

ASSESSMENT OF WELL-BEING AND WORK FROM HOME AMONG UNIVERSITY EMPLOYEES DURING THE MOVEMENT CONTROL ORDER (MCO) IN MALAYSIA

Wan Suriyani Che Wan Ahmad
Foundation Centre Section
Applied Statistics and Data Science Research Cluster, Malaysian Institute of Information Technology,
Universiti Kuala Lumpur, 50250 Kuala Lumpur, Malaysia
Email: wsuriyani@unikl.edu.my

Norhaidah A. Haris
Software Engineering Section
Applied Statistics and Data Science Research Cluster, Malaysian Institute of Information Technology,
Universiti Kuala Lumpur, 50250 Kuala Lumpur, Malaysia
Email: norhaidah@unikl.edu.my

Zaifilla Farrina Zainuddin
Manufacturing Engineering Technology Section
Applied Statistics and Data Science Research Cluster, Malaysia Italy Design Institute,
Universiti Kuala Lumpur, 50250 Kuala Lumpur, Malaysia
Email: zaifilla@unik.edu.my

Yasmin Yahya
Email: yasminyahya@gmail.com

ABSTRACT

Malaysian daily life has undergone a drastic change as a result of the COVID-19 pandemic. The first shutdown was implemented by the Malaysian government in an effort to stop the coronavirus from spreading. The purpose of this study is to assess the well-being of university staff members who were working from home during the initial lockdown. A total of 261 valid online surveys were issued to the employees. Turkey tests, analysis of variance (ANOVA), and correlation tests were used to investigate the work-from-home (WFH) and well-being (HW) related to the working groups of the employees. The result shows a weak negative correlation was observed between WFH and HW. The academician and management groups demonstrated substantial disparities for WFH. This study concluded that well-being among the employees of all the working groups is good during the MCO. In the future, the institution may adopt remote or work-from-home policies and reevaluate the effects on the wellbeing of its academic employees.

Keywords: Movement Control Order, well-being, Work-from-Home, COVID-19.

INTRODUCTION

The COVID-19 disease has struck almost all countries in the world including Malaysia. In the past three years, the alarming rate of the rapid increase in COVID-19 cases (Organization et al., 2020) has caused stress on the emotions compared to infectious diseases. This disease is caused by acute respiratory syndrome coronavirus 2 (SARS-CoV-2) detected in December 2019 (Singhal, 2020). The World Health Organization (WHO) has declared COVID-19 as a pandemic in March 2020. This pandemic has overwhelmed the Ministry of Health Malaysia because the number of positive and death cases keeps increasing. Thus, to avoid spreading infection, the WHO has suggested implementing the lockdown. The Malaysian government has taken the initiative to implement several Movement Control Orders (MCO), and the first MCO was imposed on 18 March 2020. The government has continuously executed four phases of MCO throughout the year 2020. All sectors faced a challenge to explore the ability to adapt to the emerging situation (Ambikapathy & Ali, 2020). It changed the way people work especially employees from the education sector. One of the changes in working methods implemented in responding to this pandemic by working from home (WFH). Employees who work from home (WFH) are expected to maintain their performance and there is an impact on them as they need to adjust to suit the WFH environment (Singh et al., 2020).

Therefore, the main intention of this study was to assess the well-being of working from home among UniKL employees during the MCO period. The objectives investigated in this study are as follows:

1. To examine whether working from home (WFH) condition affects employees' well-being (HW) during MCO.
2. To explore differences in employees' working groups regarding health well-being factors during the MCO period.
3. To identify the status of well-being conditions among UniKL employees during the MCO.

LITERATURE REVIEW

The government of Malaysia imposed the MCO to restrict the movements and contacts between people. The enforcement of MCO is to promote public health safety from the disease. Thus, this situation has caused changes in people's routine of life and working environment adjustments (Brooks et al., 2020). The abrupt life changes have caused people to develop stress, fear, and uncertainty about the rapid spread of the diseases. This situation has led people to develop psychological issues such as anxiety (Rubin &

Wessely, 2020), acute stress and depression (Brooks et al., 2020; Holmes et al., 2020). The COVID-19 outbreak has shown an increase in psychological distress symptoms such as depression and anxiety (Lai et al., 2020).

There are also studies that MCO or quarantine could cause psychological implications in the long term (Brooks et al., 2020; Holmes et al., 2020; Mazza et al., 2020) however most countries have taken quarantine action seriously to minimize the COVID-19 spread (Moreira et al., 2020). Quarantine has caused people to reduce physical activities especially adults (Giustino et al., 2020; López-Bueno et al., 2020a), children and adolescents (López-Bueno et al., 2020c). Studies found that adults who have less physical activity tend to develop poor mental health and decreased levels of well-being (López-Bueno et al., 2020b).

In other words, quarantine is associated with social and physical distancing and could cause financial insecurity, boredom, frustration, feelings of burden, loneliness, fearsome that lead to mental health issues such as anxiety, depression, suicidal intention, and self-harm (Brooks et al., 2020; Castelli et al., 2020). Thus, Bao et al. (2020) proposed a mechanism to be cautious and act to prevent people from developing mental health and psychological well-being.

According to a study on the academic environment by Nurunnabi et al. (2020), the need for lockdown, social distancing, and self-isolation is stressful and harmful for a lot of people, which has raised questions about the well-being conditions. Academicians have to manage the rise in anxiety among students (Cao et al., 2020), and many employees have an increased level of difficulties and require assistance from universities in order to work digitally and have flexible work schedules (Dinu et al., 2021). However, there are studies indicating that educated individuals typically have an awareness of their health (Brooks et al., 2020). Studies on the effects of MCO on employees' well-being have also been conducted in two Malaysian university hospitals. According to the study, mental health issues including stress, worry, and depression might worsen if friends or family don't provide them with social support (Woon et al., 2020). According to Brooks et al. (2020) and Abiddin et al. (2022), even extended quarantine during MCO may cause several mental health problems, including depression, sleeplessness, stress, anxiety, rage, irritability, and emotional tiredness.

Anyway, prior studies conducted by (Morris et al. 2006; Jovic-Vranes, Bjegovic-Mikanovic 2012; Adams et al. 2009; Ozdemir et al. 2010), people with high levels of education have sufficient knowledge of health literacy. Health literacy is defined as the degree of capacity to acquire, interpret, and understand basic health knowledge and services that are important for individuals to make appropriate health-related decisions (Kindig D.A. et al. 2004). The COVID-19 pandemic has forced people to Work from Home (WFH) and many universities in Malaysia have not prepared their employees for the sudden change in the work arrangement. Studies conducted by Nurul, Maizatul, and Ruzanna (2016) concluded that WFH employees usually have strong self-discipline, self-motivation, and time management abilities. The study is supported by Ambikapathy, M., & Ali, A. (2020), who believed that WFH employees' productivity might rise significantly to the advantage of their employers, the country, and themselves.

METHODOLOGY

The methodology of this study is as follows:

Study Design

This study adopts the strategy of a cross-sectional quantitative approach by collecting data through a random sampling technique among Universiti Kuala Lumpur employees during the first movement control order (MCO). The survey was conducted for five weeks from March to April 2020 using online questionnaires. A total of 261 employees from thirteen campuses participated in the questionnaire was sent through an email invitation. The employees are from various levels of education, and the questionnaires were developed using dual languages (English and Bahasa Malaysia). Respondents were informed that all particulars are treated with strict confidentiality. The approximate time taken to answer the survey was 30 minutes.

Study Instruments

The questionnaires employed in this study were gathered from various studies and customized to understand better the employees' well-being of UniKL employees who work from home (WFH) during the MCO period (Craig et al., 2003; Hanaysha, 2016; Pedrelli et al., 2014; Parmenter & Wardle, 1999). The questionnaire was divided into five parts. The first part is about the employees' demographic background that consists of closed-ended questions. The demographics questions consist of campus and department, sugar and blood pressure reading (optional), gender, age, height, weight, race, education, job status, income per month, smokers, financial situation, and frequency of hospitalization in the last five years. The other four parts comprise questions on eating behaviour, well-being, job satisfaction, and physical activity during the MCO period. These questions use the Likert scale items rating from 1 to 5 in a sequence of "strongly disagree"; "disagree"; "neither agree nor disagree"; "agree"; and "strongly agree". The data were analyzed using open-source statistical software R version 4.0.

Data Analysis

R version 4.0, an open-source and expert statistical programme for applying descriptive and inferential statistics, was used to analyze the data. The Pearson correlation test was used to determine how strongly the two variables, "Well-being" (HW) and "Work from Home" (WFH), were related. To investigate the variations in well-being between the three employee working groups; Academicians, Management, and Services, an Analysis of Variance (ANOVA) was performed. The ANOVA test is then used to assess the outcome of the HW and WFH components, which demonstrates significance with a 95% confidence level. Tukey multiple comparison analysis revealed that there are variations in the well-being of the employee working groups. A cross-tabulation was used to determine whether there were any notable differences between the Well-Being (HW) components (High, Medium, Low) and the employee working group (Academician, Management, Services).

RESULTS AND DISCUSSION

The descriptive information on HW and WFH factors is presented in Table 1. The respondents come from three working groups. Academicians are the largest working group that participated in this survey with 55.1% (n = 144), Management working group is 7.7% (n = 20), and Services working group is 37.2% (n = 97). The population of males in this study is 57.1% (n = 149) and female is 42.9% (n = 112) from total respondents. The majority of the employees 52.1% (n = 136) were aged 40 years old and above and only 5% of the employees' ages ranged between 25 years old to 29 years old. 18.8% and 24.1% of the employees were in the age categories of 30 – 34 years old and 35 – 39 years old. Most of the employees, 34.9% (n = 91) have served between 5 to 10 years in the university. 25.3% (n = 66) worked more than 15 years, 21.5% (n = 56) worked between 11 to 15 years, 13.4% (n = 35) worked duration between 1 to 4 years and only 13 employees (5%) just joined the company which their working duration period was less than one year. The majority of the respondents were Academicians aged more than 40 years and working in the university between 5 to 10 years.

Table 1: Descriptive Information of the Respondents

Variable	Category	Frequency			n	%
		Academician	Management	Services		
Working Group	Working Group	144	20	97	261	
Gender	Male	78	13	58	149	57.1%
	Female	66	7	39	112	42.9%
Age	25 to 29 years	2	1	10	13	5.0%
	30 to 34 years	22	4	23	49	18.8%
	35 to 39 years	34	2	27	63	24.1%
	Ages 40 years old and above	86	13	37	136	52.1%
Duration of Work	Less than 1 year	10	1	2	13	5.0%
	1 to 4 years	18	3	14	35	13.4%
	5 to 10 years	41	9	41	91	34.9%
	11 to 14 years	30	3	23	56	21.5%
	More than 15 years	45	4	17	66	25.3%

Table 2 presents the mean score for Work from home (WFH) and well-being (HW) according to gender and age. The HW factor results showed no significant differences because the HW factor mean score for males was 3.437 with a standard deviation of 0.614 and the HW mean score for females was 3.416 with a standard deviation of 0.592. The HW factor displayed that employees in all age groups took good consideration of their health (more than 3.3) during the MCO. However, the WFH overall score was 2.137 and a standard deviation of 0.88 (minimum value of 1.00, the maximum value of 4.21). The WFH factor score was lower as compared to that of the HW factor. The results also show that the male score was 2.191 and the female score was 2.096 with a standard deviation of 0.949 and 0.829. The WFH factor range score for the age group was from 2.07 to 2.25 with the lowest score of 2.073 (in a group of 35 to 39 years old). The value of the WFH factor is less than 2.5 indicating that the majority of the employees are not comfortable working at home, especially for middle-aged employees. The results are aligned with the findings by Raišienė et al., (2020), who suggested that there are differences between genders and age differences in acceptance of the WFH environment. Thus, the result concluded that the employees are not favourable to doing office work at home during MCO.

The challenges commonly faced are visibility and effective communication which are crucial to performing given tasks efficiently, maintaining good self-discipline (Ambikapathy & Ali, 2020), and not clear boundaries between leisure, work, and personal life. Even though, everyone is connected easily with technology advanced and borderless, lack of face-to-face contact is one of the challenges faced by current WFH employees, especially during the pandemic and MCO order situation (Ambikapathy & Ali, 2020) can lead to communication and cooperation between coworkers and upper management becoming difficult to managed effectively via virtual (Daim et al., 2012; Benetytė & Jatuliavičienė, 2013).

Table 2: Mean and standard deviation of WFH and HW by gender and age

Variables (Frequency)	Work From Home (WFH) Mean (SD)	Well-being (HW) Mean (SD)
Gender		
Male (149)	2.191 (0.949)	3.437 (0.614)
Female(112)	2.096 (0.829)	3.416 (0.592)
Age		
25 to 29 years (13)	2.253 (0.613)	3.649 (0.510)
30 to 34 years (49)	2.195 (0.862)	3.377 (0.630)

35 to 39 years (63)	2.073 (0.903)	3.471 (0.495)
Above 40 years (136)	2.134 (0.907)	3.400 (0.641)
Overall (261)	2.137 (0.882)	3.425 (0.601)

The first MCO implementation in Malaysia was successful in controlling the spread of COVID-19. Thus, this study plans to further investigate the employees' well-being during the MCO as the employees are required to work remotely from the university. This study analyzes factors HW and WFH to understand better the relationship between the two factors. A Pearson linear correlation analysis has determined the existence of the correlated relationship between HW and WFH factors. The result suggested that the value for the correlation coefficient of -0.224 and the p-value of 0.000 confirmed that negative weak correlation between these two factors. The result analysis suggested that employees with good well-being are not comfortable working from home. This can happen because factors relating to the amount of time spent with the children, the quality of relationships, and the household environment, can lead to a negative effect on employees' well-being (Sulaiman & Abdullah, 2022). A similar finding has been reported by Dinu et al. (2021) that remote working was also associated with difficulties in work-life balance and distractions for some academicians. The result is in contradiction with the finding carried out by Xiao et al. (2021) on the impacts of working from home during the COVID-19 pandemic that suggested the physical and mental well-being of the employees are better in the WFH environment with the correlation between WFH expectations and HW is 0.27 with a significant level of 0.001.

Table 3: Mean, standard deviation (in parentheses) and ANOVA results for well-being and WFH factors among the working group during MCO period

Factor	Academician (A) n=144	Management (M) n=20	Services (S) n=97	ANOVA F (p-value)	Tukey Test
HW	3.409 (0.607)	3.616 (0.633)	3.409 (0.584)	1.094 (0.336)	Not significant at 0.05 level
WFH	2.281 (0.607)	1.664 (0.632)	2.021 (0.584)	5.863 (0.003)	A-M (p=0.009)

Analysis of variance (ANOVA) was conducted to investigate the differences in HW and WFH factors among Academician, Management, and Services working groups. The analysis results showed the mean values for HW were higher than the mean for WFH for every working group. Table 3 shows that the highest mean value for the Management group is 3.616 with a standard deviation of 0.633 for the HW factor. However, the WFH factor, for the Management group has the lowest mean value (1.664) with a standard deviation of 0.632. The Academician and Services groups showed low mean values for the WFH factor which were 2.281 and 2.021 respectively. The F-value for the HW factor is 1.094 and the p-value of 0.336 indicated no significant difference for the HW factor among the three working groups. The F-value of 5.836 with a p-value of 0.003 suggested that at least one of the working groups has a significant difference for WFH.

The multiple comparison analysis using the Tukey test identifies the WFH factors differences among the three working groups. The result revealed that the Academician and Management working groups have different behaviours in managing their office work. This study believes that the employees in the Management group are not happy to do their office work remotely. However, the Academician could manage their work remotely better compared to the Management group. Most of the academicians in the university are well prepared and confident to teach through distance technologies. The transition to online education and remote working is likely to rely on digital abilities and confidence (Dinu et. al, 2021). The advantages of teaching online could reduce physical contact, especially during the Covid-19 pandemic. Sendogdu and Koyuncuoglu (2022) suggested that distance learning technologies during the pandemic have various levels of self-efficacy acceptance among academicians and students, especially in computer competencies adaptation. The same finding reported by Dinu et al. (2021) that the academicians admitted that supportive departments and colleagues helped them navigate the abrupt transition to online education. Thus, the result suggested that the academicians are well-prepared for WFH as their HW factors are not much affected during the MCO.

Table 4 shows three statuses of HW factors that are classified as High, Medium, and Low. The HW factor for the High-status score value is between 4.0 to 5.0, the Medium status score value is from 3.0 to 3.99 and lastly, the Low-status score value is below 3.00. A total of 153 with 58.6% of respondents are categorized in Medium status score value. The majority of the Academicians were in the Medium level which is 33.3% followed by 21.1% from the Services group. Only 64 (24.5%) respondents are in High-status score value and 44 of 261 respondents (16.9%) fall under Low-status score value. Comparing the three working groups only an academician working group has the highest HW status (13.4%) of the total respondents.

Additionally, the majority of the university's academic staff in this study were in good health during the MCO. The HW components included engaging in physical activity or exercise, eating a healthy diet, getting enough sleep, rest, and relaxation to preserve good health. Therefore, this study concluded that during MCO, employees attempted to maintain their physical health and well-being. Research by Sulaiman & Abdullah (2022) has demonstrated the importance of having organisational support to lessen the potential negative effects that working from home may have on a person's welfare. The same study found strong evidence that workers who work from home are less likely to experience negative effects on their well-being when their employers offer them psychosocial assistance. The continuous support from the university to promote physical activities would give positive benefits to the employees. Exercise for physical fitness, a healthy diet, rest, relaxation, and sleep would therefore supply the energy needed to carry out everyday tasks like housework, work, and other activities (Bao, 2020; Batmang et al., 2021). Exercise has the potential to improve a person's psychological and physical growth, which will improve their body's ability to handle stress (Tunç & Akandere, 2020).

Table 4: Cross-tabulation of well-being (HW) status among working groups

HW	Score Value	Academician (%)	Management (%)	Services (%)	TOTAL (%)
High	4.0 – 5.0	35 (13.4)	4 (1.5)	25 (9.6)	64 (24.5)
Medium	3.0 – 3.99	87 (33.3)	11 (4.2)	55 (21.1)	153 (58.6)
Low	Below 3.0	22 (8.4)	5 (1.9)	17 (6.5)	44 (16.9)

RECOMMENDATIONS AND CONCLUSION

Despite the findings in this study, a few limitations should be addressed in the future. The data collected were limited to all employees at one of the private universities in Malaysia; hence, the findings may not be generalized to the whole university's employees in Malaysia. In the future, this study suggested expanding the analysis by collecting sample data from public higher institutions. Comparing and implementing a mixed-method strategy and including both quantitative and qualitative would generate knowledgeable information. Thus, any issues related to well-being among university employees could be analyzed in-depth and then focused on to improve well-being as part of this process. (Dinu et al.,2021; Sulaiman & Abdullah, 2022).

This study concluded that the university employee's well-being is not affected during the MCO. Even though most of them are, WFH, the result shows no significant differences in well-being among academicians, management, and services working groups. Further analysis can be conducted in future research to explore other factors that may impact workers' physical activities or personal emotions and feelings during WFH. The findings from this study can be used to assess how the policy of working from home can be implemented in future without giving impact to academic employees' well-being in Malaysia.

REFERENCES

- Abiddin NZ, Ibrahim I and Abdul Aziz SA. (2022). A Literature Review of Work from Home Phenomenon During COVID-19 Toward Employees' Performance and Quality of Life in Malaysia and Indonesia. *Frontier in Psychology*, 13:819860. doi: 10.3389/fpsyg.2022.819860.
- Adams, R. J., Appleton, S. L., Hill, C. L., Dodd, M., Findlay, C., & Wilson, D. H. (2009). Risks associated with low functional health literacy in an Australian population. *Medical Journal of Australia*, 191(10), 530-534.
- Ambikapathy, M., & Ali, A. (2020). Impact and Challenges Towards Employees Work from Home During COVID-19 (MCO) Period. *International Journal of Social Science Research*, 2(4), 97-107.
- Bao, W. (2020). Covid-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*, 2(2), 113–115.
- Bao, Y., Sun, Y., Meng, S., Shi, J., & Lu, L. (2020). 2019-ncov epidemic: address mental health care to empower society. *The Lancet*, 395(10224), e37–e38.
- Batmang, B., Sultan, M., Azis, A., & Gunawan, F. (2021). Perceptions of pre-service teachers on online learning during the COVID-19 pandemic. *International Journal of Education in Mathematics, Science and Technology*, 9(3), 449–461.
- Benetytė, D., & Jatuliavičienė, G. (2013). Building and sustaining trust in virtual teams within an organizational context. *Regional formation and development studies* (2), 18–30.
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: a rapid review of the evidence. *The Lancet*, 395(10227), 912–920.
- Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287, 112934.
- Castelli, L., Di Tella, M., Benfante, A., & Romeo, A. (2020). The spread of COVID-19 in the Italian population: anxiety, depression, and post-traumatic stress symptoms. *Canadian journal of psychiatry. Revue canadienne de psychiatrie*, 65(10), 731.
- Craig, C. L., Marshall, A. L., Sjöström, M., Bauman, A. E., Booth, M. L., Ainsworth, B. E.,... others (2003). International physical activity questionnaire: 12-country reliability and validity. *Medicine & science in sports & exercise*, 35(8), 1381–1395.
- Daim, T. U., Ha, A., Reutiman, S., Hughes, B., Pathak, U., Bynum, W., & Bhatla, A. (2012). Exploring the communication breakdown in global virtual teams. *International Journal of Project Management*, 30(2), 199–212.
- Dinu, L.M., Dommert, E.J., Baykoca, A., Mehta, K.J., Everett, S., Foster, J.L.H., Byrom, N.C. (2021). A Case Study Investigating Mental Wellbeing of University Academics during the COVID-19 Pandemic. *Education Sciences*. 2021, 11, 702. <https://doi.org/10.3390/educsci11110702>.
- Giustino, V., Parroco, A. M., Gennaro, A., Musumeci, G., Palma, A., & Battaglia, G. (2020). Physical activity levels and related energy expenditure during COVID-19 quarantine among the Sicilian active population: a cross-sectional online survey study. *Sustainability*, 12(11), 4356.
- Hanaysha, J. (2016). Determinants of job satisfaction in higher education sector: Empirical insights from Malaysia. *International Journal of Human Resource Studies*, 6(1), 129–146.
- Holmes, E. A., O'Connor, R. C., Perry, V. H., Tracey, I., Wessely, S., Arseneault, L., ... others (2020). Multidisciplinary research priorities for the Covid-19 pandemic: a call for action for mental health science. *The Lancet Psychiatry*, 7(6), 547–560.
- Jovic-Vranes, A., & Bjegovic-Mikanovic, V. (2012). Which women patients have better health literacy in Serbia? *Patient Education and Counselling*, Vol.89(1), 209-212.

- Kindig, D. A., Panzer, A. M., & Nielsen-Bohlman, L. (Eds.). (2004). *Health literacy: a prescription to end confusion*. National Academies Press (US).
- Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., . . . others (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA network open*, 3(3), e203976–e203976.
- López-Bueno, R., Calatayud, J., Andersen, L. L., Balsalobre-Fernández, C., Casaña, J., Casajús, J. A., López-Sánchez, G. F. (2020a). Immediate impact of the COVID-19 confinement on physical activity levels in Spanish adults. *Sustainability*, 12(14), 5708.
- López-Bueno, R., Calatayud, J., Ezzatvar, Y., Casajús, J. A., Smith, L., Andersen, L. L., & Lopez-Sanchez, G. F. (2020b). Association between current physical activity and current perceived anxiety and mood in the initial phase of COVID-19 confinement. *Frontiers in psychiatry*, 11, 729.
- López-Bueno, R., López-Sánchez, G. F., Casajús, J. A., Calatayud, J., Gil-Salmerón, A., Grabovac, I., Smith, L. (2020c). Health-related behaviours among school-aged children and adolescents during the Spanish COVID-19 confinement. *Frontiers in pediatrics*, 8.
- Mazza, C., Ricci, E., Biondi, S., Colasanti, M., Ferracuti, S., Napoli, C., & Roma, P. (2020). A nationwide survey of psychological distress among Italian people during the COVID-19 pandemic: immediate psychological responses and associated factors. *International journal of environmental research and public health*, 17(9), 3165.
- Moreira, P., Ferreira, S., Couto, B., Machado-Sousa, M., Fernandez, M., RaposoLima, C., . . . Morgado, P. (2020). Protective elements of mental health status during the COVID-19 outbreak in the Portuguese population [published online May 1, 2020]. *medRxiv*.
- Morris, N. S., MacLean, C. D., Chew, L. D., & Littenberg, B. (2006). The Single Item Literacy Screener: Evaluation of a brief instrument to identify limited reading ability. *BMC Family Practice*, 7, 1-7.
- Nordin, N. N., Mohd Baidzowi, F. M., & Razak, R. A. (2016). Understanding the work at home concept, Its Benefits and Challenges Towards Employees. *Social Sciences Research*, 109-118.
- Nurunnabi M, Almusharraf N, Aldeghaither D. (2020). Mental health and well-being during the COVID-19 pandemic in higher education: Evidence from G20 countries. *Journal Public Health Research*. 2020; Vol 9 (Suppl 1):2010. doi: 10.4081/jphr.2020.2010.
- Organization, W. H., et al. (2020). World health organization coronavirus disease (COVID-19) dashboard. *World Health Organization*.
- Ozdemir, H., Alper, Z., Uncu, Y., & Bilgel, N. (2010). Health literacy among adults: a study from Turkey. *Health education research*, 25(3), 464-477.
- Parmenter, K., & Wardle, J. (1999). Development of a general nutrition knowledge questionnaire for adults. *European journal of clinical nutrition*, 53(4), 298–308.
- Pedrelli, P., Blais, M. A., Alpert, J. E., Shelton, R. C., Walker, R. S., & Fava, M. (2014). Reliability and validity of the symptoms of depression questionnaire (sdq). *CNS spectrums*, 19(6), 535–546.
- Raišienė, A. G., Rapuano, V., Varkulevičiūtė, K., & Stachová, K. (2020). Working from home—who is happy? A survey of Lithuania's employees during the COVID-19 quarantine period. *Sustainability*, 12(13), 5332.
- Rubin, G. J., & Wessely, S. (2020). The psychological effects of quarantining a city. *Bmj*, 368.
- Sendogdu, A. A., & Koyuncuoglu, O. (2022). An analysis of the relationship between university students' views on distance education and their computer self-efficacy. *International Journal of Education in Mathematics, Science and Technology*, 10(1), 113– 131.
- Singhal, T. (2020). A review of coronavirus disease-2019 (covid-19). *The Indian journal of paediatrics*, 87(4), 281–286.
- Singh, M. K., Kumar, V., and Ahmad, T. (2020). Impact of Covid-19 pandemic on working culture: an exploratory research among information technology (IT) professionals in Bengaluru, Karnataka (India). *Journal of Xi'an University Architecture & Technology* 12, 3176–3184.
- Sulaiman A. A. & Abdullah E. A. (2022). An Assessment of the Effect of Work from Home on Academic Worker's Well-Being in Malaysian Higher Educational Institutions. *Global Business and Management Research: An International Journal*. Vol. 14 No. 3s.
- Tunc, A. Ç., & Akandere, M. (2020). Effects of sports on social anxiety and subjective well-being levels of university students. *Journal of Education and Training Studies*, 8(1).
- Woon, L. S.-C., Sidi, H., Nik Jaafar, N. R., & Leong Bin Abdullah, M. F. I. (2020). Mental health status of university healthcare workers during the covid-19 pandemic: a post-movement lockdown assessment. *International journal of environmental research and public health*, 17(24), 9155.
- Xiao, Y., Becerik-Gerber, B., Lucas, G., & Roll, S. C. (2021). Impacts of working from home during the COVID-19 pandemic on the physical and mental well-being of office workstation users. *Journal of Occupational and Environmental Medicine*, 63(3), 181.