ORIGINAL ARTICLE

Gender and Ethnic Differences in Stress and Lifestyle Factors Post COVID-19 Lockdown Among Medical Students

George SD[a], Thamilvanan N[b], Nil Singh KLB[b] , Jaspal Singh KS[b], Isyraqiah F[c]

[a]Department of Physiology, Faculty of Medicine, Manipal University College Malaysia, Melaka, Malaysia.
[b]Year 5 MBBS Student, Faculty of Medicine, Manipal University College Malaysia, Melaka, Malaysia.
[c]Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, Selangor, Malaysia.

ABSTRACT

INTRODUCTION: Lifestyle choices can significantly impact students' stress levels, especially during the COVID-19 lockdowns. It is not known whether the management of lifestyle behaviours and stress factors post COVID-19 lockdown differs between genders and ethnicities in Malaysia. **MATERIALS AND METHODS:** A cross-sectional study was conducted among 345 medical students in a private Malaysian University willing to participate. The demographic details were collected after obtaining their consent for participation. Lifestyle and stress questionnaires were administered online, and multiple logistic regression analyses were used to analyse their lifestyle and stress factors post COVID-19 lockdown. **RESULTS:** Male students tend to have a strict exercise regime (p<0.0001) and reported low alcohol consumption (p=0.002). Female students did less exercise (p=0.007) and experienced an increase in muscular aches (p<0.0001). They also tend to bring work home at night (p=0.032), have insufficient hours to do all duties (p=0.038), and have altered appetites (p=0.001). Both Indian (p=0.011) and Chinese (p=0.006) participants can still cope with the present working environment. Indian respondents tend to get sick more frequently than other ethnicities (p=0.043). Malay (p=0.007) and Chinese (p=0.024) respondents are less likely to experience muscular pain. Chinese students are less likely than other ethnicities to have sick parents (p=0.027), while Malay students have family members with illnesses like high blood pressure and diabetes (p=0.019). **CONCLUSION:** Developing targeted student support learning such as stress management workshops, time management training, and comprehensive wellness programs tailored to different genders and ethnicities could reduce stress and promote a healthier lifestyle.

Keywords
Gender, Ethnicity, Lifestyle, Stress, Lockdown.

Corresponding Author
Dr. Faizatul Isyraqiah
Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, Selangor, Malaysia.
E-mail: faizatul.muhammad@monash.edu

Received: 28th November 2024; Accepted: 23h March 2025

Doi: https://doi.org10.31436/imjm.v24i03/2789

INTRODUCTION

Medical students frequently suffer high amounts of stress because of their intensive training, which can lead to burnout and mental health concerns.[1] Social isolation, independent study, and continuous cognitive workload have added significant educational challenges during the COVID-19 pandemic.[2] The closing of universities had overwhelmed healthcare students' education as lessons were shifted to online delivery and clinical placements were cancelled.[3] Higher academic load and lack of social support can heighten the stress levels of undergraduate students.[4] Stress can promote unhealthy lifestyle choices and increase the risk of chronic diseases.[4] The pandemic has disrupted many students' daily routines, leading to increased sedentary behaviour and poor eating habits,[5] and these were associated with heightened anxiety and depression.[3] Adopting a healthy lifestyle is related to decreased odds of depression, anxiety, and stress.[6] Developing efficient support systems requires an understanding of how these hardships impact various student groups.

There is limited data on the intersection of gender and ethnicity on stress factors and lifestyle behaviours post COVID-19 lockdown among medical students in Malaysia. Ethnic background can influence lifestyle choices, resource availability, and coping techniques.[6]

A pre-pandemic study in Malaysia reported Chinese students were more prone to higher stress levels compared to other ethnicities probably due to the stronger commitment to strive for excellence.[8] Indian students reported lower coping skills than other ethnicities.[8] During the pandemic, female students are more likely to report higher levels of stress and anxiety compared to their male counterparts,[9] and this was similarly observed in a Malaysian cohort.[10] Examining how gender and ethnicity interact with lifestyle choices will provide insights into the broader health consequences for medical students in the post COVID-19 lockdown, which may affect patient care in the future. This understanding is critical for establishing focused educational strategies and mental health interventions that address the specific requirements of varied student populations, thereby improving their educational experience and well-being. As a result, the current research paper investigates the impact of gender and ethnicity on lifestyle and stress factors post COVID-19 lockdown among medical students at a private Malaysian University.

MATERIALS AND METHODS

Study Design

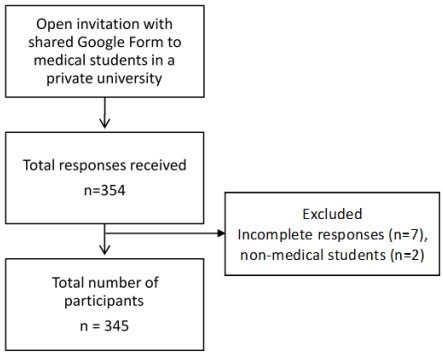

Figure 1: Flowchart of study design in recruitment of participants

The purpose of the survey was to investigate if there are differences in gender and ethnicity in the lifestyle behaviours and stress factors post COVID-19 lockdown among medical students. Lifestyle behaviour encompasses the dietary habits, sleeping patterns, and physical activities performed. Lifestyle choices are important as they can impact the stress levels of students. Stress is a significant underlying cause of mental and physical illnesses. The instrument used in this study aligns closely with the construct and measures the lifestyle and stress factors mentioned above. Two reviewers independently validated the questionnaire to ensure the questions were relevant, clear, and understandable for respondents. In the stress questionnaire, question number 20 (My sex drive is lower, can experience changes to the menstrual cycle) was removed as it can be misinterpreted as applying only to the female respondents. Overall, basic evidence for validity in this study included alignment with the construct and content validity by expert reviews.

Participant Recruitment and Data Collection

A cross-sectional study was conducted between June to September 2022 at a private Malaysian university. The timeline indicated the physical return of the students to campus after the COVID-19 lockdown was lifted in early 2021. The students, regardless of age or gender, who agreed to participate in the study and are well-versed in English were included in this study. The questionnaire was administered online (Google Form) to collect data from the students. Students who are not from the medical program are excluded from this study. A final total of 345 medical students participated in this study.

The final online survey consisted of three sections: (1) demographics; (2) lifestyle behaviours[11] with 15 items; and (3) stress factors[12] with 24 items. The format of the questionnaire on lifestyle behaviour was multiple options with no order, while the stress factors were in a dichotomous (yes/no) format. The purpose and objective of the study were explicitly described to the students via an information sheet, and they were informed that participation was voluntary. It was emphasized that all collected data would remain confidential. The questionnaire was distributed to the respondents only after receiving written informed consent. The survey took about 10-15 minutes to be completed. We acknowledge the potential biases introduced by using an online questionnaire, such as limited participation by less tech-savvy or less English-proficient students. These were mitigated by including the contact number and email of the person in charge to address any queries. Self-reported bias is reduced as participants have the right to not share their identity and remain anonymous. Measures to maintain confidentiality are ensured by restricting access to the respondents' data.

Data Analysis and Statistical Methods

Multiple logistic regression analyses were used to determine the correlation between gender and ethnicity with lifestyle and stress factors. Odds ratios (ORs) and 95% confidence interval (CI) were also identified in this study. The analysis was conducted using statistical tests in the SPSS software (version 29.0). Data is expressed as number of respondents and/or percentages. Heat maps and stacked bar charts were constructed using GraphPad Prism (version 10.2.2).

RESULTS

Demographic characteristics

On average, the age of the participants was 20.73 years. There were more female respondents (55.7%) compared to male respondents (44.3%) in this study. The majority of the participants were of Indian ethnicity (65.2%) (Table 1).

Table 1: Demographic characteristics of questionnaire respondents (N=345)

Characteristics	Frequency (%)
Age (years), mean ± SD	20.73 ± 1.797
Gender	
Male	153 (44.3)
Female	192 (55.7)
Race	
Chinese	75 (21.7%)
Indian	225 (65.2%)
Malay	30 (8.7%
Others	15 (4.3%)

Health and Lifestyle behaviour

Health and lifestyle behaviour were assessed on various parameters such as meal frequency, fitness, smoking habits, and alcohol consumption (Figure 2 and 3; Table 2 in Supplementary Page). Results show that female participants hardly exercise (OR=2.43, 95% CI: 1.27-4.65; p=0.007), while the male participants were more likely to follow a strict exercise regime (OR= 0.177, 95% CI: 0.07-0.44; p<0.0001). It is not surprising that the female respondents also felt unfit compared to males (OR= 3.45; 95% CI: 1.62-7.33; p=0.001), and the majority felt they could be fitter (OR= 2.00, 95% CI: 1.15-3.47; p=0.014). They also spend more time watching television or online surfing (OR= 3.97, 95% CI: 2.19-7.21; p<0.0001), or feel that they do not have any free time (OR= 3.12,95% CI: 1.47-6.63; p=0.003). Male respondents tend to report low alcohol consumption (OR= 0.47, 95% CI: 0.29-0.76; p=0.002).

Both parents of Chinese participants were more likely to be healthy (OR = 0.07, 95% CI: 0.01-0.73; p=0.027), while Malay participants have family members with illnesses like high blood pressure and diabetes (OR= 9.12, 95% CI 1.43-58.00; p=0.019). Both Indian (OR= 6.21, 95% CI: 1.51-25.49; p=0.011) and Chinese (OR= 10.16, 95% CI: 1.92-53.81; p=0.006) participants can still cope with the present working environment. More Malay respondents fell ill in the last 3 to 6 months (OR= 7.36, 95% CI: 1.00-54.15; p=0.05), or last year (OR= 9.24, 95% CI: 1.15-74.05; p=0.036), while Indian respondents tend to get illness in the last month (OR= 4.71, 95% CI: 1.05-21.12; p=0.043).

Stress Factors

Stress factors were assessed on various parameters such as ability to manage workload, appetite, mood swings, and pain complaints (Figure 4 and 5; Table 3 in Supplementary Page). Female respondents were more likely to bring work home at night (OR= 1.75, 95% CI: 1.05-2.91; p=0.032). Despite this, they still felt like they did not have enough time to complete their work (OR= 1.79, 95% CI: 1.03-3.09; p=0.038). They also experienced a change in their appetite (OR= 2.2, 95% CI: 1.40-3.45; p=0.001) and felt that they had impaired concentration and memory (OR= 1.69, 95% CI: 1.10-2.61; p=0.017). Female participants reported increased muscular aches and pains (OR= 2.53, 95% CI: 1.62-3.97; p<0.0001), while Malay (OR= 0.14, 95% CI: 0.03-0.59; p=0.007) and Chinese (OR= 0.23, 95% CI: 0.07-0.83; p=0.024) participants were less likely to have such pain. There was no interaction between both ethnicity and gender in this stress factor.

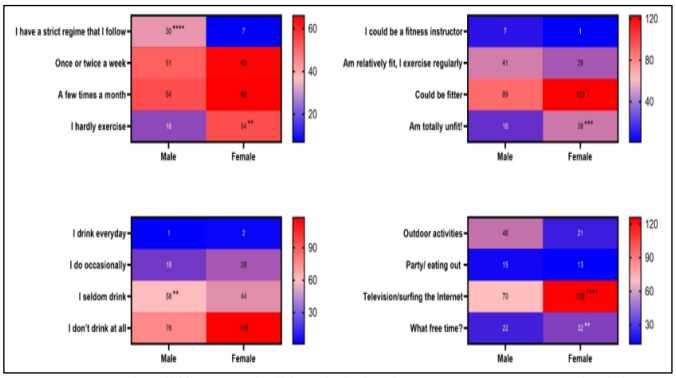

Figure 2: Gender differences in lifestyle behaviours post COVID-19 lockdown among medical students.
Heat maps show the number of responses from male and female students. Asterisks mark significant p-values
(*p<0.05, **p<0.01, ***p<0.001, ****p<0.0001)

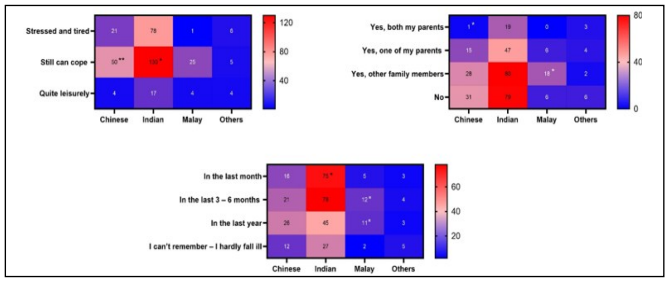

Figure 3: Ethnic differences in lifestyle behaviours post COVID-19 lockdown among medical students.
Heat maps show the number of responses between students of different ethnicities. Asterisks mark significant p-values (*p<0.05, **p<0.01)

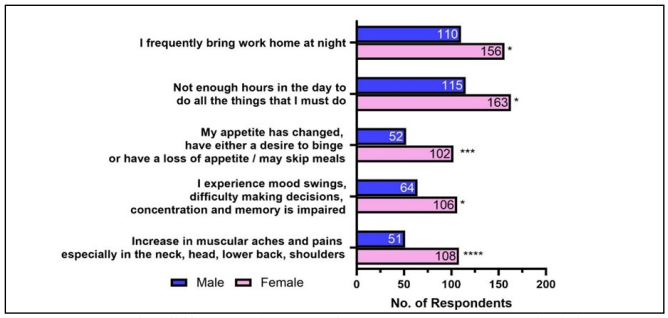

Figure 4: Gender differences in stress factors post COVID-19 lockdown among medical students.
Stacked bar charts show the number of responses between male and female students. Asterisks mark significant p-values
(*p<0.05, ***p<0.001, ****p<0.0001)

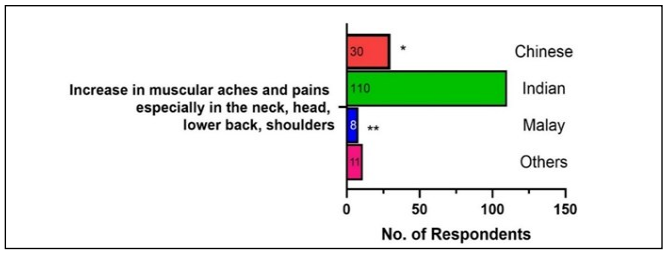

Figure 5: Ethnic differences in stress factors post COVID-19 lockdown among medical students. Stacked bar charts show the number of responses between students of different ethnicities. Asterisks mark significant p-values (*p<0.05, **p<0.01)

DISCUSSION

The present survey evaluated gender and ethnicity differences in lifestyle and stress factors post COVID-19 lockdown among medical students. We found that the female participants did less physical activity (OR=2.43, 95% CI: 1.27-4.65; p=0.007) and experienced increased muscular aches and pains (OR=2.53, 95% CI: 1.62-3.97; p<0.0001) compared to males. This is supported by another finding whereby the majority of the female respondents also felt they were unfit and could be fitter. Women were found to participate less in physical activity due to gender roles, cultural standards, lack of motivation and social support.[13] Perceived stress was associated with physical inactivity, and the effects were stronger in female students.[4] In our study, more male participants follow a strict exercise regime (OR=0.177, 95% CI: 0.07-0.44; p<0.0001), and consumed less alcohol (OR=0.47, 95% CI: 0.29-0.76; p=0.002). However, during the lockdown, physical activity was reportedly decreased and alcohol consumption increased especially in men.[14] Male college students experienced much lower perceived stress levels than females,[15] which could be related to the use of self-distraction to cope with stress.[16] Females tend to use emotion-focused approaches that brings about short-term relief of stress,[15] like spending their free time watching television or surfing the Internet as seen in our study. Those who engaged in less physical activity had reduced scores in mental health and well-being, in addition to profound generalized anxiety.[17] This however was not seen in our study. The mental conditions of the female medical students were not affected, most likely because this survey was conducted after the national Movement Control Order (MCO) were lifted and there were no barriers to partake in physical activity.

Time management has been a major issue among students in higher education.[9] Students may feel overwhelm with the crammed daily schedules and increased pressure to maintain academic performance. The constant stress can influence students' mental and physical health, which became even more noticeable during the COVID-19 pandemic.[18] We found that the majority of the female participants seem to struggle with time management, which may lead to feeling stressful. They felt that they hardly have any free time (OR=3.12, 95% CI: 1.47-6.63; p=0.003) and were more likely to bring work home at night. Despite this, they still felt like they do not have enough time to complete their work. Without establishing an effective time management, students may feel less motivated to learn, leading to procrastination, stress, and anxiety,[9,19] The stressful environment may have contributed to appetite change and concentration and memory impairment observed among the female students in our study. As a result, students reported increased levels of stress and anxiety disorders compared to pre-pandemic.[20]

We found that both Indian (OR= 6.21, 95% CI: 1.51-25.49; p=0.011) and Chinese (OR= 10.16, 95% CI: 1.92-53.81; p=0.006) participants reported that they can still

cope with the present working environment. In a study conducted on a Malaysian cohort before the pandemic, Chinese students were reportedly more prone to higher stress levels compared to other ethnicities, while Indian students reported lower coping skills than other ethnicities.[8] The reason for this is still not certain, as factors like parental expectations[21] and socioeconomic status[22] may affect students' behaviour. Regardless, there is a clear ethnic disparity in perceived stress levels, which warrants further investigations in order to implement appropriate coping strategies in learning.

Leading a healthy lifestyle habits are essential to prolong quality of life and prevent disease. Our study found that both parents of Chinese participants were more likely to be healthy (OR=0.07, 95% CI:0.01-0.73; p=0.027), while Malay participants have family members with illnesses like high blood pressure and diabetes (OR= 9.12, 95% CI 1.43-58.00; p=0.019). Ethnic groups have varying lifestyle behaviours that can be attributed to cultural, socio-economic, and environmental factors.[23] Chinese individuals were more likely than Malays to achieve higher healthy lifestyle scores[23]. This is most likely due to the better diet quality intake[24] and better level of health literacy[25] compared to other ethnicities, resulting in healthier lifestyle. It is interesting to find a similar health pattern in different ethnicities in our cohort, where Indian respondents tend to get sick in the last month, while Malay respondents reported falling ill significantly less often. This may be corroborated by another finding of our study, where Malay (OR=0.14, 95% CI: 0.03-0.59; p=0.007) and Chinese (OR=0.23, 95% CI: 0.07-0.83; p=0.024) participants were less likely to have such increased muscular aches and pains compared to Indian respondents. Compared to Malay and Chinese participants, Indian individuals engaged in less physical activity,[26] although this was not found significantly different in our study. Indian respondents reported the lowest self-efficacy scores, and this was related to their high pain score compared to other ethnicities.[27] The pain they are experiencing can make them reluctant to perform tasks. In contrast, Chinese groups prefer not to verbalize pain and use peer support to manage functional activities, while Malay respondents reported the highest score in physical health-related quality of life.[27]

LIMITATIONS

This study has several limitations. This study is confined to data collected from a single private university with origins in India, which means it only represents the student population at this specific institution. This study does not represent the general populations of Malaysians, where the major ethnic group is Bumiputera (which include Malay and indigenous people), followed by ethnic Chinese and Indians. This study is cross-sectional and comparisons to the effects of lifestyle and stress factors before lockdown were not possible. A prospective cohort study among several universities may be useful to understand the long-term effect of the pandemic on stress and lifestyle behaviours between the gender and ethnicity of medical students. This study did not investigate whether the students were in lockdown by themselves or with others as this may have affected their responses. This study did not examine the socioeconomic status of the students or its potential impact on lifestyle and stress levels as a confounding variable. The pandemic may have disproportionately affected families from lower socioeconomic backgrounds due to financial insecurity and limited access to healthcare. The findings of our study may be influenced by bias, as participants were enrolled in a medical course and are potentially more health-conscious compared to the general student population.

RECOMMENDATIONS

Students' stress levels can be mitigated by promoting healthy lifestyle behaviours such as physical activity, a healthy diet, and low-risk use of alcohol and cigarettes. Campus administrators can prioritize healthier food options in the cafeteria and provide opportunities and spaces for sports, physical activities, and walkability on campus. Stress management workshops and nutrition and wellness campaigns can be encouraged to advocate a healthier lifestyle. These interventions can be uniquely tailored to male and female students. Policymakers can allocate resources to acknowledge and educate mental health and well-being on campus and in social media, such as providing access to mental health counselling services and peer support groups. It is important to intervene at a college level where the learning spaces are safe and welcoming to foster sustainable behaviours as students

progress to their professional life. Organization is essential to keep up with tasks and accomplish them on time. This skill is indeed important when undergraduate students are in complete charge of their schedule due to the sudden closure of universities and campus libraries during the pandemic. Students' preference for organization was shown to promote perceived control over time, thereby reducing stress and anxiety.[9] Actionable persuasive strategies to assist students in organizing tasks, study space, and realizing the benefits of organization can be implemented especially for female students. This includes goal-setting, self-monitoring, and social learning strategies.[9] It is also important to devote particular attention to Indian students in terms of managing their physical and mental health. Simultaneously, motivation and encouragement by peers and senior role models to take on important challenges can contribute to higher self-esteem.

CONCLUSION AND FUTURE DIRECTIONS

Overall, our findings clearly show a difference in lifestyle behaviours and stress factors between genders and ethnicities post COVID-19 lockdown. This may probably impact the overall performance of the students during assessments, which will be particularly important during the clinical rotations where social competencies are fundamental. Hence, early interventions on lifestyle and stress factors can be addressed especially in the campus setting. Integrating casual physical activities and conducting stress management workshops tailored to male and female students can foster a healthier environment. Training and support on time management is crucial to reduce stress and anxiety. Comprehensive health campaigns and wellness programs focusing on different ethnic perspectives could be beneficial to the students. Future research comprising several universities in Malaysia is needed to understand the long-term effect of the pandemic on stress and lifestyle behaviours between different genders and ethnicities of medical students.

INSTITUTIONAL REVIEW BOARD (ETHIC COMMITTEE)

Ethical approval for this study was obtained from the University Research Ethics Committee (MUCM/FOM/REC-12/2022). Informed consent was obtained from all respondents before answering the questionnaire. Data confidentiality was respected by ensuring restricted access to personal data and anonymized when sharing to protect participants' identities.

REFERENCES

1. Zhu J, Racine N, Xie EB, et al. Post-secondary student mental health during COVID-19: a meta-analysis. Frontiers in Psychiatry 2021; 12:777251.
2. Giusti L, Salza A, Mammarella S, et al. Everything will be fine. Duration of home confinement and "All-or-Nothing" cognitive thinking style as predictors of traumatic distress in Young University students on a digital platform during the COVID-19 Italian lockdown. Front Psychiatry 2020; 11:574812.
3. Gadi N, Saleh S, Johnson JA, et al. The impact of the COVID-19 pandemic on the lifestyle and behaviours, mental health, and education of students studying healthcare-related courses at a British university. BMC Med Educ 2022; 22:115.
4. Badger J, Quatromoni PA, Morrell JS. Relationship between Stress and Healthy Lifestyle Factors of College Students. Health Behavior and Policy Review 2019; 6(1):43–55.
5. Travasso SM, Joseph S, Swaminathan S, et al. Impact of the COVID-19 lockdown on household diet diversity in rural Bihar, India: a longitudinal survey. Nutrition Journal 2023; 22(1):13.
6. Rahimi A, Wardak MF, Shayan NA. Assessing the Relationship Between Lifestyle Factors and Mental Health Outcomes Among Afghan University Students. Journal of Affective Disorders Reports 2024; 17:100827–100827.
7. Narendra Kumar MK, Francis B, Hashim AH, et al. Prevalence of anxiety and depression among psychiatric healthcare workers during the COVID-19 pandemic: a Malaysian perspective. In Healthcare 2022; 10(3):532.
8. Madlan L, Bahari F, Ardillah F. Stress and coping skills among university students: A preliminary research on ethnicity. Journal of Southeast Asia Psychology 2024; 1(1): 31–37.
9. Alhasani M, Alkhawaji A, Orji R. Mental Health and Time Management Behaviour among Students During COVID-19 Pandemic: Towards Persuasive

Technology Design. Human Behaviour and Emerging Technologies 2022; 7376748.
10. Hassan NA, Abdullah NH, Ahmad R, et al. Mental Health in Malaysia: A Study of Gender Differences. Malaysian Journal of Social Sciences and Humanities 2023; 8(12): e002608–e002608.
11. Pathlab, Health Screening, Blood Test. Health and Lifestyle Assessment Test [online]. Available at: https://www.pathlab.com.my/health-corner/health-and-lifestyle-assessment-test. Accessed January 30, 2022.
12. Stress Questionnaire [online]. Available at: https://isma.org.uk/sites/default/files/clients/413/Stress-Questionnaire-F2.pdf. Accessed January 30, 2022.
13. Aljehani N, Razee H, Ritchie J, et al. Exploring Female University Students' Participation in Physical Activity in Saudi Arabia: A Mixed-Methods Study. Frontiers in Public Health 2022; 10.
14. Orlandi M, Rosselli M, Pellegrino A, et al. Gender differences in the impact on physical activity and lifestyle in Italy during the lockdown, due to the COVID-19 pandemic. Nutr Metab Cardiovasc Dis 2021; 31(7):2173-2180.
15. Graves BS, Hall ME, Dias-Karch C, et al. Gender differences in perceived stress and coping among college students. PLoS One 2021; 16(8):e0255634.
16. Hummel S, Oetjen N, Du J, et al. Mental health among medical professionals during the COVID-19 pandemic in eight European countries: cross-sectional survey study. Journal of Medical Internet Research 2021; 23(1):e24983.
17. Nienhuis CP, Lesser IA. The Impact of COVID-19 on Women's Physical Activity Behaviour and Mental Well-Being. Int J Environ Res Public Health 2020; 17 (23):9036.
18. Santomauro DF, Mantilla Herrera AM, Shadid J, et al. Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. The Lancet 2021; 398(10312):1700–1712.
19. Kalman R, Macias Esparza M, Weston C. Student views of the online learning process during the COVID-19 pandemic: a comparison of upper-level and entry-level undergraduate perspectives. Journal of Chemical Education 2020; 97(9):3353–3357.
20. Voss C, Shorter P, Weatrowski, G, et al. A comparison of anxiety levels before and during the COVID-19 pandemic. Psychological Reports 2022; 126(6):003329412210932.
21. Suhaimi AS, Abdullah SA, Mohamad MH, Taib NZ. Perceived Academic Stress Among Students During Pandemic in a Malaysian University 2023.
22. Finkelstein DM, Kubzansky LD, Capitman J, et al. Socioeconomic Differences in Adolescent Stress: The Role of Psychological Resources. Journal of Adolescent Health 2007; 40(2):127–134.
23. Khaw WF, Nasaruddin NH, Alias N, et al. Socio-demographic factors and healthy lifestyle behaviours among Malaysian adults: National Health and Morbidity Survey 2019. Sci Rep 2022; 12(1):16569.
24. Mohammadi S, Jalaludin MY, Su TT, et al. Determinants of Diet and Physical Activity in Malaysian Adolescents: A Systematic Review. Int J Environ Res Public Health 2019; 16(4):603.
25. Froze S, Arif MT. Determinants of health literacy and healthy lifestyle against metabolic syndrome among major ethnic groups of Sarawak, Malaysia: A multi-group path analysis. Open Public Health J 2019; 12:172–183.
26. Tan AK, Dunn RA, Yen ST. Ethnic disparities in metabolic syndrome in Malaysia: an analysis by risk factors. Metab Syndr Relat Disord 2011; 9(6):441-51.
27. Dewan S, Kutty R, Siew L. Analysis of racial/ethnic differences in pain perception, quality of life, and self-efficacy among chronic neck pain patients. Physiotherapy Quarterly 2022; 30(3):13–18.

Supplementary Material

Table 2: Health and lifestyle behaviour of medical students post COVID-19 lockdown

Health and Lifestyle-related Behaviour	Total N (%) 345 (100)	Gender		Race			
		Male	Female	Chinese	Indian	Malay	Others
Frequency of eating out (per week)							
0 – 2	114 (33)	-	-	-	-	-	-
3 – 5	174 (50.4)	ns	ns	ns	ns	ns	ns
> 5	57 (16.5)	ns	ns	ns	ns	ns	ns
Frequency of meals (per day)							
1	15 (4.3)	-	-	-	-	-	-
2	112 (32.5)	ns	ns	ns	ns	ns	ns
3	204 (59.1)	ns	ns	ns	ns	ns	ns
> 3	14 (4.1)	ns	ns	ns	ns	ns	ns
Frequency of snacks							
No	32 (9.3)	ns	ns	ns	ns	ns	ns
Once in a while, usually `healthy' snacks	49 (14.2)	ns	ns	ns	ns	ns	ns
Sometimes	225 (65.2)	ns	ns	ns	ns	ns	ns
All the time – I thrive on snacks!	39 (11.3)	-	-	-	-	-	-
Frequency of exercise							
I have a strict regime that I follow	37 (10.7)	<0.0001	ns	ns	ns	ns	ns
Once or twice a week	116 (33.6)	ns	ns	ns	ns	ns	ns
A few times a month	120 (34.8)	-	-	-	-	-	-
I hardly exercise	72 (20.9)	ns	0.007	ns	ns	ns	ns
Fitness							
I could be a fitness instructor	8 (2.3)	ns	ns	ns	ns	ns	ns
Am relatively fit, I exercise regularly	70 (20.3)	-	-	-	-	-	-
Could be fitter	212 (61.4)	ns	0.014	ns	ns	ns	ns
Am totally unfit!	55 (15.9)	ns	0.001	ns	ns	ns	ns
Personal illnesses							
Yes, and it's quite serious	2 (0.6)	ns	ns	ns	ns	ns	ns
Yes, but it's under control	21 (6.1)	ns	ns	ns	ns	ns	ns
I don't think so (but I'm not very sure)	195 (56.5)	-	-	-	-	-	-
Nope – I have regular check-up	127 (36.8)	ns	ns	ns	ns	ns	ns
Family Members with illnesses							
Yes, both my parents	23 (6.7)	ns	ns	0.027	ns	ns	ns
Yes, one of my parents	72 (20.9)	ns	ns	ns	ns	ns	ns
Yes, other family members	128 (37.1)	ns	ns	ns	ns	0.019	ns
No	122 (35.4)	-	-	-	-	-	-
Tobacco use							
Yes, I smoke at least a pack a day	0	ns	ns	ns	ns	ns	ns
Yes, I smoke around half a pack a day	5 (1.4)	ns	ns	ns	ns	ns	ns
I'm a social smoker	26 (7.5)	ns	ns	ns	ns	ns	ns
No	314 (91)	-	-	-	-	-	-
Alcohol consumption							
I drink everyday	3 (0.9)	ns	ns	ns	ns	ns	ns
I do occasionally	46 (13.3)	ns	ns	ns	ns	ns	ns
I seldom drink	102 (29.6)	0.002	ns	ns	ns	ns	ns
I don't drink at all	194 (56.2)	-	-	-	-	-	-
Duration of sleep (hours per day)							
7 – 8	62 (18)	-	-	-	-	-	-
5 – 6	234 (67.8)	ns	ns	ns	ns	ns	ns
< 5	49 (14.2)	ns	ns	ns	ns	ns	ns
Present working mood							
Stressed and tired	106 (30.7)	ns	ns	ns	ns	ns	ns
Still can cope	210 (60.9)	ns	ns	0.006	0.011	ns	ns
Quite leisurely	29 (8.4)	-	-	-	-	-	-
Activities during free time							
Outdoor activities	67 (19.4)	-	-	-	-	-	-
Party/ eating out	28 (8.1)	ns	ns	ns	ns	ns	ns
Television/surfing the Internet	196 (56.8)	ns	<0.0001	ns	ns	ns	ns
What free time?	54 (15.7)	ns	0.003	ns	ns	ns	ns
Mental conditions							
Yes but it's in the past	53 (15.4)	ns	ns	ns	ns	ns	ns
Yes – quite often	49 (14.2)	ns	ns	ns	ns	ns	ns
Yes- only once in a while	158 (45.8)	ns	ns	ns	ns	ns	ns
Never	85 (24.6)	-	-	-	-	-	-
Frequency of previous illness							
In the last month	99 (28.7)	ns	ns	ns	0.043	ns	ns
In the last 3 – 6 months	115 (33.3)	ns	ns	ns	ns	0.05	ns
In the last year	85 (24.6)	ns	ns	ns	ns	0.036	ns
I can't remember – I hardly fall ill	46 (13.3)	-	-	-	-	-	-
Body size							
Average	167 (48.4)	-	-	-	-	-	-
On the slender side	74 (21.4)	ns	ns	ns	ns	ns	ns
Slightly plump	82 (23.8)	ns	ns	ns	ns	ns	ns
Very overweight or obese	22 (6.4)	ns	ns	ns	ns	ns	ns

ns=not significant, -=reference, p-values (bolded) <0.05 is considered as significant

Table 3: Stress factors of medical students post COVID-19 lockdown

Stress factors	Total N (%)	Gender		Race			
		Male	Female	Chinese	Indian	Malay	Others
I frequently bring work home at night							
Yes	266 (77.1)	ns	0.032	ns	ns	ns	ns
No	79 (22.9)	-	-	-	-	-	-
Not enough hours in the day to do all the things that I must do							
Yes	278 (80.6)	ns	0.038	ns	ns	ns	ns
No	67 (19.4)	-	-	-	-	-	-
I deny or ignore problems in the hope that they will go							
Yes	174 (50.4)	ns	ns	ns	ns	ns	ns
No	171 (49.6)	-	-	-	-	-	-
I do the jobs myself to ensure they are done properly							
Yes	281 (81.4)	ns	ns	ns	ns	ns	ns
No	64 (18.6)	-	-	-	-	-	-
I underestimate how long it takes to do things							
Yes	225 (65.2)	ns	ns	ns	ns	ns	ns
No	120 (34.8)	-	-	-	-	-	-
I feel that there are too many deadlines in my work / life that are difficult to meet							
Yes	188 (54.5)	ns	ns	ns	ns	ns	ns
No	157 (45.5)	-	-	-	-	-	-
My self confidence / self esteem is lower than I would like it to be							
Yes	146 (42.3)	ns	ns	ns	ns	ns	ns
No	199 (57.7)	-	-	-	-	-	-
I frequently have guilty feelings if I relax and do nothing							
Yes	246 (71.3)	ns	ns	ns	ns	ns	ns
No	99 (28.7)	-	-	-	-	-	-
I find myself thinking about problems even when I am							
Yes	224 (64.9)	ns	ns	ns	ns	ns	ns
No	121 (35.1)	-	-	-	-	-	-
I feel fatigued or tired even when I wake after an adequate sleep							
Yes	212 (61.4)	ns	ns	ns	ns	ns	ns
No	133 (38.6)	-	-	-	-	-	-
I often nod or finish other peoples sentences for them when they speak slowly							
Yes	127 (36.8)	ns	ns	ns	ns	ns	ns
No	218 (63.2)	-	-	-	-	-	-
I have a tendency to eat, talk, walk and drive quickly							
Yes	172 (49.9)	ns	ns	ns	ns	ns	ns
No	173 (50.1)	-	-	-	-	-	-
My appetite has changed, have either a desire to binge or have a loss of appetite / may skip meals							
Yes	154 (44.6)	ns	0.001	ns	ns	ns	ns
No	191 (55.4)	-	-	-	-	-	-
I feel irritated or angry if the car or traffic in front seems to be going too slowly/ I become very frustrated at having to wait in a queue							
Yes	146 (42.3)	ns	ns	ns	ns	ns	ns
No	199 (57.7)	-	-	-	-	-	-
If something or someone really annoys me I will bottle up my feelings							
Yes	178 (51.6)	ns	ns	ns	ns	ns	ns
No	167 (48.4)	-	-	-	-	-	-
When I play sport or games, I really try to win whoever I play							
Yes	172 (49.9)	ns	ns	ns	ns	ns	ns
No	173 (50.1)	-	-	-	-	-	-
I experience mood swings, difficulty making decisions, concentration and memory is impaired							
Yes	170 (49.3)	ns	0.017	ns	ns	ns	ns
No	175 (50.7)	-	-	-	-	-	-
I find fault and criticize others rather than praising, even if it is deserved							
Yes	41 (11.9)	ns	ns	ns	ns	ns	ns
No	304 (88.1)	-	-	-	-	-	-
I seem to be listening even though I am preoccupied with my own thoughts							
Yes	242 (70.1)	ns	ns	ns	ns	ns	ns
No	103 (29.9)	-	-	-	-	-	-
I find myself grinding my teeth							
Yes	94 (27.2)	ns	ns	ns	ns	ns	ns
No	251 (72.8)	-	-	-	-	-	-
Increase in muscular aches and pains especially in the neck, head, lower back, shoulders							
Yes	159 (46.1)	ns	<0.0001	0.024	ns	0.007	ns
No	186 (53.9)	-	-	-	-	-	-
I am unable to perform tasks as well as I used to, my judgment is clouded or not as good as it was							
Yes	136 (39.4)	ns	ns	ns	ns	ns	ns
No	209 (60.6)	-	-	-	-	-	-
I find I have a greater dependency on alcohol, caffeine, nicotine or drugs							
Yes	68 (19.7)	ns	ns	ns	ns	ns	ns
No	277 (80.3)	-	-	-	-	-	-
I find that I don't have time for many interests / hobbies outside of work							
Yes	168 (48.7)	ns	ns	ns	ns	ns	ns
No	177 (51.3)	-	-	-	-	-	-

ns=not significant, -=reference, p-values (bolded) <0.05 is considered as significant