



**Research Paper**

## **Effect Of Work Related Sedantary Time And Its Associated Factors On Overall Health Profile Among Working Women In Office Based Jobs**

**Dr.GJyanthi**

*Professor, School of Management, Kumaraguru College of Liberal Arts and Science, Coimbatore -641049*

### **Abstract**

*Sedentary time has been found to be independently associated with poor health and mortality. Further, a greater proportion of the workforce is now employed in low activity occupations such as office work. To date, there is no research that specifically examines the contribution of sedentary work to overall sedentary exposure and thus risk. Research in many countries has revealed a shocking level of insufficiently physically active adults, particularly women. The risk of sedentary behavior will likely increase as the number of women with office-based jobs increases. The aim of this study is to determine the level of sedentary behavior, and its associated factors among Indian women working in office-based jobs in the urban and semi urban areas.*

*A descriptive study of Indian female employees are to be considered for the study at urban and semi urban office-based worksites. The results are to be measured to determine the body mass index and it is proposed to give a self-administered survey to evaluate their level of physical activity and sedentary behavior. Predictors of sedentary behavior during work is sitting time, level of education and the nature of jobs, number of dependents in the private sector. This study identifies Indian women in office-based jobs as a high-risk group for sedentary behavior. There is a need to promote physical activity at worksites and reduce prolonged sitting for better work life balance which will impact their family life.*

**Key Words:** *Sedentary, Associated Factors,*

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### **I. Introduction**

#### **1.1 Definition :**

Sedentary work is work that **involves very limited amounts of physical activity**. In particular, a job that requires sitting for 6 of the 8 hours in a workday is usually considered sedentary. Jobs that require light even levels of physical activity such as walking or standing are not considered sedentary work. Hence continuous sitting while doing the job is said to be sedentary, since our bodies are not meant for stationery for too long. Sedentary Behavior Research Network (SBRN) defined sedentary behavior as any activity involving sitting, reclining, or lying down that has a very low energy expenditure

#### **1.2 Factors impacting Sedentary work life are due to**

1. Socio – Economic factors
2. Nature of work
3. Work from home due to COVID 19 Pandemic situations.
4. Sedentary behavior associated work.
5. Demographic and Psychographic factors
6. Jobs related with Private VS public sector
7. Presenteeism
8. Employee Engagement
9. Family and personal commitments

#### **1.3 STATEMENT OF THE PROBLEM**

To synthesize the current observational evidence for the association between sedentary behavior and health outcomes using information from systematic reviews and to assess the methodological quality of the systematic reviews found for health related problems due to sedentary work behavior.

#### **1.4 OBJECTIVE OF THE STUDY**

**AIM OF THE STUDY :** The aim of this study is to determine the level of sedentary behavior and its associated factors among Indian women in Indian work sites as common. A self administered survey is planned to evaluate the level of physical activity and sedentary behavior leads to physical and mental problems.

The following objectives are set for the study :

1. To examine the overall contribution of work sedentary time exposure to overall sedentary time exposure to find the sedentary behavior.
2. To determine the relationship between workplace sedentary behavior (sitting time) and work productivity among full-time office-based women employees,
3. To investigate the potential factors associated with productivity and performance.
4. To find the relationship among measures of the pattern of sedentary time and physical activity to improve the work behavior among the working women.
5. To suggest the measures to improve the occupational health by reducing the sedentary behavior to prioritize health among women and guidelines for physical activity.
6. To bring awareness among the working women for prevention of diseases due to sedentary work behavior and the associated health risks.

#### **1.5 RESEARCH METHODOLOGY :**

The population for the study is infinite and non-probabilistic sampling techniques has to be adopted for the research.

**1.5.1 Proposed Sample Size :** A cross sectional study of 3000 female employees in different office based work sites in India. (Age group of 20 to 60) Considering 8 hours per day of working (480 minutes) Predictors of work day sitting time were level of education, nature of work, in the private/ public sector. The study identifies Indian women in office-based jobs as a high risk group for sedentary behavior. There is a need to promote physical activity at worksites and reduced prolonged sitting.

#### **1.5.2 Work sites includes where more sedentary is observed :**

- ✚ IT and ITES sector who has more work on sitting with computer( projects related to coding, programming etc)
- ✚ Women who are working in office related jobs where more sitting is required. ( Clerical jobs long sitting in Board Room, Secretarial, Data Entry etc)
- ✚ BPO Work places
- ✚ Work from home Jobs
- ✚ Employees working in Banks, Insurance companies, Governmental & Non governmental organizations.
- ✚ Any other back office jobs ( Attending Telephones, secretarial, clerical )

**1.5.3 Geographical area covered :** The female labour force participation rate (FLFPR) in the country has fallen from 30.27% in 1990 to **20.8% in 2019**, as per data from the World Bank. Since online survey is planned to know the level of sedentary behavior, samples from 3 Districts of Tamilnadu are to be covered for knowing the general pattern of office based work in Tamil Nadu.

Urban and semi urban areas of Coimbatore, Tirupur and Erode are selected for the study.

**1.5.4 Tools for data Collection :** The research will rely mainly on primary data and also secondary sources for systematic review of previous study. A structured questionnaire can be used to take survey. Since online platforms are supporting for collecting the data, monkey survey and google forms can be used to collect the data all over the country.

**1.5.5 Assumptions :** Based on the definition for sedentary is 6 to 8 hours per day. Sitting time during work time - 540 minutes per day ( Maximum Approx). Minimum Sedantary during work time is 360 minutes per day. ( 360- 540 minutes range is considered to be sedentary for the study undertaken).

#### **1.5.6 STATISTICAL ANALYSIS**

Paired t-tests are to be used to compare time in activity levels between work and non-work days and between work hours on work days and non-work periods. Correlations between activity levels at work and non-work periods were performed using Pearson's correlations and ANOVA. All calculations are to be made using the percentage of wear time for each time period. Dependent and Independent variables are to be identified and the impact of predictor and mediating variables will be found for analysis. The analysis can be done using SPSS & Amos structural modelling with critical alpha level of 0.05.

## II. OVERVIEW OF LITERATURE

### 2.1 Reviews for health related issues associated with sedentary behavior.

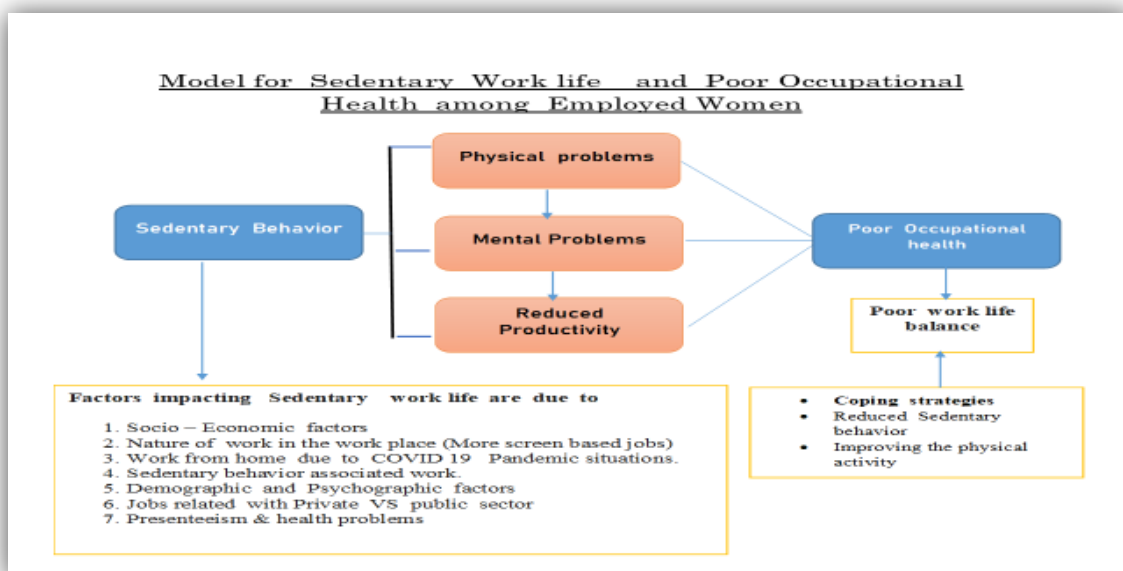
According to the research of Leandro Fornias Machado de Rezende et al., (2014) Based on the systematic reviews with the best methodological quality, it is found in children and adolescents, strong evidence of a relationship between time spent in sedentary behavior and obesity among adolescents. Moreover, moderate evidence was observed for blood pressure and total cholesterol, self-esteem, social behavior problems, physical fitness and academic achievement. In adults, we found strong evidence of a relationship between sedentary behavior and all-cause mortality, fatal and non-fatal cardiovascular disease, type 2 diabetes and metabolic syndrome. In addition, there is moderate evidence for incidence rates of ovarian, colon and endometrial cancers.

### 2.2 Measuring Sedentary Behaviour

Sedentary behavior has been defined as sitting or lying with low energy expenditure and is an independent risk factor for numerous adverse health outcomes. In industrialized modern societies, more and more time is spent for Sedantary behavior activities during normal lifestyle behavior, such as **working on computers, traveling by car**, and watching television during leisure time. Further to this, more workers are now employed in low activity jobs such as administrative work. Office workers can have Sedentary behavior for more than 3/4 of their working day. Chronic disease and all-cause mortality have been linked with self-reported time spent sitting. Sedentary Behaviour can be measured by **declarative methods** (auto-administrate questionnaires) and objective methods (observation, video, or technical instruments).

**Descriptive parameters** of physical activity and sedentary activity used most often are duration, frequency, intensity, domain or context (leisure, work, domestic, transport), and the type of activity. Indicators combining these parameters can be calculated globally or for each one of the domains individually. The most common are the volume (time × frequency) and the energy expenditure (duration × frequency × intensity), the latter being calculated to account for overall physical activity. Time spent in front of a screen (television, video, video games, computer...) is currently the most used sedentary indicator and in the majority studies, is the time spent watching television measured by survey techniques. Considering the public health impact of sedentary behavior at work, there is now a growing research interest about sedentariness at work. However, Sedentary behavior is measured through a wide range of methods, but no scientific articles provide a global overview on all methods used to quantify sedentary behavior. (Gil Boudet et al 2019)

## III. CONCEPTUAL FRAME WORK



( constructed for research)

## IV. RESEARCH PREPOSITIONS & FORMULATION OF HYPOTHESES

HO (1) - There is no significant relationship between the work related sedentary behavior and associated work related risks among working women.

HO (2) – There is no significant relationship between work related sedentary behavior and reduced productivity

HO (3)- There is no significant association with work related sedentary behavior and health problems/outcomes.

H(4) - The work based Sedentary Life style will affect the Health profile of women employees in turn will affect the work life balance

## **V. RELEVANCE AND IMPLICATIONS OF THE STUDY (SOCIETAL IMPLICATIONS)**

Sedentary behaviors have wide-ranging adverse impacts on the human body including **increased all-cause mortality and physiological problems**. Extended periods of inactivity can reduce metabolism and impair the body's ability to control blood sugar levels, regulate blood pressure and break down fat. A more active lifestyle can significantly reduce the chances of chronic health conditions, mental health disorders and premature death. To bring awareness and reduce the sedentary among working women will promote health and improve better work life balance.

### **5.1 Mental Health :**

A sedentary lifestyle also appears to have a negative impact on mental well-being. The combination of the physical and mental impact to health makes a sedentary lifestyle particularly problematic. A study proves that sedentary lifestyle and lack of physical activity with a higher risk of developing a mental health disorder and also a link between sedentary and an increased risk of depression. People can reduce the amount of time they spend being sedentary in work place by bringing awareness for improving physical activity.

- standing rather than sitting during transport
- walking to work
- taking walks during lunch breaks
- setting reminders to stand up every 30 minutes when working at a desk
- investing in a standing desk or asking the workplace to provide one
- taking a walk or standing up during tea or coffee breaks
- making excuses to leave the office or move around the building
- taking phone calls outside and walking around at the same time
- spending some free time being active and taking a break
- taking the stairs instead of using the elevator
- Suggesting few cardio vascular exercises.

### **5.2 SCOPE OF THE STUDY**

Prolonged sedentary behavior is associated with increased risk of chronic conditions. A growing number of the workforce is employed in office setting with high occupational exposure to sedentary behavior. There is a new focus in assessing and understanding to reduce the sedentary behavior in the work place. There are many objective and subjective methods available to determine the sedentary behavior. So the subjective measure of constructing a structured self administered questionnaire to know the sedentary pattern. The research will confined to know the work related sedentary behavior of working women and the assessment is limited with subjective methods.

### **5.3 OUTCOME OF THE STUDY**

The technology age is impacting so much on physical and mental health of an employee. Life without technology is liking using ventilation for breathing. More affixed on technical aids and unaffixed on physical health. The physical energy expenditure at work place is very less due to work territory and less mobility. The sedentary behavior at work has become the habit and deteriorates physical health which in turn affects productivity at work. This also leads to anxiety, stress and depression.

- The study is focusing on reducing sedentary time at work place by way of altering minor changes in the workplace and increasing physical movements during official working hours.
- The systematic approach has helped in understanding the work profile of an employee, which demands to spend most of the timing either in front of the system or in board room. This eventually leads to sedentary time and impacts occupational health. The study would reveals that the overall performance of an employee depends on the physical activeness and mental stability.
- The job profile of an employee can be designed in such a way to reduce Sedentariness and increase physical activity during working hours. This will help in reducing health related problems, and focus on performance. The focus is on to improving physical movement within the work environment and promotes health.

- A physical activity guidelines can be suggested in work places with the help of a medical practitioner.
- The study would provide Policy guidelines for improving health is mandate in any workplace. Seeking the guidelines of the practitioners to formulate the physical activities during work is significant.

## VI. CONCLUSION

Office based work is characterized by sustained sedentary time and contributes significantly to overall sedentary exposure of office workers. This overview is based on the findings that sedentary behaviour may be an important determinant of health, independently of physical activity. However, the relationship is complex because it depends on the type of sedentary behavior and the age group studied which needs to be addressed. The relationship between sedentary behavior and many health outcomes remains uncertain; thus, further studies are warranted and substantiates that occupational health is affected for performance and growth of the company. The affected individuals may have to improve their occupational health to improve better work life balance.

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