15. Statistical Study of Health Conciousness of Women as Compared to Men

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Abstract:

Health is real wealth. A healthy person is an asset to himself, to his family and to his community. For one to be healthy, he has to take regular exercise, good nutrition and adquate rest. Some health determinents have been defined by World Health Organization (WHO). Present paper delves into personal individual characteristics and behaviour. Interest lies in whether there is any difference in health conciousness amongst men and women.

1. Introduction

Since time immemorial mankind has been careful about his physical health. Because his very existance depends on it. For humans, physical health means good body health which is healthy because of regular physical activity that is exercise, good nutrition and adquate rest. Study of health awareness is important because whether we work at home or in an office, we need good health in order to perform our duties well. However, health does not merely mean being free from physical pain or symptoms of desease, the mind is of crucial consideration in the overall assessment of well being. Afterall health largely depends on psycosomatic processess. Mind plays an important role in maintaining our health. That's why they say "Healthy mind in an healthy body".

2. Objective

As per World Health Organization the main determinents of health are (i) the socio economic environment (ii) the physical environment and (iii) the persons individual characteristics and behaviours. In the present paper, the focus is on the third determinent - that is "what we are and what we do", with respect to gender difference. Nature has given more physical strength to men so they tend to do more exercise in Gyms whereas women tend to exert more in house keeping and domestic work. Due to typical social structure, women tend to do home work where as men work outside. This paper aims to find out whether this has a different impact on each gender.

3. Methodology

To find out this, information from 500 respondents was collected by the method of stratified random sampling. In which there are 294 Males and 206 Females. Stratification is done with respect to different age group and income group. And from each group, randomly some resepodents were chosen. An inexpensive way to gather data from potentially large number of respondents is to use questionnaire. An appropriate questionnaire is designed which mainly includes aspects like (i) personal information (ii) general health habits (iii) food habits and (iv) opinion about health. The respondents are chosen randomly from different localities to control the response bias and to increase reliability of the data. For the data entry, data compilation, diagramatic representation and graphical representation MS-Excel is used. R-programming and SPSS is also used for other analytical purposes.

4. Analysis

4.1 χ^2 test of independence of attribute

Man is by nature masculine and exercise is synonymous to male gender. But times now have changed. Women are no more bound to their erstwhile home daily chores and are seen sharing equal responsibility with men. Hence, interest lies in checking whether they take exercise regularly and to check if habit of exercise is independent of gender we use χ^2 test of independence of attribute and set null hypothesis as follows;

H_0: Exercising habit is independent of gender.

H_1: Exercising habit dependes on gender.

The 2 X 2 contigency table of observed frequencies is as follows;

Table 4.1

Gender	Habit of Exercise		Total
	Yes	No	
Males	162	132	294
Females	87	119	206
Total	249	251	500

Table of expected frequency is as follows;

Table 4.2

Gender	Habit of Exercise		Total
	Yes	No	
Males	146.412	147.588	294
Females	102.588	103.412	206
Total	249	251	500

From MS-Excel p-value is = 0.0004616

Since, p-value is <0.05, we reject null hypothesis and conclude that, excercising habit depends on gender. That is male respondents are found to take more exercise than women.

4.2 Large sample test for difference of proportion for excersing habit.

It is aimed to find proportion of male and female respondents who exercise regularly is equal or not. Since, sample size n=500 is very large, we used large sample test based on normal distribution. Follwing are the hypothesis formulated;

H_0:Population proportion of Male and Female who exercise is same. i.e. $P_1 = P_2$

H_1:Population proportion of Male and Female who exercise is not same. i.e. $P_1 \neq P_2$

n_1 = total number of males in the sample = 294

n_2 = total number of females in the sample = 204

x_1 = total number of males who exercise in the sample = 162

x_2 = total number of males who exercise in the sample = 87

p_1 = sample proportion of males who exercise = 0.551

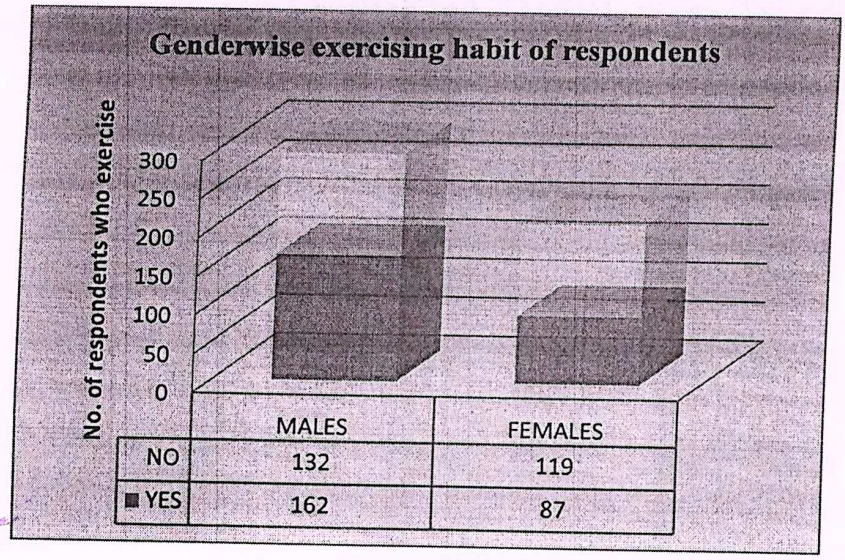
p_2 = sample proportion of females who exercise = 0.4264

Test statistic for large sample test is;

$$z = \frac{p1 - p2}{\sqrt{\hat{p} * \hat{Q} * \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

Z_{cal} = 2.7183 and Z_{tab} = 1.96 Hence, we reject H_0.

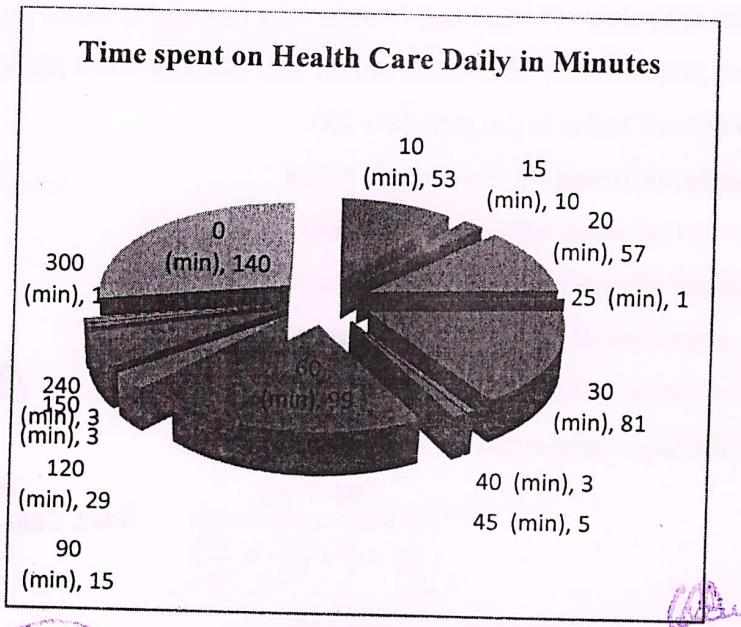
Conclusion: Proportion of male and female who exercise is not same.



Graph 4.1

4.3 Time spent on health care

Regular physical activity also helps to controll weight and may help to ease stress. Ideally, one should aim for atleast 30 minutes of moderate intesive physical activities on at least 5 days per week. From the sample data collected, it has been checked whether respondents spend this amount of time for exercise. Following pie diagram shows the factual status.



Graph 4.2

5. Conclusion

- ❖ Exercising habit depends on gender.
- ❖ From large sample test for proportions, it is found that, population proportion of male who take exercise is not same as population proportion of female who take exercise.
- ❖ It is found that proportion of males doing exercise is higher than females which may indicate that due to the responsibility of daily chores women are stuck up at home.
- ❖ It is observed that in a sample of 500 respondents, 140 respondents do not go for health care activity.

References

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2. Evans, James. R, 'Statistics, Data analysis and Decision modelling', Prentice Hall.
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