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# Impact of Covid-19 on Lifestyle Related Behaviour-A Cross-Sectional Study on Population Residing at Urban Field Practice Area, Mysore, Karnataka

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***Abstract***

*The Coronavirus disease has spread widely and infected several people. Given the severity of the illness, a nationwide lockdown was imposed to stop the spread of Covid-19. All these constraints may have had an impact on eating habits, sleep status, physical activity, and stress, resulting in a worsening lifestyle among the people. The study aims to assess the impact of Covid-19 on lifestyle-related behaviour and the factors influencing changes in lifestyle behaviour among the population. A cross-sectional survey of the 380 participants using simple random sampling was conducted in the urban field practice area, Mysuru, Karnataka, using a validated questionnaire. The data were entered into MS Excel, followed by analysis using SPSS version 26. The results for the Covid-19 before and after lifestyle scores were analyzed, and values were subtracted to provide the mean difference scores for each item. Using the paired t-test or Wilcoxon test, the differences in continuous variables between the two groups were evaluated. The criterion for statistical significance was fixed at $p < 0.05$. In this study, general eating behaviour (44.7% vs. 65.7% significantly improved, physical activity (32.3% vs. 3.4%) declined, stress (29.2% vs. 47.8%) and screen time (27.8% vs. 60.2%) increased. Behaviours such as smoking (7.3% vs. 3.1%) and alcohol consumption (37.6% vs. 16.3%) decreased, whereas approximately half of the study participants gained weight (43.6 %). This study will serve as a solid basis for creating recommendations for suitable lifestyle modifications at this time.*

***Keywords:*** *Covid-19 pandemic, Eating habits, Lifestyle behaviour, Physical Activity, Stress.*

## Introduction

Coronavirus disease 2019, also abbreviated as Covid-19, is a contagious disease. Fever, coughing, headaches, fatigue, breathing difficulties, and a diminution of flavor and odor are typical symptoms of Covid-19 [1].

In December 2019, the Wuhan area of China announced the first instance of the new coronavirus (Covid-19). Within a month, the virus had spread widely and infected several people. Since then, the number of Covid-19 patients in India's various states has significantly increased. As of March 31, 2022, WHO reported, 486,761,597 confirmed cases of Covid-19 worldwide, 43,025,775 confirmed instances, and 521,181 deaths of Covid-19 in India [2] with 39.5L total positive cases in Karnataka. There have been 2,558 deaths and 2,29,457 positive cases overall in the district of Mysuru [3].

As a result of the illness's severity, India imposed a 21-day nationwide lockdown from March 25 to April 14, 2020, to limit the spread of Covid-19. Governmental regulations and public health guidelines were imposed

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lockdowns and limitations in response to the Covid-19 outbreak. As a result of all these restrictions, they may have affected their diet patterns, sleep patterns, physical activity, and stress levels among the people. Investigating essential issues, which lifestyle behaviours were most impacted, how much of an influence Covid-19 has on all these behaviours, and what factors are most strongly impacted by these changes is crucial. A study was conducted to evaluate the overall effect of Covid-19 on alterations in lifestyle that people underwent throughout the pandemic while taking these concerns into account [4]. The study aims to assess the impact of the Covid-19 pandemic on lifestyle-related behaviour and to assess the factors influencing changes in lifestyle behaviour among the population residing in the urban field practice area, Mysuru.

## Methods

### Study Area

This survey was conducted in the Urban field practice area, Mysuru, Karnataka. Mysuru district is in the southern part of the state of Karnataka, India, and covers an area of 6,307 square kilometers. As per the 2011 Census, the population of Mysuru is 30,0127 people, with a density of population of 476 people per square kilometer.

### Study Population and Target Sample Size

A cross-sectional study was conducted with a simple random sampling technique, and the study population was those above 18 years of age, people not affected with Covid-19 (at the time of survey) and people residing more than a year at practice area; exclusion criteria were individuals who refuse to participate and non-co-operative people.

The sample size was estimated considering the prevalence of eating behavior as high as 49.7% with an absolute precision of 5% and confidence interval (CI) of 95% (32), a minimum sample of 380 subjects was studied.

### Study Instrument

The questionnaire for the research was developed from a study with a relevant research issue [5]. Three portions of the questionnaire are used to assess socio-demographic information, alterations in the style of life behaviour, and the Covid-19 causes of these changes. Age, gender, employment, self-reported anthropometric information, as well as a shift in body weight during Covid-19, are all covered in Section A. There are two parts of 20 questions each in Section B. Part A (A1 to A20) evaluates baseline lifestyle-related behaviours preceding to the pandemic, and Part B (B1 to B20) evaluates changes in different lifestyle-related behaviours during the pandemic, such as food habits, physical activity levels, and sleep patterns. Five answer categories, including not frequently, once to twice each week, thrice to four times per week, fifth to six times per week, and virtually daily, are used to categorise other eating behaviours.

The reactions are rated from 1 to 5, with 5 being the most appropriate behaviour (least acceptable behaviour). Section C has six questions (C1 to C6) that evaluate the unique Covid-19 causes of behaviour changes connected to lifestyle.

### Data Collection and Analysis

The data for this survey was collected from November 2021 to April 2022. In-person interviews and the Google Form web-based survey platform was used to collect data. To study group members, friends, and other connections, a typical study invitation text and a link to the internet questionnaire were issued through email and WhatsApp.

An online poll was created to evaluate changes in either a variety of lifestyle-related behaviours such as eating, exercising, sleeping and other actions that have a bearing on one ‘s health. The data was input into MS Excel, and then SPSS version 26 was used for analysis (licensed to JSSAHER).

The features of the population, such as age, gender etc. are represented using Arithmetic Mean, Standard Deviation, and Percentages. After comparing the Covid-19 lifestyle ratings obtained before and after, to get the mean scores for each item, these values were subtracted. Using the paired t-test or Wilcoxon test, two groups 'variations in continuous data were assessed. The criterion for statistical significance was fixed at $p < 0.05$.

## Ethical Consideration

This study has been approved by the JSS Institutional Ethical Committee, Mysore. Only responders with consent signatures were permitted to complete the questionnaires confidentially.

# Results

## Socio Demographic Characteristics

Table 1 displays the demographic profile of the 380 people who were included in the study. The mean age of study participants is 35.8. Table 1 demonstrates that the sample has a somewhat higher percentage of males 202 (53.1) and females 178 (46.8). The self-reported average body mass index (BMI) was 63.1±9.13 kg/m$^2$. Among 380 participants during the Covid-19 pandemic, 166 (43.6%) of the subjects reported weight gain, and 72 (18.9) of the respondents reported the loss of weight.

**Table 1**. Socio-demographic Characteristics of Study Participants

| **Characteristics** | **Value** |
|---|---|
| **Age (year)** | 35.8 |
| 18-35 | 212 (55.7) |
| 36-55 | 131 (34.4) |
| 56-84 | 37 (9.73) |
| **Gender** | |
| Male | 202 (53.1) |
| Female | 178 (46.8) |
| **Occupation** | |
| Employed | 137 (36) |
| Self employed | 100 (6.3) |
| Home maker | 63 (16) |
| Student | 65 (17) |
| Retired | 15 (3.9) |
| **Anthropometric parameters** | |
| Self-reported BMI | |
| Weight gain during Covid -19 | 166 (43.6) |
| Stable weight during Covid -19 | 138 (36.3) |
| Weight loss during Covid -19 | 72 (18.9) |

The mean, number (frequency%) are used to present values

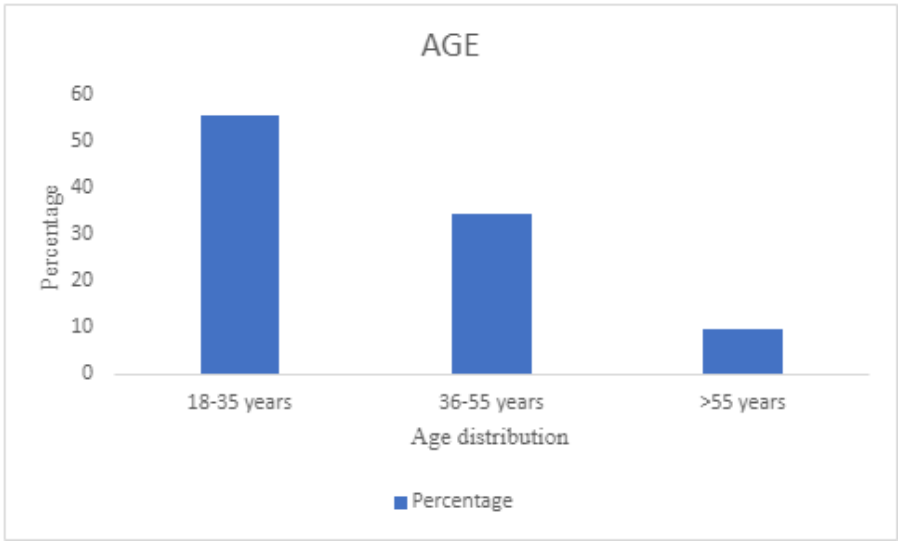


**Figure 1:** Age-wise Distribution of Study Participants

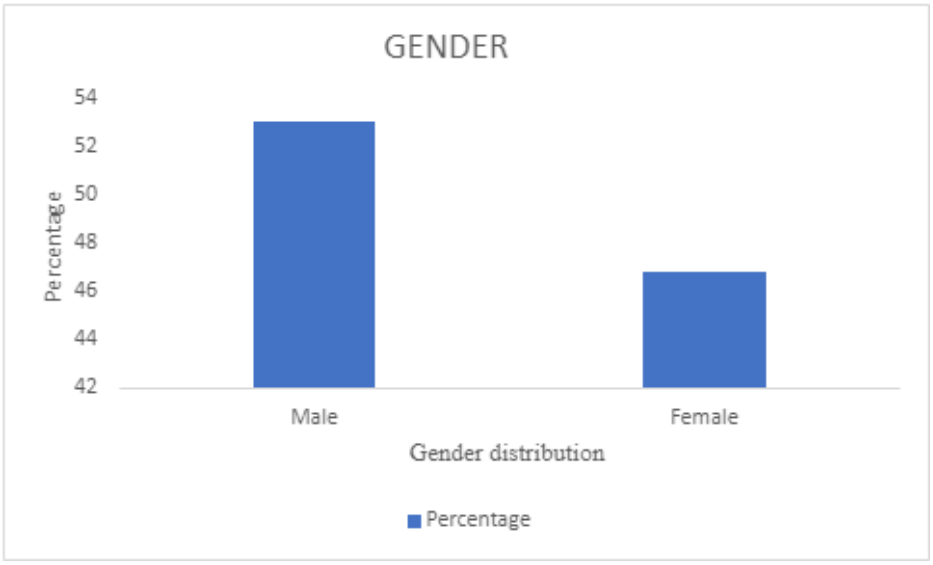


**Figure 2:** Gender Wise Distribution of Study Participant

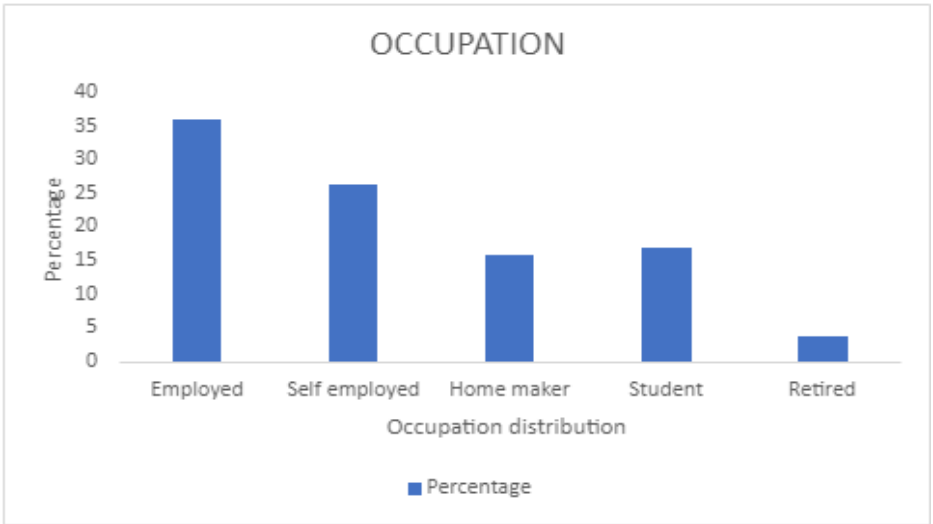


**Figure 3:** Distribution of Study Participants Based on Occupation

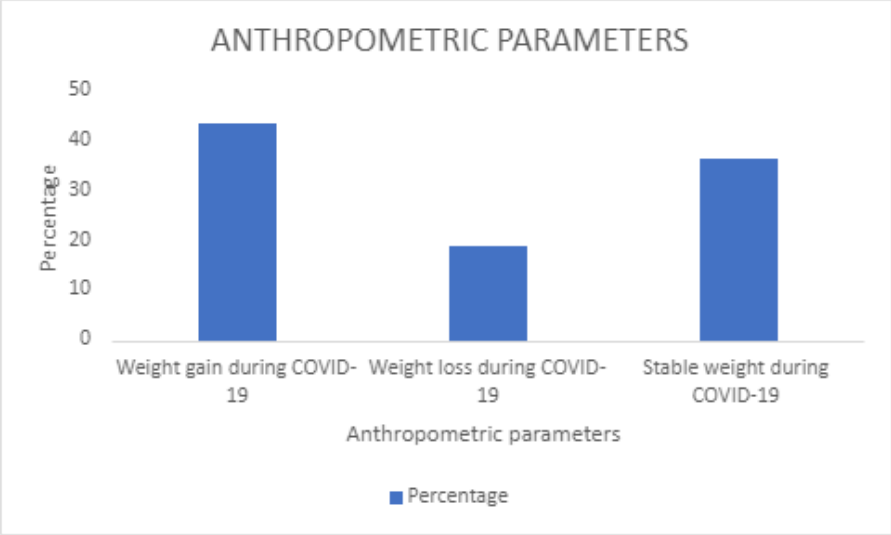


**Figure 4:** Anthropometric Participants among Study Participants during Covid-19 Pandemic

## Frequency of Participants Responses

Table 2 shows the responses for the different items used to compare lifestyle-related behaviour prior to and during Covid-19. Consuming meals daily at periodic intervals (44.7% vs. 65.7%), intake of nutritious foods such as fruits and vegetables (44.7% vs. 65.7%), daily consumption of pulses, eggs, and meat (8.42% vs. 13.7%) increased. Daily consumption of milk or its product increased (38.6% vs. 60%). In the physical activity category, exercises of intermediate aerobic intensity in three to four times a week participation (32.3% vs. 3.4%) and daily involvement in leisure-related activities (8.9% vs. 6.5%) decreased. Sleep quality (68.4% vs. 26.3%), smoking four to six cigarettes per day (7.3% vs. 3.1%), and consumption of alcohol on special occasions (37.6% vs. 16.3%) decreased.

**Table 2.** Frequency and Percentage on Lifestyle Behaviour of Study Respondents before and during Covid-19

| | **Lifestyle behaviour** | **Before Covid -19** | **During Covid -19** |
|---|---|---|---|
| 1. | **Consumption of Regular Meal Pattern** | | |
| | Not routinely | 3 (0.78) | 3 (0.78) |
| | One to two times a week | 1 (0.26) | 3 (0.78) |
| | Three to four times a week | 68 (17.8) | 4 (1.05) |
| | Five to six times a week | 138 (36.3) | 120 (31.5) |
| | Almost daily | 170 (44.7) | 250 (65.7) |
| 2. | **Consumption of Fast Food** | | |
| | Not routinely | 130 (34.2) | 178 (46.8) |
| | One to two times a week | 214 (56.3) | 123 (32.3) |
| | Three to four times a week | 23 (6.05) | 69 (18.1) |
| | Five to six times a week | 7 (1.84) | 7 (1.84) |
| | Almost daily | 6 (1.57) | 7 (1.84) |
| 3. | **Frequency of Your Fruits and Vegetables Intake** | | |
| | Not routinely | 13 (3.42) | 22 (5.78) |
| | One to two times a week | 19 (5) | 19 (5) |
| | Three to four times a week | 47 (12.3) | 66 (17.3) |

| | | | |
|---|---|---|---|
| | Five to six times a week | 101 (26.5) | 35 (9.21) |
| | Almost daily | 100 (26.3) | 238 (62.6) |
| 4. | **Consumption of Milk or Its Products** | | |
| | Not routinely | 23 (6.05) | 18 (4.73) |
| | One to two times a week | 17 (4.47) | 9 (2.36) |
| | Three to four times a week | 145 (38.1) | 6 (1.57) |
| | Five to six times a week | 48 (12.6) | 119 (31.3) |
| | Almost daily | 147 (38.6) | 228 (60) |
| 5. | **Consumption of Pulses, Egg or Meat** | | |
| | Not routinely | 32 (8.42) | 56 (14.7) |
| | One to two times a week | 237 (62.3) | 94 (24.7) |
| | Three to four times a week | 71 (18.6) | 48 (12.6) |
| | Five to six times a week | 9 (2.36) | 159 (41.8) |
| | Almost daily | 31 (8.15) | 23 (6.05) |
| 6. | **Consumption of Sugar** | | |
| | Zero teaspoons per day | 20 (5.26) | 19(5) |
| | One to two teaspoons per day | 148 (38.9) | 253 (66.5) |
| | Three to four teaspoons per day | 205 (53.9) | 95 (25) |
| | Five to six times teaspoons per day | 7 (1.84) | 13 (3.42) |
| 7. | **Consumption of Sugar Sweetened Beverages** | | |
| | Not routinely | 169 (44.4) | 171 (45) |
| | One to two times a week | 100 (26.3) | 200 (52.6) |
| | Three to four times a week | 108 (28.4) | 8 (2.10) |
| | Five to six times a week | 1 (0.26) | 0 |
| | Almost Daily | 2 (0.52) | 1 (0.26) |
| 8. | **Consumption of Foods with High Sugar** | | |
| | Not routinely | 151 (39.7) | 152 (40) |
| | One to two times a week | 104 (27.3) | 201 (52.8) |
| | Three to four times a week | 116 (30.5) | 19 (5) |
| | Five to six times a week | 5 (1.3) | 4 (1.05) |
| | Almost Daily | 4 (1.05) | 4 (1.05) |
| 9. | **Emotional Eating** | | |
| | Not routinely | 153 (40.2) | 205 (53.9) |
| | One to two times a week | 119 (31.3) | 102 (26.8) |
| | Three to four times a week | 104 (27.3) | 69 (18.1) |
| | Five to six times a week | 1 (0.26) | 0 |
| | Almost Daily | 3 (0.78) | 4 (1.05) |
| 10. | **Participation in Moderate Intensity Aerobic Exercises** | | |
| | Not routinely | 150 (39.4) | 231 (60.7) |
| | One to two times a week | 39 (10.2) | 72 (18.9) |
| | Three to four times a week | 123 (32.3) | 13 (3.4) |
| | Five to six times a week | 9 (2.3) | 6 (1.5) |
| | Almost Daily | 59 (15.5) | 58 (15.2) |
| 11. | **Participation in Household Chores** | | |

| | | | |
|---|---|---|---|
| | Not routinely | 78 (20.5) | 34 (8.9) |
| | One to two times a week | 24 (6.3) | 27 (7.1) |
| | Three to four times a week | 160 (42.1) | 25 (6.5) |
| | Five to six times a week | 21 (5.5) | 67 (17.6) |
| | Almost Daily | 97 (25.5) | 227 (59.7) |
| 12. | **Participation in Leisure Related Activities** | | |
| | Not routinely | 55(14.4) | 74 (19.4) |
| | One to two times a week | 134 (35.2) | 195 (51.3) |
| | Three to four times a week | 133 (35) | 20 (5.2) |
| | Five to six times a week | 24 (6.3) | 66 (17.3) |
| | Almost Daily | 34 (8.9) | 25 (6.5) |
| 13. | **Daily Sitting Time at Work** | | |
| | <2 hours | 53 (13.9) | 45 (11.8) |
| | 2-4 hours | 163 (42.8) | 70 (18.4) |
| | 4-6 hours | 97 (25.5) | 70 (18.4) |
| | 6-8 hours | 44 (11.5) | 166 (43.6) |
| | >8 hours | 23 (6.05) | 29 (7.6) |
| 14. | **Daily Screen Time** | | |
| | 2-4 hours | 25 (6.5) | 2 (3.15) |
| | 4-6 hours | 249 (65.5) | 139 (36.5) |
| | >6 hours | 106 (27.8) | 229 (60.2) |
| 15. | **Daily Hours of Sleep** | | |
| | <6 hours | 82 (21.5) | 10 (2.63) |
| | 6-8 hours | 286 (75.2) | 162 (42.6) |
| | >8 hours | 12 (3.15) | 209 (55) |
| 16. | **Quality of Sleep** | | |
| | Excellent | 4 (1.05) | 15 (3.94) |
| | Very good | 97 (25.5) | 71 (18.6) |
| | Good | 260 (68.4) | 100 (26.3) |
| | Bad | 18 (4.7) | 180 (47.3) |
| | Very bad | 1 (0.26) | 14 (3.6) |
| 17. | **Level of Stress or Anxiety** | | |
| | Not at all | 47 (12.3) | 47 (12.3) |
| | A little | 218 (57.3) | 97 (25.5) |
| | Much | 111 (29.2) | 182 (47.8) |
| | Very much | 3 (0.78) | 51 (13.4) |
| | Extremely | 1 (0.26) | 3 (0.78) |
| 18. | **Smoking** | | |
| | No | 253 (66.5) | 265 (69.7) |
| | Yes, 1-3 cigarettes per day | 91 (23.9) | 96 (25.2) |
| | Yes, 4-6 cigarettes per day | 28 (7.36) | 12 (3.15) |
| | Yes, 7-9 cigarettes per day | 5 (1.31) | 2 (0.52) |
| | Yes, >10 cigarettes per day | 3 (0.78) | 5 (1.31) |
| 19. | **Alcohol Consumption** | | |

| | | | |
|---|---|---|---|
| | No | 209 (55) | 312 (82.1) |
| | Yes, on special occasions | 143 (37.6) | 62 (16.3) |
| | Yes, on weekends | 24 (6.31) | 4 (1.05) |
| | Yes, more than once in a week | 1 (0.26) | 0 |
| | Yes, almost daily | 3 (0.78) | 2 (0.52) |
| 20. | **Social Support** | | |
| | Always (more than 90% times) | 143 (37.6) | 133 (35) |
| | Most of the times (approx. 75% times) | 120 (31.5) | 165 (43.4) |
| | Sometimes (approx. 50% times) | 124 (32.6) | 61 (16) |
| | Occasionally (approx. 25% times) | 20 (5.26) | 19 (5) |
| | Rarely (approx. 10% times) | 3 (0.78) | 2 (0.52) |

Frequency (%) of responses

## Before and during Covid-19 Mean Score Comparison

A comparison of lifestyle-related behaviour before and after Covid-19 mean scores are compared and illustrated in Table 3. There has been considerable enhancement in the intake of nutritious foods such as fruits and vegetables (-0.50 [1.21], P less than 0.001) along with pulses, eggs, and meat (-0.60 [1.21], P less than 0.001). During Covid-19, participants 'consumption of sugar (0.25 [0.67], P less than 0.001), high-sweet items (0.26 [0.87], P < 0.001), and beverages with added sugar (-0.28 [0.90], P less than 0.001) reduced drastically. Exercises of intermediate aerobic intensity saw a considerable drop in participation (0.52 [1.66], P < 0.001). At the same time, involvement in leisure-related activities is seen reduced (0.19 [1.49], P < 0.005). Participation in household activities increased (-1.02 [0.53)], P < 0.001). There has been a rise in screen usage (-0.68 [1.37], P less than 0.001). Whilst smoking (0.07 [0.42], P < 0.005) and consumption of alcohol (0.33 [0.57], P less than 0.001) considerably decreased during Covid-19. Social support for sustaining behaviours connected to wellness also improved (0.23 [0.70], P < 0.001).

**Table 3.** Comparison of Mean Scores of Lifestyles-Related Behavior Before and during Covid-19

| **SI. No** | **Question** | **Before Covid-19 score Mean (SD)** | **During Covid -19 score Mean (SD)** | **Change (Dur-Bef) Mean (SD)** | **P value** |
|---|---|---|---|---|---|
| 1. | Consumption of regular meal pattern | 4.24 (0.80) | 4.61 (0.63) | -0.36 (0.78) | <0.001***** |
| 2. | Consumption of fast food | 1.80 (0.76) | 1.78 (0.89) | 0.01 (1.15) | 0.756 |
| 3. | Frequency of your fruits and vegetables intake | 3.67 (1.02) | 4.18 (1.22) | -0.50 (1.21) | <0.001* |
| 4. | Consumption of milk or its products | 3.73 (1.19) | 4.39 (0.99) | -0.66 (1.02) | <0.001* |
| 5. | Consumption of pulses, egg or meat | 2.39 (0.97) | 3.00 (1.22) | -0.60 (1.21) | <0.001* |
| 6. | Consumption of sugar | 2.52 (0.62) | 2.27 (0.60) | 0.25 (0.67) | <0.001* |
| 7. | Consumption of sugar sweetened beverages | 1.86 (0.87) | 1.57 (0.56) | -0.28 (0.90) | <0.001* |

| | | | | | |
|---|---|---|---|---|---|
| 8. | Consumption of foods with high sugar | 1.97 (0.92) | 1.70 (0.70) | 0.26 (0.87) | <0.001* |
| 9. | Emotional Eating | 1.9 (0.86) | 1.67 (0.84) | 0.22 (1.25) | <0.05* |
| 10. | Participation in moderate intensity aerobic exercises | 2.44 (1.42) | 1.91 (1.44) | 0.52 (1.66) | <0.001* |
| 11. | Participation in household chores | 3.09 (1.39) | 4.12 (1.32) | -1.02 (0.53) | <0.001* |
| 12. | Participation in leisure related activities | 2.60 (1.09) | 2.40 (1.17) | 0.19 (1.49) | <0.05* |
| 13. | Daily sitting time at work | 2.53 (1.06) | 3.17 (1.17) | -0.63 (1.55) | <0.001* |
| 14. | Daily screen time | 2.49 (0.97) | 3.17 (1.03) | -0.68 (1.37) | <0.001* |
| 15. | Daily hours of sleep | 3.32 (1.23) | 3.37 (0.61) | -0.05 (1.50) | 0.453 |
| 16. | Quality of sleep | 2.77 (0.55) | 3.28 (0.94) | -0.50 (1.06) | <0.001* |
| 17. | Level of stress or anxiety | 2.19 (0.66) | 2.65 (0.89) | -0.45 (9.31) | <0.001* |
| 18. | Smoking | 1.45 (0.75) | 1.38 (0.70) | 0.07 (0.42) | <0.05* |
| 19. | Alcohol consumption | 1.54 (0.69) | 1.20 (0.49) | 0.33 (0.57) | <0.001* |
| 20. | Social support | 2.15 (0.93) | 1.92 (0.86) | 0.23 (0.70) | <0.001* |

*Significant value (p value less than 0.05)

## Factors Affecting Changes in Behaviour Connected to Lifestyle

The following tables outline the factors that contribute to changes in lifestyle-related behaviour. In Table 4. Around 237 (62.3%) of the participants said their eating habits had not changed, whereas the causes of those changes, when compared to well before Covid-19 times were documented, included more availability for cooking time 68 (17.8%), less eating out 58 (15.2%). It is given that some participants engaged in exercise through yoga 46 (12.1%), walking 149 (39.2%), and at-home workouts 47 (12.3%). Unfavorable alterations in physical activity levels were noted as a result of a lack of motivation 152 (40%), time constraints 52 (13.6%), for being healthy 25 (6.57%), and limited access to parks and public places 116 (30.5%). In addition, participants 'worries about their families 72 (18.9%), fear of contracting the coronavirus 96 (25.2%), frustration, boredom, loneliness 78 (20.5), confusion over Covid-19 and its prevention 8 (2.10%) and financial loss 60 (15.7%) which were the most often cited factors for negative alterations in anxiety and stress levels at the time of Covid-19 pandemic.

**Table 4.** Frequency and Percentage of Reasons for Changes in Lifestyle Related Behaviour

| **1.** | **Reasons for changes in dietary pattern in comparison to pre-Covid -19 times** | **Frequency (%) of responses** |
|---|---|---|
| | No change in eating pattern | 237 (62.3) |
| | Improved knowledge about nutrition | 2 (0.52) |
| | Lack of access to fresh fruits and vegetables | 2 (0.52) |
| | More available cooking time | 68 (17.8) |
| | Better family support | 5 (1.3) |
| | Less eating out | 58 (15.2) |
| | Stress and anxiety | 9 (2.36) |
| **2.** | **Reasons for changes in junk food/fast food consumption pattern in comparison to pre- Covid -19 times** | |

| | | |
|---|---|---|
| | No change | 53 (13.9) |
| | Fear of corona virus spread through food | 119 (31.3) |
| | Less eating out/socializing | 77 (20.2) |
| | Availability of cooking time | 10 (2.63) |
| | Preferring home cooked food | 108 (28.4) |
| | Stress and anxiety | 3 (0.78) |
| | Focus on eating healthy to build immunity | 10 (2.63) |
| **3.** | **In order to increase physical activity, activities been included** | |
| | At home aerobics | 13 (3.42) |
| | Yoga | 46 (12.1) |
| | At home workout videos | 47 (12.3) |
| | Gyming | 4 (1.05) |
| | Walks | 149 (39.2) |
| | At home dancing and stretching | 18 (4.73) |
| | Not doing activities | 103 (27.1) |
| **4.** | **Reasons for change in physical activity regime during Covid -19** | |
| | Lack of motivation | 152 (40) |
| | Lack of knowledge of exercises | 26 (6.84) |
| | Healthy well-being | 25 (6.57) |
| | Social restrictions to parks and public places | 116 (30.5) |
| | Weight loss | 9 (1.84) |
| | Lack of social support | 2 (0.52) |
| | Lack of time | 52 (13.6) |
| **5.** | **Reasons for a change in sleeping pattern during Covid -19** | |
| | Day time sleeping | 159 (41.8) |
| | Stress/anxiety | 108 (28.4) |
| | Long working hours | 19 (5) |
| | Flexibility in daytime | 7 (1.84) |
| | No change | 87 (22.8) |
| **6.** | **Reasons for a change in stress and anxiety levels during Covid -19** | |
| | No change | 67 (17.6) |
| | Fear of Covid -19infection | 96 (25.2) |
| | Worrying about family and friends | 72 (18.9) |
| | Frustration/boredom/loneliness | 78 (20.5) |
| | Financial loss | 60 (15.7) |
| | Confusion about what Covid -19 is? | 8 (2.10) |

Frequency (%) of responses

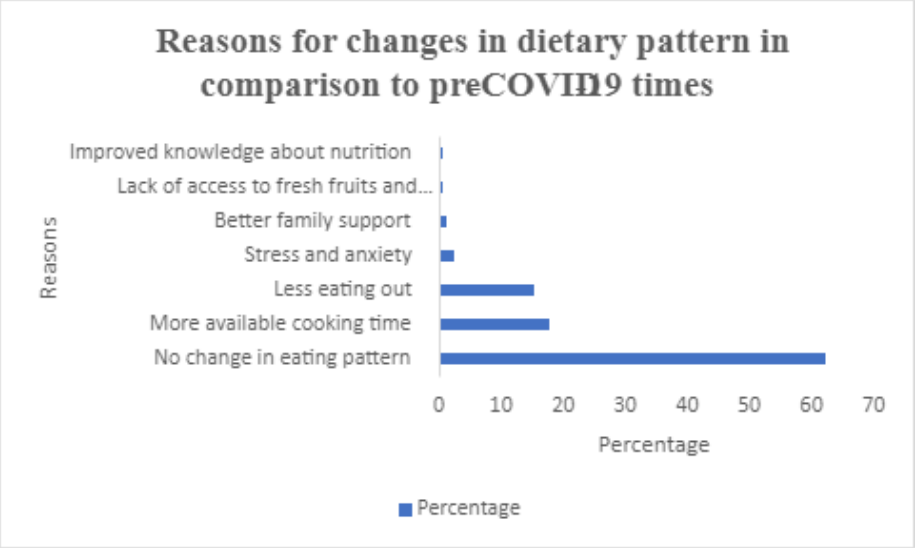


**Figure 5.** Reasons for Changes in Dietary Pattern in Comparison to Pre-Covid-19 Times

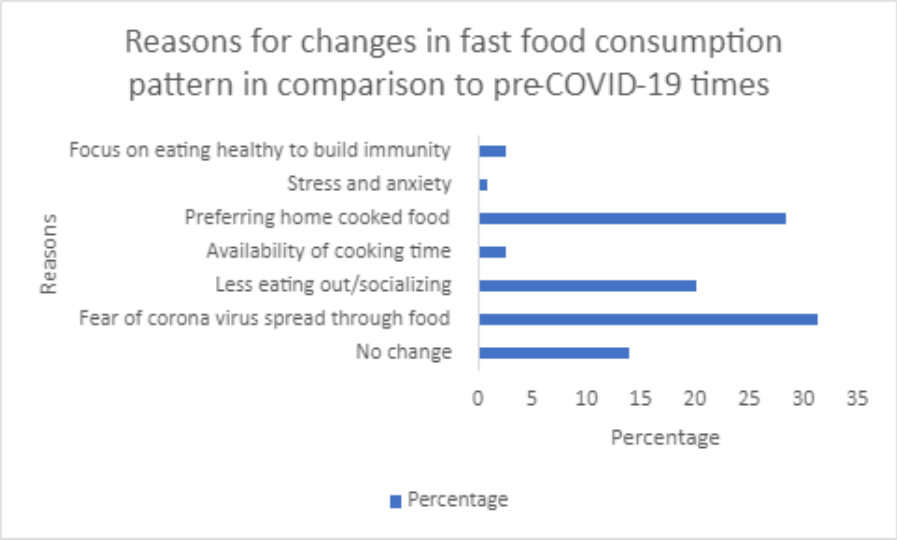


**Figure 6.** Reasons for Changes in Junk Food Consumption Pattern in Comparison to Pre-Covid-19 Times

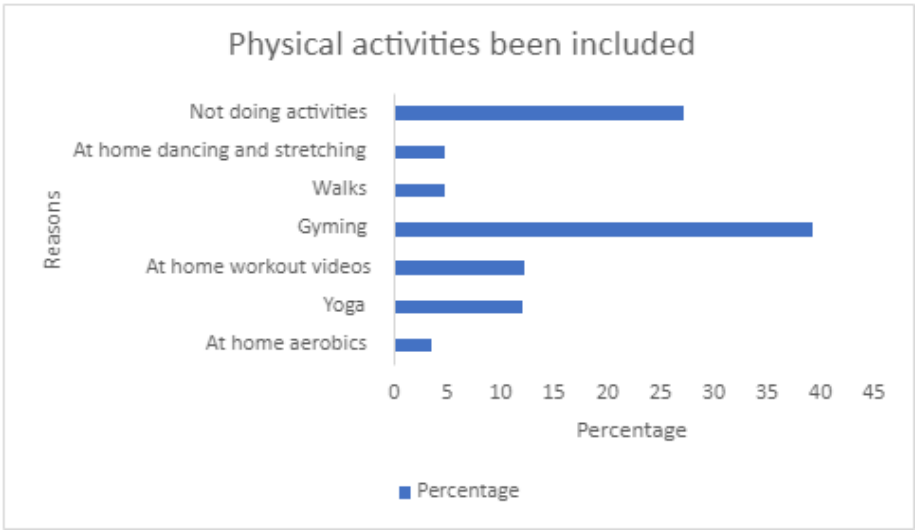


**Figure 7.** Physical Activities been Included during Covid-19

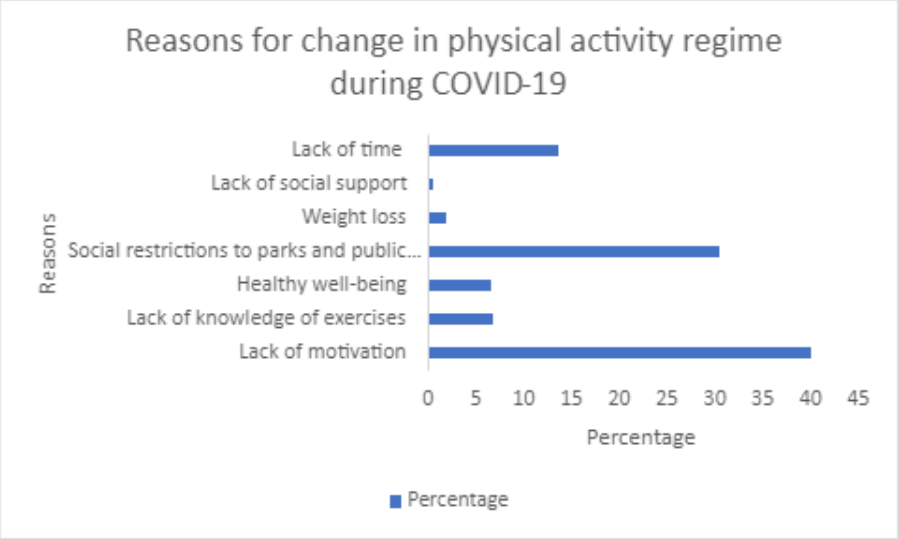


**Figure 8.** Reasons for Change in Physical Activity Regime during Covid-19

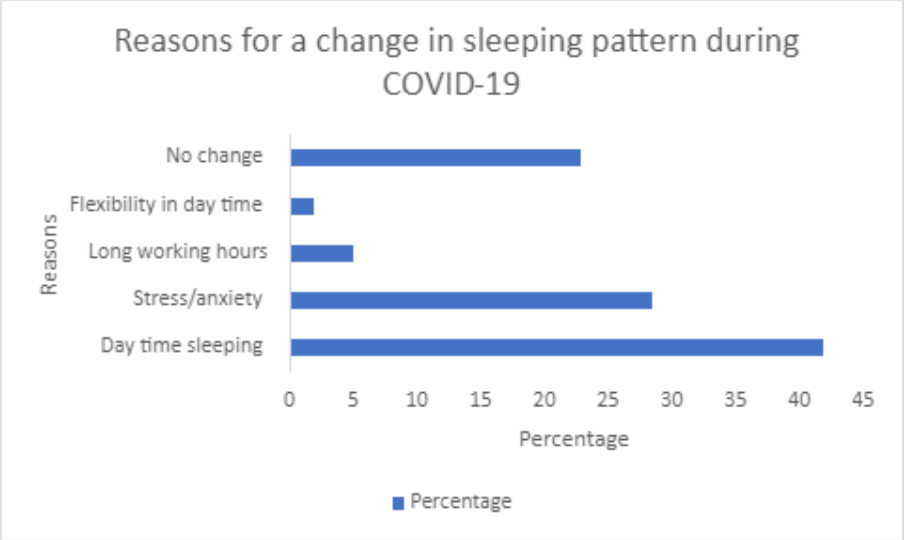


**Figure 9.** Reasons for a Change in Sleeping Pattern during Covid-19

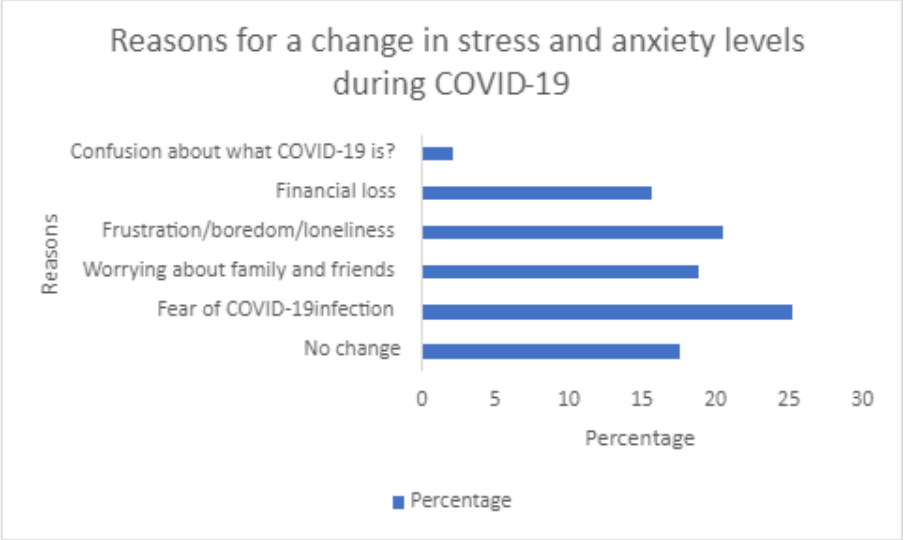


**Figure 10.** Reasons for a Change in Stress and Anxiety Levels during Covid-19

## Discussion

Among the 380 study participants, the mean age of study participants is 35.8 and the sample contains a slightly higher proportion of males 53.1 % and females 46.8% with 43.6% of the subjects reporting weight gain during the Covid-19 pandemic, the same as the result of a study performed by [5] with mean age 33.3 and 58.5% males and 41.4% females. Almost one-third of the participants reported putting on weight at the time of the Covid-19 pandemic.

In the current research the age range from 18-35 years were 55.7%, 36-55 years 34.4% and 56-84 years 9.73%, and the occupation distribution under employed 36%, self-employed 6.3%, homemakers 16%, retired 3.9% and students 17% wherein the results of the study by [6] revealed the age group from 18-35 years 55.1%, 36-55 years 35.1% and 56-84 years 9.8% and the occupation distribution under employed 51%, self-employed 7.1%, home makers16%, retired 2.2% and students 24.7%.

In the present survey findings, there has been considerable enhancement in the intake of nutritious foods such as fruits and vegetables [44.7% vs. 65.7%, (P less than 0.001)] during Covid-19 due to reduced networking and going out for eating, satisfaction and innovation for home-cooked food, more time available for preparing the meal, the inclusion of immune system response food types to preserve well-being, and improved family support all resulted in lower intake of processed foods which is similar to a study conducted by [7] where it says that intake of fresh fruit increased by 6.3% [while lockdown: 31.5% vs. before lockdown: 25.2%].

As per this present study, results showed participant's daily consumption of milk or its product was increased [38.6% vs. 60%, P < 0.001)] whereas a study conducted by [8] reveals about 26% of study participants increased intake of milk or its products during Covid-19.

In this current study, exercises of intermediate aerobic intensity saw a considerable drop in participation [32.3% vs 3.4%, (P < 0.001)] as a result of a lack of motivation, time constraints, for being healthy and limited access to parks, and public places whereas according to **[9**] findings, highly active individuals either maintained or raised their physical activity level.

According to the present study findings the daily involvement in leisure-related activities is reduced (8.9% vs 6.5%, P < 0.005) while sedentary leisure activities increased according to a study conducted by [10] whereas in this survey, some participants engaged in exercise through yoga 46 (12.1%), walking 149 (39.2%), at home dancing and stretching 18 (4.73%) and at-home workouts 47 (12.3%).

In this present study, it is seen that the time spent on screen usage is increased (27.8% vs 60%, P less than 0.001) while a study by [5] reveals that during Covid-19, one-third of respondents (13.2% vs. 32.6%) indicated daily screen use of 4-5 hours.

The current research findings show that there was an increase in the level of stress among the participants (29.2% vs. 47.8%, P < 0.001), especially worries about their families was the leading cause of stress and anxiety, which is the same as the study conducted by [9] in which concern or mild concern was expressed by the majority of participants regarding their own overall fitness (75%) or the well-being of a family member (87.5%) in relation to Covid-19.

In the present study, there was fear of contracting the coronavirus, frustration, boredom, loneliness, uncertainty over Covid-19 and its prevention, and financial loss were the most often cited factors for negative alteration in stress levels during the Covid-19 pandemic according to this study wherein the overall, 43.6% and 47.7% (N = 2803) of the Italians reported an increase in perceived stress and depression symptoms during the lockdown, respectively in a study by [11].

A study [12] shows that 99 participants (75.5%) of the 131 smokers in the subgroup reported reducing or quitting their smoking altogether during the lockdown. Before the

lockdown, 41 people admitted to drinking frequently. 19 (46.3%) of them said the lockdown had caused them to drink less alcohol than usual. Whereas according to the present study, smoking (7.3% vs. 3.1%, P < 0.005) and consumption of alcohol (37.6% vs. 16.3%, P less than 0.001) decreased.

### Limitations

Some limitations such as self-reporting, which increases the likelihood of bias in reporting, and retrospective inquiries concerning people ‘s actions before to the lockdown. All these details lessen the evaluation ‘s integrity and reliability of the study.

## Conclusion & Recommendation

In this study, general eating behaviour significantly improved, but physical activity declined, and stress and screen time increased. Other behaviours such as smoking and alcohol consumption, decreased.

Approximately half of the study participants gained weight as a result of changes in all these lifestyle-related activities. This study will serve as a solid basis for creating recommendations for suitable lifestyle modifications at this time such as the practice of at-home exercise for the general community; daily intake of fruit, veggies, cereals, proteins, legumes, and drink 8–10 cups of water each day; sleep for 7-9 hours per night, according to the National Sleep Foundation. The best ways to reduce technology use are behavioural, such as setting self-imposed limits on digitalization use, avoiding utilizing digital devices whenever possible, and utilizing them for greater wellness and health [13].

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## Conflict of Interest

Concerning the research and writing of this paper, the authors reported that they had no conflicts of interest.

## References

[1]. Coronavirus s[Internet]. [cited 2022 Aug 2]. Available from: https://www.who.int/health-topics/coronavirus.

[2]. India: WHO Coronavirus Disease (Covid-19) Dashboard with Vaccination Data [Internet]. [cited 2022 Aug 2]. Available from: https://Covid19.who.int.

[3]. Home - Covid-19 Information Portal [Internet]. [cited 2022 Aug 2]. Available from: https://Covid19.karnataka.gov.in/english.

[4]. Effects of Covid-19 lockdown phases in India: an atmospheric perspective - PMC [Internet]. [cited 2022 Aug 2]. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7785398/.

[5]. Rawat D, Dixit V, Gulati S, Gulati S, Gulati A. 2021. Impact of Covid-19 outbreak on lifestyle behaviour: A review of studies published in India. *Diabetes Metab Syndr*. 15(1):331–6.

[6]. Ammar A, Brach M, Trabelsi K, Chtourou H, Boukhris O, Masmoudi L, et al. 2020 May 28. Effects of Covid-19 Home Confinement on Eating Behaviour and Physical Activity: Results of the ECLB-Covid19 International Online Survey. *Nutrients*. 12(6):1583.

[7]. Nirala SK, Naik BN, Rao R, Pandey S, Singh CM, Chaudhary N. 2022 Mar. Impact of Lockdown due to Covid-19 on lifestyle and diet pattern of college students of Eastern India: A cross-sectional survey. *Nepal J Epidemiol*. 12(1):1139–55.

[8]. Bakhsh MA, Khawandanah J, Naaman RK, Alashmali S. 2021 Jul 30. The impact of Covid-19 quarantines on dietary habits and physical activity in Saudi Arabia: a cross-sectional study. *BMC Public Health*. 21(1):1487.

[9]. Di Renzo L, Gualtieri P, Pivari F, Soldati L, Attinà A, Cinelli G, et al. 2020 Jun 8. Eating habits

and lifestyle changes during Covid-19 lockdown: an Italian survey. *J Transl Med*. 18(1):229.

[10]. Flanagan EW, Beyl RA, Fearnbach SN, Altazan AD, Martin CK, Redman LM. 2021 Feb. The Impact of Covid-19 Stay-At-Home Orders on Health Behaviors in Adults. *Obes Silver Spring Md*. 29 (2):438–45.

[11]. Amerio A, Lugo A, Stival C, Fanucchi T, Gorini G, Pacifici R, et al. 2021 Sep 1. Covid-19 lockdown impact on mental health in a large representative sample of Italian adults. *J Affect Disord*. 292:398–404.

[12]. Singh B, Jain S, Rastogi A. 2021 Mar. Effects of nationwide Covid-19 lockdown on lifestyle and diet: An Indian survey. *J Fam Med Prim Care*. 10(3):1246–50.

[13]. A healthy lifestyle - WHO recommendations [Internet]. [cited 2022 Aug 2]. Available from: https://www.who.int/europe/news-room/fact-sheets/item/a-healthy-lifestyle---who-recommendations.

[14]. Lee A, Keung VMW, Lau VTC, Cheung CKM, Lo ASC. 2021 Oct 6. Impact of Covid-19 on Life of Students: Case Study in Hong Kong. *Int J Environ Res Public Health*. 18(19):10483.

[15]. Lesser IA, Nienhuis CP. 2020 May. The Impact of Covid-19 on Physical Activity Behavior and Well-Being of Canadians. *Int J Environ Res Public Health*. 31;17(11): E3899.

[16]. Pietrobelli A, Pecoraro L, Ferruzzi A, Heo M, Faith M, Zoller T, et al. 2020 Aug. Effects of Covid-19 Lockdown on Lifestyle Behaviors in Children with Obesity Living in Verona, Italy: A Longitudinal Study. *Obes Silver Spring Md*. 28(8):1382–5.

[17]. Hu Z, Lin X, Chiwanda Kaminga A, Xu H. 2020 Aug 25. Impact of the Covid-19 Epidemic on Lifestyle Behaviors and Their Association with Subjective Well-Being among the General Population in Mainland China: Cross-Sectional Study. *J Med Internet Res*. 22(8): e21176.

[18]. Zaccagni L, Toselli S, Barbieri D. 2021 Jun 13. Physical Activity during Covid-19 Lockdown in Italy: A Systematic Review. *Int J Environ Res Public Health*. 18(12):6416.

[19]. Sepúlveda-Loyola W, Rodríguez-Sánchez I, Pérez-Rodríguez P, Ganz F, Torralba R, Oliveira DV, et al. 2020. Impact of Social Isolation Due to Covid-19 on Health in Older People: Mental and Physical Effects and Recommendations. *J Nutr Health Aging*. 24(9):938–47.

[20]. Madan J, Blonquist T, Rao E, Marwaha A, Mehra J, Bharti R, et al. 2021 Oct 20. Effect of Covid-19 Pandemic-Induced Dietary and Lifestyle Changes and Their Associations with Perceived Health Status and Self-Reported Body Weight Changes in India: A Cross-Sectional Survey. *Nutrients*. 13(11):3682.