

# The impact of confinement on the quality of life changes related to eating habits at home in the era of Covid-19: Data Analysis survey of a Moroccan sample

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**Abstract-** Severe acute respiratory syndrome coronavirus type 2 virus (SARS-CoV-2) first appeared in the city of Wuhan which exists in the Hubei region of China, and subsequently caused a new coronavirus disease (COVID -19) [1]. This type of disease is characterized by rapid spread around the world, causing a high number of deaths and posing major critical challenges for public health and clinical research worldwide. The epidemic of Covid-19 was announced by the World Health Organization (WHO) indicate that this type of disease is considered as a public health emergency. According to statistics, there are more than 18 million confirmed cases of coronavirus worldwide, including 702,903 deaths [2]. In our country Morocco, there are 28,500 confirmed cases and 345 deaths. Forecasts of the cumulative number of confirmed cases, cured, assets and deaths have been recently provided. [3] Furthermore, we evaluated the behavior of the virus during the confinement through questions related to lifestyle (eating) during confinement at home. These data are intended to help the Moroccan authorities and other countries to better understand the impact of this crisis on Moroccan citizens and therefore to develop adequate protocols to manage post-confiscation or a possible future crisis. The data we collected from this study during the period of home confinement from a sample contains 142 people describing their eating behavior. This study aims to discover the impact of confinement on the change in habits of confined people (sleep, diet, physical activity, mental health and weight variation). The information discussed in our article was collected using a questionnaire made available by social networks. 142 confined is the number of people who were able to answer our questionnaire, the average age is 25 to 40 years. The results show a high consumption houses meals, weakness of physical activity, sleep disturbance and deterioration of mental health causing subsequently a change in the weight of people confined.

**Keywords:** COVID-19 pandemic, eating habits, physical activity, weight, Morocco.

## I. INTRODUCTION

The coronavirus virus type 2019 (Covid-19) is generated by a new coronavirus strain called coronavirus-2 Severe Acute Respiratory Syndrome (SARS-CoV-2) [1]. The first confirmed case appeared on December 31, 2019 [2]. Its rapid rise led the World Health Organization to announce that the epidemic is a global health emergency on January 30, 2020 [3], then, on March 11, 2020, also announced more than 118.00 cases confirmed by this epidemic in more than 110 countries [4]. In order to better control and limit the risk of development and rapid spread among their citizens, the majority of countries have implemented several public health measures to decrease person-to-person transmission of COVID-19.

Despite the presence of some differences in the measures adopted by the countries, most of them have taken precautions to isolate symptomatic patients, for example: quarantine for people with a history of contact with people positive for COVID-19, social distancing, use of face masks, restrictions on movement, interruptions of activity, all these have disrupted people's lives [5,6]. April 2020, approximately 3.9 billion people worldwide - nearly half of the total world population - representing more than 90 countries or territories were invited or ordered to stay in their homes [7]. Then, a study was carried out on a healthy population at the start of the pandemic release in China indicated that more than 53.8% suffered the psychological impact of moderate to severe COVID-19. Their symptoms of depression (16.5%), anxiety (28.8%) and stress (8.1%) were also moderate to severe. [8] Besides that, being a woman, a student, having specific physical symptoms (eg, myalgia or dizziness) and self-reported poor health were significantly associated with a greater psychological impact of the pandemic and with higher levels of stress, anxiety and depression. In the case of patients with systemic lupus erythematosus (SLE), they exhibit higher levels of perceived stress, as well as psychopathological symptoms compared to the healthy population [9]. Several studies indicate that most people do not recognize their real weight [10-12]. Many people of normal weight mistakenly perceive their weight to be overweight, and overweight or obese people underestimate

their body weight [13]. Poor weight perception can have a negative effect on eating disorders and may modulate eating attitudes and behaviors based on perceived weight acceptability [14]. Few studies have discussed the perception of weight during lockdown. Researchers have reported that the COVID-19 pandemic appears to increase people's perception of weight more than their weight, leading to an increased risk of eating disorders [15-17]. Keel et al. showed that 28.4% of college students considered themselves to have gained weight since the start of the pandemic, with these perceptions linked to growing concerns about weight, fitness and diet [15].

#### *A-Methodology*

This study is an opinion poll disseminated by social networks which lasted 2 months, the research concerned a sample of 142 people of age groups between 15 and 40 years of different social activity (student / civil servant / employee / other)

To succeed in our work, we followed the key steps of the survey methodology:

##### *Step 1:*

##### *Define the objectives*

-The variation in the weight of people confined after confinement/the impact of confinement on the eating habits of those confined.

-Choice of sample

-A random choice of social media users aged 15 to 40.

##### *2nd step :*

-Structure of the questionnaire

-A questionnaire of 16 closed questions of logical order starting with age and marital and social situation until the change in weight

##### *Step 3:*

-The data collection

-We used a computer voice using Google forms

##### *Step 4:*

-Data analysis

-We have a multivariate analysis and the interpretation of the results is done by the SPSS software.

#### *B-Procedure*

This questionnaire has been written and includes several questions related in its entirety to the nutrition scheme. The participants in this questionnaire are people aged at least 15 and over 40. A group of researchers, specialists and the public has been recruited for this operation via social networks. You will find attached the line of this online form.

[https://docs.google.com/forms/d/e/1FAIpQLScJSuCD16QILI\\_mkYeOjiRuq8uAW9fnbsudkb4DOi-88s\\_Zw/viewform?fbzx=3722190556315221433&fbclid=IwAR1khE2-K6\\_0WJSmXQHDV4K2COJzYwIRVSzgoDn-2bV2Edo4BrZYR7WiNTI](https://docs.google.com/forms/d/e/1FAIpQLScJSuCD16QILI_mkYeOjiRuq8uAW9fnbsudkb4DOi-88s_Zw/viewform?fbzx=3722190556315221433&fbclid=IwAR1khE2-K6_0WJSmXQHDV4K2COJzYwIRVSzgoDn-2bV2Edo4BrZYR7WiNTI)

#### *C-Survey*

The questionnaire has two parts and takes approximately 20 minutes to complete. The first part evaluated the socio-demographic characteristics of the participants, namely, age, sex,

marital status, level of education, employment situation. The second part concerned the mode of feeding of confined people, based on the dichotomized questions (Yes / No) in order to assess the unexpected event with two answers, the balanced diet before the confinement also two answers, change of 'diet before confinement, perception of the change in weight "do you consider that you have gained or lost weight during the dismay", with two possible answers, to play sports and to housework. Then during the confinement you had problems sleeping. The specific questions and response options are presented in [Table 1](#).

## II. STATISTICAL ANALYZES

Statistical analysis of results was performed using IBM SPSS Statistics v.26 software (IBM Corporation, Armonk, New York, USA).

The t-test was used for continuous variables and the chi-square test for categorical variables. The level of statistical significance used was 5% two-tailed. For variables where significant differences were found, effect sizes were then calculated using Cohen's d, using the following values for interpretation: small effect size > 0.20, mean effect size > 0.50 and large effect size > 0.80 [18].

## III. RESULT AND DISCUSSION

From the processing of statistical data from the questionnaire, we can see that the male sex is more dominant, representing 58.45% compared to 41.54% women, [Figure 1](#) illustrates the results obtained. In addition, the age group most participating in this questionnaire is indicated in [Table 1](#).

Then, the results obtained indicate that the students participated in this questionnaire with a percentage of 45.07% then the employees represent 42.21% and other represents 11.96% as shown in [Figure 1](#).

#### *A-Confinement and physical activity*

In this work, we studied the impact of confinement on the rate of physical activity of the confined the results are illustrated in [Figure 2](#).

Time spent in physical activity decreased during confinement at home, in addition, we observed that participants engaged in less physical activity than usual during the confinement period with a percentage of 53.52%. , the participants (41 responses from people) who spent more time practicing sport did not exceed 28.87%. Then, the participants who saved their time to practice physical activity (sport) did not exceed 25 responders with a percentage of 17.6%. These results are similar to those obtained by author A. Azizi, et al 2020 [19], who confirmed our results. In addition, other author Boudokhane et al 2020 [20] carried out a survey (France) on patients with rheumatoid arthritis showed that the proportion of these people usually practicing physical activity decreased sharply during confinement by 74%. at 42% for active movement from 22% to 11% for practicing moderate sport and from 16% to 6% for practicing intense sport.

#### *B-Containment and sleep*

Based on statistical analysis of data regarding the relationship between confinement and sleep, the results obtained are summarized in [Figure 3](#).

We received 93 people including 42 women and 50 men (65.48%) who experienced sleep problems during confinement while 17 women and 32 men in total of 49 people (34.5%) did not experience changes in sleep. These results are similar to those obtained by the author S. Hartley et al 2020 [21], who indicates that through an online survey via social networks distributed among 1777 French participants including 17% of women, 47% of these reports a decrease in the quality of sleep. Poor quality is strongly associated with a change in sleep behaviors and light exposure (less daylight and more screen in the evening), to keep the rhythm regular we need to make the most of natural or ambient light during the day and especially in the morning / reinforce social interactions during the day / practice regular physical exercises especially in the morning / avoid having a physical activity too close to bedtime which could increase physiological activation and disrupt subsequent sleep [22].

#### *C-Confinement and eating habits*

We studied the relationship between confinement and eating habits, according to statistical analysis of the data, **Figures 4 and 5**, show that the 94 people participating in this survey considered that before confinement had a balanced diet with a percentage of 66.19% in this range we find 35 women and 59 men. The rest of the responders, 48 people are not sure of their food before confinement (33, 80%). for people who took advantage of this event unexpected changes in the way of eating are 60, 65% ie 86 people (35 women and 51 men) and 39.43% of the responders did not change anything.

-This modification can be presented by three aspects:

-Nibbling: we find 75 people who nibble which represents a percentage of 52.81% compared to a percentage of 47.18% for 67 people.

-Skipping meals: for this bad habit 93 people confirm that they skip meals while 49 answered no (34.5%)

-Cooking meal house: We notice that during this period of confinement people who cook flat-houses won first place with a percentage of 68.31%, that is to say 97 responders.

Several studies have been carried out on changes in household food practices. The author Jacinthe Cloutier et al 2020 [23] studied the changes in the food mode among the confined with the United States and the Chinese showing that the closure of restaurants has led people to cook more at home, this has As a result, people began to cook and eat more with their families. Then other author Catherine Tourette-Turgis et al 2021 [24] studied the modification of lifestyles and the psychosocial impact of confinement linked to COVID-19 (online Nutri.net-sant  ) they interviewed 37,252 adults on their diet comparing self-reported behavior before and during confinement two trends were observed the first where the lifestyle is altered by weight gain for a third of respondents this is linked to a decrease in the consumption of fresh products and an increase in processed products, conversely the second trend is known by a loss of weight for nearly one in four French people, subsequently an increase in home cooking for two respondents on Cinque.

#### *D-Confinement and mental health*

Among our interviewees we had 111 people who are really disturbed by the confinement and who represent a percentage of 78.16% including 65 men and 46 women, people who confirmed that the confinement was not an event that disturbs their daily lives. and their mental state are in number of 31 respondents (21.83%) with a distribution of 18 men and 13 women. **Figure 6** shows the percentage of participants who expressed their responses to the inconvenience caused by the unexpected event.

A study carried out with Chinese researchers Anna V. Mattioli, et al 2020 [25] aims to explore the prevalence of the severity of psychological distress in the general population in connection with covid 19, the results of the study focusing on out of 52,730 people indicating a moderate degree of psychological distress score in 35% of the population, a high distress score in just over 5% of the population. In France, public health has designed with the study company an online survey device from March 23, 2020 aimed at monitoring the evolution of mental health behaviors in the general population, the results obtained showed the potential level depression especially in the 3rd and 4th week of confinement as well as increased feelings of fear and anger which degrades psychological health [26].

#### *E-Confinement and obesity*

In this survey 93 people pay attention to their weight (65.49%) and the rest 49 respondents (34.5%) neglect this point (**Figure 7**). For people who gained weight during confinement there are 64 people (45.07%) including 23 women and 41 men, then the confined who have not experienced weight variations are numbered in 34 people by a percentage of 23.94% divided into 16 women and 18 men, the last tranche is for people who lost weight during confinement, they are 44 people (30, 98%) including 20 women and 24 men

A self-administered questionnaire study by Ricci and Gagnon, measurements taken before and during confinement 62 patients were included in this study, while confinement patients decreased their physical activities in a statistically significant manner. Containment leads to weight gain (pre mass = 71.56 "62.55-83" Kg Vs post mass=72.26 "62.17-84.50" Kg p= 0.0272) this mass gain is due to a fat gain according to the author Samantha K Brooks et al 2020 [27].

## IV. CONCLUSION

In the light of this investigation, after processing and from data analysis, the results revealed that fear of Covid-19 and the change in self-reported weight was negatively associated with the perception of weight change, while a Higher anxiety and longer confinement duration correlated with a higher perceived weight change. In addition, confinement has changed the qualitative and behavioral aspect in the daily life of the confined, however the increase in sedentary lifestyle and sleep disturbance as well as the deterioration of mental health are risk factors for aggravate the state of overweight from which the study population suffers.



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