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The association between obesity and risk of fall in geriatric population

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Abstract

Background: Obesity nowadays, is a very common health condition in geriatric population due to sedentary lifestyle, physical inactivity and is defined as the excessive fat accumulation in body. recent studies has pointed to a possible correlation between obesity and risk of fall in geriatric population. The physical consequences of fall has been well documented in literature. Purpose-To find the association between obesity and risk of fall in geriatric population.

Methods: The observational study consists of sixty participants with age between (60-70) and BMI ≥ 23 .

Sampling Method: Convenient sampling method. Selection Criteria, Inclusion criteria-people with BMI ≥ 23 , the people of age between (60-70), the people with no previous history of fall, Exclusion Criteria-the people with condition-postural hypotension, neurological insults(stroke, Parkinson's disease), high grade fever, severe dehydration, recent general surgery, recent lower limb fracture.

Results: The result of the study showed that there was not statistical significance as ($p \geq 0.05$) in all population.

Conclusion: Study concludes that there is no correlation between obesity and risk of fall in geriatric population. Females are more prone for risk of fall as compared to male.

Keywords: obesity, risk of fall, association

1. Introduction

The aging is a physiological process which cause considerable changes in body composition. mainly characterized by increased in fat mass and decreased in lean mass. The excessive accumulation of fat in body can leads to a condition known as obesity. Obesity is characterized by increased fat mass in body, which affects 40% people over the age of 60years. Recent studies has pointed to a possible correlation between obesity and falls. The occurrence of falls in older adults constitutes an important health problem. It is estimated that approximately 30% older adults falls at least once a year. Falls are 2nd leading cause of accidental death in population and they can result in injuries of greater complexity that leads to restrictions of ADLs and loss of functional independence Although obesity is associated with higher occurrence of falls the mechanisms for this are still unclear. The study of factors related to greater occurrence of falls in this population is relevant and may be useful in design the preventive interventions. Another imp aspect to be consider is the individuals concern about the likelihood of falling. The fear of falling is a common condition amount older people that results in functional restriction and recognized as indication for future falls. An analysis of previous studies revealed that factors related to falls can be divided into intrinsic and extrinsic factors. specifically internal factors include the persons age, physical abilities including strength and balance, pain, history of falls orientation, cognitive abilities and fear of falling. External factors include medication intake, and environmental factors.

2. Problem Statement

To study and correlate the obesity and risk of fall in geriatric population.

3. Objectives

1. To know the association between obesity and risk of fall in geriatric population.
2. To find relation between risk of fall and gender.

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4. Methodology

Study type: Observational study. Duration: 6 months. Target population: - Geriatric population (young old 60-70yrs). Study place: PCMC, Pune, Physio OPD. Sample size : 60. Sample technique: Convenient sampling.

A. Inclusion Criteria

The people with BMI ≥ 23 , The people of age between (60-70) yrs, The people with no previous history of fall.

B. Exclusion Criteria

The people with following conditions:-
Postural hypotension, Neurological insults(stroke, Parkinson's disease), High grade fever, severe dehydration, recent general surgery, Recent lower limb fracture

Outcome measures:

1. Berg Balance Scale.
2. BMI values

5. Procedure

Ethical approval was taken. Subjects was chosen on the basis of inclusion and exclusion criteria. Written and signed

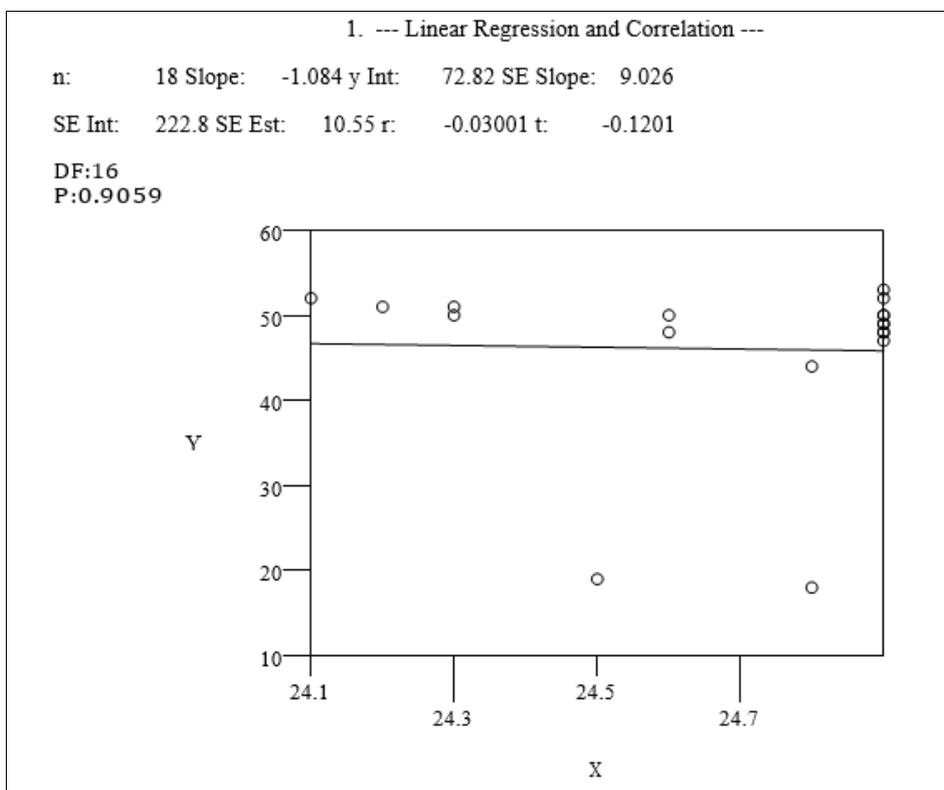
consent was taken from patients. Berg balance scale was taken in same population. BMI was calculated for each subject. Then the data was collected based on this and was analysed further. The subjects then divided into four categories according to their BMI (overweight, pre-obese, obese, grade 1

6. Data Analysis

Data was collected by using BMI values and berg balance scale. The total score of each participant was added to Excel sheet and out of 60 population. No of people having risk of fall were calculated by using percentage. Data was analyzed by using Microsoft Excel. Population then divided into 4 categories according to their BMI values. 19 people are at high and medium risk of fall and remaining 19 are at low fall risk. The result of study were taken. Descriptive data analysis was done using percentage.

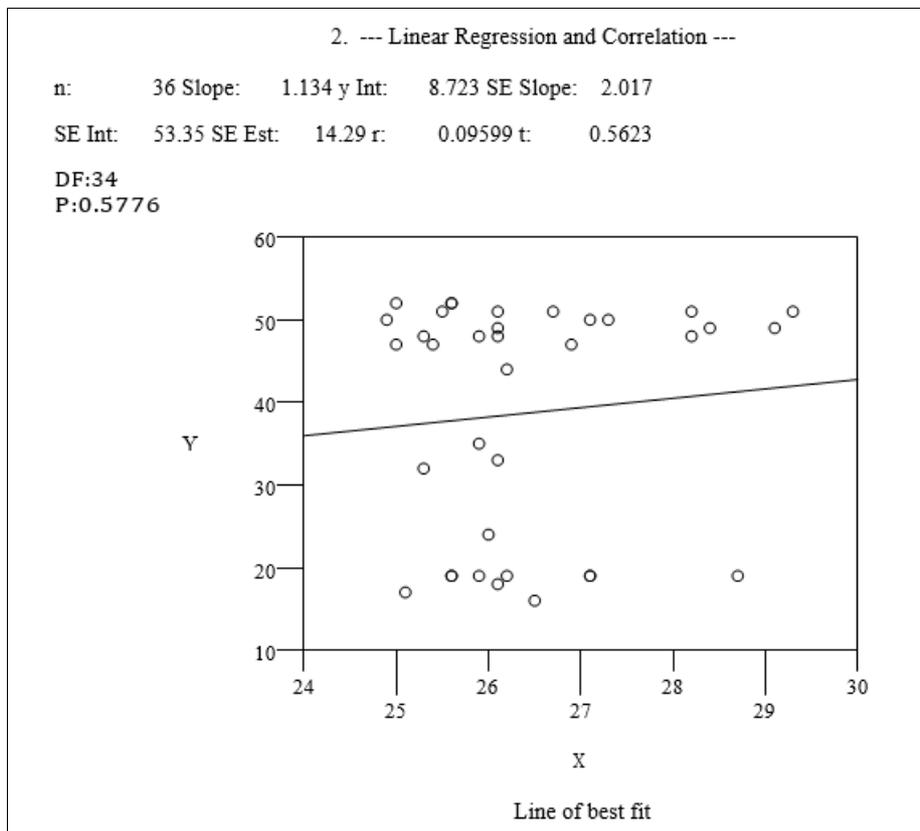
7. Result

The linear regression and correlation test was applied on collected data to know the correlation between obesity and risk of fall Then data was analyzed further. Found that, there was no correlation between obesity and risk of fall.



The diagram shows correlation between BMI(overweight) and risk of fall by Linear Regression and Correlation test.

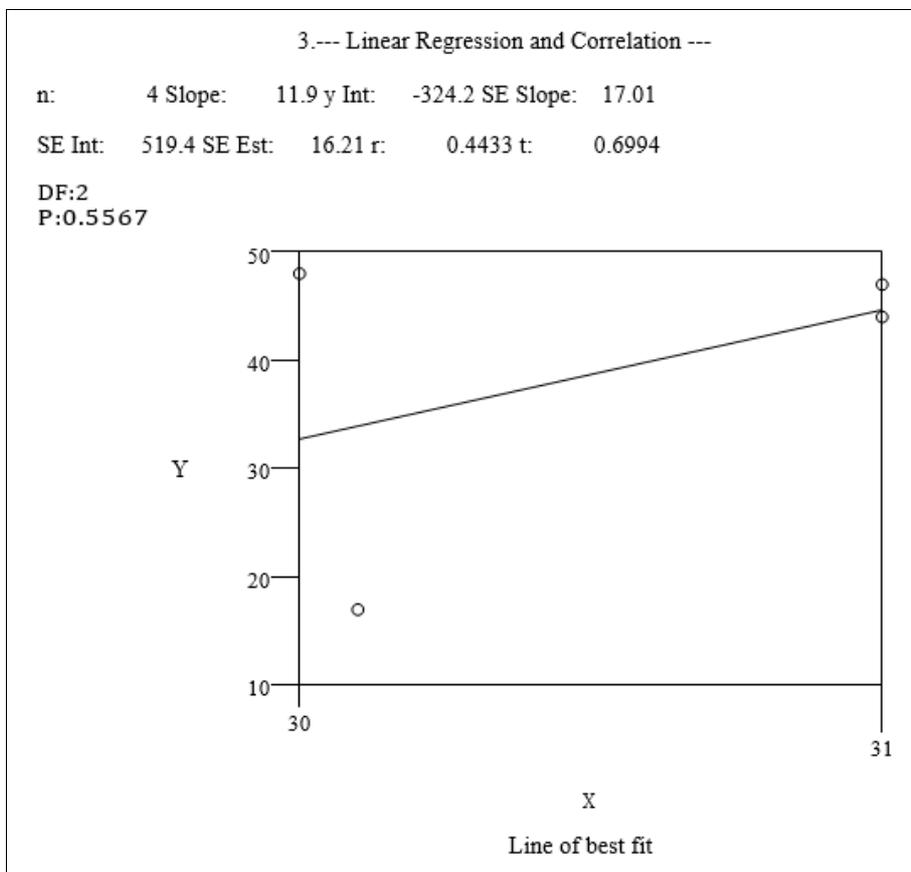
-statistically not significant (P value >0.05)



Interpretation

The graph shows correlation between BMI (pre-obese) and risk of fall by Linear Regression and Correlation test.

Statistically not significant as (P value.0.05)



Interpretation

The graph shows correlation between BMI (obese grade 1) and risk of fall by Linear Regression and Correlation test.

Statistically not significant (P value. 0.05)

4. Compare Two Regressions

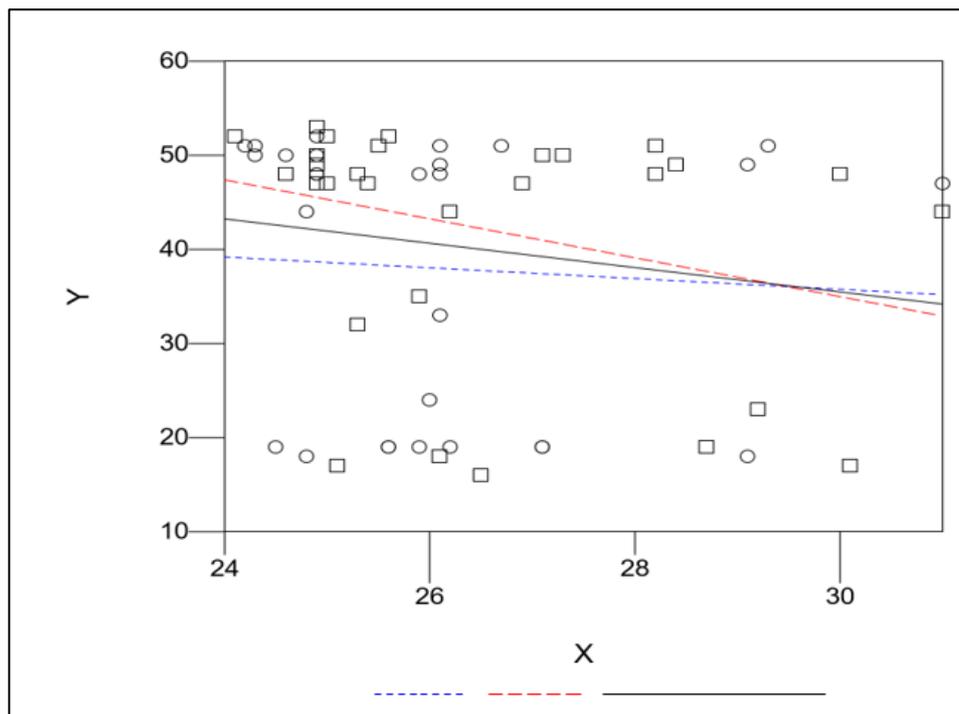
Line 1 Line 2 Single Regression n: 28
 32 60 Slope: -0.574 -2.067 -1.294 y Int:
 52.972 96.975 74.297 SE Slope: 1.671 1.176
 0.988

 SE Int: 43.667 31.162 26.010 SE Est:
 14.876 12.138 13.533 r: -0.067 -
 0.305 -0.169 t: -0.344 -1.757 -1.309
 DF: 26 30 58

 P: 0.734 0.089 0.196---

Overall Test of Coincidence:
 F = 1.235 with 2 numerator and 56 denominator degrees of
 freedom; P = 0.299

Comparison of slopes: t = 0.747 with 56 degrees of
 freedom; P = 0.458 Comparison of intercepts: t = 0.837 with
 56 degrees of freedom; P = 0.406



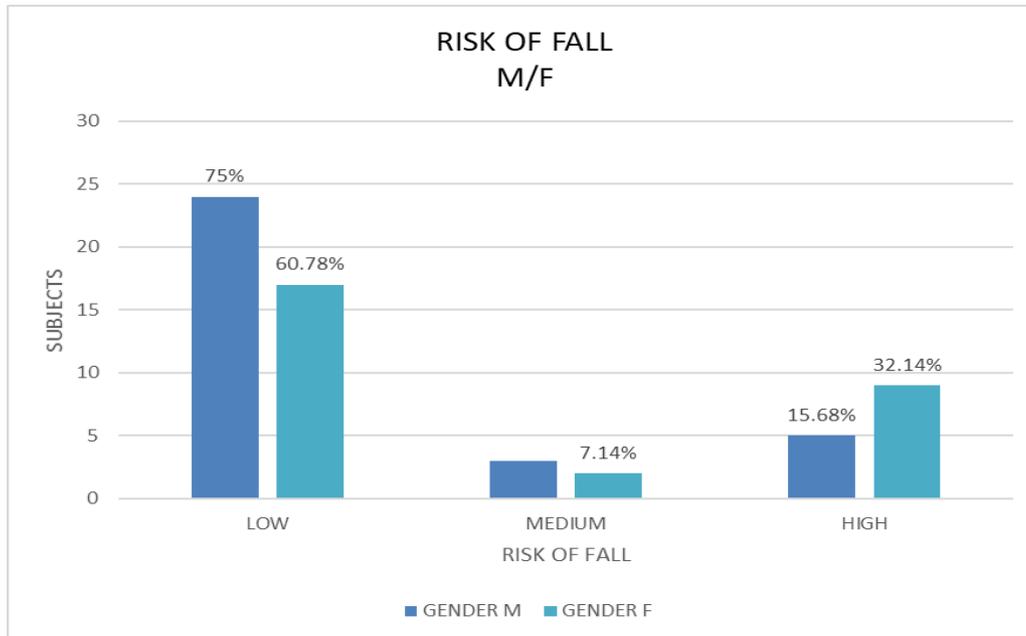
Group 1 Group 2 Single Regression

Interpretation

The graph shows correlation between gender and risk of fall.

Females are more prone for risk of fall than male population.

	GENDER			
RISK OF FALI	M		F	
LOW	24	75%	17	60.71%
MEDIUM	3	9.38%	2	7.14%
HIGH	5	15.63%	9	32.14%
TOTAL	32	100%	28	100%



1. The graph show that 75% male fall under low fall risk, 9.38% fall under medium fall risk and 15.63% fall under high fall risk.
2. 60.71% female fall under low fall risk, 7.14% fall under medium fall risk and 32.14% falls under high fall risk.

8. Discussion

This study aims to find out the relationship between obesity and risk fall in geriatric population. Elderly people living in modern society having sedentary lifestyle and tends to have high BMI due to excessive nutritional intake and low activity level and the relationship between falls and obesity needs to be studied continuously. the another important factor of fall in elderly is fear of falling which also lead to falls in these population. The present study was to analyze the relationship between obesity and risk of fall in geriatric population by using Berg Balance Scale and by calculating BMI. It was observed that obesity was not associated with risk of fall. A study done by Corbeil *et al* (27) suggested that obese people with abnormal distribution of body fat, particularly in abdominal area, might be at an increased risk of fall as compared to individual who are not obese. but in this study we found that obesity is not associated with risk of fall. In this study as compare to males, females are more prone for risk of fall, this is may be due to postmenopausal and hormonal changes, osteoporotic changes in females. The overall study analyzed that, among the 60 population the 19 population are having high and medium risk of fall and 49 population has low fall risk. among the all 60 population, 31.6% are at high risk of fall and 69.4% have no fall risk. Out of 60 population 69% have low fall risk, 23% have medium fall risk and 8% have high fall risk. There is no statistical significance between obesity and risk of fall in selected population.

9. Conclusion

The above study concludes that there is no association between obesity and risk of fall.

The females are more prone for risk of fall as compared to male

10. References

1. GRNS, Oliveira JS, Dario BA, Lima MR, Tiedemann A. Does obesity increase the risk and severity of falls in people aged 60 years and older? A systematic review and meta-analysis of observational studies [published online ahead of print, 2019Nov21]. *JGerontolABiol Sci MedSci*
2. Sullivan Fjeldstad OC, Fjeldstad A, Acree L, Nickel K, Gardner A. The influence of obesity on falls and quality of life. *Dyn Med* 2008;7:4.
3. Association between obesity, risk of falls and fear of falling in older women (published) 2017
4. The effect of obesity on fall efficacy in elderly people published 2013
5. Textbook of preventive practice and community physiotherapy (Bharti Bellaire) Stella Soltiriadi-Viachou, Faedrou 9 str., PC 11635. Athens Greece Obesity and its relationship with falls, fracture site and bone mineral density in postmenopausal women. (published 24) 2017, 2.
6. Rebecca J Mitchell, Stephen R Lord, Lara A, Haevey, Jacqueline CT, Close, Association between obesity and overweight and fall risk, health status and quality of life in older people 2013, 38.
7. Byoung-Jin Jeon. The effects of obesity on fall efficacy in Elderly People. (published) 2013, 25.