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Assessing the Body Temperature and SpO_2 Level during Covid-19 Pandemic among Men and Women in Ruler Area.

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Abstract

The object of this study was to examine the Body temperature and Blood oxygen level (SpO_2) between men and women in ruler area of Pune District especially in Junnar Tsahalis ruler area particularly Hadser village .

For this research, population form Hadser Village area have been selected as population a total of 60 among them 30 men and 30 women age group of 21 to 40 years old. The test was conducted during the Maharashtra governments policy of " Maze Kutumba Mazi Zababdari" during Covid-19 Pandemics in 2020, so government permitted particular area for test and the particular data was submitted to government agencies also.

Samples for this research were men and women in ruler area of Pune District especially in Junnar Tahasil area particularly Hadser village. Researcher took around 300 test (Morning at 9.00am.to11.30 am.) for every person in that area but children and senior citizens were excluded from this study so researcher have been selected total of 60 men and women age group of 21 to 40 years old population for particular study.

For this study body temperature was measured by Digital Thermometer and blood oxygen level was measured by Pulse Oximeter.

For these studies, Descriptive statistics, and Independent sample t-test used for the data analysis.

Results

This particular research researcher shows that the Body temperature of men and women was normal (t- 0.87: P 0.35 > 0.05) and also found that no significant difference in body temperature of men and women. Blood oxygen level of men and women was also normal (t- 0.32: P 0.57 > 0.05) and no significant difference found in SpO_2 level of men and women. There were no signs of any fever or infection. In this research researcher also shows the blood oxygen level of men and women were normal so research conclude that no fever and infection sings found in any subject.

Key Words- *Assessing body temperature and SpO_2, Body Temperature and blood oxygen.*

Body Temperature

Body Temperature is an early sign of infection. Fever is one of your bodies' reactions to infection and is common in illness like influenza and covid-19. Monitoring your body temperature, even when you are healthy, can help detect disease early and help you know if it's okay to go to work or school. (Torrence, 27 may 2020) Body Temperature has change according to gender, age, envirmental factors and overall health. The normal range of body generally accepted as 98.6^{o}F (37^{o}C) some studies have been shown that the normal body temperature can have wide rang form 97^{o}F (36.1^{o}C) to 99^{o}F (37.2^{o}C).A temperature over 100.4^{o}F (38^{o}C) most often means you have ever caused by an infection or illness. (WHO, 2019) The body temperature of a healthy person, during the day about 0.5^{o}c (0.9^{o}F), lower temperature in morning in the late afternoon and evening also. (Rogers, December 7,2020)

Body temperature is a measure of how well your body can make and get rid of heat. The body is very good at keeping its temperature with in a safe rang even when temperatures outside the body change frequently. Thermometer shows body temperature in either degrees Fahrenheit (^{o}F) or degrees delicious (^{o}C). (uofmhealth.org)

Blood Oxygen Level (SpO_2)

Blood oxygen level is a measure of how much oxygen your red blood cells are carrying. Your body closely regulates your blood oxygen level. Maintain the precise balance of oxygen saturated blood is vital to your health. (Holland, September 27.2019)

Most children and adults doesn't need to monitors their blood oxygen level in fact many doctors wont check it until unless you are showing signs of problem like shortness of breath or chest pain. Monitoring your blood oxygen level can help to determine if treatment are working or if they should be adjusted. (Cattamanchi, October 5,2021)

Effect of oxygen saturation in Adults- The normal values of SpO2 range from 92 to 100 percent for a healthy person, SpO2 values usually fall between 94-96 percent. However a value below 90 percent during covid-19 outbreak indicates low oxygen level. If you are in high risk group, "a person with diabetic, hypertension, heart deices" SpO2 level drops below 90 percentages you will be need hospitalization and inhalations oxygen as part of your treatment. (Catharine R.Van Son, Deborah U.Eti, April 14, 2021)

Relation between body temperature and blood oxygen level

High body temperature decreases the affinity of oxygen to hemoglobin fever is associated with decrease SpO_2.Temperature dependent change in hemoglobin oxygen affinity was measured as a function of hemoglobin oxygen saturation. (M.P.Hlastala,

September1,1977). When the ambient temperature falls below 35^0C oxygen consumption increases linearly with decreasing ambient temperature and thus a constant body temperature is maintained. The metabolic rate at 5^0C is approximately three and half time that at 35^0C. (R.B.Reeves, July 1,1982)

Aim and Objective of the Study

- To assess the Body temperature among men and women.
- To assess the blood oxygen level among men and women.
- To increase the awareness about infection of covid and viral fever and relation of body temperature and Spo2 among society.

Hypothesis

Ho- There is no significant difference of Body temperature in men and women.

Ho- There is no significant difference of Blood Oxygen level ($SpO_{2)}$ in men and women.

Method

Descriptive Survey method was used for this particular study. (Best J. W,and Khan J.V., 2006)

Population and sample

Population form Junnar Tahasils ruler area village Hadser has been selected as population. Samples for this research were men and women in urban area of Pune District especially in Junnar ruler area. Researcher took around 300 test for every person in that area but children and senior citizens were excluded from this study so researcher have been selected total of 60 samples among them 30 men and 30 women age group of 21 to 40 years old for this Study.

The tool of data collection:

Body Temperature

Test- Body Temperature.

Purpose-To assesses Body Temperature.

Equipment- Digital Thermometer

Blood Oxygen Level

Test- Blood Oxygen Level

Purpose-To assesses Blood Oxygen Level

Equipment-Plus Oximeter

Statistical tools

For these studies, Descriptive statistics, and Independent sample t-test used for the data analysis. (B.Youngeman, 2010)

Results

Table No 1

Descriptive analysis of Body Temperature Test

Group Statistics of Body Temperature					
Body Temperature	SPO2 Level	N	Mean	Std. Deviation	Std. Error Mean
	Body Temperature Men	30	35.94	0.85	0.156
	Body Temperature Women	30	35.76	0.83	0.151

Table No-1 Precise the descriptive analysis of Body Temperature Test: the number of men and women for Body Temperature Test are respectively 30 each.

The body temperature of men's Mean is 35.94 with S.D. is 0.85; SEM is 0.156 and body temperature of women's Mean is 35.76 with S.D. is 0.83; SEM is 0.151.The mean of body temperatures of men and women's are almost similar.

Table No 2

Independent t-Test of Body Temperature Test

Independent Samples t-Test of Body Temperature										
		Levene's Test for Equalityof Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	**Mean Difference**	**Std. Error Difference**	**95% Confidence Interval of the Difference**	
									Lower	Upper
Body Temperature	Equal variances assumed	0.879	0.35	0.021	58	0.98	0.00	0.16	0.31	0.31
	Equal variances not assumed			0.021	44.674	0.98	0.00	0.16	0.31	0.32

Table -2 Body temperature of the men and the women's F-value is 0.87 which is not significant as P-value is 0.35 which is greater than 0.05 levels. Thus the null hypothesis of equality of variance is rejected and it is conclude that the variance of the two groups is not equal. The value of t-test is 0.88. Thus t-value is not significant as the p-value is 0.35 is greater than 0.05.Thus the null hypothesis of equality of population mean of two groups is rejected and it is concluded that the body temperature of men and women are different.

Table No 3

Descriptive analysis of Blood Oxygen Level (SpO_2) Test

Group Statistics of SpO_2L					
	SpO_2 Level	N	Mean	Std. Deviation	Std. Error Mean
Body Temperature	SpO_2 L Men	30	97.7333	0.58329	0.1069
	SpO_2 L Women	30	97.5000	0.93772	0.17120

Table No-3 Precise the descriptive analysis of Blood Oxygen (SpO_2) Test: the number of men and women for Blood Oxygen (SpO_2) Test are respectively 30 each.

The Blood Oxygen (SpO_2) of men's Mean is 97.73 with S.D. is 0.58; SEM is 0.10 and Blood Oxygen (SpO_2) of women's Mean is 97.50 with S.D. is 0.93; SEM is 0.17.The mean of Blood Oxygen (SpO_2) of men slightly less than women's Blood Oxygen (SpO_2) level.

Table No 4

Independent t-Test of Blood Oxygen Level (SpO_2) Test

Independent Samples Test of SpO_2L										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**	**95% Confidence Interval of the Difference**	
									Lower	**Upper**
SPO2 Level	Equal variances assumed	0.326	0.57	2.62	58	0.01	0.61	0.21	1.18	0.23
	Equal variances not assumed			2.91	57.98	0.01	0.70	0.24	1.18	0.21

Table -2 Blood Oxygen (SpO_2) of the men and the women's F-value are 0.32 which is not significant as P-value is 0.57 which is greater than 0.05 levels. Thus the null hypothesis of equality of variance is rejected and it is conclude that the variance of the two groups is not equal. The value of t-test is 0.32. Thus t-value is not significant as the p-value is 0.57 is greater than 0.05.Thus the null hypothesis of equality of population mean of two groups is rejected and it is concluded that the Blood Oxygen (SpO_2) level of men and women are different.

- There was a significant difference of Body temperatures of Men and Women's (t-value is 0.87: P 0.35 > 0.05).
- There was a significant difference of Blood Oxygen (SpO_2) level of Men and Women's (t-value is 0.32: P 0.57 > 0.05).

Results and Discussion

The normal range of body temperature is (37^0C) some studies have been shows value of normal Body Temperature can have a wide range from (36.1^0C) to (37.2^0C). (Holshue, 2020,382(10)) A temperature over (38^0C) most often means you have a fever caused by an infection or illness. This particular research researcher shows that the Body temperature of men and women was normal and also found that no difference in body temperature of men and women. There were no signs of any fever or infection.

The normal range of Blood oxygen level of human body is 92-100 for a healthy person. SpO2 values usually fall between 94 -96 Percentage. However oxygen level below 90 during Covid-19 Outbreak indicates low oxygen level. (Dikla Zigdon,Lahvel et.al. , March 2015) In this research researcher shows the blood oxygen level of men and women were normal so research conclude that no Covid-19 sings found in any subject.

Conclusion

By comparing mean difference value suggest that the Men and Women's body temperatures is almost similar.

By comparing mean difference value suggest that the Men and Women's blood oxygen level, men SpO_2 level slightly better than women.

There is no significant difference occurs between two group's men and women, in the body temperature level.

There is no significant difference occurs between two group's men and women, in the blood oxygen (SpO_2) level.

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