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# Repercussions of Home Confinement during the COVID-19 Pandemic

## Abstract

The COVID-19 pandemic has disrupted almost all aspects of one's daily routine which has led to unprecedented stress and other mental consequences. This, coupled with home confinement has led to a change in the nutritional and exercise habits of the population, both positive and negative. The purchase of calorie-dense foods has been increased and so has boredom eating however given that more time is being spent at home, many people are opting to cook more. Home confinement has also led to an increase in sedentary behaviour but some have found more time to pursue exercise as a form of leisure. The following changes could lead to an increase in obesity, which in itself is already one of the problems that Malta has been facing these last few years.

**Tags:** nutrition, exercise, obesity, pandemic

## Introduction

The year 2020 has been dominated by the COVID-19 pandemic which originated in Wuhan, China in December 2019. The WHO declared the SARS-CoV-2 outbreak as a pandemic on 11th March 2020. Since this virus is primarily spread through small droplets, most governments have enforced lockdowns and other restrictions in order to minimise further spreading of the virus, with Malta implementing a partial lockdown on 28th March (Grech V. 2020).

Isolation and confinement have been proven to be beneficial to contain and limit the spread of disease (Duerr et al. 2007). This however has had many mental repercussions on many individuals, with increased risk of depression, boredom, and anxiety (Wang et al. 2020). With such emotions many people will no longer prioritise their health.

This has caused an enormous change in the routine of many people's lives.

While for some this can be considered as a small vacation from their normal lives, for many this has been a time of uncertainty. In a study about how emotions affect human appetite, changes in food intake have been observed in times of stress and other heightened emotional states (Macht et al. 2008). The nutritional status of individuals can be taken as an indicator of the resilience against destabilisation (Naja et al. 2020). One can therefore presume that in some individuals there have been changes in their diet.

With the closure of gyms and other recreational centres, one can also expect a change in the energy expenditure of many individuals (Naja et al. 2020). On the other hand many people found themselves with more free time to pursue hobbies which they may not have had time to do before and some of these hobbies could have included a degree of exercise.

## **Nutrition**

One of the main pillars of maintaining a healthy lifestyle is adequate nutrition. The deviation from the normal routine will certainly have an effect on this. Even short deviations from routine such as on vacations usually result in weight gain. (Cooper et al. 2016). Literature shows that even in this short amount of time there can be disruptions in eating behaviours which usually lean towards an energy surplus, leading to increased

fat formation (Bhutani et al. 2020). The most at risk to this phenomenon are those individuals which are overweight however even the most physically active are not necessarily protected from this effect (Stevenson et al. 2013). The public health measures imposed due to the pandemic have certainly caused a deviation from the normal well-established routines of many people's lives and so one can cautiously expect to see a similarity between effects caused by vacation and effects caused by the pandemic (Bhutani et al. 2020)

Studies have indicated that households have increased their purchasing of calorie-dense ultraprocessed foods (Bhutani et al. 2020). In the beginning there was also a fear of food running out which led to the purchase of many long-lasting preserved foods (Food Insight). This has made access to high-calorie food much easier. An initial study of Google trends has shown that while there was an increase in the searches for 'recipe' in April, there was also a decline in the searches for 'healthy eating'. Around March there was also a surge in searches for the term 'boredom' which can reflect the feelings of the general population (Goldman D. 2020). Boredom, coupled with anxiety, can lead to more frequent eating (Sominsky et al. 2014). An Australian study which surveyed 5289 individuals indicated that 34.6% of them

has engaged in binge eating during the lockdown (Phillipou et al. 2020). Limited culinary ability can also contribute negatively to nutrition (Ribeiro et al. 2020).

However, the social distancing measures imposed also present an opportunity for many to change previous bad nutrition habits. The purchase of more food coupled with an increase in free time for most people has given ample opportunity for more home cooked meals. In the case of university students, many are pressured by social media to be healthy (Sogari et al. 2018) so this may provide a further incentive to have good eating habits.

## **Exercise**

For many university students and other youths physical activity is achieved during their time spent at university, either during movement around or to and from campus or through sport participation (Hoffmann B et al, 2019). The closure of universities, gyms and other recreational centres therefore point to a decrease in activity. Sedentary behaviours also increase in confined environments which leads to less energy expenditure (Hobbs et al. 2014). A study conducted by Phillipou et al. (2020) indicated that almost half of its respondents were exercising less than they would before the pandemic.

Although places that are specifically designated for exercise are closed, this does not mean that people are unable to exercise. The increase in popularity of home fitness products has increased throughout the years due to their convenience and safety. Many home fitness apps allow not only the user to track their workouts but also provide a sense of community in the same way a gym does (Nyenhuis et al. 2020). Moreover even basic exercise such as walking could still be done as long as social distancing is maintained. Since outings are restricted many have opted for the latter with a study reporting a 34.3% increase in exercise (Phillipou et al. 2020).

## **Implications for the future**

Poor diet quality has been associated with a high body mass index (BMI), a decrease in the gut microbiome diversity and also poor mental health (Hislop et al. 2006). The ramifications of physical inactivity include negative effects on glucose homeostasis and metabolic health (Narici et al. 2020). Physical inactivity is considered one of the most important risk factors for major disease morbidity (Hallal et al. 2012) and is also associated with a decreased immune response and more severe cardiopulmonary complications (Bloch et al. 2020). Malta already has an

obesity crisis with a third of the population falling in this category (Cuschieri S et al. 2016). Obesity is associated with a multitude of non-communicable illnesses such as diabetes mellitus, hypertension, and gall bladder disease (Bray et al. 2000). In 2016 this crisis was estimated to cost around €3.6 million spread across pharmaceuticals, hospital care and primary care. Assuming that the obesity rate had remained the same as in 2016, the projected cost of taking care of the obesity crisis was expected to reach €5.1 million by 2022. (PWC: Weighing the cost of Obesity). With the pandemic, it is likely that the obesity rate will increase and will further increase the cost, as well as the burden on our health system.

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