



# INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES



## Obesity, Overweight, and Mental Health: Is there a Link with Employment Opportunities? A Study on University Students in Malaysia

Erni binti Tanius, Sharifah Izwan Tuan Othman, Che Manisah Mohd Kasim, Rozila Alias

To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v12-i1/12072> DOI:10.6007/IJARBSS/v12-i1/12072

**Received:** 11 November 2021, **Revised:** 14 December 2021, **Accepted:** 30 December 2021

**Published Online:** 17 January 2022

**In-Text Citation:** (Tanius et al., 2022)

**To Cite this Article:** Tanius, E. binti, Othman, S. I. T., Kasim, C. M. M., & Alias, R. (2022). Obesity, Overweight, and Mental Health: Is there a Link with Employment Opportunities? A Study on University Students in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 12(1), 1506 – 1518.

**Copyright:** © 2022 The Author(s)

Published by Human Resource Management Academic Research Society ([www.hrmars.com](http://www.hrmars.com))

This article is published under the Creative Commons Attribution (CC BY 4.0) license. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this license may be seen at: <http://creativecommons.org/licenses/by/4.0/legalcode>

**Vol. 12, No. 1, 2022, Pg. 1506 – 1518**

<http://hrmars.com/index.php/pages/detail/IJARBSS>

JOURNAL HOMEPAGE

Full Terms & Conditions of access and use can be found at  
<http://hrmars.com/index.php/pages/detail/publication-ethics>



# INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES



[www.hrmar.com](http://www.hrmar.com)

ISSN: 2222-6990

## Obesity, Overweight, and Mental Health: Is there a Link with Employment Opportunities? A Study on University Students in Malaysia

Erni binti Tanius<sup>1</sup>, Sharifah Izwan Tuan Othman<sup>2</sup>, Che Manisah Mohd Kasim<sup>3</sup>, Rozila Alias<sup>4</sup>

<sup>1</sup>Faculty of Business and Accounting, <sup>2</sup>Faculty of Health Science, <sup>3</sup>Faculty of Engineering & Life Science, <sup>4</sup>Centre of Foundation and General Studies, University Selangor, Malaysia

<sup>1</sup>Corresponding Author: Erni Tanius

Email: [ernitanus@unisel.edu.my](mailto:ernitanus@unisel.edu.my)

### Abstract

Human capital quality health issue among university students in Malaysia is critical and worrying. The number of obese, overweight, and mental health students is steadily increasing. Additionally, the students are having difficulty securing a job after they graduate. Hence, this study examines the obesity, overweight, and mental status among university students in Malaysia. Furthermore, we will identify a link between quality health and employment opportunities. There are 1087 students from 12 public and private universities who participated in this study. The questionnaire is used to collect the data; meanwhile, the data is analyzed by using SPSS 21. Furthermore, descriptive statistics and chi-square were used to answer the study's objective. The result indicated that the students perceived that quality health is not linked with employment opportunities. Therefore, they were confident to be hired after graduating. However, the student's quality of health is inadequate, and the rate of overweight, obese I, II, and III, and underweight was significant. Finally, some of them claimed that they had experienced severe and extremely severe levels of depression and anxiety.

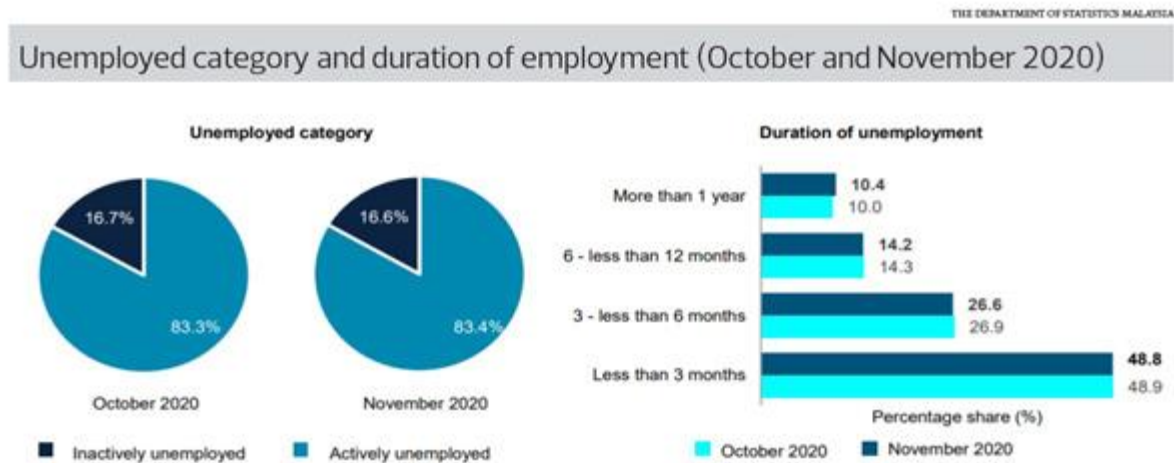
**Keywords:** Obesity, Overweight, Mental Health, Employment Opportunities, Malaysian University Students

### Introduction

The employability issue among Malaysian graduates is categorized as a critical (Ministry of Education, 2015). The national unemployment rate was 3.38% in 2019 (Plecher, 2020). It continued to rise to 4.9% in June and slightly lower to 4.7 in July 2020 and edged up again to 4.8% in November 2020. The high rate recorded among new graduates, in 2016, 22.7% (MOE, 2017). The education minister Datuk Seri Dr. Noraini Ahmad said that out of the 300,000 graduates in 2015 and 2019, only 58% gained employment; another 20% struggled with employability issues. It increased in 2020 to 75,000 or 25% total number of annual graduates (The Star, 2021). Finally, the statistic in figure 1, indicated that 83.4% of the unemployment

category in November 2020 is actively unemployed, which means those actively seeking a job and 10.4% of them unemployed for more than one year.

**Figure 1: Unemployment and Employment Rate (October and November, 2021)**



**Source: The Department of Statistic Malaysia (2021)**

The literature specified that the reason for unemployment is mismatching skills. The skills required by the industry do not match the skills owned by graduates. The government takes several interventions through Talent Corp to overcome this issue. It included 1 Malaysia Training Scheme (SL1M), Graduate Employability Management Scheme (GEMS), and Graduate Career Accelerated Programme (GCAP). Besides, an unconventional training method by Khazanah Nasional failed, as the unemployment rate is still high among university students in Malaysia.

Furthermore, the initiatives taken by the government focus more on quality skills but forget about the aspect of quality health that becomes a concern to the employers. The current trend is the employer's concern about quality health (Goldin, 2014). Health and ability become job requirements in most organizations (Neagu et al., 2016). Health quality relates to the organization's ability to manage competitors and sustainability in the global labor market (Moynahan, 2018). In addition, it contributes to the employee's ability to solve complex problems and think critically (Ying, 2017).

Meanwhile, Onley (2017) established that heavier females and males face a lower hiring rate than those who are not. On top of that, recruiters tend to decline to recruit obese applicants at the interview stage (Anderson, 2015). Finally, World Economic Forum (2016); Gog (2016) emphasized that health is crucial for future employment.

The crucial part is limited literature and study related to its quality health and employment opportunity, especially in Malaysia. The previous researches tend to focus on quality health or employment opportunity separately. Hence this knowledge gap is crucial to be addressed to acquire the information needed to design effective interventions to increase employment opportunities among the new graduates in Malaysia. Therefore, we examined the link between obesity, overweight and mental health (depression, anxiety, and stress) with employment opportunities.

## Literature Review

### Employment Opportunity

Every year, higher learning institutions in Malaysia produce over 200,000 graduates. However, one out of five graduates remains unemployed, with the majority of the Degree holders (Abdul Kadir et al., 2020). Meanwhile, actively unemployed increased from 76.8% to 83.2% in July 2020 (Department of Statistics Malaysia, 2020).

Furthermore, the literature indicated that people who suffer from health conditions have difficulties finding jobs (Boelhouwer et al., 2020; Subramaniam et al., 2020). Therefore, the employer claimed that hiring unhealthy people will impact health and safety. Additionally, it increases the costs and difficulties in managing work agreements (Boelhouwer et al., 2020; Levack et al., 2019). Meanwhile, Welsh et al (2018) said that health conditions resulted in the possibility of the employee to terminate by the employers. Moreover, they are often underpaid and work temporarily only. Consequently, it leads to self-stigmatization and self-confidence and discourages them from seeking a job (Subramaniam et al., 2020).

### Obesity and Overweight

Obesity and overweight is a widespread phenomenon and increases dramatically both worldwide and in Malaysia (Chan et al., 2017; Ghee, 2016). Globally, it increased from 17.7% in 2015 to 19.7% in 2019 (CodeBlue, 2020). Meanwhile, WHO (2021) reported that the increase has almost tripled since 1975. In 2016, the totals were 1.9 billion (39%) adults, 18 years and older, were overweight, and over 650 million (13%) were obese. The unhealthy risk factors include poor diet and physical inactivity (Andersson & Vasan, 2018). Finally, (Andersson & Vasan, 2018; Laffin, 2019; Reaume et al., 2020; Williams et al., 2015) concluded that the trending of obesity among adults and youth, regardless of race, ethnicity, gender, or age, are constantly rising, and it is worrying.

Malaysia has the highest rate of overweight and obesity in South-East Asia (World Health Organization, 2020). 30.4 % of the adult population was overweight, and 19.7% were obese. In 2015, 48.6% of Malaysians suffered from abdominal obesity and increased to 52.6% in 2019 (Abdul Razak, 2015). Health Minister Khairy Jamaluddin said that out of two Malaysians, one is obese, and four do not keep fit. Additionally, half a million adults are depressed, and the awareness of health issues among Malaysians is still at a low level (The Star, 2021).

### Mental Health

Mental health is another global health phenomenon, and it remains a neglected part of worldwide efforts to improve health. It is a condition of complete physical, emotional and social wellbeing, not only the absence of disease or infirmity (Ghebreyesus, 2019). 16% or one in six people is aged 10-19 years had experienced mental health such as depression and anxiety (World Health Organization, 2020). It develops in early life (Brown, 2018). It also affects social well-being, such as self-efficacy (He et al., 2018).

In Malaysia, 29.2% or every three in ten adults aged 16 years and above have experienced some sort of mental health problem (Salleh, 2018). Meanwhile, NHMS, in a 2012 study on 25,507 students, found that 7.9% of them had suicidal ideation, 6.4% planned suicide, and 6.8% made suicidal attempts. Additionally, 17.7% of students were depressed, 39.5% anxious, and 10.1%. Meanwhile, in 2017 NHMS reported that almost one-third (29.2%) of Malaysians above 16 had mental health problems. Another one in ten was stressed, one in five had depression, and two in five suffered from anxiety. In addition, 10% of adolescents

had the idea of committing suicide. In 2019, the prevalence of depression among Malaysians 18 years old and above yielded 2.3%. Half a million people in Malaysia are experiencing symptoms of depression (Bernama, 2020). University students are not excluded, as Arumugam et al (2021) found that university students from local universities, both private and public, were dealing with symptoms of depression, anxiety, and stress.

It is worsening during COVID 19 pandemic. For example, Star (2021) reported that 20 percent of the people in Malaysia experienced symptoms of stress before the pandemic compared to 38 percent during COVID 19 pandemic. Furthermore, the Ministry of Health (MOH) claimed that between January and December 2020, 1,080 Malaysian attempted suicide. In the meantime, Fire and Rescue Services Department Malaysia (JBPM) reported that the attempted suicide cases were 253 in 2020, 2019; 170 (2018); 151 (2017); 146 (2016); and 141 (2015). Finally, Moy & Ng (2021) found that the mental status of university students was greatly affected during the COVID-19 pandemic.

### **Methodology**

This study is quantitative, and the data was collected from 1087 students from 12 private and public universities in Malaysia. Convenience sampling is used to select a sample, and the questionnaire was specifically designed for university students in Malaysia. There are three main variables in the questionnaire: BMI, Mental health, and employment opportunity. The data were analyzed using descriptive analysis. Meanwhile, the chi-square test was used to determine the relationship between mental health (DASS21), Body Mass Index (BMI), and employment opportunities among university students.

### **Finding**

#### **Demographic Respondents**

1087 respondents from 12 public and private universities in Malaysia joined this study. 70.2% of respondents are female, and the majority, or 64.7% of them, is less than 23 years old. In terms of race, mainly, or 67.9, is Malay, and they are from a public university (70.9%). Nearly half of respondents (40.75) take business and management study and finally, respondents almost from all over Malaysia with the most from Selangor (24.6%).

#### **The Quality of BMI**

Body mass index (BMI) has been used as a health indicator that impacts the overall quality of life. It is a direct measure of body fatness (Lawlor et al., 2010). BMI is a person's weight in kilograms divided by the square of height in meters [BMI = Weight (kg) / (Height (m)\*Height (m))]. This study used the BMI classification for Asians, as shown in table 1. It is getting more stringent categorical data that might impact the employment opportunity perceptions among university students in Malaysia. The respondents are classified into six categories: underweight, normal, pre-obese, obese I, obese II, and obese III.



**Table 1: Asian BMI Classification**

Classification	Asian BMI (kg/m <sup>2</sup> )	WHO BMI (kg/m <sup>2</sup> )	Risk of comorbidity
Underweight	< 18.5	< 18.5	Low
Normal	18.5 – 23.9	18.5 – 24.9	Low
Overweight/Pre-obese	24.0 – 29.9	25.0 – 29.9	Increase
Obese I	30.0 – 35.0	30.0 – 35.0	High
Obese II	35.1 – 39.9	35.1 – 39.9	Very high
Obese III	> 40.0	> 40.0	Extremely high

Source: WHO (2020)

Table 2 shows that the majority of the respondent, 42.7% are normal BMI. However, 24.7% of them are overweight, and another 16.8% are categorized as Obese I (14.4%), Obese II (1.5%), and Obese III (1.0%).

BMI Body Mass Index	Frequency	Percentage
	N	%
Underweight	170	15.6
Normal	464	42.7
Overweight	269	24.7
Obese I	157	14.4
Obese II	16	1.5
Obese III	11	1.0
<b>Total</b>	<b>1087</b>	<b>100</b>

Table 2. The distribution respondent Body Mass Index

### The Quality of Mental Health

The mental health assessment in this study is Depression Anxiety Stress Scale (DASS) shorter 21-item version developed by Lovibond and Lovibond [9]. The DASS will identify the predominantly aimed at assessing the perceived severity of depression, anxiety, and stress symptoms. The mental health scores are calculated by summing the scores for the relevant items. The total score has been multiplied by 2 to get the total score for the Mental Health status classification (Table 3).

Table 3: Depression, Anxiety & Stress Classification According to DASS-21 Scoring System

	Depression	Anxiety	Stress
<b>Normal</b>	0-9	0-7	0-14
<b>Mild</b>	10-13	8-9	15-18
<b>Severe</b>	21-27	15-19	26-33
<b>Extremely Severe</b>	28+	20+	34+

Source: Lovibond & Lovibond (1995). Manual for the Depression Anxiety & Stress Scales. (2nd Ed.) Sydney: Psychology Foundation.

Table 4 shows that most of the Malaysian students in this study had a normal level of depression (35.6%), a moderate level of anxiety (34.8%), and stress (42.4%). On the other hand, about 18.4% of students show severe to extremely severe depression, 33.7%. Besides

severe to extremely severe anxiety, 26.5% showed severe to extremely severe stress. In the depression condition group, the highest was the normal level (35.6%). It followed by moderate level (32.0%), mild (14.05), severe (10.1%), and extremely severe level (8.3%). While in the anxiety condition group, the highest was from moderate level (34.8%), followed by normal (22.6%), extremely severe (20.5%), severe (13.2%), and mild (8.9%). In addition, for the stress condition group, the highest was from moderate level (42.4%), normal (25.9%), severe (16.8%), extremely severe (7.7%), and mild (7.2%).

DASS21	Depression		Anxiety		Stress	
	N	%	N	%	N	%
Normal	387	35.6	246	22.6	281	25.9
Mild	152	14.0	97	8.9	78	7.2
Moderate	348	32.0	378	34.8	461	42.4
Severe	110	10.1	143	13.2	183	16.8
Extremely severe	90	8.3	223	20.5	84	7.7
Total	1087	100	1087	100	1087	100

**Table 4: The Mental Health Status of the respondent**

#### **BMI Status and the Impact on Employment Opportunity (EOP)**

We found that BMI does not affect the EOP of the students ( $p > 0.05$ ). Regardless of their BMI, students have a mixture of perceptions of whether they will be successfully employed, not sure, or will not be employed after graduation (Table 5).

**Table 5: Impact of BMI status towards Employment Opportunity**

BODY MASS INDEX		EMPLOYMENT OPPORTUNITY			Total	
		Not Offered	Not Sure	Offered		
Underweight		13	83	71	167	
		7.8%	49.7%	42.5%	100.0%	
	Normal		34	220	196	450
			7.6%	48.9%	43.6%	100.0%
	Overweight		26	104	130	260
			10.0%	40.0%	50.0%	100.0%
	Obese I		7	75	71	153
		4.6%	49.0%	46.4%	100.0%	
Obese II		1	7	8	16	
		6.2%	43.8%	50.0%	100.0%	
Obese III		0	6	2	8	
		0.0%	75.0%	25.0%	100.0%	
Total		81	495	478	1054	
		7.7%	47.0%	45.4%	100.0%	

**p-value = 0.290 not significant**

#### **Effects of Mental Health Status towards Student's Employability Opportunity Perception**

We found out that anxiety and depression affect EOP ( $p = 0.000$  and  $0.003$ , respectively). Most of the students showing a normal level of anxiety and depression doubt whether they will get employed or not. However, those who are severe to extremely severe levels of mental health conditions show confidence they will get employed after they graduate. However, stress conditions did not affect EOP ( $p > 0.05$ ).

Table 6: Impact of Anxiety Status towards Employment Opportunity Perceptions

		EMPLOYMENT OPPORTUNITY			Total
		Not Offered	Not Sure	Offered	
ANXIETY	Normal	27 11.2%	113 47.1%	100 41.7%	240 100.0%
	Mild	8 8.7%	35 38.0%	49 53.3%	92 100.0%
	Moderate	25 6.7%	204 55.0%	142 38.3%	371 100.0%
	Severe	12 8.6%	69 49.3%	59 42.1%	140 100.0%
	Extremely Severe	11 5.0%	80 36.4%	129 58.6%	220 100.0%
Total		83 7.8%	501 47.1%	479 45.1%	1063 100.0%

P-value = 0.000 – significant

Table 7: Impact of Depression Status towards Employment Opportunity Perceptions

		EMPLOYMENT OPPORTUNITY			Total
		Not Offered	Not Sure	Offered	
DEPRESSION	Normal	39 10.3%	192 50.5%	149 39.2%	380 100.0%
	Mild	16 10.7%	73 48.7%	61 40.7%	150 100.0%
	Moderate	22 6.5%	148 43.9%	167 49.6%	337 100.0%
	Severe	6 5.6%	51 47.2%	51 47.2%	108 100.0%
	Extremely Severe	0 0.0%	37 42.0%	51 58.0%	88 100.0%
Total		83 7.8%	501 47.1%	479 45.1%	1063 100.0%

p-value = 0.003 – significant

Table 8: Impact of Anxiety Status towards Employment Opportunity Perceptions

		EMPLOYMENT OPPORTUNITY			Total
		Not Offered	Not Sure	Offered	
STRESS	Normal	26 9.7%	125 46.5%	118 43.9%	269 100.0%
	Mild	7 9.2%	36 47.4%	33 43.4%	76 100.0%
	Moderate	34 7.5%	230 50.7%	190 41.9%	454 100.0%
	Severe	14 7.7%	80 44.2%	87 48.1%	181 100.0%
	Extremely Severe	2 2.4%	30 36.1%	51 61.4%	83 100.0%
Total		83 7.8%	501 47.1%	479 45.1%	1063 100.0%

p-value = 0.065 not significant

### Conclusion

This study focuses on the factors contributing to capital quality health among university students in Malaysia. Overall, the study concluded there is no link between overweight, obesity, and mental health as perceived by the university students in Malaysia involved in this study. Furthermore, the respondent's quality of health is inadequate, and less than fifty



percent of respondents' categories are normal. However, the rate of overweight, obese I, II, and III, and underweight was also significant. The result shows that nearly one-third of respondents reported they have a severe and extremely severe level of depression. In addition, close to two-thirds of respondents said they experienced moderate, severe, and extremely severe anxiety. Furthermore, nearly a quarter are experiencing a severe and extremely severe stress level. Overall, the respondents said they were confident to be hired after graduation. It is obtainable, especially for those categorized as overweight, obese. It is similar to extremely stressed, severe, extremely depressed, and extremely anxious respondents. It concluded that the university students in Malaysia perceived that quality health does not affect their employment opportunities.

### **Discussion**

As a whole, the result indicated that the number of overweight and obesity among university students is high. Hence, they are exposed to several prevalent health diseases, such as cardiovascular attacks (Laffin, 2019; Tok et al., 2018). Besides, diabetes type 2, cardiovascular disease, and several types of cancers include breast, large intestine, pancreas, and kidney cancers (The Star, 2021). Besides hyperlipidemia, sleep apnoea; liver and gall bladder disease; and gynecological problems (Williams et al., 2015). Finally, Reaume et al (2020) said it relates to asthma and increased risk for poor mental health (Campos et al., 2018).

The result also shows that the mental health status among respondents is worrying. Some of the respondents claimed that they experienced a severe and extremely severe level of depression. Besides, the level of anxiety was moderate, severe, and extremely severe. Moreover, nearly a quarter are going through extremely severe stress levels. The result shows that university students in Malaysia expose to critical and invisible diseases that affect their self-efficacy (He et al., 2018). Besides, the possibility of suicidal attempts (Malaysian Healthcare Performance Unit, 2017).

As a consequence, the government's financial burdening increased. Finance Minister Tengku Zafrul Aziz said Malaysia's health spending is increasing from 4.2 percent of gross domestic product (GDP) in 2016 to 4.7 percent of GDP or RM63.8 billion in 2020, and 5 percent of the GDP or RM72.7 billion in 2021 (CodeBlue, 2021). Therefore, poor quality health may jeopardize Malaysia's vision to become high nation income country by 2050.

Finally, the respondents claimed that health issues such as for overweight, obesity, and mental health did not influence their employment opportunities. It is the opposite of the industry view that they prefer candidate free from health (Boelhouwer et al., 2020; Subramaniam et al., 2020). Support by Boelhouwer et al (2020); Levack et al (2019); Welsh et al (2018) emphasize on quality health for employment.

### **Recommendation for Implementation**

Health quality problem such as obesity, overweight, and mental health is severe and critical. It relates directly to the future of human capital. Hence, the findings appeal for serious attention to prevent these problems. The collaboration among stakeholders, such as a parent, government, society, and universities, has vital to reducing the prevalence of health problems among university students in Malaysia. Furthermore, the government should include it in a national public health agenda.

Moreover, the stakeholders should use social media to promote healthy lifestyles, especially young people actively using this site. Nevertheless, the policy to control and monitor social media may help prevent students from being trapped in the wrong direction. Additionally, a

healthy lifestyle, including dietary intake and physical activity, is a part of family culture. Besides, the close relationship will prevent them from mental health such as depression and anxiety. Nonetheless, educators, especially in universities, must be alert to the current trends of quality health among their students. Therefore, they should incorporate with syllabus and co-curriculum activities. Last but not least, the counseling service, environment, and culture significant interventions to reduce and control health problems.

### **Limitation and Recommendation for Future Study**

However, this study has some limitations; the number of respondents is small (N= 1087) and only involves 12 universities in Malaysia. However, this study indicated that health problems exist and are distressing. Therefore, we suggest that future studies involve more respondents and focus on young people (primary school students). In addition, the literature reported that health problems in Malaysia are rooted from a young age. Probably, the following study may focus on different variables such as environmental and family factors. Last but not least, the qualitative and clinical study is helpful rather than self-reported data so that the data may be more accurate.

Overall, the study attempts to provide theoretical support for human capital quality health, overweight, obesity, and mental health as predictors for employment opportunity among university students. Additionally, this study has a significant impact on the government designing public health policy in Malaysia. Besides, universities need to be aware and intervene to ensure their students will hire after graduation. Therefore, they need to blend the quality health activity through training, health assessment, and the crucial is to include it in the syllabus. Furthermore, the study has also proposed that future researchers use clinical studies to know the precise quality health status; hence, the proposed intervention is more accurate. Finally, the other factors contributing to quality health, such as dietary and physical activity, should be included in future of study.

### **Acknowledgment**

This article is part of the Fundamental Research Grants Scheme (FRGS/1/2018/SS03/UNISEL/03/2) funded by the Malaysia Ministry of Higher Education Malaysia.

### **References**

- Abdul Kadir, M. J., Naghavi, N., Subramaniam, G., & Abdul Halim, N. A. (2020). Unemployment among Graduates - Is There a Mismatch? *International Journal of Asian Social Science*, 10(10), 583–592. <https://doi.org/10.18488/journal.1.2020.1010.583.592>
- Amiri, S., & Behnezhad, S. (2019). Obesity and anxiety symptoms: a systematic review and meta-analysis. *Neuropsychiatrie* 33, 72–89. DOI: 10.1007/s40211-019-0302-9
- Anderson, E. (2015), Nearly half of employers 'unlikely' to hire overweight workers, *The Telegraph*, <https://www.telegraph.co.uk/finance/jobs/11522021/Nearly-half-of-employers-unlikely-to-hire-overweight-workers.html>
- Andersson, C., & Vasan, R. S. (2018). Epidemiology of cardiovascular disease in young individuals. *Nature Research*. <https://doi.org/10.1038/nrcardio.2017.154>
- Arumugam, N., Ramasamy, V. (Resh), Suppiah, P. C., & Segarmurthy, M. V. (2021). Mental Health Among Malaysian University Students Amidst Lockdown. *International Journal of Academic Research in Progressive Education and Development*, 10(2), 1081–1095.

- Bernama. (2020) Survey finds almost half a million Malaysians experience symptoms of depression, *BERNAMA*, <https://www.astroawani.com/berita-malaysia/survey-finds-almost-half-million-malaysians-experience-symptoms-depression>
- Boelhouwer, I. G., Vermeer, W., & Van Vuuren, T. (2020). WorkAbility, Burnout Complaints, and Work Engagement Among Employees With Chronic Diseases: Job Resources as Targets for Intervention? *Frontiers in Psychology*, 11(August), 1–15. <https://doi.org/10.3389/fpsyg.2020.01805>
- Brewis, A. (2003), Biocultural aspects of obesity in young Mexican schoolchildren. *Am J Hum Biol.* 15(3):446–60.
- CodeBlue. (2020). Survey : 1 . 7 Million Malaysians Risk Three Chronic Conditions. Retrieved from <https://codeblue.galencentre.org/2020/05/29/survey-1-7-million-malaysians-risk-three-chronic-conditions/>
- CodeBlue. (2021), Malaysia's Health Spending Estimated To Hit 5% GDP In 2021, <https://codeblue.galencentre.org/2021/09/21/malaysias-health-spending-estimated-to-hit-5-gdp-in-021/>
- Department of Statistics Malaysia. (2020). *Key Statistics of Labour Force in Malaysia, June 2020*. <https://www.dosm.gov.my/v1/index.php>
- Ghebreyesus, T. A. (2019). The WHO Special Initiative for Mental Health ( 2019-2023 ) : Universal Health Coverage for Mental Health.
- Ghee, L. K. (2016), A Review of Adult Obesity Research in Malaysia, *Med J, Malaysia*, Volume 71 Supplement 1 June 2016, ISSN 0300-5283 PP 2121/01/2013 (031329) MITA(P) 124/1/91
- Goldin, C. (2014). *HumanCapital*, Harvard, [http://scholar.harvard.edu/files/goldin/files/human\\_capital\\_handbook\\_of\\_cliometrics](http://scholar.harvard.edu/files/goldin/files/human_capital_handbook_of_cliometrics) [http://orapp.aut.ac.nz/bitstream/handle/10292/12440/MSD-HRC-Overview%20-%20Protocol\\_FINAL.pdf?sequence=1&isAllowed=y](http://orapp.aut.ac.nz/bitstream/handle/10292/12440/MSD-HRC-Overview%20-%20Protocol_FINAL.pdf?sequence=1&isAllowed=y) <https://apps.who.int/iris/bitstream/handle/10665/336656/9789240015128-eng.pdf?sequence=1&isAllowed=y>
- Laffin, L. (2019). Why Are Heart Attacks on the Rise in Young People? Retrieved from Cleveland Clinic website: <https://health.clevelandclinic.org/why-are-heart-attacks-on-the-rise-in-young-people/>
- Lamertz, C. M., Jacobi, C., Yassouridis, A., Arnold, K., & Henkel, A. W. (2002). Are obese adolescents and young adults at higher risk for mental disorders? A community survey. *Obesity research*, 10(11), 1152–1160. <https://doi.org/10.1038/oby.2002.156>
- Lavallee, K. L., Zhang, X. C., Schneider, S., & Margraf, J. (2021). Obesity and Mental Health: A Longitudinal, Cross-Cultural Examination in Germany and China. *Frontiers in psychology*, 12, 712567. <https://doi.org/10.3389/fpsyg.2021.712567>
- Levack, W., Fadyl, J., Reed, K., Kayes, N., Hardwood, M., Lockett, H., Woodhams, N. (2019). Protocol: Overview of systematic reviews on support for gaining employment with a long-term health condition.
- Lukat, J., Becker, E. S., Lavallee, K.L., Van der Veld, W. M., Margraf, J. (2017). Predictors of Incidence, Remission and Relapse of Axis I Mental Disorders in Young Women: a Transdiagnostic Approach. *Clinical Psychology & Psychotherapy*, 24, 322-331. DOI: 10.1002/cpp.2026.
- Maercker, A., Chi Zhang, X., Gao, Z., Kochetkov, Y., Lu, S., Sang, Z., Yang, S., Schneider, S., & Margraf, J. (2015). Personal value orientations as mediated predictors of mental health: A three-culture study of Chinese, Russian, and German university

- students. *International journal of clinical and health psychology: IJCHP*, 15(1), 8–17. <https://doi.org/10.1016/j.ijchp.2014.06.001>
- Malaysian Healthcare Performance Unit. (2017). Malaysian Mental Healthcare Performance: Technical report 2016, Ministry of Health Malaysia: Putrajaya. p. 1-67.
- Mohd-Sidik, S., Lekhraj, R., & Foo, C. N. (2021). Prevalence, Associated Factors and Psychological Determinants of Obesity among Adults in Selangor, Malaysia. *International journal of environmental research and public health*, 18(3), 868. <https://doi.org/10.3390/ijerph18030868>
- Moy, F. M., & Ng, Y. H. (2021). Perception towards E-learning and COVID-19 on the mental health status of university students in Malaysia. *Science Progress*. <https://doi.org/10.1177/00368504211029812>
- Moynahan, M. (2018), *Creativity will boost career prospects in the fourth industrial revolution*, <http://www.creativenz.govt.nz/b>
- Neagu, O., Lazăr, V., Mircea, T., Macarie, S. (2016), Human capital quality and development: an employers' and employees' comparative insight, *Studia Universitatis, Vasile Goldis|| Arad. Economics Series* Vol 26 Issue 3/2016, ISSN: 1584-2339, Pg 62 –73
- Onley, D. (2017), *Ending Weight Bias in the Hiring Process Starts with Being Conscious*, <https://www.shrm.org/resourcesandtools/hr-topics/talent-acquisition/pages/weight-bias-hiring-process.aspx>
- So Reaume, S. V., Luther, A. W. M., & Ferro, M. A. (2020). Physical Morbidity and Mental Health Care among Young People. *Journal of Adolescent Health*. <https://doi.org/10.1016/j.jadohealth.2020.06.040>
- Son-Joo, G. (2016), *Rethinking the Human Capital Development Model for The Future of Work*, The HEAD Foundation, [http://www.headfoundation.org/papers/\\_2016](http://www.headfoundation.org/papers/_2016)
- Swallen, K. C., Reither, E. N., Haas, S. A., Meier, A. M. (2005), Overweight, obesity, and health-related quality of life among adolescents: the National Longitudinal Study of adolescent health. *Pediatrics*. 2005;115(2):340–7.
- The ASEAN Post. (2020), Obesity on The Rise In ASEAN, *The ASEAN Post*, <https://theaseanpost.com/article/obesity-rise-asean>
- The Star. (2021), Analysis: Mental health issues growing more serious, *The Star* <https://www.thestar.com.my/news/nation/2021/07/02/analysis-mental-health-issues-growing-more-serious>
- The Star. (2021), Malaysia needs to urgently control obesity rates, *The Star*, <https://www.thestar.com.my/opinion/letters/2021/07/10/malaysia-needs-to-urgently-control-obesity-rates>
- Tok, C. Y., Ahmad, S. R., & Koh, D. S. Q. (2018). Dietary habits and lifestyle practices among university students in university Brunei Darussalam. *Malaysian Journal of Medical Sciences*, 25(3), 56–66. <https://doi.org/10.21315/mjms2018.25.3.6>
- Tremmel, M., Gerdtham, U. G., Nilsson, P. M., & Saha, S. (2017). Economic Burden of Obesity: A Systematic Literature Review. *International journal of environmental research and public health*, 14(4), 435. <https://doi.org/10.3390/ijerph14040435>
- Welsh, Strazdins, Charlesworth, Kulik, and D'Este (2018), WHO Guidelines on Physical Activity and Sedentary Behaviour, *WHO* (2020),
- WHO. (2021), Obesity and Overweight, *WHO* <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>
- Williams, E. P., Mesidor, M., Winters, K., Dubbert, P. M., & Wyatt, S. B. (2015). Overweight and Obesity: Prevalence, Consequences, and Causes of a Growing Public Health

Problem. *Current obesity reports*, 4(3), 363–370. <https://doi.org/10.1007/s13679-015-0169-4>

World Economic Forum. (2016). The Future of Jobs Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution. *World Economic Forum*, [http://www3.weforum.org/docs/WEF\\_FOJ](http://www3.weforum.org/docs/WEF_FOJ)

World Obesity Federation. (2021), COVID-19 and Obesity: The 2021 Atlas, March 2021, *World Obesity* <https://data.worldobesity.org/publications/COVID-19-and-Obesity-The-2021-Atlas.pdf>

Ying, A. O. E. (2017). Three Essential Skills for the Fourth Industrial Revolution, <http://www.asiaone.com/business>