



INTERNATIONAL JOURNAL OF  
MODERN TRENDS IN  
SOCIAL SCIENCES  
(IJMTSS)  
[www.ijmtss.com](http://www.ijmtss.com)



## THE DIETARY CHANGES AND FOOD PREPARATION AMONG MALAYSIAN HOUSEHOLD DURING COVID-19 LOCKDOWN

Eshaby Mustafa<sup>1\*</sup>, Noor Azimin Zainol<sup>2</sup>

<sup>1</sup> School of Tourism, Hospitality and Event Management, Universiti Utara Malaysia (UUM), Malaysia  
Email: [eshaby@uum.edu.my](mailto:eshaby@uum.edu.my)

<sup>2</sup> School of Tourism, Hospitality and Event Management, Universiti Utara Malaysia (UUM), Malaysia  
Email: [azimin@uum.edu.my](mailto:azimin@uum.edu.my)

\* Corresponding Author

### Article Info:

#### Article history:

Received date: 27.12.2021  
Revised date: 15.01.2022  
Accepted date: 02.02.2022  
Published date: 06.03.2022

#### To cite this document:

Mustafa, E., & Zainol, N. A. (2022). The Dietary Changes and Food Preparation among Malaysian Household During COVID -19 Lockdown. *International Journal of Modern Trends in Social Sciences*, 5 (19), 01-10.

DOI: 10.35631/IJMTSS.519001

This work is licensed under [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)



### Abstract:

The COVID-19 lockdown in Malaysia resulted in disruptions to everyday life, including changes in grocery shopping, cooking, and eating. Individuals are spending more time at home and consuming food and meals that would have otherwise taken place in different settings. This study aims are twofold; to explore the changes in dietary patterns during COVID 19 lockdown; and to understand the perception of food preparation during COVID 19 lockdown. This study employs qualitative approach using an in-depth interview conducted using a sample of 12 respondents of a typical Malaysian household. The respondents participated in a virtual interview session via Zoom about dietary patterns and food preparation during the COVID-19 pandemic. This study found two main themes emerged from the thematic analysis conducted; (1) increasing patterns of dietary habits implicated by increased in food consumption, increased and more regular mealtimes, and increased snacking habits; (2) perceived positive feelings in food preparation during lockdown, which were implicated by increased food preparation time, positive feelings associated with food preparation, and increased awareness on safety about food preparation during lockdown. Consequently, an increased pattern in dietary habits were inevitable during the lockdown period and food preparation activities were considered as an important leisure activity with the loved ones during the COVID-19 period, especially for people who suddenly faced a lockdown almost no one is accustomed to. As Malaysia begins to transition to a new normal, a return to healthier eating habits should be the focus of public health efforts.

### Keywords:

COVID 19, Lockdown, Dietary Changes, Food Preparation, Malaysian Household

## Introduction

The COVID-19 lockdown in Malaysia (commonly known as Movement Control Orders or MCOs) caused disturbances in daily living, such as adjustments in grocery shopping, cooking, and dining habits. People are spending more time at home and consuming food and meals that they would have consumed in other places. The development and spread of this disease culminated in a COVID-19 pandemic, causing enormous social, health, and economic upheaval (Ghebreyesus, 2020). The governments worldwide enforced social distancing measures, including ‘lockdown’ that sought to reduce the movement of and contact between people to control the spread of the virus (Gerritsen et al., 2021). Moreover, curfews, quarantines, stay-at-home orders, and shutdowns are all global versions of lockdown, with only critical companies authorised to remain open and schools, public buildings, and the bulk of workplaces compelled to shut. Everyone was asked to stay at home to break the chain of transmission of the virus, leaving their household only if they were essential workers. Restaurants, cafes, takeaway shops (fast-food restaurants), fruit and vegetable stores, bakeries, and butchers were closed. Supermarkets and other essential shops were open with physical distancing measures in place. The next Figure summarized the lockdown stages in Malaysia.



**Figure 1: Movement Control Order (MCO) Stages in Malaysia**

[Source: (Own)]

Malaysia began the first lockdown or Movement Control Order (MCO) from 18<sup>th</sup> until 31<sup>st</sup> March 2020. This quarantine measure encompassed restriction on movement including interstate and international travel with only essential business, industry and government bodies identified by the Malaysian National Security Council or Majlis Keselamatan Negara (MKN), remained open. The MCO stages were extended to different phases in 2020 and 2021, as shown in the Figure 1 above.

The key strength of this study is highlighted by the analysis of the overwhelming responses from the participants in the in-depth interview, where the expressive feedback and comments were related to the experience of sudden and unprecedented lockdown that no one is accustomed to. Furthermore, this study is also significant as the qualitative approach lend a

greater in-depth understanding how Malaysian household have been affected by the lockdown restrictions.

### **Literature Review**

The lockdown period has limited physical access and affordability of healthy food as well as causing disruption to cultural and social food practices. In addition, supermarkets and food outlets struggled to meet increased demand, with many running out of necessary food supplies. This was mainly due to panic buying and stocking up on goods, including groceries.

Moreover, online shopping slots for pick up or delivery were full several days or weeks in advance and not to mention the online food deliveries continued and reported record numbers of new members. Alongside the lockdown period, Baker et al., (2020) also mentioned household's increased spending on food purchases and credit card spending.

Throughout the pandemic, international public health advice on nutrition has been to consume a diet rich in fresh foods (de Faria Coelho-Ravagnani et al., 2020). Further, it was also advised that intakes of sugary drinks and processed foods high in calories and salt must be limited because optimum nutrition is important for mitigating the risk of morbidity due to COVID-19 (de Faria Coelho-Ravagnani et al., 2020). However, the psychological consequences of lockdown (increased anxiety, tension, irritation, bewilderment, rage, and boredom) and divergence from normal routines may result in overeating of unhealthy foods, which may aggravate obesity and raise the risk of cardiovascular and metabolic illnesses (Bhutani and Cooper 2020; Martinez-Ferran et al. 2020; Mattioli et al. 2020).

The requirement to stay at home full time calls for online teaching and learning, working at home as well as 'at home' physical exercise. The control over grocery shopping trips also forced people to hoard food. Furthermore, the disruption of the job pattern induced by the quarantine where most job task must be completed remotely at home, and online meeting took over the traditional face to face meetings, may cause extended boredom. In turn, this condition is related to an increase in energy intake to reduce boredom. In addition, listening to or reading about the numbers of COVID-19 cases obtained from the media might be upsetting. The stressed period influenced people's tendency to overeat, particularly on comfort foods, and caused food cravings (Di Renzo et al., 2020).

In another perspective, home cooking is typically seen as healthier option than dining out. Eating out has been related to obesity and eating less vegetables, but home-cooked meals often include lower total kilojoules, carbs, fat, sugar, and ultra-processed foods (Wolfson and Bleich 2015). However, it is unknown if these general results concerning home cooking remain true when the community is compelled to cook at home, such as during a pandemic lockdown.

The COVID-19 pandemic is likely to serve as an impetus for changes in food environment (Hammons et al., 2021). The frequency of shared mealtimes has been associated with many benefits including healthy eating, especially fruits and vegetables, and overall diet quality (Dwyer et al., 2015). Other studies using survey research during the first couple of months of the pandemic also found changes in eating habits (e.g., increased processed foods, snack foods, and fresh foods in the home), as well as changes in parent feeding practices, such as increases in restriction, monitoring, and pressure to eat (Ammar et al., 2020).

The unexpected isolation due to COVID 19 showed that leisure is important, and people can still find ways to be together (Lashua et al., 2020; Samdahl, 2020). Culinary activities have begun to be an opportunity for many people to get away from a problem. Gammon and Ramshaw (2020) stated that in the period of enforced lockdowns and social distancing, people resort to nostalgia-based leisure activities such as baking bread and making fresh pasta.

Despite the quarantine or lockdown regulations during the lockdown, little is known about its effect on the dietary patterns or changes, and the food preparation of the general household in Malaysia. Therefore, this study aimed to capture the dietary changes and perceptions of food preparation during the COVID 19 lockdown period among Malaysian household. There are two research objectives set for this study. First, is to explore the changes in dietary patterns during COVID 19 lockdown in Malaysia. Second, is to understand the behaviours and perception of food preparation during COVID 19 lockdown. Moreover, understanding the effect of the lockdown period on dietary habits and lifestyle of the general population would be essential in developing intervention strategies, should extended lockdown be imposed or the possibility of another pandemic in the future.

## Materials and Methods

### *The Respondents*

There were 12 respondents who took part in the study. Table below summarized the characteristics of each respondent.

**Table 1: Characteristics of the Respondents**

Pseudonym	Age/Gender	Employment status	Background
R1 (R1, FMW2C) <small>[e.g Respondent 1 is female (F) and married with 2 children (MW2C)]</small>	29/ Female	Private sector	Married with 2 children
R2 (R2, FM0C)	25/ Female	Government sector	Married with no children
R3 (R3, MMW3C)	36/ Male	Government sector	Married with 3 children
R4 (R4, FMW1C)	23/ Female	Unemployed	Married with 1 child
R5 (R5, MMW4C)	44/ Male	Government sector	Married with 4 children
R6 (R6, FMW3C)	40/ Female	Private sector	Married with 3 children
R7 (R7, FS)	24/ Female	Government sector	Single
R8 (R8, MS)	25/ Male	Government sector	Single
R9 (R9, MS)	25/ Male	Private sector	Single
R10 (R10, FMW2C)	32/ Female	Private sector	Married with 2 children
R11 (R11, FS)	21/ Female	Unemployed	Single
R12 (R12, FMW4C)	40/ Female	Private sector	Married with 4 children

Source: (Authors' Own)

The inclusion criteria for the sample selection are (1) any adult individuals required to stay at home during COVID 19 lockdown in Malaysia, (2) must have access to internet, (3) responsible for food preparation and (4) must be Malaysian aged 18 and above. The interviews were conducted in English and Malay, via an online meeting platform called Zoom. The online interview sessions took place between December 2020 and February 2021. The respondents were contacted through local community WhatsApp group, snowball sampling and word of mouth recommendation. Each of the interview lasted between 30 to 45 minutes. Electronically recorded interviews were then transcribed verbatim by the researchers and then subjected to

the qualitative thematic analysis. The transcribed interview data were then analysed to identify any patterns and then were coded in similar groups. The codes were then placed under main themes and subthemes. Interpretation of the codes regarding the themes were made separately.

## Results

From the thematic analysis, several themes emerged and were further analysed in relation to the study aim and objectives. The summary of the themes is presented in the next table. The analysis for the demographic characteristics of the respondents, the themes and subthemes for this study is presented next.

**Table 2: Themes and Subthemes from the Data Analysis**

Themes	Subthemes
Increasing patterns in dietary habits	Increased in food consumption
	Increased and more regular mealtimes
	Increased snacking
Perceived positive feeling in food preparation during lockdown	Increased food preparation time
	Positive feeling when preparing food
	Increased awareness of safety in food preparation during lockdown
<b>Total themes: 2</b>	<b>Total subthemes: 6</b>

Source: (Authors' Own)

### ***Demographic Analysis of The Respondents***

Eight female respondents and four male respondents took part in the interview. Most were married with children (seven respondents), four single, and one respondent is married without children. There is equal representative from the government and private sectors and two respondents were unemployed. All of them has responsibility of preparing food for themselves or their families.

### ***Increasing Patterns of Dietary Habits***

#### ***Increased in Food Consumption***

Most respondent reported increased food consumption over the lockdown, which was caused by the stay-at-home orders. Most respondents felt bored, and they consequently went to the kitchen to find food in the kitchen cabinet or the fridge: *'The children would go to the fridge and eat more things because they are at home a lot and has nothing to do'* (R3, MMW3C). One respondent also noted the increased amount of food purchases because they have run out of food more frequent than usual: *'I have to buy more food because they eat a lot more at home now'* (R12, FMW4C). The reasons given by the respondent on the increased food consumption were due to boredom: *'I spend more time at home, and I feel hungry most of the time. I think I was bored, so I eat frequent'* (R7, FS).



### ***Increased and More Regular Mealtimes***

The lockdown period was often regarded as an advantage for some of the respondent because they tend to spend more time at home, something they were not used to before. However, the extended stay-at-home period with several restrictions made them feel lost without much to do. Most of these free times were often occupied with much more regular mealtimes: *'We would normally eat at breakfast very early, then snack before lunch. We will have something late afternoon, dinner, and some fruits before bedtime. We eat, like, the whole day actually'* (R1, FMW2C).

One respondent mentioned how hurried he was almost every morning before going to work. He drove every morning and would often get caught up in traffic jams to go to work. Hence, he would skip the most important meal of the day, the breakfast. However, since he was instructed to work remotely at home, he was much more relaxed and plenty of time to prepare for breakfast and eat them while working: *'Before this, I often skip breakfast because I need to get to work early. But now I have more time before I start the day, so I will have regular breakfast, lunch, and dinner'* (R8, MS). This respondent even makes it a regular thing to have breakfast, lunch, and dinner and he felt much more happier working at home.

### ***Increased Snacking***

Respondents with children reported increased consumption of snacks during the lockdown period. Unfortunately, these parents resorted to providing junk food as an alternative because according to them, healthier snacks require more time to prepare. They often include chips, sweets, chocolates, biscuits, cakes, ice creams and processed frozen food as the option when their children ask for something to eat after the main meal: *'I bought more snacks. They are fast and cheaper to other foods'* (R12, MW4C). The snack of choice was purchased after the consideration of ease of preparation, good taste and cheap price. Interestingly, these types of snacks were also the choice among the respondents who were single: *'Yes I eat more snacks now. They are easily available and convenient for me'* (R9, MS). Often, the single respondent justified their snack of choice was due being too lazy to cook a whole meal. It was also found that they often snack while doing their work to help them maintain focus.

### ***Perceived Food Preparation during Lockdown***

#### ***Increased Food Preparation Time***

Lockdown has different impact on every household's food behaviour. Most non-essential businesses were forced to shut or transform their service to avoid contact and control the spread of COVID 19 disease. This includes many restaurant and other eatery outlet where they were only allowed to operate by providing takeaways or delivery only. However, most respondent felt the dilemma over this option as they were not encouraged to go outside unless it was very important. Most respondent choose to cook their own meal to avoid the risk of crowded places and because of the high cost on food delivery. The respondent also reported that since the beginning of the lockdown period, the enjoyment of preparing their own food has increased over time and they are spending more time in the kitchen compared to before the lockdown: *'I spend at least 3 hours a day in the kitchen now, 4 hours if I am baking!'* (R4, FMW1C).

One respondent also claim that she spends more time in the kitchen because she likes being with her children while preparing the food: *'My son and daughter will help out when we are in the kitchen so I will spend more time preparing the food because I love being with them'* (R10, FMW2C). It was surprising to one respondent to find his hidden talent in preparing food for

his family. He rarely cooks before, but the lockdown period has allowed him to discover and experiment with different recipe and he grew to be really good in his cooking: *'I spend most of my time cooking now and I am confident I can become a chef after this! My children say my cooking is even better than my wife's'* (R5, MMW4C). This respondent admits that before the lockdown period, they often buy readymade food from outside, and his wife does all the cooking when needed.

### ***Perceived Positive Feeling When Preparing Food***

Most of the respondent agreed that they would choose to prepare their own food during the lockdown. Apart from the convenience, the respondents relate to how preparing the food made them feel better about the lockdown. One respondent refers to how she felt happy when she cooks: *'I cook to avoid boredom and cooking makes me happy'* (R1, F, MW2C). This respondent admit that she also spends most of her time on the social media because she was bored. However, as most of the news in the social media were often updates of Malaysia's COVID 19 cases, she was restless. She felt much happier when preparing food and spending time in her kitchen. It was also mentioned that she felt more satisfied and excited when purchasing kitchen wares from her online shopping platform.

In addition, one respondent mentioned the extended lockdown period felt like it never ends and was overwhelmed when the government announces more and more restrictions as the COVID 19 cases increased: *'The lockdown is a boring time away from our work and we cannot leave home. It was quite fun to spend this period in the kitchen and preparing the food because you don't feel how time flies'* (R6, F, MW3C). This respondent admitted that preparing food is fun for her. The lockdown period also leads one respondent to feel stress but when he tried some new recipes that went viral over social media, it helped him coped with the feeling: *'I don't feel too much stress when I cook and I am more motivated when I cook something that look and taste really good'* (R9, MS).

### ***Increased Awareness of Safety in Food Preparation During Lockdown***

During the first phase of the lockdown period in Malaysia, one respondent mentioned how he was being extra cautious and heightened concern over being contracted by the disease after a trip outside to purchase supplies: *'I quickly purchase the things I needed, like in 10 minutes, went back home and straight to shower and change cloth. You never know how you might be infected'* (R3, MMW3C). Furthermore, this respondent added that: *'I noticed the fact that I was very careful when handling food because I worry about the COVID 19 outbreak. I clean my hands more regularly before and after touching the food, I washed the food thoroughly and inspect the food before I cook them. I have to be extra careful'* (R3, M, MW3C).

The increased awareness over their own safety and fear of contracting Covid 19 through the food prepared by others heightened over the lockdown period. However, respondents admitted that their concern now was not as overly expressed as during the first few months of the lockdown. This was mainly due to increased awareness and the situation was much more manageable in terms of more options and flexibility of food accessibility. Further, more access to valid and credible resources over Covid 19 contamination has lessened the community's concern over this issue. Admittedly, preparing their own food was still considered a safer option as the government repeatedly advised the public to avoid crowded place and confined spaces to minimize the risk of contamination: *'I cook more because I don't want to go outside*

*to buy food. I have to be careful about how the food was made, just in case the cook is infected with the disease. Cooking my own food is much safer' (R11, FS).*

## **Discussion**

This study found two emerging main themes; the increasing patterns of dietary habits, and the perception of food preparation during lockdown, from the in-depth interviews conducted with 12 respondents. In addition, three subthemes were developed from the dietary habits and patterns subthemes which are; increase in food consumption, more regular mealtimes, and increased snacking. Another three subthemes were also developed from the perceived positive feelings of food preparation main theme which are; increased food preparation time, perceived positive feelings when preparing food, and increased awareness of safety in food preparation during lockdown. These themes are discussed further next.

The lockdown settings resulted in an overlap in eating and mealtimes. People were rushed to create new eating patterns, including healthy and unhealthy habits. This study demonstrated how the COVID-19 pandemic's lockdown impacted Malaysian's dietary environment. During the pandemic, people altered their eating habits, snacked more throughout the day, and had more meals together (Giacalone et al., 2020). Moreover, the results from this study concurs with several studies carried out in different countries across the world which also found changes in eating habits related to the lockdown period. For example, changes in dietary habits among Italian adults (Di Renzo et al., 2020), patterns of change in eating habits and physical activity during COVID-19 lockdown in Spain (Perez-Rodrigo et al., (2021), dietary changes during the COVID-19 pandemic and their associations with socio demographics, body mass index (BMI) before pandemic, and lifestyle changes among Polish adults (Gornicka et al., 2020). This findings from this study are evidence that healthy eating, balanced diet and nutrition, must be better promoted to the community during the lockdown period. The government and other responsible agencies must come up with promotional strategies to increase accessibility to healthier food and provide resources to aid nutritious food consumption among. This action will help to maintain immunity, especially for vulnerable populations such as children and the elderly (Di Renzo et al., 2020).

Furthermore, it is important to note the second theme developed, which revealed that participants perceived the time they spent in the kitchen during the pandemic lockdown period as a leisure recreation experience. Interestingly, cooking was no longer considered as female chores, perhaps due to the nature of the lockdown, where people were forced to work from home, and they have additional time to spent in the kitchen. Cooking was considered as the channel to consume comfort food that can make the lockdown period felt better. Similarly, as mentioned in Gammon and Ramshaw (2021), preparing food appears to be the preferred pastime during the COVID 19 lockdown, as it provides a relaxed feeling in times of crisis. It has been observed that people, who started to spend time in the kitchen to be relieved from their boredom caused by staying closed in at home, turned to cook the dishes they have not tried to cook before due to the abundance of free time and perceive this activity as a quality time spent with their loved ones. In addition, the situational health and hygiene expectation arising from the pandemic also directed people to the kitchen and preparing their own food.

## **Limitation of Study**

This study could benefit from a much diverse respondents, across different age groups, gender, and employment status. However, a comparison study of how demographic characteristics influence the responses was not conducted. Face to face interviews is the most accurate method



for the most comprehensive inferences in accordance with the nature of qualitative research. Moreover, due to constraints of travel restrictions during the lockdown period, face-to-face interviews were not possible. In a different note, a study that focused on the type of food prepared during the lockdown could also benefit researchers to identify the diet quality of home cooked food during the lockdown period. A quantitative study may be conducted to larger setting, using food diary as an instrument to appropriately record all dietary intake. Future study could concentrate on reducing the possible long-term physical health consequences of overeating and sedentary behaviour during the epidemic, as well as developing sustainable healthy habits that may be applied to similar times in the future.

## Conclusion

This study found the increasing patterns in dietary habits and the changes in food preparation during lockdown, among the Malaysian households. Changes in food habits, was proven inevitable and health promotion messages must be conveyed especially to vulnerable groups to COVID 19 such as the elderly and children, in order to increase their immunity. The importance of healthy and balanced diet during lockdown period must be highlighted as people in lockdown tend to change their dietary habits to a less nutritious food, as found in studies across countries. Consequently, it is possible to say that food preparation activities were considered as an important leisure activity with our loved ones during the COVID-19 period, especially for people who suddenly faced a lockdown almost no one is accustomed to. As Malaysia begins to transition to a new normal, a return to healthier eating habits should be the focus of public health efforts. The consumption to healthier and balanced diet must be emphasized to encouraged people to maintain a healthier lifestyle, physically and mentally.

## References

- Ammar, A., Brach, M., Trabelsi, K., Chtourou, H., Boukhris, O., Masmoudi, L., ... & ECLB-COVID19 Consortium. (2020). Effects of COVID-19 home confinement on eating behaviour and physical activity: results of the ECLB-COVID19 international online survey. *Nutrients*, 12(6), 1583.
- Baker, S.R., Farrokhnia, R.A., Meyer, S., Pagel, M. and Yannelis, C. (2020), How does household spending respond to an epidemic? Consumption during the 2020 COVID - 19 pandemic, *National Bureau of Economic Research*.
- Bhutani S., Cooper J. A. (2020). COVID-19 related home confinement in adults: weight gain risks and opportunities. *Obesity* 28, 1576–1577
- de Faria Coelho-Ravagnani, C., Corgosinho, F. C., Sanches, F. L. F. Z., Prado, C. M. M., Laviano, A., & Mota, J. F. (2021). Dietary recommendations during the COVID-19 pandemic. *Nutrition Reviews*, 79(4), 382-393.
- Di Renzo, L., Gualtieri, P., Pivari, F., Soldati, L., Attinà, A., Cinelli, G. & De Lorenzo, A. (2020). Eating habits and lifestyle changes during COVID-19 lockdown: an Italian survey. *Journal of Translational Medicine*, 18, 1-15.
- Dwyer, L., Oh, A., Patrick, H., & Hennessy, E. (2015). Promoting family meals: a review of existing interventions and opportunities for future research. *Adolescent Health, Medicine and Therapeutics*, 6, 115.
- Gammon, S., & Ramshaw, G. (2021). Distancing from the present: nostalgia and leisure in lockdown. *Leisure Sciences*, 43(1-2), 131-137.
- Gerritsen, S., Egli, V., Roy, R., Haszard, J., Backer, C. D., Teunissen, L., & Te Morenga, L. (2021). Seven weeks of home-cooked meals: changes to New Zealanders' grocery shopping, cooking and eating during the COVID-19 lockdown. *Journal of the Royal Society of New Zealand*, 51(sup1), S4-S22.

- Giacalone, D., Frøst, M. B., & Rodríguez-Pérez, C. (2020). Reported changes in dietary habits during the COVID -19 lockdown in the Danish population: the Danish COVIDiet study. *Frontiers in Nutrition*, 7, 294.
- Górnicka, M., Drywień, M. E., Zielinska, M. A., & Hamułka, J. (2020). Dietary and lifestyle changes during COVID-19 and the subsequent lockdowns among Polish adults: a cross-sectional online survey PLifeCOVID-19 study. *Nutrients*, 12(8), 2324.
- Hammons, A. J., & Robart, R. (2021). Family Food Environment during the COVID-19 Pandemic: A Qualitative Study. *Children*, 8(5), 354.
- Lashua, B., Johnson, C. W., & Parry, D. C. (2021). Leisure in the time of coronavirus: a rapid response special issue. *Leisure Sciences*, 43(1-2), 6-11.
- Martinez-Ferran M., de la Guía-Galipienso F., Sanchis-Gomar F., Pareja-Galeano H. (2020). Metabolic impacts of confinement during the COVID-19 pandemic due to modified diet and physical activity habits. *Nutrients* 12:E1549.
- Mattioli A. V., Pinti M., Farinetti A., Nasi M. (2020). Obesity risk during collective quarantine for the COVID-19 epidemic. *Obes. Med.* 20:100263.
- Pérez-Rodrigo, C., Gianzo Citores, M., Hervás Bárbara, G., Ruiz-Litago, F., Casis Sáenz, L., Arijá, V., ... & Aranceta-Bartrina, J. (2021). Patterns of change in dietary habits and physical activity during lockdown in Spain due to the COVID-19 pandemic. *Nutrients*, 13(2), 300.
- Samdahl, D. M. (2021). Advice for leisure studies: reflections on the pandemic from a retired professor. *Leisure Sciences*, 43(1-2), 247-251.
- Wolfson, J. A., & Bleich, S. N. (2015). Is cooking at home associated with better diet quality or weight-loss intention? *Public Health Nutrition*, 18(8), 1397-1406.