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# Covid-19 and Immune Response on Our Lifestyle

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**Abstract:** Covid-19 (Pandemic) not only agitated physical health, but mental health has also taken a toll in last 2 years however, it impacts on our lifestyle. The aim of this review is to disclose about the lifestyle changes due to the disruption of Covid-19 and how humans are approaching this global pandemic. A survey was conducted online, in which we prepared a questioner chart asking about different lifestyles problems including increased screen-time, lack of body movement, eating disorder, dietary health, depression, sleeping pattern, in lockdown period due to coronaviruses. Total 138 people were involved, aged 16- 50 in this survey about 70% respondent in elevation of screen-time, and about 30 % people increased their fruit & vegetable intake after the outbreak of covid19.

**Keywords:** Covid-19, lifestyle, health, obesity, pandemic

## I. INTRODUCTION

The pandemic was first observed in Wuhan, China as per record in end of December 2019. The first case was of pneumonia and from their scientist took a dip and find out about covid-19 and what are the symptoms. After seeing the increasing number of cases WHO declared covid-19 a world Pandemic on 11 March 2020. Covid -19 is a disease caused by a new strain (severe acute respiratory syndrome coronavirus 2, or SARS-CoV-2). Most people infected with the COVID-19 viruses experience mild to moderate respiratory illness and recover without requiring special treatment, its way to serious for old people having health problems like heart disease, chronic respiratory disease, diabetes, cancer & more. Middle-aged people and children are less likely to be affected by covid-19 and if also they get affected, they are likely to recover faster than old people(1). Luckily the India recovery rate is crossed 97.31% reported by Union Health Ministry which is amongst highest in world. Meanwhile, the fatality rate today is 1.43%, one of the lowest in the world. But still it's a pandemic we are facing other more problems even if a person is not affected by covid-19 we can see drastic changes in our daily life, starting from physical health to mental health and social(2).

### A. Covid-19 Effects on our Daily Lifestyle.

At present, government are making strict rules, quarantines and travel bans, so we can control the outbreak of the coronavirus the comparison of our lifestyle related behaviors before and during COVID-19 is mentioned further. The habit of eating at irregular timing increased, around (47%) because people are working from home and are quarantine for days due to restrictions. people are eating more healthy food compared to now (64%-81.6%) fried food (44%-62) and junk food (53.2% - 67%). people are reported marginal improvement in the frequency of consumption of vegetables, fruits (34%-38%) during COVID-19. In the physical activity domain, an increase in participants not routinely exercising more then three days a week. (45.4%-45.2%) before the pandemic maintained the habit of exercising during the pandemic as well participants refraining from routinely involvement in leisure – related physical activity also increased by more than double (29% vs 65%)(3).

-Increased screen time is also one of the leading problems which we are seeing in age of COVID-19 pandemic. people are spending more time in home and getting work from home from the companies, students have been told to do online class from home. which is not only increasing their screen time, but their mental health is also disturbing. there is seen increased in anxiety level whenever they receive a notification. Descriptive analysis was carried out to evaluate the student's satisfaction with the online learning experience during the COVID-19 Pandemic quarantine(4). The result show that in total, almost half of the sample and more are dissatisfied by **online class (48%)** of the student (28%) were neutral and only (23%) were satisfied by online class. This survey shows that sudden shift to exclusive online instruction and learning methods have rendered the students dissatisfied with learning experience. primary students are also forced to take online classes, which disturbed their mental health and becoming addicted to screens which indirectly weekend their immune system(5). it is found that association between increased computer use and myopia at 9 years of age (odds ratio= 1.005[95% confidence interval, 1.001-1.009]) Government have also imposed limits on digital device usage in order to prevent myopia(6). We cannot deny the importance of digital technology these days and its increase more post-covid-19, but it is necessary for parents to pay more attention to their children and set minimum timing for using screens so that they get not affected much by harmful radiation emits from phones, tablets, Pc etc.

The number of pandemic-related stressors was strongly associated with increases in both internalising and externalising symptoms during the pandemic after controlling for pre-pandemic symptoms(7).

Early in the pandemic, youths who spent less time on digital devices ( $b=0.272$ ,  $p=.0004$ ), as well as those who consumed less than 2 hours of news per day ( $b=0.193$ ,  $p=.010$ ), had lower externalising symptoms, while greater time spend in nature was marginally associated with lower internalising symptoms ( $b=-0.124$ ,  $p=.074$ ).

#### B. What Can We do about Increase Screen Time day by day?

Government should make strict rule for online class and tell schools not to force any student to take part in classes. or provide specific slots for studying so they can give rest to their mind and eyes and cope up with sudden change in education system after COVID19 outbreak. But for parents who worried about the time their children spend on social media and online games *before* the pandemic, the figurative 'jump' into screens can also cause more concern or even distress(8). Digital game distributors, such as Steam [report a considerable increase](#) in the case of regular users the past weeks: from 19 million in early March to a record high of 23.5 million in early April(9).

#### C. Mechanism of Immune Systems within the Physique Against COVID-19

Because there's no registered drugs or immunising agent against COVID-19, the system is that the best defence as a result of it supports the body's aptitude to defend against pathogens (e.g., viruses, bacteria, fungi, protozoan, and worms) and resists infections. If the system is functioning unremarkably, infections like COVID-19 go unremarked. The 3 varieties of immunity are immunity (rapid response), adaptational immunity (slow response), and passive immune). acquired immunity has 2 types: innate immunity, received from the maternal facet, and artificial immunity, received from drugs. Skin and inflammatory responses begin once the body is affected. However, once the body encounters germs or viruses for the primary time, the system cannot work properly, and sickness will occur. This situation is what has occurred within the case of COVID-19

#### D. Depression in Pandemic – A invisible Disease

Most studies of mental state throughout COVID-19 are conducted in Asia and Europe, wherever the sickness 1st unfold. The U.S. has since emerged together of the foremost extremely wedged countries, with the best variety of total COVID-19 infections and deaths by April 2020 (McNeil Junior. 3 studies mistreatment likelihood primarily based across the country representative samples give initial proof that symptoms and rates of mental health disturbance increased within the U.S. throughout the pandemic (Ertman et Holman, Thompson, Garfin, & Silver, Twinge & Joiner,). However, all 3 studies compared rates between cohorts assessed before v. throughout COVID-19 or earlier v. later periods of the pandemic, therefore amendment couldn't be assessed at the within-person level. in addition, the temporal order and severity of COVID-19 infections and native government responses have varied wide across the U.S., therefore substantial variations at the regional level are sunburst along in these across the country representative samples(10).

Young adults and adolescents are also particularly liable to mental state consequences of the COVID-19 pandemic (Gruber et al., 2020), In Spring 2020, nearly all education within the U.S. transitioned to remote learning and schools across the country closed their dorms, forcing students to manoeuvre, generally back home with their families, and limiting social interaction with peers(11). A recent review on the connection between mental state and loneliness/social isolation in youngsters and adolescents warned that COVID-19 social distancing measures is also notably prejudicial for youth (Loades et al., 2020). Further, student standing, and younger age are related to worse mental state throughout COVID-19 in Asian samples (Huang & Zhao, 2020; Wang et al., 2020).

- 1) The percentage of Americans reporting symptoms of depression more than tripled during the ongoing coronavirus [pandemic](#), according to a new study.
- 2) In surveys conducted prior to the pandemic, 9% of respondents reported depressive symptoms, researchers found. Once the pandemic hit, that percentage jumped to 28% of respondents, according to new survey data(12).

#### E. Symptoms of Hysteria (GAD) and Depression (MDD) in Canadians aged 18+

13% of Canadians screened positive for GAD.

- 1) Higher among ladies then men
- 2) Highest among those aged 18-34 years nineteen



#### F. Alcohol and Cannabis Consumption Rate During Pandemic

Since before the pandemic, Sixteen Personality Factor Questionnaire of Canadians reportable a rise in alcohol consumption, and five-hitter reportable a rise in cannabis use.

Compared to people who failed to screen positive for GAD and/or MDD, people who screened positive were additional seemingly to report:

- 1) Daily or nearly daily significant drinkingFootnote5 – a pair of.5 times additional seemingly
- 2) Daily cannabis use – a pair of.5 times additional seemingly

#### G. Obesity in Presence COVID-19

Because of covid 19, people these days are facing many difficulties these days one of the major is obesity and weight gain, as government restricts every person to work home to stop the spread of coronavirus. people are eating more processes food at home and eating late night snacks and moving their body for hours which is slow smoking which is contributing to their obesity. Report from the US stated that 1.27 million new childhood obesity cases were recorded until December 2020 if school did not reopen(13).

Immune cell activity in dysfunctional (visceral) fat. In obesity, the excessive presence and hypertrophy of adipocytes finish in drive, cell stress and cell death. The hypoxic setting induces the infiltration of immune cells into the fat as a result of the expression of chemo partaking molecules. Also, hypertrophic adipocytes manufacture multiple pro-inflammatory adipokines, like growth sphacelus (TNF- $\alpha$ ), cytokine (IL)-6 and leptin.

#### H. Obesity will increase ACE2 Expression

Virus entry is expedited by binding of the SARS-CoV-2 spike (S) macromolecule to the membrane macromolecule angiotensin-converting accelerator a pair of (ACE2) and the priming of the S macromolecule by amino acid proteinase TMPRSS2 and the endosomal amino acid proteases cathepsin B and L expressed by host cells. ACE2 is an element of the renin-angiotensin system (RAS) and plays a crucial role in regulation general pressure. proteolytic enzyme induces chemical action cleavage of vasoconstrict orogen into angiotensin (Ang)-I, that is then born-again into Ang-II by ACE1. The action of ACE1 induces constriction and inflammation whereas ACE2 acts as a counter-regulator of the RAS. ACE2 induces vasodilatation Associate in Nursing has a medication impact, by changing the pro-inflammatory Ang-II into Ang-1-7 that opposes the actions of Ang-II. ACE2 is expressed in human tissues like the little viscus, testis, kidneys, heart, thyroid, lungs and brain

#### I. Sleep Pattern in Pandemic

Sleep disturbances have affected a considerable proportion of the overall population throughout the COVID-19 pandemic internment. This square measure considerably related to a self-assessed impact on mental state however can also be associated with suspected COVID-19 standing, changes in habits and self-isolation.

The pandemic internment had a serious impact on the population. Most respondents represented Associate in Nursing altered sleep pattern and nearly half the studied population felt sleepier than before the internment. according to issues enclosed dozing off accidentally within the day, discontinuous sleep, difficulties falling/staying asleep and later bedtimes. Over 1 / 4 of all respondents according Associate in Nursing multiplied alcohol intake throughout the internment. moreover, those self-isolating according to additional insomnia/disrupted sleep, daytime symptoms, abnormal behaviours in sleep and symptoms of restless legs syndrome compared to those not self-isolating. Keyworkers according to fewer sleep alterations than others. In those with suspected COVID-19, nightmares and abnormal sleep rhythm were additional common. An according impact on mental state was most powerfully related to additional difficulties falling asleep, sleep disruption, nightmares and daytime somnolence. An amendment in sleep pattern was related to medication use, current COVID-19 symptoms and mental state impact, and it had been negatively related to age, male gender and general health(14).

#### J. Stress-Related Fatigue in Pandemic

The chronic stress of living through the uncertainty of an epidemic will result in several physical symptoms, together with persistent headaches, memory lapses, and biological process issues. Stress-related fatigue is another common facet impact(15). The defines fatigue as “a nearly constant state of tiredness that develops over time and reduces your energy, motivation and concentration.”

Even if you receive Associate in Nursing adequate quantity of sleep in the dark, fatigue will still leave you feeling tired and unprovoked within the morning

## II. CONCLUSION

After the outbreak of covid-19 (pandemic) most of the countries are suffering for medical services but also economic crisis. Most countries are now partly shut down or we can say lockdown is there to stop the infection of covid 19. As travel regulation have been altered so humans are facing unprecedented regime which has change their health data but also daily lifestyle, it is important to know the pathophysiology of covid19 and how immune response to the pathogen affects the disease as recovery rate is high in India but still there are many people who lost there live in this pandemic. Although immunity level is important to fight this virus, many people are also facing life-style problems in this time starting from obesity to mental health which is great concern because of AC2 expression which is normally high in obese people.

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