

Effect of Changes in the Dietary Patterns among Athletes during COVID-19 Pandemic

Gayatri Salunke¹, Priyanka², Rupali Sengupta³

Department of Post Graduate Studies
Post Graduate Diploma in Sports Science Fitness & Nutrition
Dr. BMN College of Home Science (Autonomous),
S. N. D. T Women's University 338, Rafi Ahmed Kidwai Rd, Matunga,
Mumbai, Maharashtra 400019, India

Abstract: *The ongoing global pandemic brought about by Coronavirus II (SARS - CoV - 2 or COVID-19) has caused an ongoing cessation of sporting competitions and training facility closures, posing fundamental challenge for amateur and elite sporting professional. The research conducted consisted of questions in a differential format, with questions related to responses "before" and "during" confinement conditions. Food & Supplement consumption (macronutrient & micronutrient), snacks between meals, and intake of junk food were consumed more consciously during confinement, with alcohol binge drinking decreasing significantly. The COVID-19 home confinement had a negative effect on all Physical Activity (PA) & training intensity levels (vigorous, moderate, walking and overall); thereby changing the dietary intake in accordance with the changed regime during pandemic (54.4 %). Results indicated direct relationship between change in the dietary patterns altering the training regime & vice versa. Significant levels of stress have been observed among the athletes regarding their performance due to the compromise in their training regime as a result of the ongoing global pandemic (39.9%).*

Keywords: Pandemic, Athletes, Confinement, Food, Supplements, Physical Activity, Modification, Performance

1. Aim

To assess the changes in the dietary habits of athletes during COVID-19 pandemic.

2. Objectives

- To assess changes in the intake of food groups & nutritional supplements before & during home confinement among athletes.
- To assess the psychological stress and physical activity during home confinement among athletes.

3. Introduction

The ongoing pandemic caused by the outbreak of the severe acute respiratory syndrome known as Coronavirus II (SARS - CoV - 2 or COVID-19) in late 2019 has caused a major shift in the global way of life. Many affected countries had severe negative impacts on multiple domains including work, travel, leisure activity and national economies. For sporting organizations, restrictions have forced a temporary but ongoing cessation of major events and competitions worldwide. These restrictions have extended to the closure of training facilities, including private and commercial gymnasiums & these closures present a fundamental problem for general population health, as well as amateur and elite sporting professionals. The present paper presents preliminary data on the effects of the change in the dietary patterns of athletes before and during home confinement.

4. Materials & Methods

4.1 Survey Questionnaires

A cross - sectional study was conducted using Athlete

Dietary Index Questionnaire & Athlete Psychological Strain Questionnaire to assess change in dietary patterns during the COVID-19 outbreak. The questionnaire included questions on nutrition, health, mental well - being, mood, training pattern to achieve future goals and multidimensional lifestyle behaviours such as physical activity, diet, need of psychosocial support. All questions were presented in a differential format, to be answered directly in sequence regarding "before" and "during" confinement conditions. Therefore, a collection of validated and/or crisis oriented brief questions were included. The survey was open for athletes aged 18 - 30 years.

4.2 Data Privacy and Consent of Participation

During the informed consent process, survey participants were assured all data would be used only for research purposes. Participants were not asked to provide their names or contact information. Additionally, participants were able to stop study participation and leave the questionnaire at any stage before the submission process, where the responses were saved only by clicking on the provided "submit" button.

By completing the survey, participants acknowledged their voluntary consent to participate in this anonymous study.

Participants were requested to be honest in their response.

5. Result

In the face of the present COVID-19 pandemic, the effects of the home confinement on athletes have been seen in different domains: nutrition, physical activity, psychological states or the integration of the all the mentioned domains. Though the public health recommendations and governmental measures have enforced lockdowns and

restrictions to help abate the rate of infection; such limitations has resulted in negative effects by limiting participation in normal daily activities, physical activity (PA), travel and access to many forms of exercise (e. g., closed gyms, no group gatherings, increased social distancing). In addition to challenges to engage in PA - the closure of food suppliers has placed a burden on usual consumption of supplements. It was observed that home confinement has positively resulted in consumption of home cooked food (46.4%). Mood disturbances, such as anxiety, anger, irritability, stress - related disorders has been observed among athletes during quarantine periods (39.9%). Reduced mental well - being and satisfaction and increased need for psychological support has been observed as compared to the pre - epidemic period. Even though the modifications of nutritional practices are voluntary changes made by the athletes in accordance to the changed training regime (54.4%), they are merely the coping mechanism used to adjust with the current circumstance.

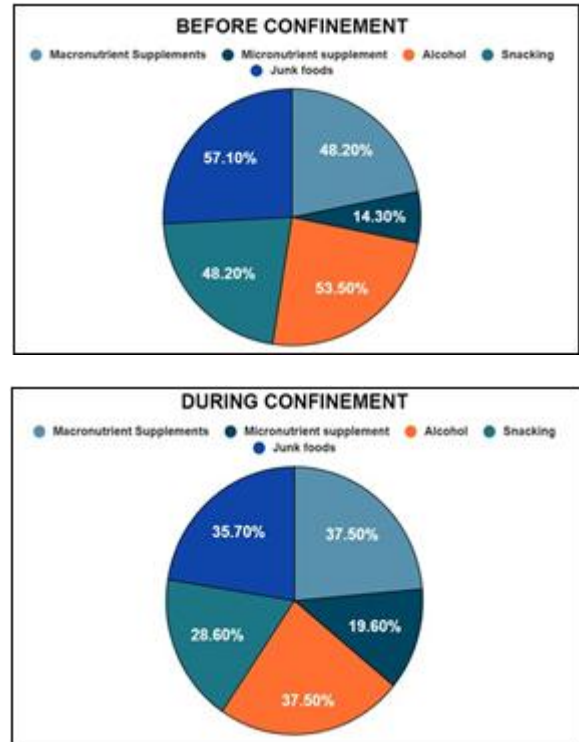


Figure 1: Significant response distribution differences (in %) between “before” and “during” COVID-19 home confinement period

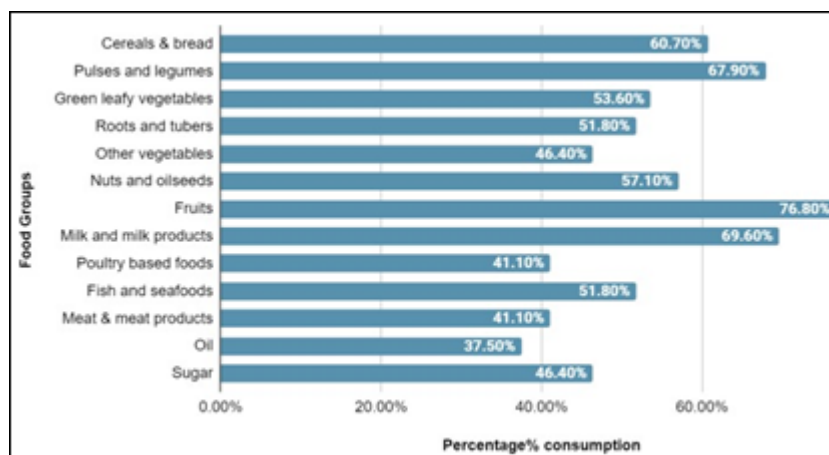


Figure 2. Responses of the participants for the consumption of specific food groups “before confinement”

Note: No significant changes were observed with respect the consumption of specific food groups “during confinement”.

6. Discussion

Based on the previous literature, it is known that both mood and exercise might affect nutritional choices. These effects are not independent, but exercise might mediate the mood - food relationship & thus determining changes in nutritional choices. Anxiety, stress evoked due the compromise in the training regime of athletes during home - confinement can be considered as the factor for consuming more food than the current physical activity levels; or for developing psychological & stress - related disorders.

1) Effect of Exercise on Nutrition

The combination of a healthy diet and physical exercise is the foundation of a healthy lifestyle. Exercise contributes to a negative energy balance by increasing energy expenditure. It has been proposed that exercise could influence nutrition

habits by improved mood states and increased self - efficacy through application of self - regulatory conducts - suggested gateway behavior for healthful eating. Our study showed that athletes performed other exercises to keep some sort of physical activity. Physical exercise and healthy food choices seem to facilitate each other, via improved self - regulatory strategies and intentions (e. g., planning to perform physical exercise), indicating potential transfer effects between these two aspects.

2) Effect of Mood on Nutrition

Quarantine situations have been evidenced to negative impact on mental health, in particular by promoting insomnia, depression, anxiety, irritability, stress - related disorders and anger. Poorer mental health - a partial consequence of COVID-19 lockdown, possibly led to less healthy diets can be linked to negative mood levels, such as

anxiety and depression; kick - starting the vicious circle of psychological & stress - related disorder. Hence, diet and mood can mutually influence each other through the gut-brain axis, in which the gut microbiome plays an important role in maintaining mental health.

7. Conclusion

The analysis of nutritional choices, physical exercise and mood in athletes during COVID-19 outbreak highlighted the importance of physical exercise on dietary habits. Indeed, reduced exercise showed to have two major effects - one through the application of self - regulatory conducts - causing conscious consumption of fresh fruits, vegetables, fish & meat according to the changed training regime & another through an indirect effect on nutritional choices, counterbalancing the impact of negative psychological states on the dietary habits. It is noteworthy that good nutrition plays a significant role in the health and well - being of an athlete. Overall, changes in the dietary habits led to healthier nutritional choices, mediating the effects of mood states & might represent a key measure in particular situations, such as a home - confinement due to a pandemic.

8. Strength & Limitations

This work has some strengths and limitations. The main strength point is that the dietary changes were assessed using standard questionnaires which comprised questions pertaining responses of 'before' & 'during' confinement period. The limitation is represented by the convenience sampling method, used for the recruitment of the participants which limited the statistical power and resulted in a self - selection bias associated with the athlete's gender. Another important aspect was that to ensure the sincerity of the answers as the questionnaires were anonymous, implying the impossibility of confirming the athletes' identities. This study has low - threshold strategy in that it did not allow for narrow target groups with defined inclusion - exclusion criteria. Thus, a collection from a representative sample cannot be expected.

Future studies could focus on the psychological and physiological mechanisms underlying the changes in dietary habits following different training modalities.

References

- [1] Amatori, S et al. (2020, November 28). Dietary Habits and Psychological States during COVID-19 Home Isolation in Italian College Students: The Role of Physical Exercise. *MDPI*.10.3390/nu12123660
- [2] Ammar, A. (2020, May 28). Effects of COVID-19 Home Confinement on Eating Behaviour and Physical Activity: Results of the ECLB - COVID19 International Online Survey. *MDPI*.10.3390/nu12061583