



An Impact of first COVID lockdown on physical and mental health along with the quality of life in Adults belonging to Maharashtra state

Tejal Patel¹, Aashi Bhatnagar¹, Junneshwar Bidve^{*2}, Ashwin Kshirsagar³, Satyam Bhodaji⁴,
Rekha Marbate², Avani Dabri¹, Nilofer Mogal¹

¹MGM School of Physiotherapy, Aurangabad, Maharashtra, India

²Department of Cardio-Respiratory Sciences, MGM School of Physiotherapy, Aurangabad, Maharashtra, India

³Department of Sports physiotherapy, MGM School of Physiotherapy, Aurangabad, Maharashtra, India

⁴Department of Community Based Rehabilitation, MGM School of Physiotherapy, Aurangabad, Maharashtra, India

Article History:

Received on: 28 Apr 2021

Revised on: 24 May 2021

Accepted on: 02 Jun 2021

Keywords:

Lockdown,
Mental health,
Pandemic,
Physical health,
Quality of life

ABSTRACT

Amid rise in Covid-19 cases throughout the world including India. So study was initiated to find out the impact on different domains of health. A self-administered questionnaire was prepared, which consist of questions pertaining to the change in physical and mental health along with the quality of life during the lockdown period and was distributed through Google forms. During the survey, a total of 663 responses were collected, of which 604 responses were analyzed. Out of responses that were calculated, the physical health of 370 participants (61.30%) was improved, physical health of 111 (-18.40%) participants has deteriorated and the remaining 123 (20.30%) participants barely changed. The mental health of 274 (-45.30%) participants was declined, 201 (33.20 %) respondents tried to maintain a healthy mental state while 129 (29.30%) members maintained a peaceful state of mind. The quality of life of 290 (48%) was adversely affected, 218 (36%) participants were able to maintain a healthier lifestyle, and their quality of life increased, while 96 (15.8%) remained unchanged. Quality of life is most negatively hampered whereas there is improved physical health status in the adult population. All the 3 components are Physical and Mental health along with Quality of life was affected due to Covid-19 related lockdown but out of these, physical health was 61.3% positively affected while mental health and QOL were deteriorated by 45% and 48% respectively.



*Corresponding Author

Name: Junneshwar Bidve

Phone: 9619660779

Email: junneshwar@gmail.com

ISSN: 0975-7538

DOI: <https://doi.org/10.26452/ijrps.v12i3.4766>

Production and Hosted by

IJRPS | www.ijrps.com

© 2021 | All rights reserved.

INTRODUCTION

Lockdown is a term used for “mass quarantine”, which basically suggests “stay at home” (Lippi *et al.*, 2020). For imposing social distancing and restricting the movement of population in a specific area, the government has passed this ordinance for counteracting an ongoing outbreak of COVID-19 (Lippi *et al.*, 2020). This will mandate the residents to stay at their homes and are allowed to carry out essential activities like purchasing medicine, food and beverages and other all non-essential activities

are stopped (Lippi *et al.*, 2020).

COVID-19 pandemic is a public health emergence of international concern with its high morbidity and high fatality rate, and the government was forced to pass an ordinance of complete lockdown as it was the only measure to prevent human-to-human transmission (Lippi *et al.*, 2020; Mukhtar, 2020). A nationwide lockdown has already been proven effective in the control of the COVID-19 outbreak but, this prolonged home stay is associated with potential side-effects which may deteriorate people's health. The apparent consequences of complete lockdown was the tremendous reduction of physical activity (Lippi *et al.*, 2020).

Prolong inactivity due to lockdown may lead to many adverse health changes, which includes the development of insulin resistance, muscle atrophy and bone loss, decrease aerobic capacity, increased blood pressure, fatty liver disease or non-alcoholic steatohepatitis and dislipidemia. It can also lead to the development of high risk for osteoporosis, diabetes, cardiovascular disease, cancer, dementia as well as obesity (Lippi *et al.*, 2020). Overall it will not only increase the risk of disability but also increases the risk of all-cause mortality in the general population (Lippi *et al.*, 2020).

WHO currently recommends that adults should engage in not less than 150mins per week of moderate-intensity aerobic physical activity or not less than 75min per week of vigorous-intensity aerobic physical activity or an equivalent combinations of moderate and vigorous-intensity activity for health promotion and its maintenance. It also recommends to perform some muscle-strengthening exercises, which includes major muscle groups, for two or more days per week.

Mental Health is an essential aspect that needs to be focused on during this Lockdown period. All modes of communication revolve around the virus during this lockdown, which has led to a wide range of symptoms. People who are quarantined are likely to develop symptoms such as psychological stress and disorder, including low-mood, insomnia, stress, anxiety, anger, irritability, emotional exhaustion, depression and post-traumatic stress symptoms (Mukhtar, 2020).

This pandemic has increased the risk of infection, fear of becoming sick or of losing loved ones, as well as the prospect of financial hardship, which are the utmost reasons for stress, abound in lockdown (Hoof, 2020) Prolong home-stay has not only affected the Physical and Mental health but also has adverse effects on quality of life. The risk of weight gain is one of the most significant implications of

physical inactivity, ultimately increasing the risk of many pathologies like diabetes, cardiovascular disease, embolism, cancers, low back pain, osteoarthritis and disabilities. This aspect is magnified by the unhealthy dietary habit that very frequently accompanies screen viewing (Hoof, 2020).

Prolong indoor stay is accompanied by unavoidable television watching, online gaming or social networking thus increasing the risk of a behavioral addiction disorder and psychological vulnerability. Most common side-effects includes sleep deprivation, eye strain, headache, low back pain, carpal tunnel syndrome, as well as increase risk of immobility related venous thrombosis (Hoof, 2020; Zhang and Ma, 2020).

Social isolation is a primary public health concern most commonly in an elderly population, as it increases the burden of neuro-cognitive, mental, cardiovascular and auto-immune problems along with depression and anxiety (Hoof, 2020; Zhang and Ma, 2020). Living in lockdown may either improve or deteriorate the health status of substance users. Major risk factors contributing to the worsening of the condition may include Self-isolation, Unemployment, Increased spare time and family dynamics (Zhang and Ma, 2020). Lockdown has limited the availability of addictive drugs, which can either help control addiction or intensify withdrawal symptoms (Zhang and Ma, 2020).

This study is conducted to compare the change in physical health, mental health and quality of life before and during the lockdown period. So that efficient remedies must be identified and readily put into action to prevent the risk of developing unwarranted health consequences from prolong home-stay (Troyer *et al.*, 2020). This study will acknowledge about the percentile of change in physical health, mental health and quality of life in the adult population due to lockdown.

MATERIALS AND METHODS

Study design

Cross sectional study

Study type

Observational study

Source of data

People residing in Maharashtra

Study setting

MGM school of physiotherapy

Study population

Male and female of age group 18-55yrs

Sampling method

Convenient method

Type of data

Primary data

Study procedure

In present study, we created a self-made questionnaire. It was sent for content validation to 5 experts, and then after validation pilot study was conducted. Then we created a google docx and circulated it amongst the people through social media.

Study tools

Self-made Questionnaire

Inclusion criteria

1. Both male and female
2. Age-18-55

Exclusion criteria

Individuals not willing to participate.

Study materials

A self-administered questionnaire was prepared; it consists of questions pertaining to change in physical health, mental health and quality of life during the lockdown period.

RESULTS AND DISCUSSION

Tables and Graphs are mentioned at the end of the references.

In our study, we tried to gain knowledge regarding the change in Physical health, Mental health and Quality of life among the adult population during the lockdown period. This extended stay at home has the potential to have negative consequences for people's well-being. People were asked to stay at home in order to survive the pandemic, which can have a detrimental effect on their physical and mental well-being, leading to diabetes, cancer, obesity, cardiovascular disease, osteoporosis, depression, anxiety, and mood disorders. As a result, we conducted this research to determine the effect of lockdown on the health of Maharashtra residents aged 18 to 55.

During the survey, a total of 663 responses were collected, of which 604 responses were analyzed. Out of responses that were calculated, the physical health of 370 participants (61.30%) was improved as during lockdown; people got much more time for self-care and exercise to keep themselves healthy as, before lockdown, it was not possible for some people to work out due to lack of time. There were

a number of motivational programs and classes encouraging fitness to improve good health during the lockdown, and it found out to be a wonderful coping strategy that can help keep our bodies resilient in the midst of this global pandemic. It was found that one in three are exercising more since lockdown measures began but, in this study, we discovered that the physical health of 111 (-18.40%) participants was deteriorated as there sitting time due to work, contributing to sedentary behavior, and the remaining 123 (20.30%) participants barely changed. It is been mentioned in Graph 1, Shows the number of people that are positively affected, negatively affected and unaffected of all the three components.

The mental health of 274 (-45.30%) participants was declined due to multiple stressors like worrying about their own health and their loved ones, loneliness, unemployment, financial problems and domestic work. Protective factors such as a high degree of trust in doctors, satisfaction with health information, and personal precautionary measures helped 201 (33.20 %) respondents to maintain a healthy mental state while 129 (29.30%) members maintained a peaceful state of mind.

Total lockdown during the COVID-19 pandemic causes social jetlag, with delayed sleep-wake cycles, meal timings, and excessive digital media exposure, as well as reduced social interactions due to physical distance, adversely affecting 290 (48%) participant's quality of life. Despite the lockdown, 218 (36%) participants were able to maintain a healthier lifestyle, and their quality of life increased, while 96 (15.8%) respondents remained unchanged. A total of 604 men and women between the ages of 18 and 55 years old actively participated in this survey. Physical health was improved by 61.30% as the individuals were encouraged to begin or continue daily participation in physical activity to promote physical and mental health, according to the World Health Organization (WHO, 2020), the Centers for Disease Control and Prevention (CDC, 2020a), and other public health advisory organizations (ACSM, 2020; American Heart Association, 2020). The benefits of daily physical activity in enhancing immune function and reducing the risk, length, or severity of viral infections were among the main key points mentioned in one of the papers (Laddu et al., 2021). It is been mentioned in Graph 2, Results in percentage.

Regular activity has a significant impact on human metabolism, and regardless of the intensity or time of day, it can vastly improve a variety of health problems (Chandola et al., 2020). Physical exer-

cise has the ability to counteract the negative cardiometabolic impact of inactivity while also bolstering psychological capital and coping abilities (Füzéki et al., 2020).

During quarantine, exercise becomes particularly important for older people because protecting the physiological function and reserve of most organ systems will help combat the mental and physical effects of Covid-19 (Jiménez-Pavón et al., 2020). According to Mi Xiang's et al. research, during the COVID-19 pandemic, there was a significant decrease in physical activity and a rise in screen time, which could have a long-term effect on physical activity habits and sedentary time presenting serious challenges for children and adolescents (Xiang et al., 2020a). A study was conducted in Greece, which concluded that there was a significant decline in physical activity of the male adult population due to lockdown (Bourdas and Zacharakis, 2020).

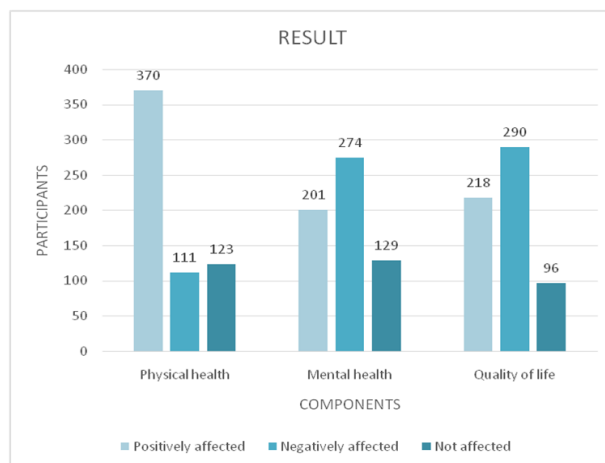
A data revealed by Adarsh Kumar Srivastav et al. stated that physiotherapy professionals and students reported a significant drop in self-reported physical activity and energy expenditure (Srivastav et al., 2021). The negative effects of lockdown on physical activity and sedentary attitudes were linked to changes in lifestyle behaviours during the lockdown era, according to this report. These findings should be taken into account in future public health policies (Chambonniere et al., 2021). As a result, the lockdown time is strongly linked to a decrease in overall physical activity. However, according to our study, physical activity among the adult population of Maharashtra has improved.

Lockdown can be a major and effective social distancing technique to combat the increasing spread of the highly contagious COVID-19 virus, and it can also have some psychological effects on the public ranging from anxiety, fear, depressive symptoms, loneliness, sleep disturbances, frustration, and so on (Reynolds et al., 2008). More than two-fifths of people in India are suffering from common mental disorders as a result of the lockdown and the ongoing COVID-19 pandemic, according to a survey (Grover et al., 2020). In our sample, 45.3% of people had negative mental health effects.

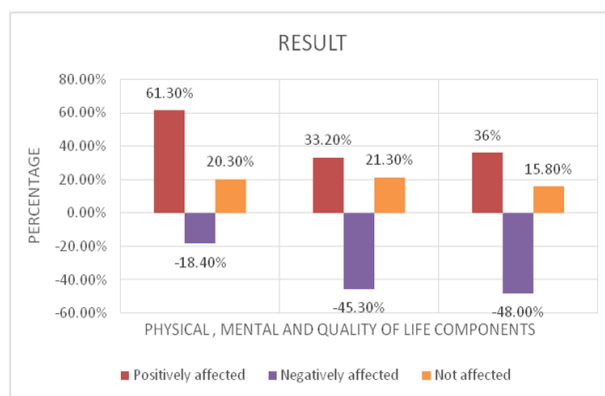
There may be public anxiety about the availability of basic services such as groceries and milk supplies, medications, treatment of previously ill family members due to other health problems, elderly people living alone, limitations on free movement, having a dominant feeling of being trapped in one's own house or "being under house arrest." (Varalakshmi and Swetha, 2020)

According to a study conducted among the adult

population in the United Kingdom, depression and financial stressors remained key risk factors for the development of CMD, even after a decrease in pandemic and lockdown-related stress or levels by the mid of 2020 (Talevi et al., 2020). Experts emphasize the importance of paying special attention to the groups who are at risk of more emotional damage, which could require targeted approaches with the aim of better coping strategies, the urgent psychological issues of people affected by the COVID-19 pandemic (Xiang et al., 2020b).



Graph 1: Shows the number of people that are positively affected, negatively affected, and unaffected of all the three components



Graph 2: Results in percentage

(Xiang et al., 2020b) proposed three key elements: the formation of collaborative mental health teams, consistent communication with timely alerts about the COVID-19 outbreak, and the implementation of secure programs to provide psychiatric care through telemedicine with expanding attention for vulnerable people such as elderly individuals or people with mental illness (Morganstein, 2020).

Mental health agencies and public health institutions are issuing practical recommendations

for how to care for one's mental health and well-being. The American Psychiatric Association (NAMI, 2020), the National Alliance On Mental Illness (SAMHSA, 2020), and the Substance Abuse and Mental Health Services Administration (Sharma et al., 2020) all provide general advice to the public on how to plan their time and handle their mental health.

According to a study on school teachers, yoga practice has been actively pursued to effectively reduce anxiety and stress, so that improved sleep can positively impact immunity. As a result, there is a surge in social media contributing to regular online Yoga classes, which seem to be beneficial in offering convenient means to achieve both mental and physical well-being (Sinha et al., 2020a). Among the adult population of Maharashtra, 33% of people might have adopted these strategies to cope up with the psychological stress associated with lockdown, according to this survey.

We report a significant decline in Quality Of Life by 48% in an adult population of Maharashtra. During a lockdown, a higher number of people reported increased during the day napping, worsened sleep quality, and sometimes interrupted sleep, as well as insufficient physical activity, relatively low subjective mood status, increased eating/ snacking pattern, marginally increased appetite, and a disrupted daily routine (Renzo et al., 2020).

Due to the obvious containment steps, people's lifestyles drastically altered, increasing the likelihood of sedentary behaviour, smoking, and sleep pattern. Several studies have found a connection between sleep disruptions and obesity, owing to an increase in the secretion of pro-inflammatory cytokines by increased visceral adipose tissue, which can lead to sleep-wake rhythm disruption, revealed according to an Italian survey (CDC, 2020b).

Center of Disease Control (CDC) states that our well-being can be jeopardized by changes in our eating habits and lifestyle. Maintaining proper nutrition is critical, particularly during a time when the immune system may be under attack (Vanderbruggen et al., 2020). When compared to the time prior to the lockdown, people consumed slightly more alcohol and smoked somewhat more cigarettes. The key reasons for consuming more of the different drugs were boredom, lack of social contacts, loss of daily structure, reward after a hard day's work, isolation, and conviviality (Carreras et al., 2021). The major cause of concern is smokers who had increased their cigarette consumption as a result of increased psychological distress associated with lockdown lead-

ing to decrease in quality of life (Bahkir and Grandee, 2020).

The study found a significant spike in the use of smart devices following the implementation of the COVID-19 lockdown, as well as a gradual decline in ocular health amongst all age groups. It's important to raise awareness of how to avoid digital visual fatigue, and interventions to lessen the effects should be investigated in the future (Sinha et al., 2020b; Masaeli and Farhadi, 2021). Financial issues, solitude, inappropriate substance use, and behavioural health issues such as depression, anxiety, and stress all contributed to an increase in Internet-based addictive behaviours during the COVID-19 pandemic, according to the articles reviewed (Masaeli and Farhadi, 2021).

The pandemic's deep effects on health habits, as well as the likelihood of a second COVID-19 wave, reflects the need for innovative, multiple strategies to help people adapt their self-care behaviours to avoid chronic and infectious diseases.

CONCLUSIONS

This study has demonstrated that all the 3 components that is Physical health, Mental health and Quality of life, were affected due to covid-19 related lockdown but out of these, physical health was 61.3% positively affected while mental health and QOL were deteriorated by 45% and 48% respectively.

There is a necessity to develop a robust, evidence-based strategy to manage the issues that the population faces before and after lockdown. It is important to develop constructive coping mechanisms in light of the ongoing crisis and to avoid more problems as a result of a prolonged stay at home.

ACKNOWLEDGEMENT

The authors would like to thank to all participant for participating in the survey.

Conflict of Interest

The authors declare that they were no conflict of interest.

Funding Support

No external funding received for the study.

ORCID

JunneshwarBidve- <https://orcid.org/0000-0002-1478-1157>.

REFERENCES

- ACSM 2020. Staying active during the coronavirus pandemic. Updated on Nov 18, 2020. *American College of Sports Medicine*.
- American Heart Association 2020. Working out while staying safe during the coronavirus outbreak. Accessed on: 25 Mar 2021.
- Bahkir, F. A., Grandee, S. S. 2020. Impact of the COVID-19 lockdown on digital device-related ocular health. *Indian Journal of Ophthalmology*, 68(11):2378.
- Bourdas, D. I., Zacharakis, E. D. 2020. Impact of COVID-19 Lockdown on Physical Activity in a Sample of Greek Adults. *Sports*, 8(10):139.
- Carreras, G., Lugo, A., Stival, C., Amerio, A., Odone, A., Pacifici, R., Gallus, S., Gorini, G. 2021. Impact of COVID-19 lockdown on smoking consumption in a large representative sample of Italian adults. *Tobacco Control*.
- CDC 2020a. Division of Viral Diseases: Coronavirus Disease 2019 (COVID-19) Daily life and coping. Centers for Disease Control and Prevention, National Center for Immunization and Respiratory Diseases (NCIRD).
- CDC 2020b. People who are at higher risk for severe illness. Centers for Disease Control and Prevention.
- Chambonniere, C., Lambert, C., Fearnbach, N., Tardieu, M., Fillon, A., Genin, P., Larras, B., Melsens, P., Bois, J., Pereira, B., Tremblay, A., Thivel, D., Duclos, M. 2021. Effect of the COVID-19 lockdown on physical activity and sedentary behaviors in French children and adolescents: New results from the ONAPS national survey. *European Journal of Integrative Medicine*, 43:101308.
- Chandola, T., Kumari, M., Booker, C. L., Benzeval, M. 2020. The mental health impact of COVID-19 and lockdown-related stressors among adults in the UK. *Psychological medicine*, pages 1–10.
- Füzéki, E., Groneberg, D. A., Banzer, W. 2020. Physical activity during COVID-19 induced lockdown: recommendations. *Journal of Occupational Medicine and Toxicology*, 15(1):1–5.
- Grover, S., Sahoo, S., Mehra, A., Avasthi, A., Tripathi, A., Subramanyan, A., Patojoshi, A., Rao, G. P., Saha, G., Mishra, K. K., Chakraborty, K. 2020. The psychological impact of COVID-19 lockdown: An online survey from India. *Indian Journal of Psychiatry*, 62(4):354–362.
- Hoof, E. V. 2020. Lockdown is the world's biggest psychological experiment-and we will pay the price. *In World Economic Forum*, 9.
- Jiménez-Pavón, D., Carbonell-Baeza, A., Lavie, C. J. 2020. Physical exercise as therapy to fight against the mental and physical consequences of COVID-19 quarantine: Special focus in older people. *Progress in Cardiovascular Diseases*, 63(3):386–388.
- Laddu, D. R., Lavie, C. J., Phillips, S. A., Arena, R. 2021. Physical activity for immunity protection: Inoculating populations with healthy living medicine in preparation for the next pandemic. *Progress in Cardiovascular Diseases*, 64:102–104.
- Lippi, G., Henry, B. M., Bovo, C., Sanchis-Gomar, F. 2020. Health risks and potential remedies during prolonged lockdowns for coronavirus disease 2019 (COVID-19). *Diagnosis*, 7(2):85–90.
- Masaeli, N., Farhadi, H. 2021. Prevalence of Internet-based addictive behaviors during COVID-19 pandemic: a systematic review. *Journal of Addictive Diseases*, pages 1–27.
- Morganstein, J. 2020. Coronavirus and mental health: Taking care of ourselves during infectious disease outbreaks. APA Coronavirus Resources. American Psychiatry Association.
- Mukhtar, S. 2020. Psychological health during the coronavirus disease 2019 pandemic outbreak. *International Journal of Social Psychiatry*, 66(5):512–516.
- NAMI 2020. CoViD-19 Resource and Information Guide. National Alliance on Mental Illness.
- Renzo, L. D., Gualtieri, P., Pivari, F., Soldati, L., Attinà, A., Cinelli, G., Leggeri, C., Caparello, G., Barrea, L., Scerbo, F., Esposito, E., Lorenzo, A. D. 2020. Eating habits and lifestyle changes during COVID-19 lockdown: an Italian survey. *Journal of Translational Medicine*, 18(1):1–15.
- Reynolds, D. L., Garay, J. R., Deamond, S. L., Moran, M. K., Gold, W., Styra, R. 2008. Understanding, compliance and psychological impact of the SARS quarantine experience. *Epidemiology and Infection*, 136(7):997–1007.
- SAMHSA 2020. Tips for social distancing, quarantine, and isolation during an infectious disease outbreak. (Accessed: May 2020). Substance Abuse and Mental Health Services Administration.
- Sharma, K., Anand, A., Kumar, R. 2020. The role of Yoga in working from home during the COVID-19 global lockdown. *Work*, 66(4):731–737.
- Sinha, M., Pande, B., Sinha, R. 2020a. Association of mid sleep time and social jetlag with psychosocial behaviour of Indian population during COVID-19 lockdown. *Journal of Public Health Research*, 9(4).
- Sinha, M., Pande, B., Sinha, R. 2020b. Impact

- of COVID-19 lockdown on sleep-wake schedule and associated lifestyle related behavior: A national survey. *Journal of Public Health Research*, 9(3):1826.
- Srivastav, A. K., Sharma, N., Samuel, A. J. 2021. Impact of Coronavirus disease-19 (COVID-19) lockdown on physical activity and energy expenditure among physiotherapy professionals and students using web-based open E-survey sent through WhatsApp, Facebook and Instagram messengers. *Clinical Epidemiology and Global Health*, 9:78-84.
- Talevi, D., Socci, V., Carai, M., Carnaghi, G., Faleri, S., Trebbi, E., Bernardo, A. D., Capelli, F., Pacitti, F. 2020. Mental health outcomes of the CoViD-19 pandemic. *Rivista di psichiatria*, 55(3):137-144.
- Troyer, E. A., Kohn, J. N., Hong, S. 2020. Are we facing a crashing wave of neuropsychiatric sequelae of COVID-19? Neuropsychiatric symptoms and potential immunologic mechanisms. *Brain, Behavior, and Immunity*, 87:34-39.
- Vanderbruggen, N., Matthys, F., Laere, S. V., Zeeuws, D., Santermans, L., den Aemele, S. V., Crunelle, C. L. 2020. Self-Reported Alcohol, Tobacco, and Cannabis Use during COVID-19 Lockdown Measures: Results from a Web-Based Survey. *European Addiction Research*, 26(6):309-315.
- Varalakshmi, R., Swetha, R. 2020. Covid-19 lock down: People psychology due to law enforcement. *Asian journal of psychiatry*.
- WHO 2020. Stay physically active during self-quarantine. World Health Organization.
- Xiang, M., Zhang, Z., Kuwahara, K. 2020a. Impact of COVID-19 pandemic on children and adolescents' lifestyle behavior larger than expected. *Progress in Cardiovascular Diseases*, 63(4):531-532.
- Xiang, Y. T., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T., Ng, C. H. 2020b. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *The Lancet Psychiatry*, 7(3):228-229.
- Zhang, Y., Ma, Z. F. 2020. Impact of the COVID-19 pandemic on mental health and quality of life among local residents in Liaoning Province, China: A cross-sectional study. *International journal of environmental research and public health*, 17(7):2381.