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Psychological and physiological experiences of adolescents during home-based learning amid the COVID-19 pandemic: A qualitative study in Malaysia

Norrafizah Jaafar ^{1,*}, Aimi Nadiah Mohamad Norzlen ¹, Noorlaile Jasman ¹, Nadia Hani Jahaya ¹, Zanariah Zaini ¹ and Siti Nadiah Busyra Mat Nadzir ²

¹ *Institute for Health Behavioural Research, Ministry of Health Malaysia.*

² *National Institute of Health, Ministry of Health Malaysia.*

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Abstract

Background: The COVID-19 pandemic affected adolescents' lives, including their educational progress and social withdrawal. To reduce this damage, many countries, including Malaysia, adopted online home-based learning to ensure the continuity of adolescents' education. Yet, little was understood about whether the learning atmosphere at home and separation from school during a pandemic might positively or negatively impact adolescents.

Methods: The study employed a phenomenological qualitative method using in-depth online interviews via Google Meet to explore adolescents' reactions and experiences during the COVID-19 pandemic. A Malay-translated, semi-structured topic guide, adapted from previous studies, was used for the interviews, which were recorded, transcribed, and analysed thematically using NVIVO 12 software. Peer checking ensured the validity and reliability of the findings, with 23 participants included in the final analysis after data saturation was achieved.

Results: A total of 23 participants, aged 10 to 16, from 18 different schools in Selangor, Malaysia, represented the three main ethnic groups (Malay, Chinese, and Indian) and various socio-economic backgrounds, including the Top 20, Middle 40, and Bottom 40 groups by monthly household income. Thematic analysis revealed that most adolescents perceived home-based learning negatively, experiencing psychological emotions such as sadness, fatigue, anger, and restlessness, along with physiological impacts like digestive issues and immune suppression, all of which were early signs of stress triggered by social, academic, and environmental stressors. Home-based learning during the COVID-19 pandemic caused adolescents to feel isolated, distracted by home responsibilities, and face technical difficulties, leading to negative emotions and stress. These challenges triggered both psychological and physiological stress responses, including changes in eating habits, weight gain, and increased susceptibility to illness.

Conclusion: The research revealed that the majority of adolescents had a negative experience with home-based learning throughout COVID-19, impacting them mentally and physiologically, with many oblivious to these manifestations of stress. Digital mental health therapy, although accessible during the MCO, may only assist individuals who acknowledge their symptoms and proactively seek assistance.

Keywords: Adolescent; COVID-19 Pandemic; Home-Based Learning; Emotional Well-Being; Mental Health

* Corresponding author: Norrafizah Jaafar

1. Introduction

The COVID-19 pandemic profoundly affected people worldwide, including adolescents in Malaysia, who were restricted to learning at home, so-called home-based learning (HBL) [1], as a measure to continue their education during school closures [2].

Full HBL in Malaysia was implemented on March 18, 2020, during the COVID-19 pandemic [2]. While this shift from traditional classroom settings to online learning ensured educational continuity, it raised concerns about adolescents' emotional and physical well-being [3]. The lack of interaction with peers and teachers and the challenges of studying at home created an environment that triggered intense feelings among adolescents, including loneliness, frustration, and demotivation [4]. Embodied emotions accompanied these negative experiences, as adolescents reported physiological impacts such as fatigue, sleep disturbances, and changes in eating habits, reflecting how stress manifested in their bodies [5].

Besides, it is essential to comprehend the full impact of home-based learning on adolescents, as unresolved stress may lead to long-term psychological and physical effects, potentially hindering their ability to flourish during this key stage of development. Research from Sweden shows that while some students remained motivated and engaged during HBL, others struggled with the lack of social interaction, discipline, and focus [6]. Thus, this study explores the emotions or psychological and physical signals or physiological effects of home-based learning on adolescents in Selangor, Malaysia, during the COVID-19 pandemic, aligning with the 2030 Agenda for 17 Sustainable Development Goals (SDGs), particularly Goal 3 (Good health and well-being) and Goal 4 (Quality education) [7]. Addressing these issues is essential to ensuring adolescents' overall well-being and promoting both mental and physical health as they transition into adulthood.

2. Methods

2.1. Study Design

The researchers used the phenomenological qualitative study approach to conduct virtual in-depth interviews (IDIs). Due to COVID-19 constraints, the researchers did the interviews virtually through Google Meet (GM). Compared to other software programme, participants are familiar with GM software because they use it frequently during home-based learning sessions [8]. This method allowed participants to openly express their responses, emotions, and experiences about the investigation subject. This method enabled participants to share their views, opinions, preferences, and values through an in-depth study of their personal viewpoints. In the end, it revealed their cognitive structures, thought processes, and underlying requirements, offering profound insights into the topic.

2.2. Study Instrument

A Malay translated semi-structured topic guide was used in this study. This semi-structured topic guide is adopted and adapted from a Qualitative Study of Child and Adolescent Mental Health During The COVID-19 Pandemic in Ireland done by O'Sullivan et al. (2021) and Psychological Impacts of Students on Online Learning During the Pandemic COVID-19 by Irawan and Lestari (2020).

2.3. Data Management and Data Analysis

Each session was digitally recorded. The adolescent participants provided verbal agreement before beginning the interviews; no printed or written assent was used due to the COVID-19 pandemic, as some of them lacked amenities such as printers or scanners. Participants' identities were anonymised to maintain anonymity, and their names were replaced with particular codes. The interview transcripts were transcribed verbatim, and this process was completed immediately following each session to ensure no information was missed and to allow the researcher to detect emergent data that could shape future interviews. The captured data was securely maintained in softcopy format, solely for research reasons. The data were analysed using a thematic approach, with NVIVO 12 software used to manage and organise them more efficiently [11].

2.4. Validity and Reliability

To ensure the validity and reliability of this study, researchers use a peer-review process. For this peer checking, the researcher discussed the interpretation and conclusion with another researcher. According to Johnson (1997), peer checking involves discussion with a "disinterested peer" (e.g., another researcher not directly involved) [12]. This peer

should be sceptical, challenging the researcher to provide solid evidence and conclusions. Discussion with peers who are familiar with the research can also help provide valuable challenges and insight [12].

2.5. Data Collection Process

The researchers collected data in Selangor from November 2021 to March 2022. The inclusion criteria for the study consisted of Malaysian participants aged 10,11,13,14, and 16 years old, who resided and attended online home-based learning during the Movement Control Order (MCO), Enhanced Movement Control Order (EMCO) and Conditional Movement Control Order (CMCO) of the COVID-19 pandemic. Participants are excluded from the study if they are currently sitting for national examinations as set and restricted by the Ministry of Education (aged 12,15 and 17 years old). All participants were selected from the government daily schools and government-aided daily schools (Islamic religious schools, Chinese and Tamil national types of schools, and missionary schools). The Ministry of Education (MOE) and school authorities helped identify the participants from the selected schools. They also allowed the researcher to collect the participants' and parent's or guardian's contact details (their names, handphones, and email addresses). Firstly, the researcher contacted the parents or guardians of participants (by telephone or email) to get their consent to let their children be involved in the study. Upon getting their approval, the researcher approached the participants for their assent. The assent was achieved verbally through the recruitment phone call and during the interview. Initial assent is taken a week before the interview just in case the participant changes their mind during the interview date; this allows the participant to have sufficient time to consider participating or otherwise in the study. Later, after obtaining consent and assent, the researcher gathered the parents' socio-demographic information (employment status, education level, and household income) directly from the participants' parents.

The in-depth interviews (IDIs) were conducted online at prearranged dates and times, with each participant provided a personal GM link [13]. Interviews, ranging from 45 to 60 minutes, were conducted by a seasoned researcher. A trained counsellor was present in each session as an observer, possessing the authority to intervene or halt the interview if the participant exhibited excessive emotional distress. Participants had the option to select either a male or female interviewer and counsellor according to their preference. To ensure successful moderation, the participants received clear instructions regarding confidentiality, anonymity, and the reduction of external disturbances [14]. The researcher prohibited family members from attending the session, promptly notified the parents, instructed participants to inform their families about the study's requirements, and ensured informed consent was obtained and documented from each participant during the interview.

On the interview day, all parties (researcher, counsellor and participant) open the GM link at least 20 minutes before the planned interview. The video camera on a smartphone or computer is positioned directly at eye level so all parties can see and observe each other entirely or partially. Then, the researcher (interviewer) greeted the participant, introduced the counsellor, and asked about the participant's background and personal interests in building rapport [15] at the beginning of the session. All participating researchers had substantial experience in qualitative research methodologies.

Data saturation occurred after the twentieth interview. However, the researchers conducted three additional interviews to confirm that no new themes or insights emerged, indicating that sufficient data was collected to fully address the research questions [16].

3. Results and Discussions

Twenty-three participants, aged ten to sixteen years old, from eighteen government daily schools and government-aided daily schools across Selangor, Malaysia, belonged to the three main ethnicities: Malay, Chinese, and Indian. They came from diverse socio-economic backgrounds, including the Top 20 (monthly household income above MYR 9620), Middle 40 (MYR 4360 to MYR 9616), and Bottom 40 (less than MYR 4360) [17]. Table 1 depicts the socio-demographic characteristics.

Table 1 Demographic information of the interviewed adolescents

Characteristics	Number of Participants n=23
The age group of participants 10 to 11 years old (Primary school)	13
13 to 16 years old (Secondary school)	10
Gender of participants Male	15
Female	8
Ethnicity of participants Malay	9
Chinese	8
Indian	6
Parents' monthly household income* Top 20	5
Middle 40	9
Bottom 40	9
Parent's employment status* Father: Working in the private sector	12
Working in the government sector	4
Self-employed	5
Unemployed	1
**Passed away	1
Mother: Working in the private sector	6
Working in the government sector	8
Self-employed	3
Housewife	6
Parent's education level* Father: Secondary	11
Tertiary	11
**Not available	1
Mother: Secondary	5
Pre-University	2
Tertiary	16

*Parents' information was self-claimed by the parents themselves

3.1. Psychological and physiological impacts experienced by adolescents and reasons for stress

The thematic analysis showed that adolescents' perceptions of home-based learning amid the COVID-19 pandemic weighed heavily on the opposing side. The study identified 21 psychological emotions categorised into primary ones: sad, fatigued, angry, fearful, meaningless, emotionally ambivalent, and restless. A few adolescents also experienced some physiological impacts, which affected the digestive systems, immune system suppression, and others. Further analysis discovered that adolescents face many types of stressors, such as social and interpersonal, academic and environmental. As is evident in Table 2, these emotional or intense feelings (psychological) and physical or embodied

emotions (physiological) showed early signals or signs and symptoms of stress among adolescents. The quotes that best presented the above themes were chosen and tabled to support the results as showed in Table 3.

Table 2 Psychological and physiological impacts experienced by adolescents and reasons for stress

Domain	Theme (Primary)	Sub-theme	Stressor
Psychological	Sad	Loneliness, Disappointed, Abandoned, Powerless, Guilty	Social and interpersonal Separation from school Interaction with friends and teachers Academic Technology facilitating conditions Workload Facilities Immediate consultations Environmental Distraction Restriction Family structure Fears of contagion
	Fatigued	Boredom, Tiredness	
	Angry	Infuriated, Annoyance, Let down	
	Fearful	Anxious, Scared, Worthless	
	Meaninglessness	Demotivated, Depressed, Emotional numbness	
	Emotional ambivalence	Excited and frustrated, Joy and sad, Excited and bored	
	Restlessness	Out of control, Overwhelmed	
Physiological	Effect on the digestive system	Weight gain, Changes in appetite	
	Suppression of the immune system	Fever, Exhaustion or lack of energy	
	Others	Changes in sleep patterns, Eye strain	

Table 3 Adolescents' narrative excerpt

Adolescents' ID	Excerpt
Female, Indian #45	I felt stressed and anxious because I could not keep up with my studies. Everything felt difficult, and I even got a fever while studying.
Male, Chinese #50	It is hurting me. I am angry with home-based learning. One year has been wasted. I don't even know my school. I cannot enjoy the moment at school. Home-based learning is a 'bad tired'.
Male, Malay #13	I feel demotivated. It is not fun when you cannot meet your friends.
Male, Chinese #46	Initially, I was excited about home-based learning, but over time it became boring and frustrating because I could not socialise with friends and all activities were virtual.
Female, Chinese #32	The internet was slow. I can't attend classes. I have three siblings and two computers at home, but only one functions. We took turns. I am angry as I always didn't make it to classes on time.
Female, Malay #18	My dad works as a driver, and my mom is a housewife. I help mom prepare breakfast early in the morning before entering the online class. By noon, during lesson break, I will run around to help

	mom prepare lunch – most of the time, the lesson will restart while I am still helping her. I am obligated to take care of my younger sisters and help my parents with the house chores. I would feel my whole-body ache after cleaning the house. My mind was also tired of doing the school's homework. For example, a teacher gave me ten questions, but I only solved five. Later, other teachers gave homework based on their subject. My mind is tired of thinking about all the unfinished school's homework.
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The narrative excerpt showed how home-based learning during the pandemic impacted adolescents after the World Health Organization declared COVID-19 a global public health emergency [18]. The adolescents must attend online lessons at home, preventing them from meeting their friends, continuing their schooling in person, and participating in extracurricular activities such as sports, Boy or Girl Scouts, music and others. Although the quality of parent-adolescent relationships is essential for the well-being of youth, adolescence is a developmental period in which contact with peers and the development of close relationships outside the family environment is vital. Friends are an important source of comfort, emotional support and encouragement, helping teens manage, cope with and positively overcome various developmental challenges during this period [19,20].

Besides feeling lonely because of being unable to go to school, meet, and play with friends, they also expressed various other emotions because of the challenges they experience during home-based learning. Most of them faced distractions from younger siblings, and undoubtedly, as they claim, they are helpful in helping parents with household tasks every day; however, most of the time, they are not able to attend online classes on time. After all, there were not enough computers at home, and the internet connection was unstable.

Negative perceptions, emotions, and experiences during home-based learning and social isolation amid the COVID-19 pandemic are common among adolescents [9]. A study showed that when adolescents were not at school, for example, studying at home, they were physically less active, so their use would feel saturated, even with severe or mild stress [21,22].

Generally, adolescents did not favour online lessons at home; however, they attempted to adapt to the changes and cope with the situation despite experiencing numerous challenges. The challenges that they experience are the reasons that cause different types of stress responses in their body, including psychological and physiological responses. An adolescent caught a fever while studying during home-based learning. Another adolescent notice changes in his eating habits; he tends to eat more and gain weight. When the body cannot cope with the stress, it will affect the body in various ways. Studies have shown that obesity and stress are related [23,24], and people under stress are more susceptible to viral illnesses like the flu and the common cold [25,26].

Limitations

The real-time virtual interaction of interviews during the movement control order amid the COVID-19 pandemic was challenging. Prior to the interviews, the adolescents were briefed on the study requirements. However, some participants had limitations due to the absence of stable internet access at certain places in some localities and distractions caused by family members or the surrounding noise. Unfortunately, this was subject to the available location deemed as comfortable by the participants. Limited internet coverage resulted in a delay in audio, an inability to join meetings, and other similar technical issues, which deteriorated the smoothness of the interview session. Due to this, some sessions would drag on more than an hour compared to the traditional face-to-face method, which usually takes 45 minutes to an hour for each session, causing some adolescents to lose focus and concentration.

4. Conclusion

This study explored adolescent emotions during home-based learning amid COVID-19. Our analysis concluded that most of our informants in this study had negative experiences with online classes compared to physical classes, whereby they could freely socialise with friends and teachers in physical classes. These affect them psychologically (emotionally) and physiologically (physically). They are unaware that these emotions and physical signals are early signs and symptoms of stress. During MCO, digital mental health therapy is available for those who need help and support for mental health difficulties. Although online mental help-seeking may offer an alternative for adolescents to seek help, it may only work for those aware of the symptoms and desire help.

Compliance with ethical standards

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Disclosure of conflict of interest

The author(s) declared no potential conflicts of interest concerning this article's research, authorship, and/or publication.

Statement of ethical approval

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Statement of informed consent

Informed verbal assent and consent were taken from all participants at the beginning of the study.

References

- [1] Sarif, S. M., and Yahya, R. (2020). Managing crisis with "unprecedented situation deals with unprecedented measures": the case movement control order on coronavirus disease 19 (COVID-19) in Malaysia.[Internet].(Retrieved 2023 April 15).
- [2] Ministry of Education Malaysia (2020). "Manual Pengajaran dan Pembelajaran di Rumah" Available online: <https://www.moe.gov.my/muat-turun/lain-lain/manual-pdp-di-rumah/3727-manual-pdpdr/file>. Accessed on 17 June 2023
- [3] Baltà-Salvador, R., Olmedo-Torre, N., Peña, M., and Renta-Davids, A. I. (2021). Academic and emotional effects of online learning during the COVID-19 pandemic on engineering students. *Education and information technologies*, 26(6), 7407-7434.
- [4] Elmer, T., Mepham, K., and Stadtfeld, C. (2020). Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. *Plos one*, 15(7), e0236337.
- [5] Nuryana, Z., Xu, W., Kurniawan, L., Sutanti, N., Makruf, S. A., and Nurcahyati, I. (2023). Student stress and mental health during online learning: Potential for post-COVID-19 school curriculum development. *Comprehensive Psychoneuroendocrinology*, 14, 100184.
- [6] Bergdahl, N., Nouri, J., Fors, U., and Knutsson, O. (2020). Engagement, disengagement and performance when learning with technologies in upper secondary school. *Computers and Education*, 149, 103783.
- [7] United Nations, The Sustainable Development Goals Report 2024. Available online: <https://unstats.un.org/sdgs/report/2024/The-Sustainable-Development-Goals-Report-2024.pdf>. Accessed on December 23 2024
- [8] Magesvaran, U., and Mahamod, Z. (2021). Aplikasi Google Meet sebagai medium pembelajaran Bahasa Melayu secara dalam talian di kalangan pelajar sekolah menengah. In *Proceeding of International Conference of Business Studies and Education ICBE* (pp. 30-43).

- [9] O'Sullivan, K., Clark, S., McGrane, A., Rock, N., Burke, L., Boyle, N., Joksimovic, N. and Marshall, K. (2021). A qualitative study of child and adolescent mental health during the COVID-19 pandemic in Ireland. *International Journal of Environmental Research and Public Health*, 18(3), 1062.
- [10] Irawan, A. W., Dwisona, D., and Lestari, M. (2020). Psychological impacts of students on online learning during the pandemic COVID-19. *KONSELI: Jurnal Bimbingan dan Konseling (E-Journal)*, 7(1), 53-60.
- [11] Allsop, D. B., Chelladurai, J. M., Kimball, E. R., Marks, L. D., and Hendricks, J. J. (2022). Qualitative methods with Nvivo software: A practical guide for analysing qualitative data. *Psych*, 4(2), 142-159.
- [12] Johnson, R.B. (1997). Examining the validity structure of qualitative research. *Education*, 118(3), 282-292.
- [13] Alam, M. K. (2021). A systematic qualitative case study: questions, data collection, NVivo analysis and saturation. *Qualitative Research in Organizations and Management: An International Journal*, 16(1), 1-31.
- [14] Lobe, B., Morgan, D., and Hoffman, K. A. (2020). Qualitative data collection in an era of social distancing. *International journal of qualitative methods*, 19, 1609406920937875.
- [15] Dianiska, R. E., Simpson, E., and Quas, J. A. (2024). Rapport building with adolescents to enhance reporting and disclosure. *Journal of Experimental Child Psychology*, 238, 105799.
- [16] Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., ... and Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualisation and operationalisation. *Quality and quantity*, 52, 1893-1907.
- [17] Department of Statistic Malaysia. Available online: <https://www.dosm.gov.my> (accessed on January 11 2024).
- [18] Spina, S., Marrazzo, F., Migliari, M., Stucchi, R., Sforza, A., and Fumagalli, R. (2020). The response of Milan's Emergency Medical System to the COVID-19 outbreak in Italy. *Lancet (London, England)*, 395(10227), pp. e49-e50.
- [19] Zeifman, D., and Hazan, C. (2008). Pair bonds as attachments: Reevaluating the evidence. In J. Cassidy and P. R. Shaver (Eds.), *Handbook of Attachment: Theory, Research, and Clinical Applications*, 436-354. New York, Guilford Press.
- [20] Stapley, E., Stock, S., Deighton, J., and Demkowicz, O. (2023, February). A qualitative study of how adolescents' use of coping strategies and support varies in line with their experiences of adversity. In *Child and Youth Care Forum* (Vol. 52, No. 1, pp. 177-203). New York: Springer US.
- [21] Brazendale, K., Beets, M. W., Weaver, R. G., Pate, R. R., Turner-McGrievy, G. M., Kaczynski, A. T., ... and von Hippel, P. T. (2017). Understanding differences between summer vs. school obesogenic behaviors of children: the structured days hypothesis. *International Journal of Behavioral Nutrition and Physical Activity*, 14(1), 1-14.
- [22] Strehli, I., Ziegenfuss, D. H., Block, M. E., Burns, R. D., Bai, Y., and Brusseau, T. A. (2022). "I felt grounded and clear-headed": qualitative exploration of a mind-body physical activity intervention on stress among college students during COVID-19. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 59, 1-13.
- [23] Sharma, D. K. (2018). Physiology of stress and its management. *J Med Stud Res*, 1(001), 1-5.
- [24] Kumar, R., Rizvi, M. R., and Saraswat, S. (2022). Obesity and stress: a contingent paralysis. *International Journal of Preventive Medicine*, 13(1), 95.
- [25] Cohen, S., Doyle, W. J., Skoner, D. P., Rabin, B. S., and Gwaltney, J. M. (1997). Social ties and susceptibility to the common cold. *JAMA*, 277(24), 1940-1944.
- [26] Labotka, D., and Gelman, S. A. (2022). Scientific and folk theories of viral transmission: A comparison of COVID-19 and the common cold. *Frontiers in Psychology*, 13, 929120.