



## The Impact of the Covid-19 Pandemic on the Lifestyle of people

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**ABSTRACT:** Introduction: The covid-19 pandemic has affected people all over the world. Especially with the nationwide lockdown people have changed their day to day routine. The lifestyle habits of most people have been impacted after the onset of the pandemic.

Objective: We conducted this survey to study the impact of the covid-19 Pandemic on the lifestyle of people.

Study design: Cross-sectional study

Methodology: We conducted an online questionnaire and circulated it with the help of social media platforms, to record and evaluate responses of the participants.

Statistical analysis: SPSS 16 version software and Microsoft excel sheet were used to interpret the data.

Results: We studied that the covid-19 pandemic had an impact on the lifestyle of people. Changes were noticed in various factors such as weight, diet, physical activity, bowel disturbances, sleep, smoking habits and alcohol consumption habits. There was also a difference in responses between both the genders and various age groups.

Conclusion: The sudden onset of the Covid-19 or coronavirus pandemic has completely turned the world upside down. Covid-19 pandemic has resulted in a massive change in Lifestyle. In some people it may also lead to serious health issues. Thus people should follow a healthy lifestyle and get help when needed.

**Key words:** Lifestyle, covid-19, lockdown, pandemic

### I. INTRODUCTION:

[1].The year 2020 has put immense pressure on the healthcare systems of all countries all over the world. The reason is the highly communicable Novel Corona Virus (SARS-Cov2) or Covid-19 Virus causing acute respiratory syndrome in humans. [1].It was first identified on December 12<sup>th</sup> 2019 in Wuhan, Hubei, China and is spreading rampantly all over the world.

[1].The COVID-19 pandemic affects human health, causing sudden lifestyle changes, through social distancing and isolation at home, with social and economic consequences. Optimizing public health during this pandemic requires not only knowledge from the medical and biological sciences, but also of all human sciences related to lifestyle, social and behavioural studies, including dietary habits and lifestyle.

Due to the rampant spread of the pandemic, governments all over the world have implemented lockdowns and restrictions. [2].This in turn affects the people's lifestyle which could lead to health consequences. It restricts routine activity, physical activity, access to exercise facilities (due to closing down of physical activity and sports centres).Due to lack of exercise and physical activity, this in turn reduces a person's immunity. [2].As there is physical inactivity and poor mental health, this increases the risk for major disease morbidity.[3].As people have limited access to shops, fresh wholesome food is hard to come by, people turn to fast food as its cheaper and easily available. This change in food pattern greatly affects their health. [4].A study claims one-third of adults were physically inactive and 41.5% spent four or more hours sitting per day. This increase their risk of cardiovascular disease.

In this study, we are finding out how the Covid-19 pandemic has made an impact on the lifestyle of the people including physical activity, weight changes, smoking, alcohol etc.

### II. OBJECTIVE:

Our study is aimed at finding out how the Covid-19 pandemic has changed or impacted the lifestyle of people.This survey studied changes in weight, diet, physical activity, smoking, alcohol, sleep and Bowel disturbances in people before and after the pandemic.



### III. METHOD:

A Cross sectional descriptive study with the help of a structured questionnaire was prepared. Pilot testing of the survey was done and questionnaire modified. The questionnaire was also validated by a Psychiatrist. The survey was circulated among the public with the help of social media. People of all age groups from India answered the survey. This study was conducted in the months of August and September in the year 2020. A total of 575 responses were collected. The questions in the survey were based on general lifestyle, smoking habits, alcohol consumption,

weight changes, sleep pattern and sleep disturbances, stress and anxiety level, fear, mood swings, difficulty concentrating, financial stress, relaxation techniques to cope with the stress. The questionnaire was in English. Data was fed into an excel sheet and statistical analysis was done using SPSS 16 version. The data was statistically analysed. Descriptive analysis was done to analyse frequency and percentage of participants involved. Null hypothesis was used to determine association between different factors and results were interpreted. The survey was anonymous and respondents identify was kept confidential.

### IV. RESULT:

**Table 1:** The frequency and percentage of responses of all the factors included in the study

VARIABLE	SUB GROUPS	FREQUENCY	PERCENTAGE
GENDER	Female	322	56.0
	Male	253	44.0
AGE	<18	8	1.4
	>50	85	14.8
	18-30	246	42.8
	30-50	236	41.0
WEIGHT CHANGE	No	231	40.2
	Yes - a decrease	178	31.0
	Yes - an increase	166	28.9
DIET CHANGE	Consuming a diet that includes carbohydrates, proteins, cereals, vegetables, fruits. A healthy home cooked diet.	296	51.5
	Consuming more unhealthy/ junk food/ ordering fast food	70	12.2
	No change	209	36.3
EXERCISE BEFORE LOCKDOWN	No	287	49.9
	Yes	287	49.9
EXERCISE AFTER LOCK DOWN	No change	161	28.0
	Yes - Decrease	190	33.0
	Yes - Increase	224	39.0
BOWEL CHANGES	No	393	68.3
	Sometimes	112	19.5
	Yes	70	12.2
SMOKING	No	484	84.2
	Occasionally	33	5.7
	Yes	58	10.1
SMOKING CHANGE	Not applicable	484	84.2
	Decreased	46	8.0
	Increased	21	3.7
	No change	24	4.2
ALCOHOL	No	290	50.4
	Occasionally	270	47.0
	Regularly	15	2.6
ALCOHOL CHANGE	Not applicable	290	50.4



	Decreased	144	25.0
	Increased	24	4.2
	No change	117	20.3
<b>SLEEP PATTERN</b>	<6hrs	93	16.2
	>8hrs	76	13.2
	6-8hrs	406	70.6
<b>SLEEP CHANGE</b>	No change	331	57.6
	Yes - Lack of Sleep	155	27.0
	Yes - Oversleep	89	15.5

<b>ANY FAMILY MEMBER COVID OCCURRED HEALTH AWARENESS</b>	No	507	88.2
	Yes	68	11.8
	No	49	8.5
	Yes	526	91.5

1. Gender: Out of 575 participants, 322 females (56%) and 253 males (44%) took the survey. Of both genders decrease in weight was noticed more in the females bracket 15.6% and increase in weight post logged on with notice more in males bracket 18.78%. The male gender showed more changes in smoking habits compared to females. 6.26% males noticed decrease in smoking habits and 2.8% males were smoking more. Similarly changes in alcohol consumption after the lockdown was also noticed more in males. 13.4% males decreased consumption of alcohol and 2.08% males increased their alcohol consumption. 11.13% showed no change. Difference in physical activity level was also noticed in both genders 16.6% males experienced decrease in physical activity post lock down and 16.86%

males experienced increased in physical activity. 16.34% females experienced decrease in physical activity and 22.08% females are experienced increased physical activity. Females experienced more bowel changes during the lockdown when compared to males 13.21% females experienced bowel disturbances sometimes and 6.2% females experienced bowel disturbances regularly. The female gender also experienced more sleep disturbances. 16.69% females had lack of sleep while 9.73 females were oversleeping. We found an association between gender and changes in smoking habit, changes in alcohol consumption, changes in level of physical activity, bowel disturbances and changes in sleep cycle during the pandemic.

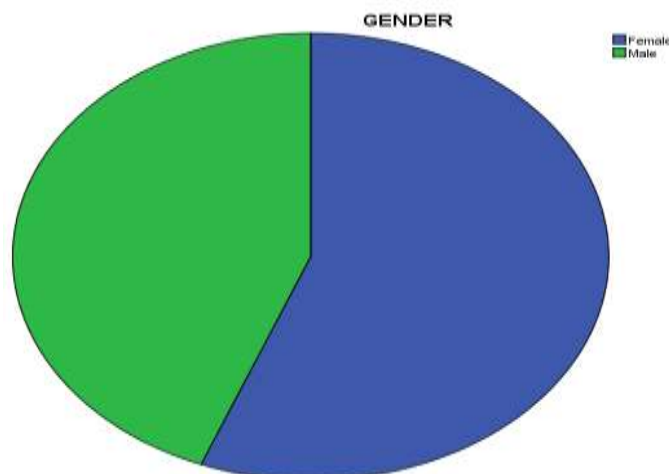


Figure 1

Table 2: Association of gender with various other lifestyle factors.

GENDE R	MALE	FEMALE	P VALUE
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	SMOKING CHANGE	Decreased	36 (6.26%)	10(1.8%)	0.000(p<0.05)
		Increased	16(2.8%)	5(0.86%)	
		No change	23(4%)	1(0.17%)	
	ALCOHOL CHANGE	Decreased	77(13.4%)	67(11.65%)	0.000(p<0.05)
		Increased	12(2.08%)	12(2.08%)	
		No change	64(11.13%)	53(9.2%)	
	Physical activity	No change	60(10.43%)	101(17.56%)	0.043(p<0.05)
		Yes - Decrease	96(16.69%)	94(16.34%)	
		Yes - Increase	97(16.86%)	127(22.08%)	
	Bowel changes	No	183(31.82%)	210(36.52%)	0.018(p<0.05)
		Sometimes	36(6.26%)	76(13.21%)	
		Yes	34(5.91%)	36(6.26%)	
	SLEEP CHANGE	No change	161(28%)	170(29.56%)	0.033(p<0.05)
		Yes - Lack of Sleep	59(10.26%)	96(16.69%)	
		Yes - Oversleep	33(5.73%)	56(9.73%)	

2. Age: There were 8 participants less than 18 years of age (1.4%), 246 participants (42.8%) 18-30 years of age, 236 participants (41%) 30-50 years of age and 85 participants (14.8%) more than 50 years of age. 30 to 50 years of age group did not show any major changes in their weight during and after lockdown. Weight changes were noticed in people 18 to 30 years of age. 14.08% of people from this age group noticed a decrease in weight and 15.65% of people notice an increase in weight. 18 to 30 years of age group also noticed changes in the smoking habits. 5.73% of people from this group noticed a decrease in smoking habits and 2.26% of people noticed an increase in smoking habits. minor changes were observed in people of other age groups. 18 to 30 years of age group also included people that noticed decrease in the alcohol consumption habits after the lock

down:14.95%. increase alcohol consumption after lock down was seen in 30 to 50 years of age group: 2.08%. Changes in diet pattern was mostly observed in people 18 to 30 years of age. 23.47 percentage of people of 18-30 years of age group consumed home cooked healthy meals while 8.17% of people consume more junk food. Maximum changes in bowel habits causing bowel disturbances was also seen people from 18 to 30 years of age group. Majority of people did not experience much changes in the sleep cycle, although the 18 to 30 years of age group experienced most changes in sleep cycle. 12.69% had lack of sleep and 10.78% were over sleeping. We found an association between age and changes in alcohol consumption, weight change, smoking habits changes, diet changes, sleep changes and bowel disturbances during the pandemic.

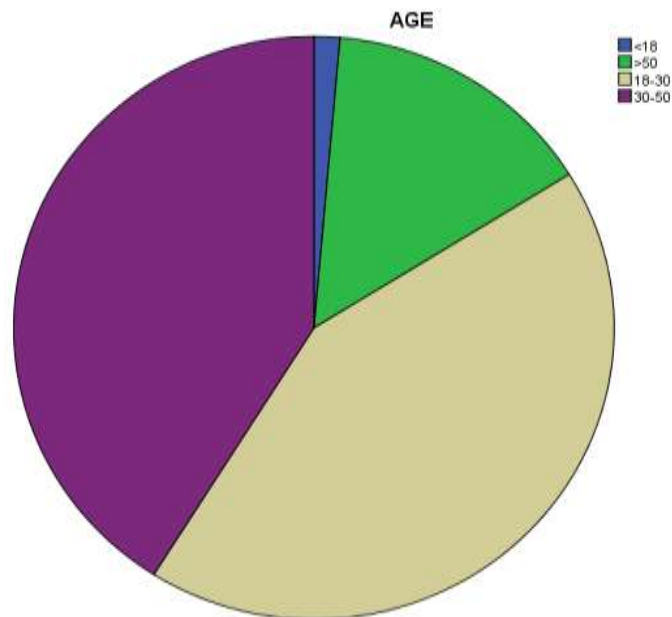


Figure 2

Table 3: Association between age and other factors

Age		<18	>50	18-30	30-50	P VALUE
WT CHANGE	No	4(0.69%)	44(7.65%)	75(13.04%)	108(18.78%)	0.001 (p<0.05)
	Yes - a decrease	1(0.17%)	23(4%)	81(14.08%)	73(12.69%)	
	Yes - an increase	3(0.52%)	18(3.13%)	90(15.65%)	55(9.56%)	
SMOKING CHANGE	Decreased	0	6(1.04%)	33(5.73%)	7(1.21%)	0.004(p<0.05)
	Increased	0	1(0.17%)	13(2.26%)	7(1.21%)	
	No change	0	4(0.69%)	11(1.91%)	9(1.56%)	
ALCOHOL CHANGE	Decreased	0	25(4.34%)	86(14.95%)	33(5.73%)	0.000(p<0.05)
	Increased	0	3(0.52%)	9(1.56%)	12(2.08%)	
	No change	2(0.34%)	14(2.43%)	49(8.52%)	52(9.04%)	
DIET CHANGE	Consuming a diet that includes carbohydrates, proteins, cereals, vegetables, fruits. A healthy	1(0.17%)	43(7.47%)	136(23.64%)	116(20.17%)	0.000(p<0.05)



		home cooked diet.					
		Consuming more unhealthy/junk food/ordering fast food	3(0.52%)	1(0.17%)	47(8.17%)	19(3.30%)	
		No change	4(0.69%)	41(7.13%)	63(10.95%)	101(17.56%)	
	BOWEL CHANGES	No	4(0.69%)	69(12%)	156(27.13%)	164(28.52%)	0.04(p<0.05)
		Sometimes	2(0.34%)	13(2.26%)	56(9.73%)	41(7.13%)	
		Yes	2(0.34%)	3(0.52%)	34(5.91%)	31(5.39%)	
	SLEEP CHANGE	No change	5(0.86%)	64(11.13%)	111(19.30%)	151(26.26%)	0.000(p<0.05)
		Yes - Lack of Sleep	1(0.17%)	15(2.60%)	73(12.69%)	66(11.47%)	
		Yes - Oversleep	2(0.34%)	6(1.04%)	62(10.78%)	19(3.30%)	

3. Weight change: Compared to the weight before the Covid-19 pandemic/ lockdown, some people noticed a change in their weight. 178 (31%) of participants noticed a decrease in

their weight compared to before, 166 (28.9%) of participants noticed an increase in weight and 231 (40.2%) did not experience any weight change.

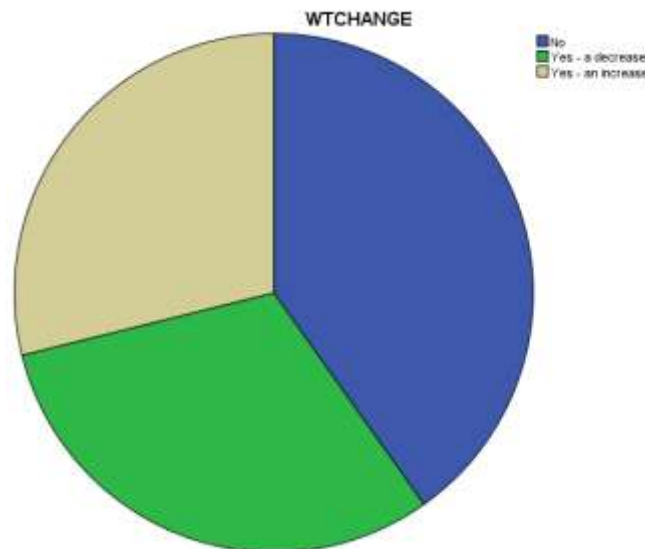


Figure 3

4. Diet: 296 participants (51.4%) consumed a diet that includes carbohydrates, protein, cereals, fibre i.e, a home cooked healthy diet. 70 participants (12.2%) consumed unhealthy/

junk food or ordered fast food during the lockdown. 209 participants (36.3%) experienced no changes in their diet.

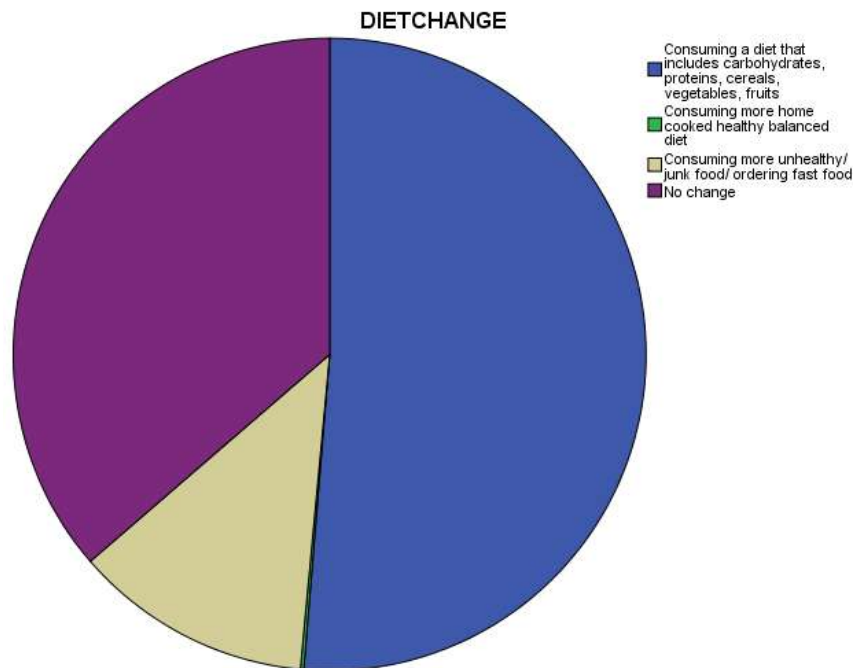


Figure 4

5. Physical Activity before lockdown: 287 participants (49.9%) of the participants did not exercise regularly before lockdown while 287 participants (49.9%) exercised regularly before the lockdown. 14.26% of the people who exercised before lock down experienced decrease in the alcohol consumption and 10.78% of the people who did not work out before lock down experienced a decrease in alcohol consumption. 1.74% of the people who were physically active before lock down experienced increased in alcohol consumption and 2.40% of the people who were not active before lock down experienced an increase in alcohol consumption. Only 4.35% of the people who were physically active before the lockdown started consuming more unhealthy or junk food during the lockdown. 26.78% of the people that exercised before lock down were consuming a more healthy home cook diet. Of all the people who were not physically

active before lock down, 7.83% consumed more unhealthy or junk food and 24.52% consumed home cooked healthy meals. Of all the people who were physically active even before the lock down 16.87% had a further increase in the level of physical activity and 20.35% experienced a decrease in the level of physical activity. of all the people who are not physically active before the lock down 21.99% experienced an increased level of physical activity and 12.7% experienced a decrease in activity. 12.7% of the people who were physically active before and 15.3% of the people who were not physically active before experienced no changes in their level of physical activity. We found an association between level of physical activity before the pandemic and changes in alcohol consumption, diet change and changes in level of physical activity after the pandemic.

**Table 4:** Association between level of physical activity before lockdown and various other factors

BEFORE EXERCISE			P VALUE	
			NO	YES
ALCOHOL CHANGE	Decreased	62(10.78%)	82(14.26%)	0.01(p<0.05)
	Increased	14(2.43%)	10(1.74%)	
	No change	47(8.17%)	69(12%)	



	DIET CHANGE	Consuming a diet that includes carbohydrates, proteins, cereals, vegetables, fruits. A healthy home cooked diet.	141(24.52%)	154(26.78%)	0.000(p<0.05)
		Consuming more unhealthy/ junk food/ ordering fast food	45(7.83%)	25(4.35%)	
		No change	101(17.57%)	108(18.78%)	
	PHYSICAL ACTIVITY	No change	88(15.30%)	73(12.70%)	0.002(p<0.05)
		Yes - Decrease	73(12.70%)	117(20.35%)	
		Yes - Increase	126(21.91%)	97(16.87%)	

6. Physical Activity during the lockdown/ Pandemic: 224 participants (39%) became more aware of their physical health and noticed an increased level of physical activity. Whereas 193 participants (33%) noticed a decrease in level of physical activity compared to before. 161 participants (28%) experienced no change in the level of physical activity. The people who noticed an increase in the level of physical activity after the pandemic also noticed a decrease in the weight 19.30%. 8% of the people who increased exercise after pandemic noticed an increase in weight. Majority of the people who decreased the level of physical activity after the pandemic noticed an increase in weight: 8.35%. 24.35% of the people who started exercising more, started

consuming more home-cooked healthy balanced diet and 3.83% of the people that excised more consumed unhealthy junk food after and during the lockdown. Of all the people who noticed a decrease in the level of physical activity after the pandemic, 10.61% consumed a healthy diet and 2.61% consumed unhealthy junk food. Majority of the people who started exercising more after the pandemic also became more aware of their health 38.9%. 19.30% of the people who noticed a decrease in their level of physical activity became more aware of their health and co morbid. We found an association between level of physical activity after the lockdown and weight change, dietchange after lockdown and awareness of one's health.

**Table 5:** Association between level of physical activity after lockdown and various other factors

EXERCISE AFTER PANDEMIC	WEIGHT CHANGE		No change	Yes Decrease	- Yes Increase	P value
C	WEIGHT CHANGE	No	42(7.30%)	45(7.83%)	5(0.87%)	0.000(p<0.05)
		Yes - a decrease	20(3.48%)	24(4.17%)	111(19.30%)	
		Yes - an increase	11(1.91%)	48(8.35%)	46(8%)	
	DIET CHANGE	Consuming a diet that includes carbohydrates, proteins, cereals,	29(5.04%)	61(10.61%)	141(24.52%)	0.000(p<0.05)





		vegetables, fruits. A healthy home cooked diet				
		Consuming more unhealthy/ junk food/ ordering fast food	1(0.17%)	15(2.61%)	22(3.83%)	
		No change	43(7.48%)	41(7.13%)	61(10.61%)	
	HEALTH AWARE	No	8(1.39%)	6(1.04%)	5(0.87%)	0.000(p<0.05)
		Yes	65(11.30%)	111(19.30%)	219(38.09%)	

- Bowel Disturbances: 393 participants (68.3%) did not experience any bowel disturbances, 112 participants (19.5%) occasionally experienced bowel disturbances while only 70 participants (12.2%) were experiencing bowel disturbances.
- Smoking habits: 484 participants (84.2%) are non-smokers, 33 participants (5.7%) smoke

occasionally and 58 participants (10.1%) are smokers. After the onset of the pandemic some of the participants noticed a change in their smoking habits. 46 participants (8%) noticed a decrease in frequency of smoking and 21 participants (3.7%) noticed an increase.

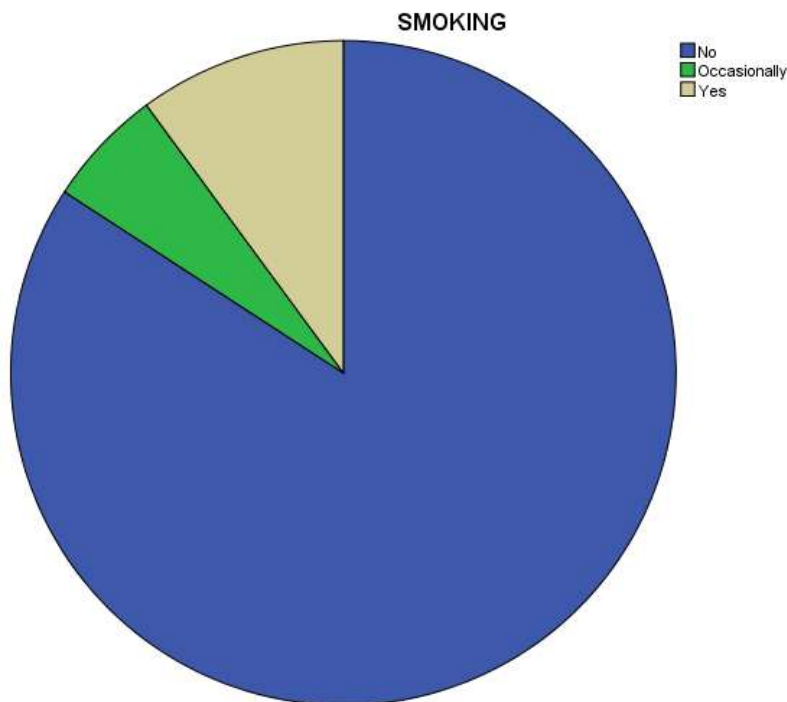


Figure 5

- Alcohol habits: 290 participants (50.4%) do not consume alcohol. 270 participants (47%) consume alcohol occasionally. 15 participants (2.6%) regularly consume alcohol. After the onset of the pandemic some people noticed a

change in their alcohol consumption habits. 144 participants (25%) experienced a decrease while 24 participants (4.2%) experienced an increase in their drinking habits.

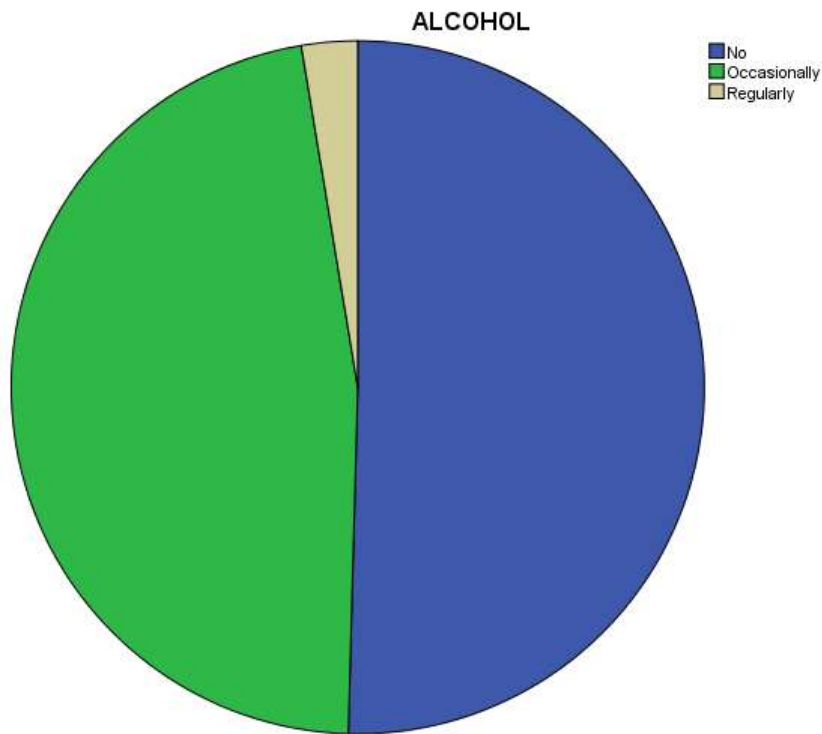


Figure 6

10. Sleep cycle:406 participants (70.6%) of the participants slept of at least 6-8 hours per night during the pandemic. 76 participants (13.2%) of the participants slept for more than 8 hours per day and 93 participants (16.2%) slept for

less than 6 hours. 331 participants (57.6%) experienced no changes in their sleep cycle during the pandemic. 155 participants (27%) experienced a lack of sleep while 89 participants (15.5%) were over sleeping.

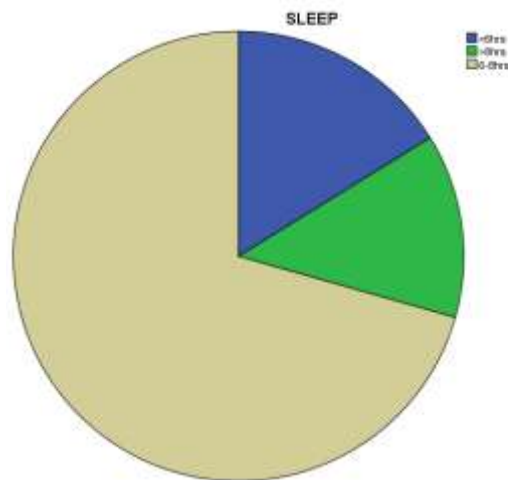


Figure 7

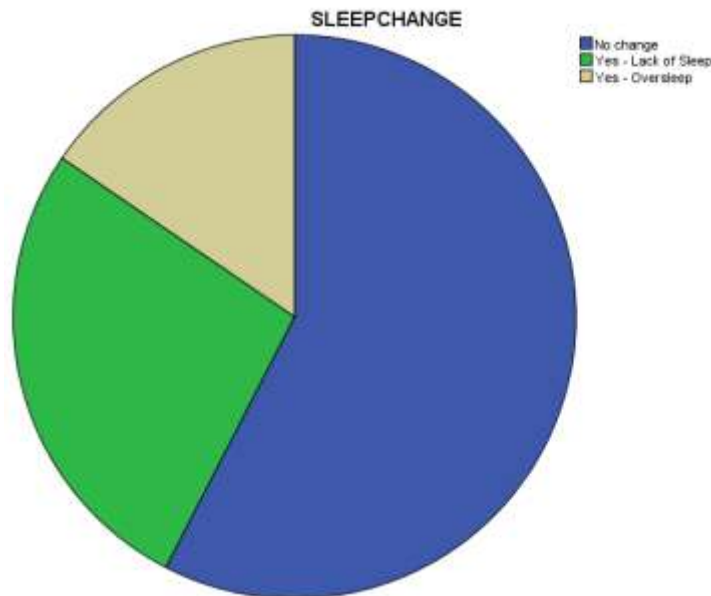


Figure 8

11. Family affected by Covid-19: 507 participants (88.2%) did not have family affected by Covid-19 while 68 participants (11.8%) had family affected by Covid-19.
12. Health Awareness: 526 participants (91.5%) became more aware about their health after the pandemic which 49 participants (8.9%) were not aware of their comorbidities.

#### V. DISCUSSION:

The sudden onset of the pandemic has completely changed the life of people all over the world. All aspects of people's lives have been affected and people of all races and socioeconomic status have been affected. The way of life is not like before. Lockdowns were imposed in various countries around the globe greatly affecting the economy as well as mental and physical wellbeing of people. In this study, we compared various parameters and factors and how things were and have changed before the pandemic and how things have changed. Individuals of various age groups took up this survey and we've quantified the results.

The most obvious physical parameter that visible to everyone's eye is weight change. There is mixed response in this parameter. With lockdown imposed in various countries, people had to work from home thus following a more sedentary lifestyle. At the same time, people had more free time at home to engage in some sort of exercise. [1]. A study done by Di Renzo L et al showed that almost half the individuals claimed to have gained weight. Our study showed that majority of

participants noticed no change in their weight while the remaining noticed an increase or decrease in their weight.

Since the onset of the pandemic, people's diet have been affected vastly. It goes both ways. Since people spent more time at home, they had time to prepare a wholesome healthy fresh homecooked meal rather than ordering fast food at their workplace. At the same time, some people ordered more unhealthy fast food and instant processed food. [3]. A study done by Martinez-Ferran M et al showed that there was increase in the percentage of people overeating. [1]. Another study showed that 15% of the individuals switched to a healthy diet. Our study showed that majority of participants switched a healthy wholesome diet, while others had no change in their diet and a small percentage of participants increased intake of unhealthy food.

As mentioned earlier, the physical activity of people had mixed responses. [2-5,9]. Some studies showed that there was decrease in physical activity of most people. [1]. Another study showed there was an increase in physical activity. In contrast, in our study majority of people engaged in some sort of physical activity and thus increased their physical activity while the remaining had no change or decrease in physical activity.

Majority of participants in our study did not experience any bowel disturbances. Only a small minority experienced occasional bowel disturbances and another small minority experienced regular bowel disturbances after the onset of the pandemic. Bowel disturbances could



be due to the changes in lifestyle, diet and physical activity.

Smoking habits changed vastly after the onset of the pandemic. While some people cut down on smoking, some increased smoking due to stress and lack of a regular income and instability of the economy. [6]. A study done by Stanton R et al showed majority had no change in smoking habits. Whereas in our study, more participants noticed a decrease in smoking and a small number of participants noticed an increase in smoking.

Alcohol habits have changed vastly for majority of participants due to the non-availability of alcohol. [7,8]. Some studies done showed an increase in consumption of alcohol by the people during the lockdown. Our study in contrast, showed that a majority of participants had cut down their alcohol consumption while only a small minority had increased their alcohol consumption.

The sleep pattern of various individuals have been affected by the pandemic due to stress, economic instability and various other factors. [4]. One study showed that there is an increase sleeping hours. [6]. While another showed there is no change in change in the sleeping hours. Our study showed majority had no change in sleep patterns while some had an increase in sleep and others had a decrease in sleep.

Our study showed most participants didn't have any family members affected by covid-19. As a result, most of our participants haven't been exposed or come in close contact with a family member affected by covid-19. The good thing about the onset of the pandemic is that many people who weren't previously health conscious or aware of their comorbid health conditions became more aware and made lifestyle modifications by taking steps to prevent further progress of their illnesses.

## VI. CONCLUSION:

Covid-19 or more commonly known as the corona virus pandemic has completely changed the way of life all over the globe. From our study we came to know that people have made various changes in their lifestyle since the onset of the pandemic, mainly as they had more time to themselves. Many people changed their lifestyle by being more active and eating healthy. Although some adapted a sedentary lifestyle. The impact of covid-19 on certain aspects of lifestyle can have severe consequences, and thus people should try and live a healthy life and get help if needed.

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