

**“IMPACT OF PHYSICAL ACTIVITY ON STRESS AND QUALITY OF LIFE OF
STUDENTS WITH SEDENTARY AND NON SEDENTARY BEHAVIOR AT
INTEGRAL UNIVERSITY LUCKNOW”**

A Dissertation

submitted

Partial Fulfillment of the Requirements

for the Degree of

MASTER OF PHYSIOTHERAPY

In

Neurology

Submitted by

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Under the Supervision of

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June, 2022

CERTIFICATE

This is to certify that **Miss Fatima Saeed** (Enroll. No.-1600103043) has carried out the research work presented in the thesis titled **“Impact of physical activity on stress and quality of life of students with sedentary and non sedentary behavior among Integral university”** submitted for partial fulfillment for the award of the **Degree of Master of Physiotherapy in Neurology** from **Integral University, Lucknow** under my supervision.

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Place-Lucknow

CERTIFICATE

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I hereby declare that the thesis titled **“Impact of physical activity on stress and quality of life of students with sedentary and non sedentary behavior at Integral university.”** is an authentic record of the research work carried out by me under the supervision of Dr. Neeraj Maurya,(PT) Department of Physiotherapy, for the period from 2020 to 2022 at Integral University, Lucknow. No part of this thesis has been presented elsewhere for any other degree or diploma earlier.

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‘Last but not least’ I am grateful to my parents, especially my parents and my friends for their constant encouragement, help and emotion support.

Fatima Saeed-

DEDICATION

My Teachers

For grooming a professional out of me.

and

My Parents and My friends

For continuous support and encouragement at all times.

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LIST OF ABBREVIATIONS

Abbreviation	Full form
D.M.	Diabetes mellitus
IPAQ-SF	International physical activity questionnaire – short form
PSS	Perceived stress scale
SF-12	Short form -12 questionnaire
PCS	Physical component score
MCS	Mental component score
SG	Sedentary group
NSG	Non sedentary group
METs	Metabolic equivalents
RMR	Resting metabolic rate
WHO	World health organization
ADL	Activities of daily living
P.A.	Physical activity
QOL	Quality of life
PSQ	Perceived stress questionnaire
S	Sedentary
NS	Non sedentary
F	Female
M	Male
SD	Standard deviation

ABSTRACT

BACKGROUND AND PURPOSE- Nowadays , individuals mostly spending their time in sitting which can be hazardous for physical health as well as mental health. sedentary behavior refers to leisure activities (sitting , reclining , lying positions requiring very low energy expenditure). Sedentary behavior have many adverse impacts on the individuals body like- cardiovascular diseases , metabolic disorders ,cancer risks, D.M. hypertension , musculoskeletal disorders , depression and cognitive impairments. Many research shown the relationship between sedentary behavior with stress , physical activity with quality of life ,stress and quality of life. but ,there are no studies that demonstrate the relationship between all these variables –physical activity [sedentary and non sedentary] ,stress ,quality of life in students. The purpose of the study was to correlate the effect of life style [sedentary and non sedentary on stress and quality of life.

METHODOLOGY – 200 university students were recruited for the study. The subjects were classified into two groups – sedentary and non sedentary. Physical activity assessed by IPAQ – SF , stress level assessed by PSS , and quality of life assessed by SF-12 questionnaire , and the scores were calculated with the help of IPAQ scoring excel sheet ,orthotool kit calculator for SF-12 and PSS scores calculated manually.

RESULT –There is no significant difference in PSS and SF-12 [both PCS & MCS]in sedentary and non sedentary behavior. Mean of stress in SG is [18.26] & NSG [18.12] and mean of quality of life in SG for PCS &MCS [44.14 & 46.13] and in NSG [46.13 & 44.94] .

CONCLUSION – Incidence of sedentary behavior is very low in university students. The results shows that there is no significant correlation in between physical activity ,stress and quality of life.

KEY WORDS – Physical Activity, Sedentary , Non- sedentary, Perceived Stress, Quality of Life.

CHAPTER -1
INTRODUCTION

Sedentary behavior defined as any behavior with an energy expenditure of less than 1.5 metabolic equivalents [METs] including leisure time. Or total sitting time more than 6-8 hours comes under sedentary behavior. METs can be defined as ratio of work of metabolic rate to the standard resting metabolic rate [RMR] of 1 kcal /[kg/h]. one MET is the energy cost for a person at rest, physical activities can be classified into 1.0-1.5 MET [sedentary behavior] 1.6- 2.9 MET [light intensity], 3- 5.9 [moderate intensity] and less than or equivalent 6 MET [vigorous intensity]. Sedentary behavior has been well defined from physical inactivity and an independent metabolic risk even if an person meets current physical activity guidelines , by Shirin Panahi et al [2018]. The literature has shown sedentary behavior negatively correlated with physical, mental and social outcomes. Boys are less sedentary and participate more in sports, than girls:^[1,2]

Around 31% of the global population age 15-30 years engages in insufficient physical activity according to Jung Ha Park, et al.[2020]. Approx 20% of Indian population are in inactive category, 36.9% are mild active, 27.8 % are moderately active and 15% are vigorously active, according to Vivek podder et al.

[2020].^[1,3]

The starting of university is usually accompanied by physiological and psychological changes associated with the developmental transition of age. The basic element for healthy life style is the practice of physical activity. Physical activity define as “any body movement produced by muscles that results in energy expenditure”. Physical activity refers to all type of activities like exercise, sports, and ADL, occupational activity, active transportation, and daily house chores.

The ways for a person to be physically active include walking, cycling, sports, active recreation and play. Yet, WHO and many organizations estimates show one in four adults and

81% of adolescents do not do enough physical activity. Physical activity has been shown to have a multitude of health benefits at a physical, mental and social level.^[4]

Physical activity helps to prevent diseases such as cardiac disease, diabetes, cancers. Physical activities also help to improve physical and mental well being of a person. P.A. is helpful in maintaining healthy body weight. Regular physical activity is most of effective ways of preventing premature death. Adults[18-40] should do at least 150min of moderate physical activity and 75 min of vigorous activity with muscle strengthening activities to maintain non-sedentary behavior . if anyone do less activities consider as sedentary behavior . Low physical activity level is leading risk factor for cardiac diseases, diabetes as well as mental stress. ^[5]

The university stage can be a stressful process due to changes at psychological, social and educational level. Stress pose a risk to personal well being and academic performance as well.

There is no universal agreement on the definition of stress. –“stress is a word used to describe experiences that are challenging emotionally and physiologically”. Stress is a feeling of emotional or physical tension stress is your body reaction to challenge or demand.

Stress is two types on the basis of duration – acute and chronic

- 1) Acute stress – lasts for a short duration or goes away quickly
- 2) Chronic stress- lasts for longer period of time [for weeks or months]. ^[6]

In university, students may feel stressed about starting university, exams, coursework deadline, or thinking about future, or leaving home for studies, meeting new people, change in

life style .Some stress is healthy and even motivating when it arises under the proper circumstances.

When the PA and stress relationship is explored, Physical activity and stress showed a significant negative association. Physical activity is improving mental health outcomes with the help of exercise. PA has been demonstrating to promote positive changes one's mental health. With the help of PA we can manage the stress. Good physical activities like practice sport and exercise promote healthy life style and good academic performance and decrease stress level. ^[4] Quality of life is well being of an individual which often include physical, mental and social aspects. Or when a person is comfortable, pain free and able to participate or enjoy in all type of events. [Having the ability to live a good life in terms of emotional and physical well- being] .

According to WHO the quality of life is -An individual`s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. All indicators of the quality of life include wealth, employment, the environment, physical and mental health, education, recreation and leisure time, social belonging, religious beliefs.^[7]

Perceived stress is negatively correlated with quality of life. Continuous stress had effects on quality of life. Continuous stress results in low quality of life. Health promoting behavior found to be enhancing the quality of life in university students.^[6]

Several research shown the relationship between sedentary behavior with quality of, nevertheless, there are no studies that demonstrate the relationship of –physical activity [sedentary and non sedentary] and stress along with quality of life in students. The purpose of this study is to determine the correlation of sedentary behavior, physical activity, stress and

quality of life among a group of university students. The author wanted to find out the relation between all variables and to what extent they relate to each other. This study aimed to summarize and analyze evidence of association between physical activity, stress, and quality of life of students.

STATEMENT OF QUESTION

Is there any correlation between physical activity and stress and quality of life in university students with sedentary or non sedentary life style?

OBJECTIVE

- 1) To compare the stress level of students who have sedentary life style with those students who have non sedentary life style.
- 2) To determine the correlation of physical activity with stress in students according to their life styles.
- 3) To determine the physical activity level and stress level in university students.
- 4) To compare the Quality Of Life of university students who have sedentary life style with those students who have non sedentary life style.
- 5) To determine the quality of life of student of integral university.

HYPOTHESIS

Alternative Hypothesis-

There will be more stress level and low quality of life in students who have sedentary life style or low physical activity level.

Null hypothesis –

There will be no difference in stress level and quality of life in both- sedentary and non sedentary life styles.

Operational definition

SEDENTARY BEHAVIOR –

Sedentary behavior is any behavior with an energy expenditure of less than 1.5 metabolic equivalents [METs] including leisure time. Or total sitting time more than 6-8 hours comes under sedentary behavior. . MET is ration of work of metabolic rate to the standard resting metabolic rate [RMR] of 1 kcal /[kg/h]. One MET is the energy cost for a person at rest, physical activities can be classified into 1.0-1.5 MET [sedentary behavior] 1.6- 2.9 MET [light intensity], 3- 5.9 [moderate intensity] and less than or equivalent 6 MET [vigorous intensity]. ^[1]

NON- SEDENTARY BEHAVIOR –

A daily physical activity of greater than 39 MET –hr considered as non sedentary. ^[1]

PHYSICAL ACTIVITY-

Physical activity is, “any body movement produced by muscles those results in energy expenditure”. Physical activity is all type of activities like active exercise, sports, and ADL, occupational activity, active transportation, and daily house chores. ^[4]

STRESS –

“Stress is a word used to describe experiences that are challenging emotionally and physiologically”. Stress is a feeling of emotional or physical tension stress is your body reaction to challenge or demand.

Stress is two types on the basis of duration – acute and chronic.

Acute stress – lasts for a short duration or goes away quickly.

Chronic stress- lasts for longer period of time [for weeks or months. ^[6]

QUALITY OF LIFE -

An individual`s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. All indicators of the quality of life include wealth, employment, the environment, physical and mental health, education, recreation and leisure time, social belonging, religious beliefs. ^[7]

CHAPTER -2
REVIEW OF LITERATURE

Travis J. Saunders, et al., [Apr. 2022]. Suggested that- “ high levels of sedentary behavior are critically associated with cognitive function or mental stress , depression, disability, low physical activity levels, and poor physical health ,low quality of life in adults .^[11]

Souhail Hermassi, et al. [March.2021]. Observed that decreased physical activity levels results in increased stress level in university student in Qatar during covid pandemic. ^[12]

Vivek Podder, et al, [May.2021]. Revealed that –“current prevalence estimates that 20 and 37 % of population in India are mildly active and 57 % of population did not match the WHO regimen for physical activity.^[3]

Ragina Marcia Ferreira Silva, et al [June. 2021] . Suggested that the barriers to physical activity among university students are mainly related to cognition, emotional, psychological factors. ^[13]

Dr. Praveen Kumar, et al .[Aug. 2021]. Concluded that majority of students have low physical activity level. Males are more engaged in vigorous physical activity than females. Awareness should promote among students in regarding the importance of physical activity. ^[14]

Ilaria Ruotolo, et al.[Aug. 2021]. Reported that SF-12 is valid and reliable instrument to assess the quality of life of medical students.^[15]

Bing Cao, et al. [Oct. 2021]. Results indicated that moderate physical activities are associated with low perceived stress in large population of china. And exercise is protecting the biological factors mediating the health outcomes. ^[16]

Ruchira pangtey, et al. [Jan. 2020]. Concluded that perceived stress high in low income urban population or low socioeconomic status. And perceived stress scale is valid in Indian population. ^[17].

Narinder Kaur, et al. [Apr. 2020]. Concluded that lack of physical activity or exercise results in chronic diseases like DM, cardiac disease. Screening and regular exercise should be promoted in students. ^[18].

Xiqin Liu, et al. [Apr. 2020]. Provide evidence to use PSS-10 to assess the stress in Chinese adolescents and students .to determine the severity of stress and guide the interventions to decrease the stress. ^[19].

Vedrana Sember, et al.[Sep. 2020]. Reported that all EU countries validate the use of IPAQ – sf in assessment of physical activity in adults. And suggested that all countries should have validated the translated IPAQ in their national languages. ^[20].

Jung Ha Park, et al [Nov. 2020]. Concluded that –“the total daily sedentary time cannot be reduced for unavoidable reasons, it is good to do sufficient exercise equivalent to or more than 150-300 minutes of MPA per week, the studies reveal that physical activity could counterbalance the adverse effects of sedentary behavior in population. If enough exercise cannot be performed by anyone, person should at least perform light physical activity, to cover or match the total time of exercise. The person should further try to increase their physical activity levels as their situations permit for good health^[11].

Ramon Chacon- et al, [June. 2019]. Concluded that- “specifically women show higher levels of stress as compare to men linked to academic commitment and associated with weight problems, specially linked with overweight or obesity states. Without finding statistically significant differences in relation to practice of Physical Activity^[4]

Husam malibary, et al. [Sep. 2019]. Reveals that gender and educational levels of medical students did not affect quality of life. But the high performing students having lower quality of life scores may be due to the educational stress they are facing^[21].

Pawel F, Nowak, et al [Dec. 2019] . Concluded that physical activity is positively correlated to the quality of life. age and gender are the main factors for physical activity intensity. Physical activity or sedentary behavior did not demonstrate any considerable relation with level of life satisfaction^[22]

Tianyao Huo,et al. [Feb. 2018]. Reported that, the SF-12 is reliable and valid for assessing the physical and mental factors. And encourage using sf-12 to assess the health related quality of life^[23].

Eun Ji Seo, et al., [Aug. 2018]. Concluded that –“the total indirect effects of the parallel multiple mediator models indicated that depressive symptoms and health promoting lifestyle profile fully mediated the relationship between perceived stress and quality of life among university students. The depressive symptoms exacerbated QOL affected by perceived stress, whereas HPLP positively mediated QOL affected by perceived stress.^[6]

Kazuhiro P. LzawaKoichiro Oka, et al. [Sep. 2018]. Revealed the differences in working and non working day total behavior [sitting time] to stimulate the physical activity for good quality of life. During week days sitting time is more than weekend time.^[24]

shirin Panahi, et al. , [Sep. 2018]. Revealed that –“person`s sedentary behavior may be more than just normal physical inactivity. A modern version of sedentary behavior that support a potential neurogenic component leading to hyperphagia causes obesity, stress, and unfavorable metabolic health outcomes. There are various approaches present which may help to increase physical activity participation that may possibly counteract the obvious unfavorable effects of sedentary behaviors.^[25]

Adomah Opoku – Acheampong, et al. [March. 2017]. Reported that there is a negative correlation between stress and quality of life of pharmacy students. Encourage the students to use of stress management strategies. ^[26]

Icaro J.S. Ribeiro, et al. [Apr. 2017]. Highlights the negative relationship between quality of life with stress in students. High level of stress during educational life results in deterioration of quality of life of university students. ^[27].

Naim Nur, et al. [Apr. 2017]. Suggested that students HRQOL is based on behavioral, demographic and socioeconomic factors. Quality of life is good in those who live in urban areas, non – smokers and have good financial status. And exercise or physical activity support to improve quality of life. ^[28].

Bharbara Karolline Rodrigues Silva, et al., [June.2017]. Concluded that- “there is negative relationship between the physical activity and stress in healthcare professionals. As the score of physical domain facets decreases, the perceived stress levels increases, which leads to the conclusion that physical activity can favor the promotion of quality of life. ^[7]

Akindutire Isaac Olusola, et al. [Aug. 2017]. Examined the reasons for sedentary life style and physical inactivity. And the risks of sedentary behavior. The result shows that Physical inactivity leads to sedentary behavior. ^[29].

Xlu Yun Wu, et al. [Nov. 2017]. Concluded that high level of physical activity and less time spent on sedentary behavior results in increased health related quality of life in children and adolescents. ^[30].

Sepaldeep Singh Dhaliwal, et al. [July.2015]. Studied that there is lack of awareness of prolonged sitting or sedentary behavior in Indian employees and students. The result shows that the large population takes lesser breaks during continuous sitting. There is a misconception that physical activity can balance the effect of sitting. ^[31].

Matthew Stults- Kolemmainen, et al., [Jan.2014]. Concluded that- “stress and physical activity are associated in a temporal manner . more specifically , the experience of stress influences PA , and the great majority of studies indicate an inverse relationship between these constructs . [5]

Caio Victor Sousa ,et al [Jan. 2014]. Concluded that the subjects identified as sedentary are 3 times more likely to have high or elevated scores of perceived stress. The results indicate that persons who practice exercise have low stress in comparison to sedentary persons. ^[32].

Diane Gill , et al [Jan. 2013]. The findings suggest that physical activity truly correlate with the quality of life of participants . In this study author also suggested that we could promote physical activity participation by branding exercise as a only way for the good quality of life . ^[33]

DR. Krishnakumar Padmapriya et al .[Feb. 2013]. Suggested that physical activity is on of the main health indicator. Young adults are involved in high to moderate levels of PA meeting [84.5%] the IPAQ high and moderate activity .^[34].

Gabrielle Cristine M. F. P. , et al [Feb. 2012]. Reveals a positive correlation of physical activity with the perception of quality of life, but this relationship varies according domains of quality of life assessed . ^[35]

Rahul Khara et al.[Dec.2012]. Concluded that significant proportion of students are low physically active . hostel residents emerged in risk group for physical inactivity. ^[36]

Paul H. Lee, et al .[Oct. 2011]. Proven the reliability of IPAQ-sf ,it can be used with care in repeated measures in studies , although the magnitude of the change over time. And weak to support the validity of IPAQ-sf . ^[9].

Regina Guthoid , et al .[Jul. 2010] . Suggested that prevalence of sedentary behavior is very high and there is a need of urgently effective planning implementation to improve physical activity levels and to minimize the sedentary behavior of students in schools and colleges before a next generation is programmed to suffer from chronic diseases epidemic. ^[37].

Mark Stephen Tremblay, et al. [Sep. 2010]. Concluded that personal , social and environmental factors contribute independently to determine the physical activity behaviors. There is a need for models that are particular to influence sedentary behavior or sedentary time in particular sitting . ^[38].

CHAPTER –3
MATERIAL AND METHODS

PARTICIPANTS – This study was conducted on 200 subjects who were Integral university students. Participants were divided into 2 groups on the basis of life style [sedentary and non sedentary] after IPAQ scoring . all subjects were fully briefed about study purpose , benefits , risk prior to taking consent .

Sample collection – random collection.

Population Area – The subject will be taken from , lucknow , u.p. India.

Study population- the target population are adults between the age of 20 -30 years.

Source of subject – the subjects will be taken from integral university, Will be taken from different professional courses.

Sample Size – 200 students of integral university

65 university students having sedentary life style

135 university students having non sedentary life style will be taken for study, average age is [20- 30 years].

Study design - a cross sectional study .

Study Duration – 6 months.

Inclusion criteria

1]-University students

2]- Both gender

3]- Age between 18 -30

4]- Able to understand study information sheet.

Exclusion criteria

1]- Any professionals

2]- Age < 18 and > 30

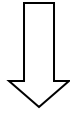
3]- Serious health conditions

4]- Any musculoskeletal deformity

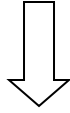
VARIABLE

VARIABLE	MEASUREMENT	TOOLS	TYPE
Independent	demographics	age	continuous
		Gender	nominal
		Education level	ordinal
dependent	quality of life	SF-12 questionnaire	continuous
	stress	stress perceived scale	continuous
	life style	IPAQ	continuous

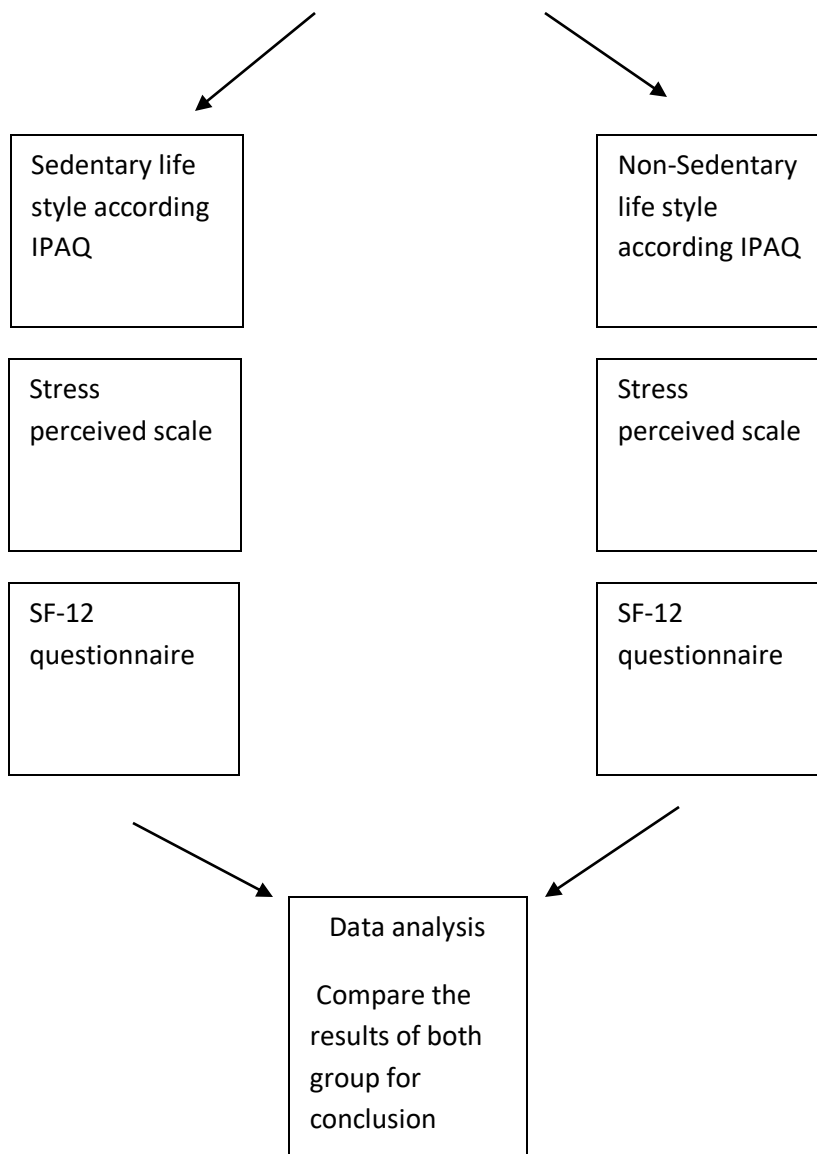
PROTOCOL



Select the participants on the basis of inclusion and exclusion criteria



Screening for Sedentary and Non-sedentary life style of participants with the help of IPAQ



PROCEDURE

Participants were recruited from integral university on the basis of inclusion and exclusion criteria. Potential participants were verbally given the summary of the study and checked whether they met the criteria, those who met the criteria were included in the study.

A consent sheet was provided to all participants with outlining the purpose of study alongside the benefits and risks of study or participating. Who voluntary participated in the study was included in the study.

Participants were provided both a study information sheet [consent] and a questionnaire sheet. Participants were encouraged to ask the question, and standard answers to common question were used by researcher to ensure consistency of information.

Measurement Tools:-scale and questionnaire given below -

1] -Measuring physical activity- with the help of international physical activity questionnaire to determine low, moderate, high physical activity level (or sedentary or non sedentary life style).

The international physical activity questionnaire [IPAQ] - comprises a set of 4 Questionnaires. long[5 activity domains asked independently] and short [4 generic items] versions for use by either telephone or self- administered methods are available .the purpose of

IPAQ is to provide common instruments that can be used to obtain internationally comparable data on health – related physical activity.

The development of an international measures for physical activity commenced in Geneva in 1998. Was followed by extensive reliability and validity testing undertaken across 12 countries [14 sites] during 2000. The final results suggest that these measures have acceptable measurement properties for use in many settings and different languages, and are suitable for national population – based prevalence studies of participation in physical activity.

Intended population – is 18 – 69 years. [8,9]

2]-Measuring quality of life – With the help of SF-12 questionnaire.

SF-12 questionnaire – The SF-12 is a self reported outcome measure assessing the impact of health on an individual's everyday life, it is often used as a quality of life measure. SF-12 is a shortened version of its processor, the SF-36, which itself evolved from medical outcomes study. The SF-12 uses the same 8 domains as SF-36. Patients fill out a 12 question survey which is then scored by a researcher .there is an online calculator available for scoring.

Intended population – designed as a general measure of health so can be used with the general population. [10].

- Short form of SF-36 questionnaire
- SF-12 measures 8 domains
- Standard score is 50 and standard deviation is -10 which represent the good or poor quality of life.

3]-Measuring Stress- with the help of PSS –

Perceived Stress Questionnaire – consisting of 10 items, the PSQ was developed as an instrument for assessing the stressful life events and circumstances that tend to trigger or exacerbate disease symptoms .with stress bearing significantly on the quality and consistency of sleep cycle. The PSS originally developed in 1983. The SQ is a potentially valuable tool for evaluating the underlying causes of sleep disturbances. The scale is specifically recommended for clinical settings, though it has been employed in research studies as well.

Intended population – the PSQ has been validated with a population of in- patients, out- patients, students and health care workers with the mean age of 13.9 – 31.8 ^[5]

– Perceived stress scale for assess the stress. With the help of questionnaire paper.

- Scores ranging from 0-13 would be considered low stress

- Score ranging from 14-26 would be considered moderate stress

- Score ranging from 27-40 would be considered high perceived stress. ^[5].



Figure-3.1

Students filling screening form



Figure- 3.2

Students filling screening form

MEASUREMENT -

International physical activity questionnaire scoring –There are two forms of output from scoring the IPAQ. Results can be reported in categories [low, moderate, and high activity levels] or as continuous variable [MET minutes a week]. MET minutes represent the amount of energy expended carrying out physical activity.

High level – High level means your physical activity level equate to approximately one hour or more. Vigorous intensity activity of at least 3 days or 1500MET minutes a week. 7 or more days of any combination of walking, moderate intensity or vigorous intensity activities achieving a minimum total physical activity of at least 3000MET minutes a week.

Moderate – Means you are doing half an hour. 3/5 or more days of vigorous activity /or walking of at least 30 minutes /day. 5 or more days of any combination of walking, moderate or vigorous activities achieving 600 MET minutes a week.

Low – Means you are not meeting any criteria for moderate or high levels of physical activity. High and moderate include as non sedentary behavior and low include as sedentary behavior.^[8,9]

SF-12 scoring – the SF-12 physical [PCS] and mental [MCS] component summary scales are scored using norm- based methods. Both the PCS and MCS scales are transformed to have a mean 50 and SD of 10 in the general US population. Standard deviation is [- 10] is indicate poor quality of life.^[10]

Perceived stress scale score – first reverse your score for question 4, 5, 7 and 8. Change the score like this 0=4 , 1=3, 2=2 , 3=1 , 4=0

Individual scores on PSS can range from 0 to 40

0-13 would be considered low stress

14-26 would be considered moderate stress

27-40 would be considered high perceived stress. ^[5].

After collection of data from all participants data were analyzed.

DATA ANALYSIS - The Data were analyzed by MS excel 2010 data analysis tool pack, excel analysis tool pack 2019. The dependent [IPAQ, SF-12, PSS] variables were summarized by means, standard deviations, and the independent variables [gender] summarized by percentage and age is summarized by mean value. T-test: Two sample assuming unequal variances were performed to determine the significant associations between physical activity, stress and quality of life between two groups. Alpha value kept at 0.05 thus P-Value below 0.05 is considered as statistical significant. P and T value are used in this study, and confidence level is [95.0%] thus these data can be used with 95% of confidence for clinical purpose.

CHAPTER -4

RESULTS

Among the 200 participants in our study 122 were females and 78 were males. Mean age of participants of both groups was [22.15] . The two sample T- test revealed that there were no significant difference in stress level in between both sedentary and non sedentary groups, with the mean [18.26] In sedentary and [18.12] in non sedentary group. But moderate perceived stress was present in both groups. And there were no significant difference in quality of life all domains [PCS & MCS] in both groups, with the mean for sedentary PCS & MCS [44.14& 46.13] and for non sedentary PCS & MCS [46.13 & 44.94]. The study shows that, there is no significant difference in PSS and SF-12 [both PCS & MCS] for sedentary and non sedentary. May due to age factor. There is very weak evidence for high perceived stress and low quality of life with sedentary life style among university students.

TABLES

TABLE-4. 1: Descriptive statistics of IPAQ score

VARIABLE	MEAN \pm S.D.	DF	T-Value	P-Value
IPAQ – S	262.21 \pm 261.85	143	1.976	0.0000001
IPAQ –NS	2567.3481 \pm 2052.1404			

Table 1- shows the IPAQ scores for sedentary and non sedentary behavior where the mean value for sedentary is [262.21] and non sedentary is [2567.73] . that means low score in [< 600 MET] sedentary behavior and high scores in [>600 MET] non sedentary behavior.

TABLE-4.2: Descriptive statistics of the PSS score for sedentary and non sedentary groups -

VARIABLE	MEAN \pm S.D.	DF	T-Value	P-Value
PSS- S	18.261 \pm 3.96	174	1.973	0.846
PSS- NS	18.125 \pm 5.74			

Table 2 –shows that perceived stress is almost equal in both groups. Both sedentary and non sedentary groups have moderate perceived stress. The mean & S.D. [18.26 \pm 3.96] for sedentary and [18.12 \pm 5.74] for non sedentary life style with non significant P-value [0.846].

TABLE-4.3: Descriptive statistics of SF-12 [PCS] score for sedentary and non sedentary groups

VARIABLE	MEAN \pm S.D.	DF	T-Value	P- Value
SF-12 [PCS]- S	44.142 \pm 8.151	123	1.979	0.103
SF-12[PCS] – NS	46.138 \pm 7.882			

Table 3 - shows that SF-12 [PCS] mean [44.14] for sedentary and [46.13] for non sedentary and S.D. below [10] for both groups, means good physical component of quality of life in both groups.

TABLE -4.4: Descriptive statistics of SF-12 [MCS] for sedentary and non sedentary groups -

VARIABLE	MEAN \pm SD	DF	T-Value	P- Value
SF-12[MCS] – S	46.134 \pm 8.103	180	1.973	0.419
SF-12[MCS] – NS	44.948 \pm 12.388			

Table 4 – shows that SF-12 [MCS] scores are almost equal in both groups, with the mean [46.13] for sedentary and [44.94] for non sedentary group. S.D. is more than [12.38] for non sedentary, which means low mental score in non sedentary group.

FIGURES

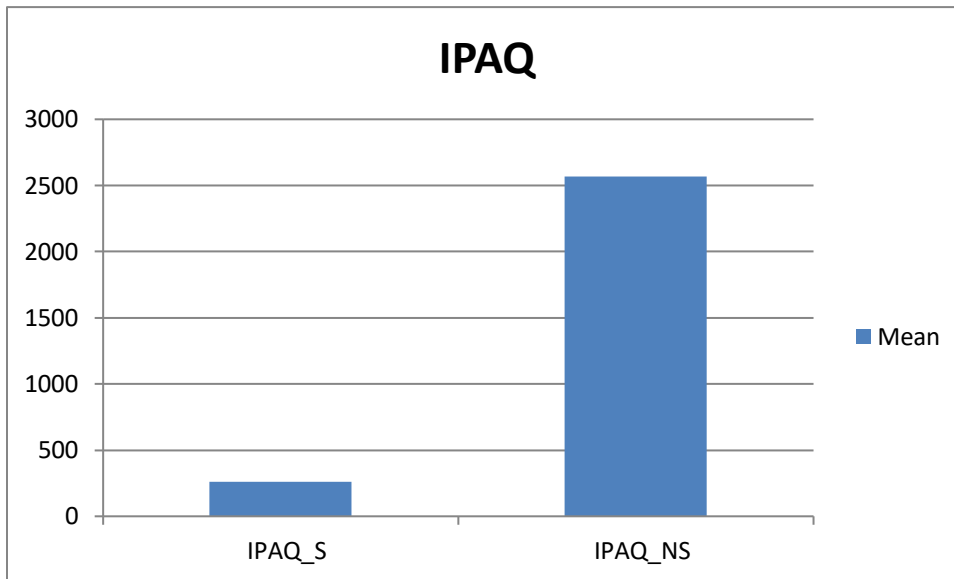


Figure -4.1

IPAQ – international physical activity questionnaire [S- sedentary] [NS- non sedentary]

The graph shows that IPAQ scores low in sedentary and high in non sedentary group.

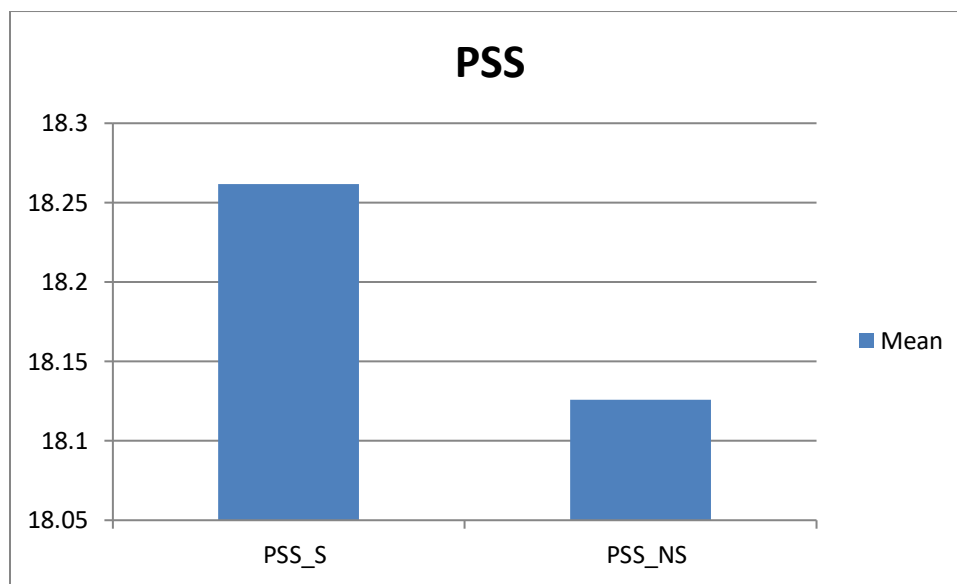


Figure -4.2

PSS- perceived stress scale [S-sedentary] [NS non- sedentary]

The graph shows that PSS score mildly higher in sedentary group but not significantly.

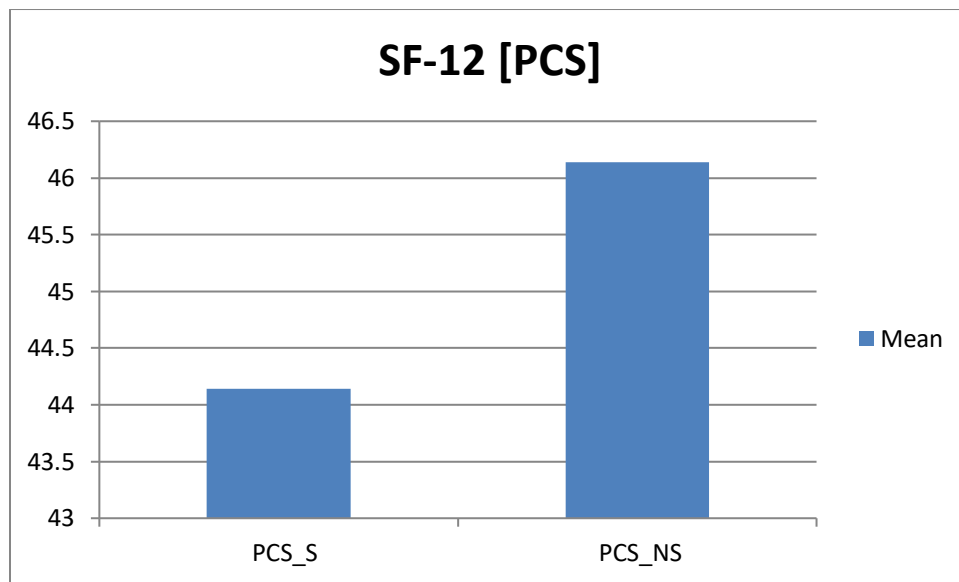


Figure-4.3

PCS- Physical component score [S-sedentary] [NS – non-sedentary]

The graph shows that physical component scores mildly low in sedentary group but not significant for low quality of life.

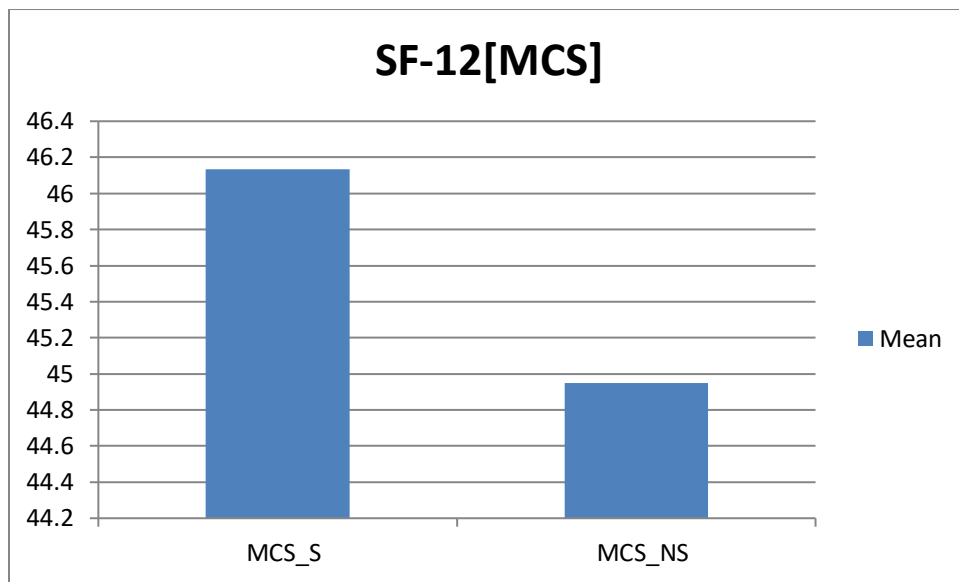


Figure 4.4

MCS- mental component score [S-sedentary] [NS –non sedentary]

The graph shows that mental component scores are mildly low in non sedentary group with good quality of life in both groups.

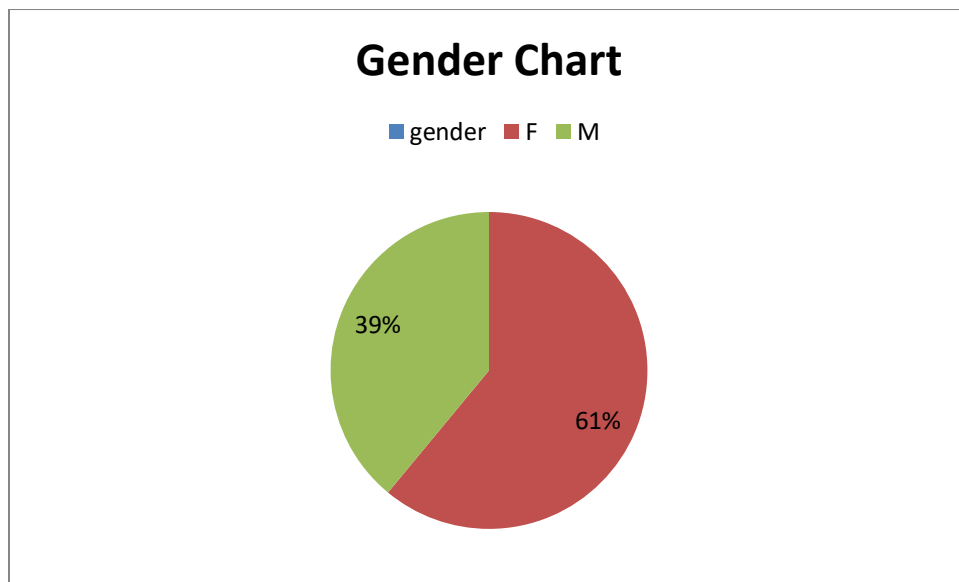


Figure -4.5

[F- female]

[M- male]

Females participants [61%] are more than male participants [39%] in this study.

CHAPTER -5

DISCUSSION

This study synthesized the relationship between physical activity, stress and quality of life among Integral University students, with sedentary and non sedentary behavior. There is no significant difference for variables [PSS AND SF-12] in both groups.

Through our analysis, we have seen that sizeable majority of university students reported non sedentary [active] behaviors. In our study students who were physically inactive were more likely to engage in sedentary behaviors compared with physically active students with significant P-value [0.0000001]. This P-value shows that physically inactive student's shows sedentary behavior and physically active student's shows non sedentary behavior. It is likely that limited physical activity and lack of adequate exercise for long periods of time will lead to sedentary behavior. The WHO and other health care organization encourage the adoption of exercise, yoga and meditation programs in daily life activities to minimizes the risk of sedentary behavior. If this study was conducted on large sample size, and covered wide age range, than may be we would have found large sedentary behavior sample size among collected sample. In our study 61% females and 39% males were participated, in non- sedentary group percentage for females were 59.26% and males were 40.74%. Which indicates that females had more non-sedentary behavior than boys in non-sedentary group, but most of the females were moderately active, and boys were highly active. Percentage of sedentary behavior for females were 64.6% and males were 35.38%. in sedentary group females are more sedentary than males. In both groups percentage of females are high than males because number of females in total sample size is inflated than males. According to Dr. Praveen Kumar males are more engaged in vigorous physical activity than females ^[14], and this statement is significant in present study, because 70% of females were highly active and 81% of males were highly active in non sedentary group, though the sample size of females is relatively larger [n=80] than males [n=42], yet the statement

holds true in the present study as well. Females did not performed vigorous activities in comparison to males; females usually performed moderate type of activities in daily house chores

Kazuhiro P. et al, [2018] stated that there is significant differences were found in age, marital status and occupation of subjects. This study proves that age of participants is important for life style behavior. ^[24]

In our study we have seen that moderate perceived stress present in both sedentary and non sedentary groups. P-value of PSS in both group is almost similar, mean value for stress is [18] in sedentary and non –sedentary groups which reveal the presence of moderate stress in students. Because the university students faced situations that generate stress, as the requirement of the practical skill, the stress is due to-among factors, academic pressure, perfectionist standards and emotionally stressful situations. Icaro Jose et al, [2017] describe that high level of stress during study can lead to the development of burnout syndrome, which is characterized by a state of physical and mental exhaustion connected to work or activities of care. To deal with this highly prevalent condition, educators must develop awareness and proposing interventions focused for welfare of students. ^[27]

Ramon Chacon et al, [2019] suggested that women shows higher level of academic stress compare to men, linked to academic commitments. ^[4] Percentage of moderate perceived stress in females [82.5%] and in males [70%] in non sedentary group. In sedentary group percentage of moderate stress in females [92.85%] and in males [56.52%]. This percentage recommended that moderate perceived stress is higher in females than males. Percentage of low perceived stress in females [17.5%] and in males [29.9%] in non-sedentary group, for sedentary group females [7.1%] and males [43.41%]. This percentage shows that females are more prone for stress than

males, because number of females participants are very large than male in both groups, yet the percentage for low stress is higher in males, that proves Ramon`s statement true in this study.

Perceived stress slightly inflated in sedentary group.

According to Adalf EM, et al, [2001]- University students, at graduate or post graduate level, are in sociodemographic age span in which stress- related disorders are more common. Additionally, the academic period involves the employment of time and financial resources by the students, without guarantees of a satisfactory return. That`s why moderate stress is present in both groups among university students.

In this study results reveals that quality of life was good for both component of quality of life- physical component score(PCS) and mental component score (MCS). In both groups [sedentary and non-sedentary]. This is may be due to small sample size of sedentary behavior and age factor of sample population. Naim nur et al, [2017]. Conducted a study which reveals that socioeconomic and demographic details of subjects influenced the quality of life. ^[28] That`s why in present study quality of life was good in both groups because of the same age group.

P- Value of PCS is[0.103] and MCS is [0.419] for quality of life is non-significant in this study. Mean value of [46.13] PCS scores are a bit higher in non sedentary group [non-significant] than sedentary group [44.14], which means non sedentary population is slightly active than sedentary population. And mean value of [44.94] MCS score non sedentary is slightly lower than sedentary group [46.13], which indicates moderately high stress present in sedentary population in comparison with non sedentary group. Allover result bear witness to not statistically significant but little bit clinically significant, superior quality of life in non sedentary group than sedentary group.

14%] males and [65%] females in sedentary group had poor quality of life and in non sedentary group [12.5%] males and [40%] females had poor quality of life, which denotes overall percentage of poor quality of life is higher in sedentary group than non sedentary group, however the sample size [n=65] of sedentary is very less than non sedentary group [n=135]. One more thing which is outcome of this statement is- females had low quality of life than men.

LIMITATION – This study presents some limitations. Firstly the subjective method of measurements use in data collection. Second one is small sample size with narrow age range covered only university students.

FUTURE STUDY-The same study will be conducted with some objective variable and in large sample size of students along with childhood and old age group.

SIGNIFICANCE IN CLINICAL PRACTICE - In subjects with sedentary behavior there is slightly presence of moderate stress and slightly low quality of life. That means sedentary behavior has negative relationship with stress and quality of life. This statement holds true with 95% confidence level and the data of present study can be use in clinical practice. Furthermore, suggestion should be given to such population to reduce sedentary behavior or improve physical activity level.

CHAPTER -6

CONCLUSION

The study shows that there is no statistically significant relationship in between physical activity, stress and quality of life. The incidence of sedentary behavior is very low in university students or very less sedentary size. Because of educational load, there is the finding of clinically significant moderate to high perceived stress in both groups. Quality of life of both groups are good enough, may be due to age factor because mean age was 22 year, and the size of sedentary sample was very small. If this study was conducted with large sample size of all age groups with objective outcome measures, than we would be found more accurate and significant results. Because in childhood, old age and diseased population shows strong correlation in between physical activity, stress and quality of life in previously performed studies.

CHAPTER -8

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Appendices

Appendix - I

CONSENT FORM

Title of study – impact of physical activity on stress and quality of life in students with or without sedentary lifestyle among integral university.

Purpose of study – to determine the correlation of physical activity on stress and quality of life among university student.

Risk– above study will not pose any physical, emotional, financial and mental risk to the participant.

Benefits – above study will help to improve the participant’s awareness about the relation of their physical and mental health. This study will demonstrate the difference between mental health of sedentary and non-sedentary students thus helping them to improve their quality of life and stress management.

Confidentiality – participants data will be kept confidential, and will be used only in educational publication intended for health professionals .

The study has been conducted by Fatima saeed..... Student of physiotherapy department , integral university, lucknow .

Declaration of participants –

Iconfirm that I have read and understand the information sheet for the above study .I understand that my participation is voluntary and I am free to withdraw at any time .I have been assured that my information will be kept confidential, and the my information may be used in future reports , articles. Iduly understand the risk and benefits involved in the study.I agree to take part in the above study.

signature of participant

date

Signature of Researcher

date

Appendix -II

SCALE

Name-

Age-

Gender-

Phone number-

Height/weight-

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the vigorous activities that you did in the **last 7 days**. Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think Only about those physical activities that you did for at least 10 minutes at a time.

1. During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling?

.....days per week

No vigorous physical activities Skip to question 3

2. How much time did you usually spend doing vigorous physical activities on one of those days?

.....hours per day

.....minutes per day

Don't know/Not sure

Think about all the moderate activities that you did in the last 7 days. Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

3. During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

.....days per week

No moderate physical activities Skip to question 5

4. How much time did you usually spend doing moderate physical activities on one of those days?

.....hours per day

.....minutes per day

Don't know/Not sure

Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, Exercise, or leisure.

5. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

.....days per week

No walking Skip to question 7

6. How much time did you usually spend walking on one of those days?

.....hours per day

.....minutes per day

Don't know/Not sure

The last question is about the time you spent sitting on weekdays during the last days. include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

7. During the last 7 days, how much time did you spend sitting on a week day?

.....hours per day

.....minutes per day

Don't know/Not sure

SCORE-

High []

Moderate []

Low []

SF-12®:

This information will help your doctors keep track of how you feel and how well you are able to do your usual activities. Answer every question by placing a check mark on the line in front of the appropriate answer. It is not specific for arthritis. If you are unsure about how to answer a question, please give the best answer you can and make a written comment beside your answer.

1. In general, would you say your health is:

.....Excellent (1)

.....Very Good (2)

.....Good (3)

.....fair(4)

.....Poor (5)

The following two questions are about activities you might do during a typical day. Does YOUR HEALTH NOW LIMIT YOU in these activities? If so, how much?

2. MODERATE ACTIVITIES, such as moving a table, pushing a vacuum cleaner, bowling, or playing

golf:

.....Yes, Limited A Lot (1)

.....Yes, Limited A Little (2)

.....No, Not Limited At All (3)

3. Climbing SEVERAL flights of stairs:

.....Yes, Limited A Lot (1)

.....Yes, Limited A Little (2)

.....No, Not Limited At All (3)

During the PAST 4 WEEKS have you had any of the following problems with your work or other regular activities AS A RESULT OF YOUR PHYSICAL HEALTH?

4. ACCOMPLISHED LESS than you would like:

.....Yes (1)

.....No (2)

5. Were limited in the KIND of work or other activities:

.....Yes (1)

.....No (2)

During the PAST 4 WEEKS, were you limited in the kind of work you do or other regular activities AS A RESULT OF ANY EMOTIONAL PROBLEMS (such as feeling depressed or anxious)?

6. ACCOMPLISHED LESS than you would like:

.....Yes (1)

.....No (2)

7. Didn't do work or other activities as CAREFULLY as usual:

.....Yes (1)

.....No (2)

8. During the PAST 4 WEEKS, how much did PAIN interfere with your normal work (including both work outside the home and housework)?

.....Not At All (1)

.....A Little Bit (2)

.....Moderately (3)

.....Quite A Bit (4)

.....Extremely (5)

The next three questions are about how you feel and how things have been DURING THE PAST 4 WEEKS. For each question, please give the one answer that comes closest to the way you have been

feeling. How much of the time during the PAST 4 WEEKS -

9. Have you felt calm and peaceful?

.....All of the Time (1)

.....Most of the Time (2)

.....A Good Bit of the Time (3)

.....Some of the Time (4)

.....A Little of the Time (5)

.....None of the Time (6)

10. Did you have a lot of energy?

.....All of the Time (1)

.....Most of the Time (2)

.....A Good Bit of the Time (3)

.....Some of the Time (4)

.....A Little of the Time (5)

.....None of the Time (6)

11. Have you felt downhearted and blue?

.....All of the Time (1)

.....Most of the Time (2)

.....A Good Bit of the Time (3)

.....Some of the Time (4)

.....A Little of the Time (5)

.....None of the Time (6)

12. During the PAST4 WEEKS, how much of the time has your PHYSICAL HEALTH OR EMOTIONAL

PROBLEMS interfered with your social activities (like visiting with friends, relatives, etc.)?

.....All of the Time (1)

.....Most of the Time (2)

.....A Good Bit of the Time (3)

.....Some of the Time (4)

.....A Little of the Time (5)

.....None of the Time (6)

Mean value-PCS []

MCS []

Perceived stress scale

For each question choose from the following alternatives:

0-never **1-almost never** **2 sometimes** **3-fairly often** **4 very**
often

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt that you were unable to control the important things in your life?
3. In the last month, how often have you felt nervous and stressed?
4. In the last month, how often have you felt confident about your ability to handle your personal problems?
5. In the last month, how often have you felt that things were going your way?
6. In the last month, how often have you found that you could not cope with all the things that you had to do?
7. In the last month, how often have you been able to control irritations in your life?
8. In the last month, how often have you felt that you were on top of things?
9. In the last month, how often have you been angered because of things that happened that were outside of your control?

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

SCORE-

- 1) Low stress []
- 2) Moderate stress []
- 3) High perceived stress []

APPENDIX –III
MASTER CHART

MASTER CHART [NON – SEDENTARY]

AGE	GENDER	EDUCATION	YEAR	SCORES			
				IPAQ	PSS	SF-12	
						PCS	MCS
24	M	BPT	3 rd	693	13	52.917	40.752
27	F	MPT	1 st	2988	9	52.045	59.695
25	M	BPT	3 rd	4698	13	55.105	46.29
21	F	BPT	2 nd	2018	25	45.685	41.941
19	F	BPT	2 nd	4902	24	32.533	38.403
22	M	BPT	2 nd	1988	16	47.017	39.632
19	F	BPT	2 nd	608	24	40.247	37.914
19	F	BPT	2 nd	5973	25	32.533	38.403
20	F	BPT	2 nd	4462	25	33.233	40.521
19	F	BPT	2 nd	4572	19	46.319	40.026
21	F	BPT	2 nd	693	28	39.585	40.339
21	F	BPT	2 nd	758	13	35.053	30.8
22	M	BPT	3 rd	2970	29	32.6	51.982
20	F	BPT	3 rd	2970	20	34.029	45.795
19	F	BPT	2 nd	4318	13	32.96	51.009
25	F	MPT	1 st	1212	21	43.47	39.376
19	F	BPT	2 nd	951	18	42.825	37.298
20	F	BPT	2 nd	1506	18	53.091	43.638

21	F	BPT	3rd	3492	21	42.846	36.053
21	F	BPT	3rd	3492	25	38.23	37.495
25	F	MPT	2nd	4212	17	53.142	40.001
26	F	MPT	1st	852	13	51.911	47.055
22	F	BPT	2nd	4062	5	56.577	60.757
22	F	BPT	2nd	2772	21	34.307	52.182
22	M	BPT	2nd	3089	19	47.628	49.905
21	M	BPT	2nd	1386	27	55.834	31.616
21	M	BPT	2nd	594	17	47.517	40.848
20	F	BPT	2nd	2933	17	50.516	53.728
22	F	BPT	2nd	1386	16	35.326	48.132
20	F	BPT	2nd	4076	9	55.571	45.777
22	F	BPT	4th	2772	26	53.501	46.358
21	F	BPT	4th	3159	15	60.032	47.687
20	F	BPT	2nd	2919	14	60.032	47.686
24	F	BPT	4th	1944	16	50.509	60.701
28	F	MPT	1st	1746	19	53.754	41.524
26	F	MPT	1st	1653	18	39.517	36.383
26	F	MPT	1st	1386	15	50.302	53.43
28	F	MPT	2nd	693	17	34.954	41.868
26	F	MPT	1st	2004	16	47.665	34.396
26	M	MPT	1st	4949	14	34.131	54.866
24	M	MPT	1st	11226	21	36.695	40.422

20	F	BPT	2nd	693	27	38.167	36.984
19	F	BPT	1st	2226	18	37.654	49.302
20	F	BPT	1st	1649	15	39.532	58.301
24	M	MPT	2nd	5304	17	51.446	58.721
28	F	MPT	2nd	1182	19	54.313	51.898
22	M	BPT	2nd	2106	23	44.366	42.221
21	F	BPT	2nd	711	5	52.996	51.665
21	F	BPT	2nd	636	21	35.148	40.112
21	F	BPT	2nd	3012	20	51.505	27.609
20	M	BPT	1st	4026	22	56.011	45.249
22	M	BPT	1st	1836	24	35.933	45.231
19	F	BPT	1st	636	15	41.568	41.981
19	F	BPT	1st	893	30	46.376	28.066
23	F	BPT	2nd	1071	26	36.773	27.317
31	F	BPT	2nd	495	23	44.132	29.169
22	F	BPT	1st	3177	16	50.427	40.012
28	M	MPT	1st	1040	12	57.318	50.326
26	M	MPT	1st	5760	34	48.813	32.615
24	M	BMLT	2nd	1293	12	53.553	60.792
23	M	BMLT	2nd	2213	6	56.577	60.757
26	M	MPT	1st	2892	21	52.193	35.226
23	F	BPT	4th	3573	27	48.864	28.764
26	F	BPT	4th	2118	20	47.638	50.471

24	F	BPT	4th	1554	18	59.226	32.473
21	F	BPT	4th	9972	25	59.449	24.752
21	F	BPT	1st	1908	21	40.778	43.868
25	F	BPT	4th	1914	18	64.276	35.483
22	F	BPT	4th	1356	16	56.749	38.57
22	M	BPT	4th	1386	24	42.753	45.32
22	F	BPT	3rd	1084	27	49.752	32.9
22	F	BPT	3rd	1124	19	45.367	38.585
23	F	BPT	3rd	3186	11	51.074	45.722
20	F	BPT	1st	4692	19	47.119	45.067
24	F	BPT	4th	1386	17	39.373	47.791
22	M	BPT	2nd	615	13	55.5	57.827
21	M	BPT	2nd	3972	7	56.946	44.803
21	M	BPT	2nd	1386	15	51.711	40.883
21	F	BPT	1st	1987	20	34.202	40.307

20	F	BPT	1st	1752	17	45.036	46.42
22	F	BPT	2nd	3070	25	46.969	43.281
20	F	BPT	1st	7948	20	47.831	49.028
22	M	BPT	1st	693	12	54.307	151.183
20	F	BPT	1st	990	10	56.173	36.906
24	M	BPT	4th	2772	12	56.025	48.462
22	M	BPT	1st	1987	17	43.746	46.684
21	M	BPT	1st	1386	17	52.344	47.379
21	F	BPT	1st	1233	25	56.265	38.794
22	F	BPT	2nd	1533	15	41.091	53.476
22	F	BPT	2nd	693	14	36.872	41.551
24	F	BPT	3rd	693	22	29.218	42.328
21	M	BPT	2nd		22	40.852	36.721

				3240			
23	M	BPT	2nd	1131	16	42.601	42.493
24	M	BPT	2nd	6426	20	54.106	41.425
22	M	BPT	2nd	5166	16	44.423	39.385
23	M	BPT	2nd	7812	17	44.034	54.533
21	M	BPT	2nd	1824	19	42.58	47.577
23	M	BPT	2nd	2346	18	44.58	46.545
22	F	BPT	2nd	7812	16	45.74	54.438
19	M	BPT	1st	899	9	46.116	52.944
21	M	BPT	2nd	1386	22	40.852	36.721
19	M	BPT	1st	1386	12	37.87	47.964
20	M	BPT	1st	8478	5	57.654	56.848
26	M	BPT	4th	3474	8	47.934	57.9
22	M	BPT	2nd	2852	14	52.221	53.632

20	F	BPT	1st	8505	16	45.621	56.745
22	F	BPT	2nd	1116	20	41.646	41.237
21	F	BPT	2nd	2826	20	42.543	33.766
18	F	BPT	1st	1022	28	48.01	26.907
19	F	BPT	1st	7518	17	53.892	39.997
22	M	BPT	2st	1453	12	48.562	53.678
19	M	BPT	2nd	1506	18	40.948	50.114
19	M	BPT	2nd	693	15	44.882	48.777
21	M	BPT	2nd	3306	20	34.964	37.939
24	M	BPT	4th	1533	19	41.118	41.66
23	M	BPT	2nd	891	15	50.338	39.311
20	F	BMLT	1st	3640	25	39.286	61.097
22	F	BMLT	2nd	3576	23	41.11	34.656
22	M	BMLT	2nd	2466	18	37.359	46.185
24	M	BMLT	2nd	1173	17	44.587	46.63
22	M	BMLT	2nd	1539	20	44.989	47.428

24	F	MPT	2nd	990	20	49.722	44.981
24	F	MPT	2nd	3707	32	40.555	33.008
20	F	B.TECH	3rd	1155	2	53.553	60.792
21	F	B.TECH	2nd	693	13	52.44	47.454
22	F	B. TECH	2nd	1386	12	52.923	51.483
22	M	BMLT	2nd	2586	15	33.709	50.73
23	M	BMLT	2nd	1280	22	58.175	29.45
22	M	BMLT	2nd	756	19	42.171	47.091
22	M	BMLT	2nd	1032	17	36.186	41.913
23	M	BMLT	2nd	1558	15	59.18	46.854
23	M	BMLT	2nd	3038	14	52.482	43.699
25	F	BMLT	2nd	3360	28	42.664	37.686
20	M	BMLT	2nd	702	19	31.834	46.962
21	F	BMLT	2nd	1463	22	38.462	45.42

MASTER CHART [SEDENTARY]

AGE	GENDER	EDUCATION	YEAR	SCORES			
				IPAQ	PSS	SF-12	
						PCS	MCS
21	M	BPT	3 rd	231	12	53.074	57.191
25	M	BPT	3 rd	231	12	60.146	40.303
24	F	BPT	3 rd	149	21	36.243	46.34
22	M	BPT	3 rd	231	13	54.315	47.632
20	F	BPT	3 rd	132	20	40.219	48.485
20	M	BPT	3 rd	231	16	48.124	42.124
19	F	BPT	2 rd	248	15	41.696	49.439
19	F	BPT	2 nd	271	15	29.505	52.518
22	M	B.TECH	4 th	462	22	54.903	39.595
29	F	MPT	2 nd	198	19	30.522	33.979
23	F	BPT	2 nd	66	17	43.707	49.524
22	F	BPT	2 nd	516	22	42.18	38.151
20	F	BPT	3 rd	492	17	47.958	51.026
23	F	BPT	4 TH	551	20	33.609	56.674
25	F	MPT	1 st	396	24	30.83	48.511
24	M	MPT	1 st	198	14	39.723	56.625

18	F	BPT	1st	492	16	46.762	48.649
21	F	BPT	1st	0	20	55.28	43.283
21	F	BPT	2nd	318	22	49.692	46.139
25	F	MPT	2nd	347	19	48.016	59.262
24	F	MPT	2nd	231	17	41.113	39.41
22	F	BPT	2nd	132	25	38.381	37.187
21	F	BPT	2nd	120	19	50.009	48.869
24	F	MPT	2nd	198	13	57.231	55.928
24	M	MPT	1st	231	20	52.426	44.474
19	M	B.TECH	2nd	347	13	41.323	64.711
26	F	MPT	2nd	0	21	37.165	35.793
21	F	BPT	4th	438	20	52.16	49.13
22	M	BPT	4th	330	21	63.853	36.348
25	M	BPT	4th	231	22	50.438	40.591
22	F	BPT	4th	330	21	39.83	42.606
27	F	MPT	2nd	160	27	30.968	38.918
28	M	MPT	2nd	0	13	55.5	57.827
20	F	BPT	1st	0	11	40.513	42.279
22	F	BPT	1st	0	17	41.987	51.933
22	F	BPT	4Tth	248	17	50.75	56.663
22	M	BPT	4th	231	13	50.799	48.1
22	F	BPT	4th	149	15	42.818	58.876
22	F	BPT	4th	0	18	37.667	33.495

24	F	BPT	4th	0	23	36.145	38.987
22	M	BPT	2nd	1674	18	41.944	44.395
19	F	BPT	2nd	600	15	36.393	50.089
22	M	BPT	2nd	1095	13	32.63	64.184
22	F	BPT	1st	396	18	50.977	52.867
21	F	BPT	1st	297	17	50.977	52.867
21	F	BPT	1st	396	19	47.165	54.442
22	F	BPT	2nd	132	20	41.246	38.18
22	M	BPT	2nd	132	24	40.85	46.054
19	M	BPT	2nd	330	24	49.764	37.53
20	F	BPT	2nd	297	24	32.2	47.698
20	F	BPT	2nd	66	18	46.043	45.686
21	F	BPT	2nd	0	9	44.888	58.935
25	F	BPT	3rd	165	21	37.236	44.976
22	M	BPT	2nd	99	23	42.838	37.711
20	M	BPT	1st	139	22	32.411	37.152
22	F	BPT	2nd	66	20	53.01	36.511
23	F	BPT	3rd	0	25	42.581	26.931
20	M	BPT	1st	198	13	50.064	49.938
20	M	BPT	1st	66	14	49.683	49.162
22	F	BTECH	2nd	660	16	56.555	34.485
25	M	MPT	2nd	264	19	47.042	38.183
25	F	MPT	2nd	264	19	42.009	45.547

21	M	BPT	2nd	66	18	36.954	39.793
22	F	BMLT	2nd	198	15	32.323	46.754
20	M	BMLT	1st	308	21	33.896	41.071

APPENDIX –IV

OUTPUT SHEET

OUTPUT SHEET OF BOTH GROUPS-

AGE_S	IPAQ_S	PSS_S	PCS_S	MCS_S		AGE_NS	IPAQ_NS	PSS_NS	PCS_NS	MCS_NS
21	231	12	53.074	57.191		24	693	13	52.917	40.752
25	231	12	60.146	40.303		27	2988	9	52.045	59.695
24	149	21	36.243	46.34		25	4698	13	55.105	46.29
22	231	13	54.315	47.632		21	2018	25	45.685	41.941
20	132	20	40.219	48.485		19	4902	24	32.533	38.403
20	231	16	48.124	42.124		22	1988	16	47.017	39.632
19	248	15	41.696	49.439		19	608	24	40.247	37.914
19	271	15	29.505	52.518		19	5973	25	32.533	38.403
22	462	22	54.903	39.595		20	4462	25	33.233	40.521
29	198	19	30.522	33.979		19	4572	19	46.319	40.026
23	66	17	43.707	49.524		21	693	28	39.585	40.339
22	516	22	42.18	38.151		21	758	13	35.053	30.8
20	492	17	47.958	51.026		22	2970	29	32.6	51.982
23	551	20	33.609	56.674		20	2970	20	34.029	45.795
25	396	24	30.83	48.511		19	4318	13	32.96	51.009
24	198	14	39.723	56.625		25	1212	21	43.47	39.376
18	492	16	46.762	48.649		19	951	18	42.825	37.298
21	0	20	55.28	43.283		20	1506	18	53.091	43.638
21	318	22	49.692	46.139		21	3492	21	42.846	36.053
25	347	19	48.016	59.262		21	3492	25	38.23	37.495

24	231	17	41.113	39.41		25	4212	17	53.142	40.001
22	132	25	38.381	37.187		26	852	13	51.911	47.055
21	120	19	50.009	48.869		22	4062	5	56.577	60.757
24	198	13	57.231	55.928		22	2772	21	34.307	52.182
24	231	20	52.426	44.474		22	3089	19	47.628	49.905
19	347	13	41.323	64.711		21	1386	27	55.834	31.616
26	0	21	37.165	35.793		21	594	17	47.517	40.848
21	438	20	52.16	49.13		20	2933	17	50.516	53.728
22	330	21	63.853	36.348		22	1386	16	35.326	48.132
25	231	22	50.438	40.591		20	4076	9	55.571	45.777
22	330	21	39.83	42.606		22	2772	26	53.501	46.358
27	160	27	30.968	38.918		21	3159	15	60.032	47.687
28	0	13	55.5	57.827		20	2919	14	60.032	47.686
20	0	11	40.513	42.279		24	1944	16	50.509	60.701
22	0	17	41.987	51.933		28	1746	19	53.754	41.524
22	248	17	50.75	56.663		26	1653	18	39.517	36.383
22	231	13	50.799	48.1		26	1386	15	50.302	53.43
22	149	15	42.818	58.876		28	693	17	34.954	41.868
22	0	18	37.667	33.495		26	2004	16	47.665	34.396
24	0	23	36.145	38.987		26	4949	14	34.131	54.866
22	1674	18	41.944	44.395		24	11226	21	36.695	40.422
19	600	15	36.393	50.089		20	693	27	38.167	36.984
22	1095	13	32.63	64.184		19	2226	18	37.654	49.302

22	396	18	50.977	52.867		20	1649	15	39.532	58.301
21	297	17	50.977	52.867		24	5304	17	51.446	58.721
21	396	19	47.165	54.442		28	1182	19	54.313	51.898
22	132	20	41.246	38.18		22	2106	23	44.366	42.221
22	132	24	40.85	46.054		21	711	5	52.996	51.665
19	330	24	49.764	37.53		21	636	21	35.148	40.112
20	297	24	32.2	47.698		21	3012	20	51.505	27.609
20	66	18	46.043	45.686		20	4026	22	56.011	45.249
21	0	9	44.888	58.935		22	1836	24	35.933	45.231
25	165	21	37.236	44.976		19	636	15	41.568	41.981
22	99	23	42.838	37.711		19	893	30	46.376	28.066
20	139	22	32.411	37.152		23	1071	26	36.773	27.317
22	66	20	53.01	36.511		31	495	23	44.132	29.169
23	0	25	42.581	26.931		22	3177	16	50.427	40.012
20	198	13	50.064	49.938		28	1040	12	57.318	50.326
20	66	14	49.683	49.162		26	5760	34	48.813	32.615
22	660	16	56.555	34.485		24	1293	12	53.553	60.792
25	264	19	47.042	38.183		23	2213	6	56.577	60.757
25	264	19	42.009	45.547		26	2892	21	52.193	35.226
21	66	18	36.954	39.793		23	3573	27	48.864	28.764
22	198	15	32.323	46.754		26	2118	20	47.638	50.471
20	308	21	33.896	41.071		24	1554	18	59.226	32.473
						21	9972	25	59.449	24.752

						21	1908	21	40.778	43.868
						25	1914	18	64.276	35.483
						22	1356	16	56.749	38.57
						22	1386	24	42.753	45.32
						22	1084	27	49.752	32.9
						22	1124	19	45.367	38.585
						23	3186	11	51.074	45.722
						20	4692	19	47.119	45.067
						24	1386	17	39.373	47.791
						22	615	13	55.5	57.827
						21	3972	7	56.946	44.803
						21	1386	15	51.711	40.883
						21	1987	20	34.202	40.307
						20	1752	17	45.036	46.42
						22	3070	25	46.969	43.281
						20	7948	20	47.831	49.028
						22	693	12	54.307	151.183
						20	990	10	56.173	36.906
						24	2772	12	56.025	48.462
						22	1987	17	43.746	46.684
						21	1386	17	52.344	47.379
						21	1233	25	56.265	38.794
						22	1533	15	41.091	53.476

						22	693	14	36.872	41.551
						24	693	22	29.218	42.328
						21	3240	22	40.852	36.721
						23	1131	16	42.601	42.493
						24	6426	20	54.106	41.425
						22	5166	16	44.423	39.385
						23	7812	17	44.034	54.533
						21	1824	19	42.58	47.577
						23	2346	18	44.58	46.545
						22	7812	16	45.74	54.438
						19	899	9	46.116	52.944
						21	1386	22	40.852	36.721
						19	1386	12	37.87	47.964
						20	8478	5	57.654	56.848
						26	3474	8	47.934	57.9
						22	2852	14	52.221	53.632
						20	8505	16	45.621	56.745
						22	1116	20	41.646	41.237
						21	2826	20	42.543	33.766
						18	1022	28	48.01	26.907
						19	7518	17	53.892	39.997
						22	1453	12	48.562	53.678
						19	1506	18	40.948	50.114

						19	693	15	44.882	48.777
						21	3306	20	34.964	37.939
						24	1533	19	41.118	41.66
						23	891	15	50.338	39.311
						20	3640	25	39.286	61.097
						22	3576	23	41.11	34.656
						22	2466	18	37.359	46.185
						24	1173	17	44.587	46.63
						22	1539	20	44.989	47.428
						24	990	20	49.722	44.981
						24	3707	32	40.555	33.008
						20	1155	2	53.553	60.792
						21	693	13	52.44	47.454
						22	1386	12	52.923	51.483
						22	2586	15	33.709	50.73
						23	1280	22	58.175	29.45
						22	756	19	42.171	47.091
						22	1032	17	36.186	41.913
						23	1558	15	59.18	46.854
						23	3038	14	52.482	43.699
						25	3360	28	42.664	37.686
						20	702	19	31.834	46.962
						21	1463	22	38.462	45.42

APPENDIX –V
DATA COLLECTION FORM

Chapter -9
MANUSCRIPT

**IMPACT OF PHYSICAL ACTIVITY ON STRESS AND QUALITY OF LIFE OF STUDENTS
WITH SEDENTAR AND NON SEDENTARY BEHAVIOR AT INTEGRAL UNIVERSITY**

LUCKNOW.

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ABSTRACT

BACKGROUND AND PURPOSE- Nowadays , individuals mostly spending their time in sitting which can be hazardous for physical health as well as mental health. sedentary behavior refers to leisure activities (sitting , reclining , lying positions requiring very low energy expenditure). Sedentary behavior have many adverse impacts on the individuals body like- cardiovascular diseases , metabolic disorders ,cancer risks, D.M. hypertension , musculoskeletal disorders , depression and cognitive impairments. Many research shown the relationship between sedentary behavior with stress , physical activity with quality of life ,stress and quality of life. but ,there are no studies that demonstrate the relationship between all these variables –physical activity [sedentary and non sedentary] ,stress ,quality of life in students. The purpose of the study was to correlate the effect of life style [sedentary and non sedentary on stress and quality of life.

METHODOLOGY – 200 university students were recruited for the study. The subjects were classified into two groups – sedentary and non sedentary. Physical activity assessed by IPAQ – SF , stress level assessed by PSS , and quality of life assessed by SF-12 questionnaire , and the scores were calculated with the help of IPAQ scoring excel sheet ,orthotool kit calculator for SF-12 and PSS scores calculated manually.

RESULT –There is no significant difference in PSS and SF-12 [both PCS & MCS]in sedentary and non sedentary behavior. Mean of stress in SG is [18.26] & NSG [18.12] and mean of quality of life in SG for PCS &MCS [44.14 & 46.13] and in NSG [46.13 & 44.94] .

CONCLUSION – Incidence of sedentary behavior is very low in university students. The results shows that there is no significant correlation in between physical activity ,stress and quality of life.

KEY WORDS – Physical Activity, Sedentary , Non- sedentary, Perceived Stress, Quality of Life.

Introduction- Sedentary behavior defined as any behavior with an energy expenditure of less than 1.5 metabolic equivalents [METs] including leisure time. Or total sitting time more than 6-8 hours comes under sedentary behavior. METs can be defined as ratio of work of metabolic rate to the standard resting metabolic rate [RMR] of 1 kcal /[kg/h]. one MET is the energy cost for a person at rest, physical activities can be classified into 1.0-1.5 MET [sedentary behavior] 1.6- 2.9 MET [light intensity],3-5.9 [moderate intensity] and less than or equivalent 6 MET [vigorous intensity].Sedentary behavior has been well defined from physical inactivity and an independent metabolic risk even if an person meets current physical activity guidelines , by Shirin Panahi et al [2018].^[1,2]

The starting of university is usually accompanied by physiological and psychological changes associated with the developmental transition of age Physical

activity define as “any body movement produced by muscles that results in energy expenditure”. Physical activity refers to all type of activities like exercise, sports, and ADL, occupational activity, active transportation, and daily house chores. ^[3]

Physical activity helps to prevent diseases such as cardiac disease, diabetes, cancers. Physical activities also help to improve physical and mental well being of a person.^[4]

The university stage can be a stressful process due to changes at psychological, social and educational level. Stress pose a risk to personal well being and academic performance as well.

There is no universal agreement on the definition of stress. –“stress is a word used to describe experiences that are challenging emotionally and physiologically”. Stress is a feeling of emotional or physical tension stress is your body reaction to challenge or demand. ^[5]

In university, students may feel stressed about starting university, exams, coursework deadline, or thinking about future, or leaving home for studies, meeting new people, change in life style.

When the PA and stress relationship is explored, Physical activity and stress showed a significant negative association.^[3] According to WHO the quality of life is -An individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. All indicators of the quality of life include wealth, employment, the environment, physical and mental health, education, recreation and leisure time, social belonging, religious beliefs.^[6]

Perceived stress is negatively correlated with quality of life. Continuous stress had effects on quality of life. Continuous stress results in low quality of life. Health

promoting behavior found to be enhancing the quality of life in university students.^[5]

Several research shown the relationship between sedentary behavior with quality of, nevertheless, there are no studies that demonstrate the relationship of -physical activity [sedentary and non sedentary] and stress along with quality of life in students.

The purpose of this study is to determine the correlation of sedentary behavior, physical activity, stress and quality of life among a group of university students. The author wanted to find out the relation between all variables and to what extent they relate to each other. This study aimed to summarize and analyze evidence of association between physical activity, stress, and quality of life of students.

STATEMENT OF QUESTION

Is there any correlation between physical activity and stress and quality of life in university students with sedentary or non sedentary life style?

OBJECTIVE

- 1) To compare the stress level of students who have sedentary life style with those students who have non sedentary life style.
- 2) To determine the correlation of physical activity with stress in students according to their life styles.
- 3) To determine the physical activity level and stress level in university students.
- 4) To compare the Quality Of Life of university students who have sedentary life style with those students who have non sedentary life style.
- 5) To determine the quality of life of student of integral university.

HYPOTHESIS

Alternative Hypothesis-

There will be more stress level and low quality of life in students who have sedentary life style or low physical activity level.

Null hypothesis –

There will be no difference in stress level and quality of life in both- sedentary and non sedentary life styles.

MATERIAL AND METHODS

Sample Size – 200 students of integral university

65 university students having sedentary life style

135 university students having non sedentary life style will be taken for study, average age is [20- 30 years].

Inclusion criteria

- 1]-University students
- 2]- both gender
- 3]- age between 18 -30
- 4]- able to understand study information sheet.

Exclusion criteria

- 1]- any professionals
- 2]- age < 18 and > 30
- 3]- serious health conditions
- 4]- Any musculoskeletal deformity

Study design - a group comparative study .

Study Duration – 6 months

VARIABLE- Independent variable- age, gender, education level.

Dependent variable – IPAQ, SF-12 questionnaire, PSS.

TOOLS –

International physical activity

questionnaire scoring –There are two forms of output from scoring the IPAQ.

Results can be reported in categories [low, moderate, and high activity levels] or as continuous variable [MET minutes a week].

MET minutes represent the amount of energy expended carrying out physical activity.

High level – High level means your physical activity level equate to approximately one hour or more. Vigorous intensity activity of at least 3 days or 1500MET minutes a week

Moderate – Means you are doing half an hour. 3/5 or more days of vigorous activity /or walking of at least 30 minutes /day. 5 or more days of any combination of walking,

moderate or vigorous activities achieving 600 MET minutes a week.

Low – Means you are not meeting any criteria for moderate or high levels of physical activity. High and moderate include as non sedentary behavior and low include as sedentary behavior.^[7,8]

SF-12 scoring – The SF-12 is a self reported outcome measure assessing the impact of health on an individual’s everyday life, it is often used as a quality of life measure. the SF-12 physical [PCS] and mental [MCS] component summary scales are scored using norm- based methods. Both the PCS and MCS scales are transformed to have a mean 50 and SD of 10 in the general US population. Standard deviation is [- 10] is indicate poor quality of life.^[9]

Perceived stress scale score- Individual scores on PSS can range from 0 to 40

0-13 would be considered low stress

14-26 would be considered moderate stress

27-40 would be considered high perceived stress. [4].

PROCEDURE

Participants were recruited from integral university on the basis of inclusion and exclusion criteria. Potential participants were verbally given the criteria for inclusion in the study and checked whether they met the criteria, those who met the criteria were included in the study.

A consent sheet was provided to all participants outlining the purpose of study alongside the benefits and risks of study or participating. Who voluntary participated in the study was included in the study.

DATA ANALYSIS - The Data were analyzed by MS excel 2010 data analysis tool pack, excel analysis tool pack 2019. The dependent [IPAQ, SF-12, PSS] variables were summarized by means, standard deviations, and the independent variables [gender] summarized by

percentage and age is summarized by mean value. T-test: Two sample assuming unequal variances were performed to determine the significant associations between physical activity, stress and quality of life between two groups. Alpha value kept at 0.05 thus P-Value below 0.05 is considered as statistical significant. P and T value are used in this study, and confidence level is [95.0%] thus these data can be used with 95% of confidence for clinical purpose.

RESULTS- Among the 200 participants in our study 122 were females and 78 were males. Mean age of participants of both groups was [22.15] . The two sample T- test revealed that there were no significant difference in stress level in between both sedentary and non sedentary groups, with the mean [18.26] In sedentary and [18.12] in non sedentary group. But moderate perceived stress was present in both groups. And there were no significant difference in quality of life all domains

[PCS & MCS] in both groups, with the mean for sedentary PCS & MCS [44.14& 46.13] and for non sedentary PCS & MCS [46.13 & 44.94]. The study shows that, there is no significant difference in PSS and SF-12 [both PCS & MCS] for sedentary and non sedentary. May due to age factor. There is very weak evidence for high perceived stress and low quality of life with sedentary life style among university students.

TABLE-4.1: Descriptive statistics of IPAQ score

VARIABLE	MEAN ± S.D.	D F	T- Valu e	P-Value
IPAQ – S	262.21 ± 261.85	14 3	1.97 6	0.00000 01
IPAQ – NS	2567.34 81 ± 2052.14 04			

TABLE-4.2: Descriptive statistics of the PSS score for sedentary and non sedentary groups -

VARIABLE	MEAN ± S.D.	DF	T- Value	P- Value
PSS- S	18.261 ± 3.96	174	1.973	0.846
PSS- NS	18.125 ± 5.74			

TABLE-4.3: Descriptive statistics of SF-12 [PCS] score for sedentary and non sedentary groups -

VARIABLE	MEAN ± S.D.	DF	T- Value	P- Value
SF-12 [PCS]- S	44.142 ± 8.151	123	1.979	0.103
SF-12[PCS] – NS	46.138 ± 7.882			

TABLE -4.4: Descriptive statistics of SF-12 [MCS] for sedentary and non sedentary groups -

VARIABLE	MEAN ± SD	DF	T- Value	P- Value
SF-12[MCS] – S	46.134 ± 8.103	180	1.973	0.419
SF-12[MCS] – NS	44.948 ± 12.388			

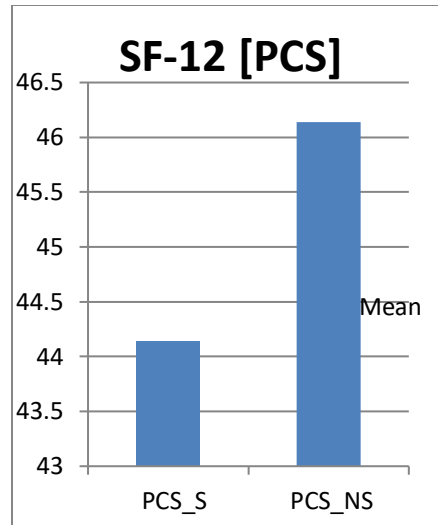


Figure-4.3- PCS for [S-sedentary] [NS – non-sedentary]

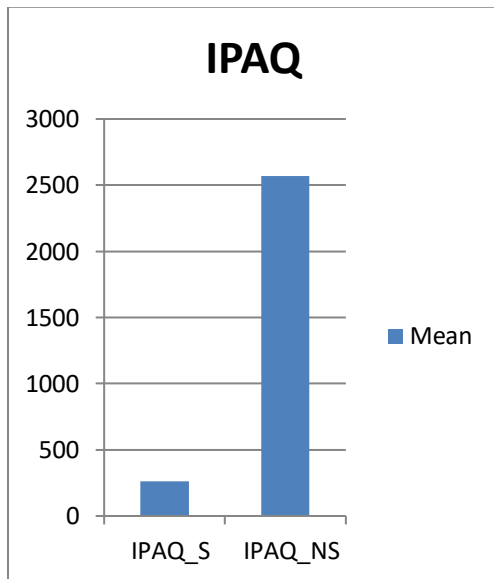


Figure-4.1-IPAQ scores in sedentary and non sedentary group

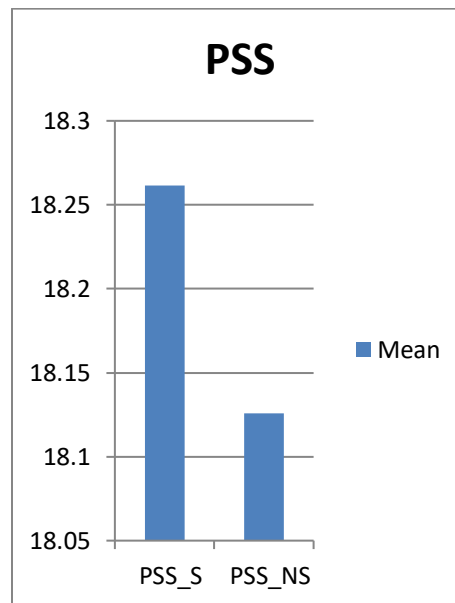


Figure -4.2 PSS- perceived stress scores [S-sedentary] [NS non- sedentary]

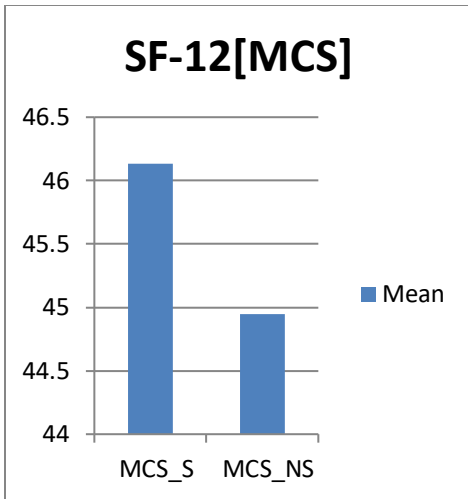


Figure-4.4-MCS for sedentary and non sedentary

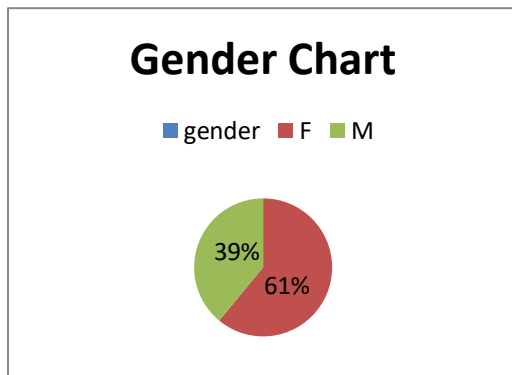


Figure-4.5[F-female] [M-male]

DISCUSSION- This study synthesized the relationship between physical activity, stress and quality of life among Integral University

students, with sedentary and non sedentary behavior. There is no significant difference for variables [PSS AND SF-12] in both groups.

Through our analysis, we have seen that sizeable majority of university students reported non sedentary [active] behaviors. In our study students who were physically inactive were more likely to engage in sedentary behaviors compared with physically active students with significant P-value [0.0000001]. This P-value shows that physically inactive student's shows sedentary behavior and physically active student's shows non sedentary behavior. If this study was conducted on large sample size, and covered wide age range, than may be we would have found large sedentary behavior sample size among collected sample. In our study 61% females and 39% males were participated, in non- sedentary group percentage for females were 59.26% and males were 40.74%. Which indicates

that females had more non-sedentary behavior than boys in non-sedentary group, but most of the females were moderately active, and boys were highly active. Percentage of sedentary behavior for females were 64.6% and males were 35.38%. in sedentary group females are more sedentary than males. In both groups percentage of females are high than males because number of females in total sample size is inflated than males. According to Dr. Praveen Kumar males are more engaged in vigorous physical activity than females ^[10], and this statement is significant in present study, because 70% of females were highly active and 81% of males were highly active in non sedentary group, though the sample size of females is relatively larger [n=80] than males [n=42], yet the statement holds true in the present study as well. Females did not performed vigorous activities in comparison to males; females usually

performed moderate type of activities in daily house chores

Kazuhiro P. et al, [2018] stated that there is significant differences were found in age, marital status and occupation of subjects. This study proves that age of participants is important for life style behavior. ^[11]

In our study we have seen that moderate perceived stress present in both sedentary and non sedentary groups. P-value of PSS in both group is almost similar, mean value for stress is [18] in sedentary and non-sedentary groups which reveal the presence of moderate stress in students. Because the university students faced situations that generate stress, as the requirement of the practical skill, the stress is due to-among factors, academic pressure, perfectionist standards and emotionally stressful situations. Icaro Jose et al, [2017] describe that high level of stress during study can lead to the development of burnout

syndrome, which is characterized by a state of physical and mental exhaustion connected to work or activities of care. To deal with this highly prevalent condition, educators must develop awareness and proposing interventions focused for welfare of students. ^[12]

Ramon Chacon et al, [2019] suggested that women shows higher level of academic stress compare to men, linked to academic commitments. ^[3] Percentage of moderate perceived stress in females [82.5%] and in males [70%] in non sedentary group. In sedentary group percentage of moderate stress in females [92.85%] and in males [56.52%]. This percentage recommended that moderate perceived stress is higher in females than males. Percentage of low perceived stress in females [17.5%] and in males [29.9%] in non-sedentary group, for sedentary group females [7.1%] and males [43.41%]. This percentage shows that females are more

prone for stress than males, because number of females participants are very large than male in both groups, yet the percentage for low stress is higher in males, that proves Ramon`s statement true in this study. Perceived stress slightly inflated in sedentary group.

According to Adalf EM, et al, [2001]- University students, at graduate or post graduate level, are in sociodemographic age span in which stress- related disorders are more common. Additionally, the academic period involves the employment of time and financial resources by the students, without guarantees of a satisfactory return. That`s why moderate stress is present in both groups among university students.

In this study results reveals that quality of life was good for both component of quality of life- physical component score(PCS) and mental component score (MCS). In both groups [sedentary and non-sedentary]. This is may be due to small

sample size of sedentary behavior and age factor of sample population. Naim nur et al, [2017]. Conducted a study which reveals that socioeconomic and demographic details of subjects influenced the quality of life. ^[13] That's why in present study quality of life was good in both groups because of the same age group.

P- Value of PCS is [0.103] and MCS is [0.419] for quality of life is non-significant in this study. Mean value of [46.13] PCS scores are a bit higher in non sedentary group [non-significant] than sedentary group [44.14], which means non sedentary population is slightly active than sedentary population. And mean value of [44.94] MCS score non sedentary is slightly lower than sedentary group [46.13], which indicates moderately high stress present in sedentary population in comparison with non sedentary group. Allover result bear witness to not statistically significant but little bit clinically significant, superior

quality of life in non sedentary group than sedentary group.

14%] males and [65%] females in sedentary group had poor quality of life and in non sedentary group [12.5%] males and [40%] females had poor quality of life, which denotes overall percentage of poor quality of life is higher in sedentary group than non sedentary group, however the sample size [n=65] of sedentary is very less than non sedentary group [n=135]. One more thing which is outcome of this statement is- females had low quality of life than men.

LIMITATION – Firstly the subjective method of measurements use in data collection. Second one is small sample size with narrow age range covered only university students.

FUTURE STUDY-The same study will be conducted with some objective variable and

in large sample size of students along with childhood and old age group.

CONCLUSION- The study shows that there is no statistically significant relationship in between physical activity, stress and quality of life. The incidence of sedentary behavior is very low in university students, Because of educational load and stress there is finding of clinically significant moderate perceived stress in both groups. Quality of life of both groups are good enough, may be due to age factor because mean age was 22 year, and the size of sedentary sample was very small. If this study was conducted with large sample size of all age groups with objective outcome measures, than we would be found more accurate and significant results.

SIGNIFICANCE IN CLINICAL PRACTICE –Results shows sedentary behavior has negative relationship with stress and quality of life. This statement holds true with 95% confidence level and

the data of present study can be use in clinical practice.

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