

Physical and Mental Health Status of Young Adults in 30 Days of Lockdown Due to COVID-19

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ABSTRACT

Background: An outbreak of corona virus covid-19 disease caused by severe acute respiratory syndrome corona virus 2 (SARAS-COV-2) first occurred in China, and then gradually spread worldwide. This disease is proven to be spread more rapidly through human to human transmission via respiratory droplet produced by the infected person while sneezing or coughing. So to control this outbreak government verdict a LOCKDOWN. This outbreak is leading to additional health problems such as anxiety, depression, insomnia, and fear while sedentary lifestyle lead to obesity and major problems concerning the potential deleterious effects of physical inactivity.

Objective: To conduct a survey which determines physical and mental health status of young adults while lockdown due to covid-19, where it is mandatory that all participants must remain at home in same environment for 30 days.

Method: The study design is questionnaire survey, Google forms were created and shared through social media, 330 participants have submitted their responses. To assess physical health “General practice physical activity questionnaire” and for mental health “Kessler psychological distress scale (K10)” was used, the responses were observed, recorded and analysed.

Results: Present study determines that in physical health 44.5% respondents are moderately inactive in household work and gardening, for mental health 34% people are having depression and anxiety and here 31.5% of total population are students and others have various occupations.

Conclusion: Physical health is decreased because of sedentary life style and mental health shows mild depression because of lockdown due to covid-19.

Keywords: Covid-19, physical and mental health.

INTRODUCTION

The Corona virus (COVID-19) was introduced in December 2019 in China (Wuhan) and the infection has spread throughout the world despite strategies adopted by the government to stop this epidemiological phenomenon. In three months Covid-19 has become a worldwide pandemic, some of the population is at higher risk for Covid-19 infection which are those with hypertension, diabetes or cardiovascular disease risk factors and patients with respiratory diseases or conditions. [1,2,3,5,6,7]

In such circumstances quarantine is the best option to stop the rapid spread of infections, this may have collateral effects on other dimensions of the isolated patient's health, and especially in those mentioned as being at higher risk. Initiating a sudden quarantine state implies a radical change in the lifestyle of the population. [2,3,5]

The lifestyles and behaviors in many cases include a certain level of physical activity and exercise to maintain an adequate health status, to counteract the negative consequences of certain diseases such as diabetes, hypertension, CVD,

respiratory disease or dementia, as associated diseases in older people. [4,5,6]

Moreover, the psychological impact of quarantine has been recently reviewed and negative psychological effects, including post-traumatic stress symptoms, confusion, insomnia, fear and anger has been reported. The stress included longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma. A paper in BMJ designed a COVID-19 Peritraumatic distress Index to assess the distress level of people during Covid-19 outbreak. These papers were critical because across the world people who did not carry the virus also had their work and life disrupted to varying degrees because of worldwide pandemic. [1,2,6,13]

Physical activities and exercise have shown to be an effective therapy for most of the chronic diseases with direct effects on both mental and physical health. In fact exercise has been considered the real stress reliever on epidemiological evidence of its preventive or therapeutic benefits and considering the main biological mediators involvement in young adults. It helps in management of diabetes mellitus, cardiovascular conditions, hyperthyroidism etc. Special attention is deserved for the elderly population group whereas, physical activity and exercise gives benefits on many diseases but also has additional effects on hallmarks of aging and associated diseases. [4,6,8]

So exercise shows positive effects and helps to recover decline of self-esteem. Therefore change in the lifestyle of people during quarantine happened but to maintain an active lifestyle at home is very important for the health of the overall population especially, for those with additional risk factors. [1,4,5,6]

Although outdoor activities are typically less available but still many possibilities for exercising at home during a quarantine can be there by getting inspiration from the slogan like “doing some exercise is better than doing nothing at all”

however, a more precise prescription and recommendation are needed to guarantee an appropriate exercise program aimed to maintain or improve the health related physical fitness components. [5,7,8]

Briefly, the reason to promote physical activity and exercise for improving physical fitness components is that they are directly related with the physiological functions of the main organ systems (respiratory, circulatory, muscular, nervous and skeletal systems) and indirectly implicated in the appropriate functioning of other systems (endocrine, digestive, immune or renal systems). Physical activity or exercise has become very much essential for people during quarantine to maintain physiological function and for reserving their organ systems which could contribute to the fight against the mental and physical consequences and severity of Covid-19. [4,6]

The restrictive measures of COVID-19 also caused major disruption to people's work. By the time of our survey it was total lockdown so universities and colleges were closed because of which students had to stay home and some people lost their respective jobs or stopped working and others were working at home. So in covid-19 situation assessing physical and mental health status of young adults in the lockdown period was very important.

METHOD

We conducted a questionnaire survey of one month into the COVID19 outbreak on MAY, 2020 All the participants were young adults not infected by the virus epidemiologically but they lived in locations that were affected by COVID-19 to varying degrees.

Thus Google form questionnaire was prepared and shared via various social media sites such as WhatsApp, Instagram, e-mail, Facebook etc, in groups or on individual basis in young adults to assess the physical and mental health status of people after completion of 30 days of lockdown. All respondents willingly participated in the study, from age 18-35.

We reached 445 young adults, and 330 of them answered the survey appropriately, with a response rate of 74.1%. The participants were not involved in the design, conduct or dissemination plans of this research.

We measured physical health with the help of “General practice physical activity questionnaire” (GPPAQ) [11] to assess the level of physical activity stated in inactive, moderately inactive, moderately active, and active criteria and We measured mental health by the ten-item “Kessler psychological distress scale” (K10), [12] the responses were observed, recorded and analysed. Participants also provided their socio-demographic characteristics, such as name, age, gender, using Google forms we collected all the responses and created an excel data sheet of responses.

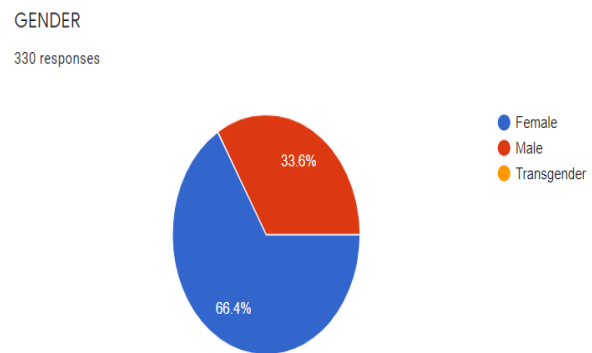
Because COVID-19 is more dangerous for people with co-morbidity, it is likely that people who have ongoing medical issues would suffer more during this outbreak and therefore we asked whether the participants had any chronic disease. On the other side, people who lead a healthy lifestyle and exercise often would be expected to far better during the outbreak. [5]

All individuals reported their work status and physical activities which they do on daily basis which was notified in hours, and their walking pace was recorded. We reported the descriptive statistics of the

study variables and the regression models to examine the relationships. The data was recorded, analyzed, and calculation was done by Microsoft Excel-2016.

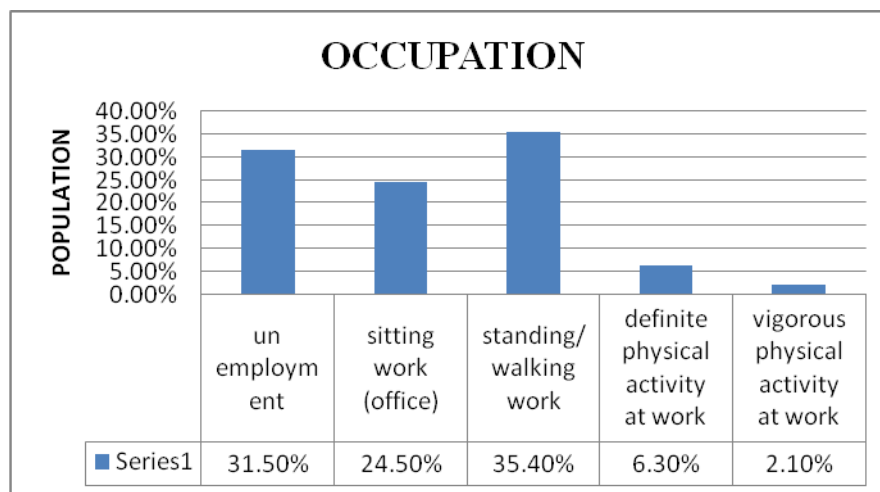
RESULTS

The result shows the descriptive characteristic of the study, from 330 responses 66.4% were female and 33.6% are male.(chart-1)



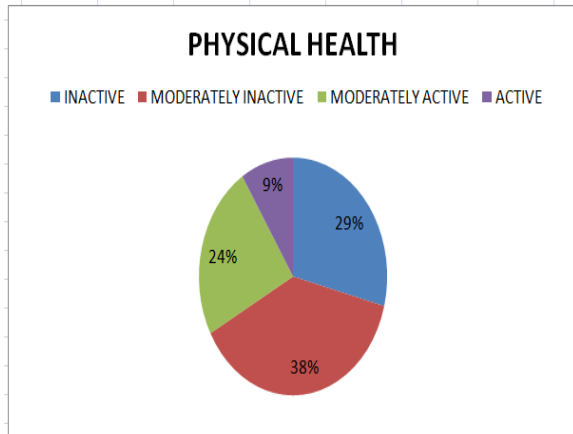
(Chart-1: Gender distribution of the respondents)

Result of General Practice Physical Activity Questionnaire for physical health the data shows that the occupation have 31.5% of student population which are unemployed, other 68.4% people are employed from which 24.5% have office work sitting job, 35% have standing or walking work at their respective job, 6.3% have definite physical activity at work place and 2.1% people have vigorous physical activity occupation.(chart-2)



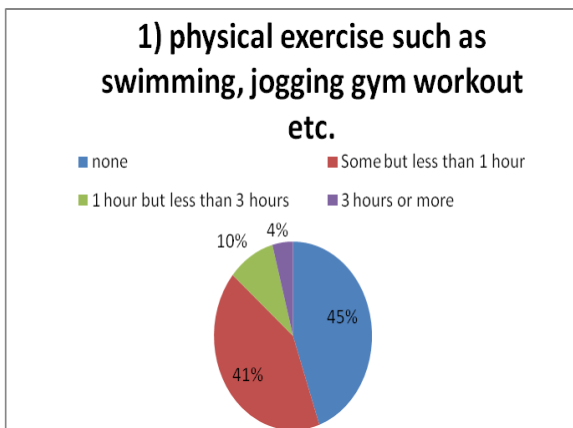
(Chart-2: occupation of respondents)

For physical health, 29% are inactive, 38% people are moderately inactive, 24% are moderately active and 9% are active in the chart of physical activity.(chart-3)



(chart-3: Physical health status of young adults)

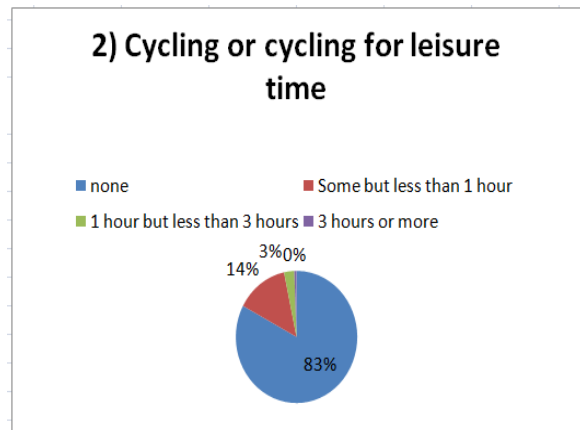
On basis of 5 different components of physical activity (chart-4 to chart-8) we have determined the physical health status of population where, general practice physical activity questionnaire has played main role, in which questions about sports activity, cycling, gardening, walking, house hold activities have been asked and from the response we can calculate the physical health status of the respondents.



(chart-4: physical exercise such as swimming, jogging, gym workout etc. of respondents)

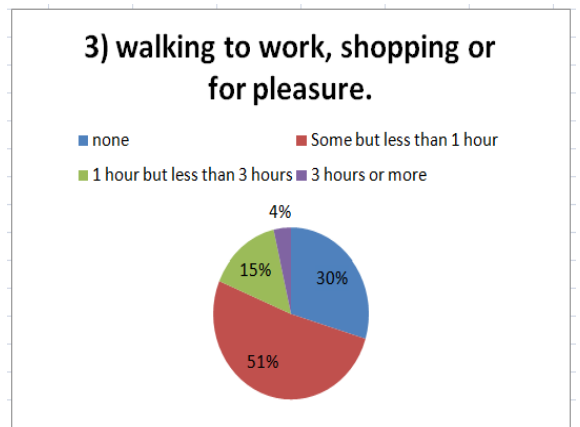
For physical activity including exercises like swimming, jogging, aerobics, football, tennis, gym workout etc. 45% people are inactive, 41% people are moderately

inactive, 10% are moderately active and 4.2% people are active.(chart-4)

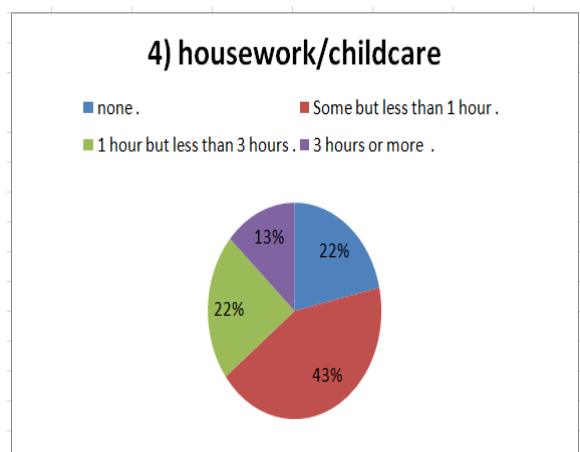


(chart-5: cycling or cycling for leisure time activity of respondent)

And another physical activity include Cycling, where cycling to work and during leisure time, 82.7% people are inactive, 13.9% are moderately inactive, 2.7% are moderately active, 0.6% are active.(chart-5)



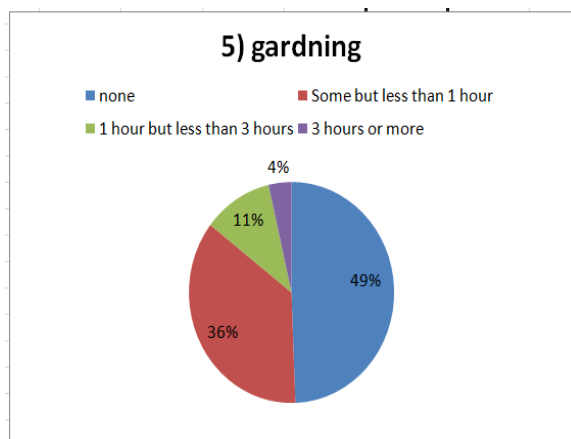
(chart-6: walking to work, shopping or for pleasure activity of respondents)



(chart-7: housework/childcare activity of respondents)

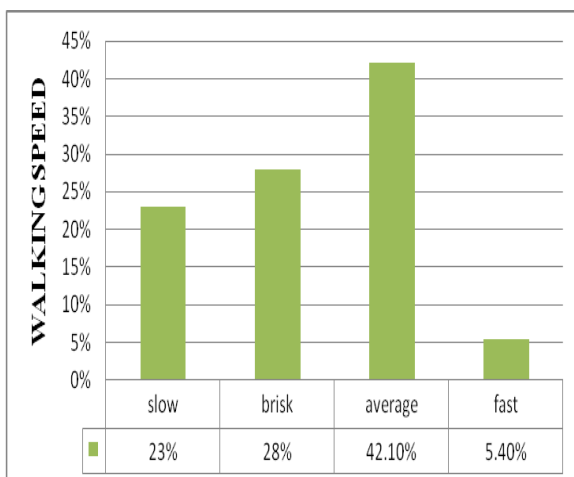
Physical activity such as Walking, including walking to work, shopping, for pleasure have 30% people inactive, 51% are moderately inactive, 15% are moderately active, 4% are active.(chart-6)

In lockdown staying at home physical activity such as Housework or Childcare have 22% people inactive, 43% people moderately inactive, 22% are moderately active and 13% people are active at home.(chart-7)



(chart-8: gardening activity of respondents)

Lastly for physical activities such as gardening or DIY (do it yourself) work 49% people are inactive, 36% are moderately inactive, 11% are moderately active and 4% people are active.(chart-8)



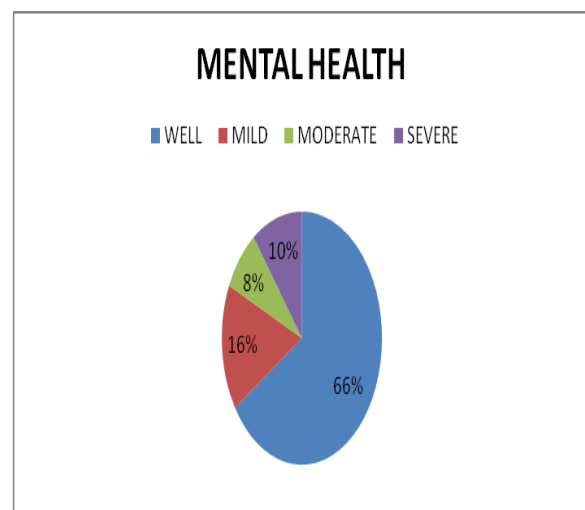
(chart-9: walking speed of the respondents)

Result also include description about walking pace of an individual in which out of 330 respondents, 23% people have slow walking pace, 28% have brisk walking pace,

42.1% are having average walking pace and 5.4% are walking fast.(chart-9)

For mental health Kessler Psychological Distress Scale (K10) was used in which 10-item questionnaire intended to yield the global measure of distress based on questions about anxiety and depressive symptoms that a person has experienced in the most recent 4 week period of lockdown were analyzed.

Where results shows that 66% people are well, 16% of population is having mild depression, 8% population is having moderate depression and 10% population is having severe depression. (chart-10)



(chart-10: Mental health of the young adults)

DISCUSSION

In this study the analysis of young adults physical and mental health is been analyzed during period of lockdown which happened because of the worldwide spread of the SARS-CoV-2 infection in which the Indian Government applied the containment measures. Indian Prime Minister verdicted total lockdown on March, 2020 in which absolute restriction to get out of their home, except to make essential work or activities. Quarantine has upset the normality of the daily life, forcing population to do social distancing and self-isolation. And restriction on sport-related activities, including walking, cycling, gyming and running outside. Thus, home workout remained is

the only possibility to play sports and stay active during Covid-19 pandemic. [3,5]

According to the WHO young adults should do 150 minutes of moderate-intensity physical activity throughout the week or they can do 75 minutes of vigorous-intensity physical activity. And for further health benefits young adults should do 300 minutes of moderate-intensity physical activity per week, in this muscle strengthening activities should be done involving major muscle group for 2 days in a week. [1,9]

And due to acute cessation of physical activity deterioration in physical health took place, which happened after abrupt establishment of quarantines. Sudden exercise cessation has been associated with rapid onset of insulin resistance in muscle tissue with decreased muscle glucose utilization, with consequent muscle atrophy. It is also established that many beneficial metabolic and cardiovascular adaptations in response to physical exercise can be lost with two weeks of physical inactivity, impairing aerobic capacity or increasing blood pressure also takes place. The reduced energy consumption by unused muscles leads to reallocation of metabolic substrates to the liver, where production of atherogenic lipoproteins is takes place, thus obesity and lipids accumulation within the blood vessels, accelerating atherosclerotic disease. Importantly, abrupt cessation of physical activity may also lead to decreased venous return and reduced coronary perfusion, which can predispose individuals to collapse upon resuming exercise. And the resting heart rate has been shown to rapidly increase after acute cessation of physical activity, which may further lead to the risk of cardiovascular events and mortality. [1,4,5]

During quarantine, staying active and maintaining a physical exercise routine will be essential for mental and physical health. As physical inactivity could lead to lethargic lifestyle and create mental health disruption, according to previous studies there is history of Korean MERS-CoV outbreak in 2015, patients were treated with

hemodialysis in an isolated environment. where Patients reported decreased values in their hematocrit, calcium and phosphorus levels after 2 weeks of isolation. Also, the levels of circulating cell-free genomic DNA (ccf-gDNA) and circulating cell-free mitochondria DNA (ccf-mtDNA), which are indicators of psychophysical stress in humans, have shown a significant delay in their normalization during the hemodialysis among patients. This implies that medical isolation during the Korean MERS outbreak has caused high level of stress in patients. Thus current covid-19 situation of isolation leads to the mental health problems such as stress, anxiety, depressive symptoms, insomnia, refutation, anger and fear. [14] These mental health problems can affect attention, understanding and decision-making capacity of individuals, which could hinder the fight against COVID-19 and they could also have a lasting effect on their overall well-being and young adults. [15]

The subjects who had direct contact via phone text messages and used social media for critical updates during the lockdown were exposed to more conflicting information and stress. Also, acute stress was reported by heavy social media users. This report highlights the importance of releasing substantive official updates at regular intervals during a crisis event and monitoring social media to reduce exposure to misleading information and distress. [16]

In fact, fear of the unknown leads to higher anxiety level in both healthy people and those with pre-existing mental health problems and anxiety of death was also noted, unjustified public fear may lead to differentiation, branding and scapegoats. [17]

People's emotional responses are likely to include extreme and negative social behaviors with perceptions of risk. so, special efforts should be made for taking care of vulnerable populations, including (1) infected and sick patients, their families and colleagues, (2) individuals and their relationships with the community, (3) individuals with preexisting medical conditions (both physical and/or mental), (4)

health care provider, who work directly with sick or quarantined people. Finally, the degree of psychological stress that health professionals and others might face and the risks of vulnerable populations should be considered in the decision making of the crisis. [2]

Generally, it is individual's own choice to perform physical activity, but due to spread of covid-19, Gyms, stadiums, swimming pools, dance and fitness studios, physiotherapy centers, gardens and playgrounds were closed, where people have to find alternative way of exercise. [5]

Previous studies have shown the impact of physical activity on psychological health during Covid-19 pandemic. The benefits of exercise are proven to be helpful, especially at times of anxiety, crisis and fear. Thus lack of regular sporting or exercise routines resulted in challenges to the immune system, physical health, including the commencement of exacerbating existing diseases that have their roots in a sedentary lifestyle. [4,5,8,10]

The limitations of this study was that sample size was less, level of accuracy while filling the form could be affected by external environment due to covid-19. However, GPPAQ questionnaires may supply a reliable approximation of physical activity at a population level, and its validity has been confirmed in different studies while, k10 questionnaire is widely used for obtaining mental health status of any population for clinical purpose as well as research purpose.

CONCLUSION

In conclusion, our results have shown that lockdown in India due to covid-19 had a significant decrease of total physical activity and energy expenditure in young adults as a result of sedentary lifestyle and because of lockdown the psychological well-being is also hampered. So, on basis of which we can conclude that maximum people are having moderately inactive physical health status and half of the population is having symptoms of

depression with anxiety, fear and stress as a result of mental health status. Thus we conclude that the physical and mental health status of young adults is hampered in the lockdown because of covid-19 disease outbreak.

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