

EFFECTS OF HOME-CONFINEMENT DURING THE COVID-19 OUTBREAK ON QUALITY OF LIFE ENJOYMENT AND SATISFACTION AND LIFESTYLE BEHAVIOURS

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ABSTRACT

Introduction: Home-confinement during the COVID-19 outbreak may affect lifestyle behaviours. The aim of the present study was to determine the effects of COVID-19 induced home-confinement on lifestyle behaviours and quality of life enjoyment and satisfaction.

Materials and methods: Participants health-related quality of life and lifestyle behaviours were assessed using the Health-related Quality of Life Enjoyment and Satisfaction-Short Form™ (HLESQ-SF) questionnaire and the Simple Lifestyle Indicator Questionnaire adapted and modified (SLIQ), respectively. Total raw scores and the % maximum of the HLESQ-SF and lifestyle behaviours, specifically, diet, exercise/activity, alcohol, smoking, and stress, with respect to before and during confinement conditions were calculated.

Results: The data showed that rate of overall life satisfaction and contentment, total raw score, % maximum, and exercise/activity raw score were higher before confinement than during confinement (all, $p < 0.01$). Diet, alcohol, and stress raw scores were higher during confinement than before confinement (all, $p < 0.05$).

Conclusion: Home-confinement has a negative effect on physical health, work, social relationships, lifestyle behaviours, and overall quality of life enjoyment and satisfaction.

Keywords: COVID-19, Quality of Life, Lifestyle, Chronic Effect, Confinement.

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Introduction

In late December 2019, a new emerging coronavirus, termed as “Severe Acute Respiratory Syndrome (SARS) Coronavirus type 2” (SARS-CoV-2), caused an initial cluster of pneumonia cases of unknown etiology, due to a putative zoonotic spill over. Subsequently, from its first epicentre, Wuhan, Hubei province, mainland China, this outbreak has spread throughout the entire country and neighbouring territories, becoming first, a public

health emergency of international concern (PHEIC) and second, a global pandemic. SARS-CoV-2 is the infectious agent responsible for a communicable disease called “coronavirus disease 2019” (COVID-19), which is generally asymptomatic. In some cases, however, the disease can have severe effects, affecting the respiratory system, and in a small proportion of cases, can be life-threatening, especially in old, frail subjects with underlying comorbidities⁽¹⁾. This pandemic is still ongoing and has become one of the most challenging public

health issues in the history of mankind due to its quick diffusion, contagiousity and sustained human-to-human transmission. Further, the pandemic has significantly strained healthcare systems worldwide⁽²⁾. Due to the lack of effective drugs or vaccines, that could cure or prevent the disease, international authorities and organizations have had to implement non-pharmaceutical interventions, such as physical/social distancing, self-isolation, stay-at-home orders, quarantine and even the lockdown of entire territories, as recommended by the World Health Organization (WHO,⁽³⁾). However, even though necessary, these measures have been particularly strict in order to properly counteract the coronavirus pandemic, thus impacting people's mental well-being, physical health and related quality of life. During the COVID-19 outbreak, an increasing body of research has, indeed, examined the possible negative impact of the public health measures implemented, such as home-confinement or quarantine, on mental health in the general population⁽⁴⁾. These measures can dramatically affect daily habits and lifestyle behaviours, such as the regular practice of physical activities, social relationships, eating behaviours, and sleep, among others, which in turn may seriously compromise mental health and psychological states^(5,6).

The pandemic and the associated confinement have caused a situation that can be described as extreme and, to some extent, even unprecedented. All aspects of people's lives have been profoundly affected and disturbed, giving way to a marked uncertainty and a realization of the fragility of life. Amongst these aspects of people's lives, of paramount importance are their psychological states, which may be affected by many factors. The psychological impact may be greater for women due to greater precariousness (e.g., single-parent families) and a greater traumatic history (e.g., past abuse or sexual violence)⁽⁷⁾. The impact is also likely to be greater when individuals or their associates have health states or problems that are also some of the risk factors for developing SARS-CoV-2 infection (e.g., advanced age, male gender, being overweight or obese, suffering from chronic-degenerative disorders or other underlying co-morbidities, among others). Furthermore, time spent thinking about the pandemic, media exposure, consumption of misleading news and misinformation are also aggravating factors that exacerbate psychological distress. Therefore, it can be anticipated that the burden imposed by anxiety, depression and sleep disorders will be on the rise,

while virus contamination appears to be associated with post-traumatic stress disorder⁽⁸⁾.

All of these aspects have been shown to be affected during the first period of confinement/quarantine (the so-called first-wave)⁽⁸⁾. However, although the impact of COVID-19 on mental health has been explored, the examination of the effects of home-confinement on quality of life enjoyment and satisfaction and related lifestyle behaviours remains scarce. Therefore, the aim of the present study was to determine the impact of COVID-19 induced home-confinement on lifestyle behaviours and quality of life enjoyment and satisfaction.

Materials and methods

Participants

An online survey was conducted, using a purposive sampling approach. 213 participants replied to the online questionnaire. They were aged between 18 and 32 years. The majority of participants were female (61.03%), single (66.80%) and had a high level of education (49.30% had a bachelor's degree or above). All participants were carefully and thoroughly informed about the objective of the study. This study was approved by the local institutional ethics committee and was conducted according to the 1964 Declaration of Helsinki and its subsequent amendments.

Quality of life enjoyment and satisfaction questionnaire (HLESQ)

To determine the effect of home-confinement on the HLESQ, participants completed the online questionnaire both before and during home-confinement (3 months) conditions^(6,9).

Participants' health-related quality of life was assessed using the HLESQ-Short form⁽¹⁰⁾. This questionnaire has 16 items for which respondents have to circle the appropriate figure on a scale of 1 (very poor) to 5 (very good). Then, we calculated total raw score, %maximum and the items related to health, work, social relationships, and life satisfaction. %maximum was computed using the following formula:

$$(\text{raw total score} - \text{minimum score}) / (\text{maximum possible raw score} - \text{minimum score}).$$

Lifestyle behaviours

Lifestyle behaviours were assessed using the Simple Lifestyle Indicator Questionnaire adapted and modified (SLIQ,⁽¹¹⁾). The SLIQ includes five

dimensions, including diet, physical activity, alcohol, smoking and stress. The diet and physical activity dimensions comprised three questions each. Alcohol, smoking and life stress components have one question each. Raw score is calculated for each lifestyle dimension, for example, the diet raw score is the sum of three questions, which scored from 0 to 5. Then raw scores were categorized from zero to two (0= score 0 to 5, 1= score 6 to 10 and 2= score 11 to 15). All of the five component scores are then summed up to provide a final SLIQ score, ranging from 0 to 10 (0 = very unhealthy, 10= very healthy).

Statistical analysis

Descriptive statistical analysis was carried out by computing the means and standard deviations for each of the variables under study. Paired Student's t-tests were used to capture differences between before and after confinement. All statistical analyses were conducted utilizing the commercial software "Statistical Package for Social Sciences" (SPSS version 24.0, IBM, Armonk, NY, USA). Results with p-values less than or equal to 0.05 were considered statistically significant.

Results

The pre- and post-confinement comparison revealed that items related to health, work and relationships (except for items 4, 11 and 15) were higher before confinement than during confinement (all, $p < 0.001$) (Table 1).

	Mean \pm SD	t	df	p
Total raw score of HLESQ-SF	Before 42.37 \pm 14.77 During 36.31 \pm 10.59	8.95	212	<0.001
%maximum	Before 0.50 \pm .26 During 0.39 \pm .18	8.95	212	<0.001
Diet raw score	Before 4.51 \pm 2.66 During 5.80 \pm 3.01	-7.01	212	<0.001
Activity raw score	Before 12.06 \pm 5.62 During 10.62 \pm 5.68	3.22	212	0.001
Alcohol raw score	Before 2.48 \pm 4.67 During 2.82 \pm 5.06	-2.22	212	0.02
Smoking raw score	Before 1.64 \pm 0.76 During 1.66 \pm 0.75	-0.49	212	0.61
Stress raw score	Before 3.22 \pm 1.50 During 3.53 \pm 1.72	-2.51	212	0.01

Table 1: Quality of life enjoyment and satisfaction and lifestyle among participants before and during the confinement.

More specifically, participants had higher levels of satisfaction with their health, work, leisure activity and relationships before confinement than during confinement. Thus, the overall life satisfaction and contentment, raw total score, %maximum, and exercise/activity raw scores were higher before confinement than during confinement (all, $p < 0.01$).

Diet, alcohol, and stress raw scores were higher during confinement than before confinement (all, $p < 0.05$) indicating higher stress levels, greater alcohol intake, and poorer diet (Table 1).

Discussion

To the best of our knowledge, this is the first study aimed to investigate the effects of home confinement on lifestyle behaviours and quality of life enjoyment and satisfaction. A recent review by Brooks et al. indicated that quarantine may have long-term consequences for mental health⁽⁸⁾. They reviewed 24 studies on the psychological effects of quarantine, which had been conducted in ten countries during previous epidemics and outbreaks (SARS, Ebola, H1N1 influenza, Middle East Respiratory Syndrome (MERS) coronavirus and equine influenza). Furthermore, confined/quarantined individuals can develop multiple psychological reactions such as decreased mood and impaired mental-wellbeing⁽⁶⁾, emotional distress⁽¹²⁾, and reduced quality of life⁽¹³⁾. The longer the duration of quarantine, the more mental health is affected, particularly with regards to the presence of negative emotions (especially fear and anger), misuse of psychoactive substances and symptoms of post-traumatic stress disorder (PTSD)⁽¹⁴⁾.

In the H1N1 epidemic, a study reported a 28% prevalence of PTSD in confined individuals compared to 7% in those who were not confined⁽¹⁵⁾. Hawryluck et al.⁽¹⁴⁾ observed 29% of people experienced moderate post-traumatic stress disorder symptoms from SARS confinement. Another study investigated by the Moroccan High Commission has studied the impact of COVID-19 on the economic, social and psychological situation of households. They involved a sample of 2,350 households representing different socio-economic strata of the population. They showed that 49% of the population had anxiety, 23.7% had sleep disorders, and 6% had depression⁽¹⁶⁾. All of these studies, however, examined the effect of COVID-19 during the first months of confinement on psychological states. The present study has extended the above-mentioned studies by showing that home confinement has also a negative effect on quality of life enjoyment and satisfaction.

Furthermore, confinement in the context of the COVID-19 pandemic is an important stress factor. A multi-country survey has shown a relevant psycho-social burden⁽¹⁷⁾. Based on the analysis of

1,047 participants (54% of which were women), quarantine was demonstrated to exert a negative impact on mental wellbeing, mood and feelings, with a statistically significant reduction in the total questionnaire scores of mental wellbeing and depression symptoms. Moreover, confinement increases the risk of developing insomnia symptoms or even an insomnia disorder if confinement persists over a period of 3 months⁽¹⁸⁻²⁰⁾. Insomnia itself is characterized by repercussions on diurnal functioning, such as fatigue or diurnal drowsiness, attention disorders, depressive disorders⁽²¹⁾, anxiety disorders, and addictive disorders⁽²²⁾.

It should also be pointed out that a reduction in sleep time, whether linked to a change in the circadian rhythm, a high level of stress or both, can (a) make people more vulnerable and prone to viral infections⁽²³⁾, (b) increase the risk of psychiatric and addictive disorders⁽²⁴⁾, (c) have a deleterious impact on cognitive performance and decision-making, and (d) increase the risk of addiction and impulsivity⁽²⁵⁾.

Confinement may also affect diet behaviours. It makes food more accessible and available (i.e., increased food stocks), while also reinforcing the emotional salience of the diet and its triggers, which in turn may increase the risk of eating and weight disorders, such as anorexia and bulimia⁽²⁶⁾. These disorders are associated with the alteration of cellular immunity⁽²⁷⁾, and the increased risk of obesity, both of which are major risk factors for developing severe disorders, such as cancer, metabolic impairments (like diabetes) or other chronic-generative diseases⁽²⁸⁾.

Other lifestyle behaviours were affected by COVID-19 induced confinement, such as physical activity and alcohol. These findings are in accordance with previous studies that reported that home confinement may increase daily sitting time^(29,30), which considered a major risk factor for cardiovascular and all-cause mortality^(31,32) and decrease quality of life⁽⁴⁾. In addition, the present data showed that home confinement increased stress, which in turn may increase the desire for alcohol because of the dysregulation of the hypothalamic-pituitary-adrenal axis and neuroadaptations in stress and reward pathways caused by chronic alcohol consumption⁽³³⁾. These lifestyle behaviours can increase stress and decrease health-related quality of life. This effect may be exacerbated by the lockdown duration and the transition phase to “normal life” strategies imposed by different governments.

In conclusion, home-confinement has negative effects on health, work, social relationships, lifestyle

behaviours and overall quality of life enjoyment and satisfaction. People should implement interventions aimed at changing their lifestyle behaviours in order to decrease the negative effects of home-confinement and increase their health level. Public health policy- and decision-makers, when devising plans to counteract outbreaks, should take into account the impact on mental health and design programs aimed at minimising such a burden.

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