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A PROACTIVE PHYSICAL APPROACH IN ASSESSING MUSCULOSKELETAL FITNESS AMONG SOFTWARE PROFESSIONALS USING THE SITTING RISING TEST

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ABSTRACT

Introduction: The software industries are in fast growth involving employees in prolonged sitting hours affecting the individual's mobility. The core of the industry is the "Human capital" who cannot escape from occupational stress influencing health in multi-dimensional ways. Workplace stress is the harmful Physical / Emotional response that can happen when there is a conflict between job demands on the employee and the amount of control an employee has over meeting these demands. A Proactive physical approach performing an experiential exercise through self-discovery and increased awareness, the individual will be able to identify, monitor and deal with recurring physical stress symptoms. Exercise a meditation in motion in any form can act as a stress reliever boosting feel - good endorphins distracting daily worries. A Proactive approach focuses on eliminating problems before they have a chance to appear. The Sitting Rising Test is a functional movement assessment cum training which is fun and challenging allowing anyone to participate which provides the training direction and competition to keep motivated helping to realize their individual dreams about health and fitness. Research application for betterment of patient care / community at large**:** A simple appropriate assessment tool is required for the individuals to know their fitness level. To acknowledge the gap existing between their self-perceived fitness level and practical fitness level possible. No specific requirement or space needed to perform the test procedure. AIM: To study the musculoskeletal functional fitness among software professionals using the sitting rising test **Objectives:** To know the demographic profile of software professionals participated in the study; To assess the score of The Sitting Rising Test of the subjects in both genders & To know the Variations in Musculoskeletal fitness among the subjects pertaining to different age groups by the scoring. **Need of the Study:** Practical feasibility of conducting musculoskeletal fitness tests requires more involvement of man and machine making it difficult for the individual to acknowledge his / her fitness level in an easier way. **Methodology:** 134 subjects have participated in the study. All subjects were Software professionals above 21 years of age including both genders working full time with minimum continuation of service more than 6 months at the time of participation. **Outcome Measures and Procedure:** Self-reported physical fitness scale and The Physical functional tool sitting rising test. All subjects were advised to fill up the self-reported physical fitness 5-point likert scale with maximum score of 25 and to perform the physical functional tool - The sitting rising test with a total score of 10. **Data Analysis and Results:** Statistics was done with chi-square test. The mean of SRT score was evaluated as per the age group in both genders. In the male subjects between 21-29 age group SRT score was found good. The p value is < 0.0001 and so there exists significant difference between SRT score of different age groups with relation to age & gender.

KEYWORDS: The software industries are in fast growth involving employees in prolonged.

INTRODUCTION

The software industries are in fast growth involving employees in prolonged sitting hours in front of computers affecting the individual's mobility. The backbone and core of the industry is the "Human capital" who cannot escape from occupational stress affecting their health in multi-dimensional ways. Workplace stress is the harmful Physical / Emotional response that can happen when there is a conflict between job demands on the employee and the amount of control an employee has over meeting these demands. A Proactive physical approach performing an experiential exercise through self-discovery and increased awareness, the individual will be able to identify, monitor and deal with recurring physical stress symptoms of long hours of sitting. Exercise a meditation in motion in any form can act as a stress reliever boosting feel - good endorphins distracting daily worries. The sitting-rising test is an easy-to-

administer test which provides a significant and efficient prediction of mortality risk [1-3] A Proactive approach focuses on eliminating problems before they have a chance to appear and a Reactive approach is based on responding to events after they have happened. The difference between these two approaches is the perspective each one provides in assessing actions and events. The Sitting Rising Test is a functional movement assessment cum training which is fun and challenging allowing anyone to participate which provides the training direction and competition to keep motivated helping to realize their individual dreams about health and fitness. Literatures over a 14-year period has suggested, there have been no adverse events, reflecting a high level of safety associated with this simple assessment tool the sitting rising test. Standing and sitting on a chair are among the most affected activities and are considered crucial for independence in the daily routine. The inability to perform these actions may lead to disability. Therefore, recovering or improving the performance of these activities is a major goal for rehabilitation teams. To do so, practitioners need clinical tools that assess these activities[5] with adequate measurement properties (such as validity and reliability)[4,8]

Research Application for Betterment of Patient Care / Community At Large
A simple appropriate assessment tool is required for the individuals to know their fitness level. To acknowledge the gap existing between their self-perceived fitness level and practical fitness level possible. No specific requirement or space needed to perform the test procedure.
 1. Stand in comfortable clothes in your bare feet, with clear space around you.
2. Without leaning on anything, lower yourself to a sitting position on the floor.
3. Now stand back up, trying not to use your hands, knees, forearms or sides of your legs.

AIM

To study the musculoskeletal functional fitness among software professionals using the sitting rising test.

OBJECTIVES

To know the demographic profile of software professionals participated in the study. To assess the score of The Sitting Rising Test of the subjects in both genders. To know the Variations in Musculoskeletal fitness among the subjects pertaining to different age groups by the scoring.

Need of the study
Practical feasibility of conducting musculoskeletal fitness tests requires more involvement of man and machine making it difficult for the individual to acknowledge his / her fitness level in a easier way.

Hypothesis
Null Hypothesis: There is no significant changes in musculoskeletal fitness with Age/Years of work among software professionals.

Alternate Hypothesis: There exists significant changes in musculoskeletal fitness with Age/Years of work among software professionals.

METHODOLOGY

Type of Study: Descriptive Study.
Sample size: 134 Subjects Sample selection: Simple random sampling.

Material used: Physical Functional Tool - The Sitting Rising Test with a total score of 10.

Inclusion Criteria
Age: Above 21 Years including both genders & Indian Software professionals with Bachelor degree in Engineering.

Exclusion Criteria
Self-employed, Home based work and other professionals; chronic illness with regular absenteeism & Continuation of service less than 6 months during the time of study.

Out Come Measures
The Sit - Rise Test: From standing sit down. If this was flawlessly executed (no hands, no loss of balance, etc.) give a score of 5. For each hand or Knee used, take off 1 point. Again if you lost balance on the way down, subtract ½ of a point. Add this "sitting" score to your rising score of 5 to get your total Sit-Rise Test score. The maximum score is 10, the minimum, of course, is Zero.
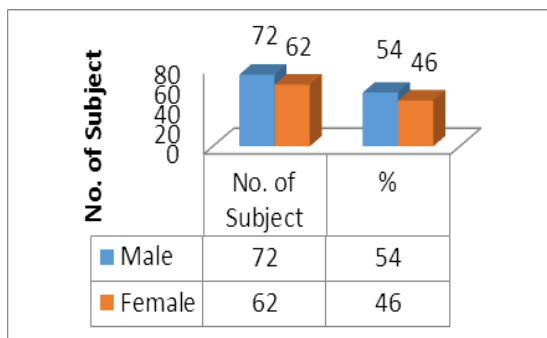
Procedure
With Informed consent the demographic data was collected and the subjects has been assessed by the Sitting - Rising Test and the Scores entered for Statistical analysis. Chi-Square test was used for statistical analysis.

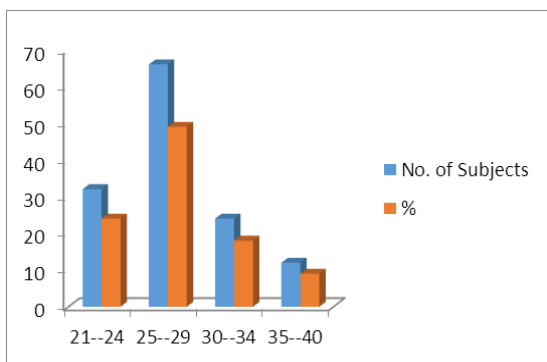**Data Presentation**
Gender Wise Distribution of Subjects

Sex	No. of Subject	%
Male	72	54
Female	62	46
Total	134	100

The total subjects were 134, out of which Male were 72 (54%) and Female were 62 (46%)

Age Wise Distribution of Subjects

Age (in years)	No. of Subjects	%
21--24	32	24
25--29	66	49
30--34	24	18
35--40	12	9
Total	134	100

According to Age group, more number of subjects were ranging from 25-29 which was 66(49%) & less no. of subjects in the age group 35-40 which was 12 (9%)

SRT Score as Per Mean & SD of Subjects Grouping

|	
Mean SRT Score	7.705223881
Standard Deviation	1.622767145
SRT Score	
Good	9.33329346
Average	7.710526316
Poor	6.087759171
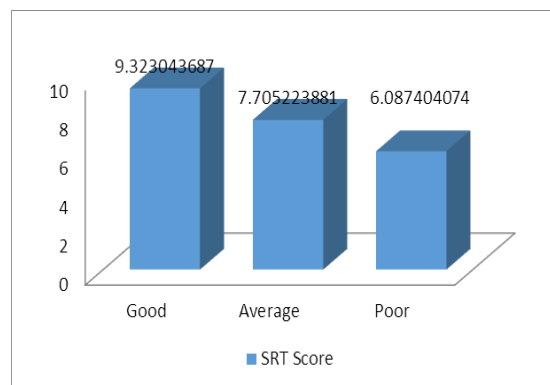
The mean & standard deviation values of the SRT score of the subjects was done and accordingly grouped into good/average/poor. The mean of SRT score was evaluated as per the age group in both genders. In the male subjects between 21-29 age group SRT score was found good.

Srt Score With Relation To Age & Gender

Age Group	Gender	Value	Mean of SRT
21-24	M	4	9.6
	F	12	8.5
25-29	M	6	9.33
	F	33	6.4
30-34	M	0	0
	F	9	6.94
35-40	M	3	6.1
	F	7	5.7

Study Variables		Good	Average	Poor	Chi-square	P-value	Inference
SEX	Male	20	49	3	22.281	0.0001	Significant
	Female	3	42	17			
Age	20--24	16	16	0	46.49	0.0001	Significant
	25--29	7	48	11			
	30--34	0	21	3			
	35-40	0	6	6			

The p value is < 0.0001 and so there exists significant difference between SRT score of different age groups with relation to age & gender.

SRT Score with relation to Gender & Age Group
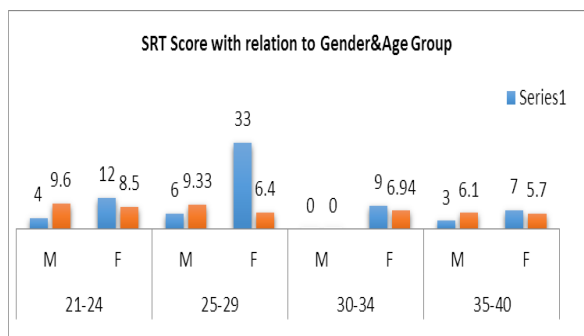
DISCUSSION

The objective of this paper is to distinguish musculoskeletal fitness among software professionals with increasing physical stress (long sitting hours with experience/aging) and it has been found significant. The design of the task and work environment seems to be a reason for it (unpleasant/ergonomic problems).

The sit and rise test is the common flexibility test used in health related fitness test batteries which is a pragmatic approach to stratify and optimize an individual's health and functional status. It can be done in any setting and totally a safe approach. Globally, a clinical approach to assessing and managing men's health is lacking. This is despite the fact that men have a shorter life expectancy and poorer health than do women. Various health prediction tools were used as a framework to prognosticate the mortality, morbidity, and functionality of individuals. The aim is to assess and stratify functional status as a main objective irrespective of age and gender. A comprehensive simpler approach without the use of any equipment is advisable upon a large scale of population.

It is well discussed by Dr. Jitender singh Narban et al, The SRT scores was found poor above age group of 35 in the study. This physical occupational stress factor has been proved as a important health problem causing subtle manifestation of morbidity that can affect productivity and personal well-being of an employee by Quick Murphy et al, According to Dr. Araujo the sitting rising test is important because many of them had trouble with ordinary motions such as simply bending down to pick up something off the floor - a common difficulty indicating a loss of flexibility. To live a healthy life, we must keep moving to maintain both muscle and balance. [9] Your ability to sit down on the ground and stand up from the ground is a reliable predictor of your mortality risk because it is a simple and fast way to test the function of the musculoskeletal system. [10-13] If you can easily sit down on the floor and stand up again without using your hands, arms, or knees for assistance and maintain your balance we can pretty accurately predict that you have a strong and functional musculoskeletal system. A strong and functional musculoskeletal system is the foundation of a robust metabolism which is the key to vibrant health.

CONCLUSION

The mean of SRT score was evaluated as per the age group in both genders. In the male subjects between 21-29 age group SRT score was found good. The p value is < 0.0001 and so there exists significant difference between SRT score of different age groups with relation to age & gender. In true yogic compassion, decide to spread the news and share this simple exercise with everyone. Any fitness class can start with the sit-rise test and let those who score poorly know that they have some work to do. Let them know how to open their hips and strengthen their spine.

Limitations of the Study

The self-perceived fitness index can be compared with The Sit-Rise Test scoring and follow up regularly at frequent intervals will make the subjects to acknowledge their musculoskeletal fitness in a better way. A simple measure of aerobic component can also be added to the self-assessment criteria.

Future Directions of the Research

Development of video graphic scoring of assessment tools to enhance standardization of health care. To establish standardized reforms for a longer work life acknowledging age sensitive measures.

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