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Ensuring Road Safety by Monitoring the Fitness of Road Enforcement Officers

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Abstract
Road accidents remain the leading cause of deaths in Malaysia, making the Road Transport Department (RTD) crucial in ensuring safe driving and officer productivity. Obesity among RTD officers is a concern despite initial intensive training. The NHMS 2019 revealed that 50.1% of Malaysian adults were overweight or obese, and RTD officers reflect this trend. In Terengganu, obese officers were required to join fitness programs to improve performance. This study, using questionnaires from randomly selected officers, found that obesity is higher in enforcement departments, with contributing factors including gender, education, work type, lack of exercise, and stress-coping activities, namely gaming.

Keywords: Fitness; Obesity; Road Safety; Productivity

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1.0 Introduction

Overweight and obesity have been identified as one of the 21st century's most critical public health problems, and as a factor, with the number of sick and deaths (Hojjat, 2021). The World Health Organisation (WHO) reported in February 2020 that obesity became one of the leading causes of death globally, with at least 2.8 million people dying each year. Malaysia was also reported to face a severe problem, as the World Population Review 2019 stated that Malaysia had the highest prevalence of obesity among adults in Southeast Asia, at 15.6 per cent, followed by Brunei (14.1 per cent), Thailand (10.0 per cent), and Indonesia (6.9 per cent). The National Health and Morbidity Survey (NHMS) 2019 findings, meanwhile, showed that 50.1 per cent of adults in Malaysia were either overweight or obese, with 30.4 per cent being overweight and 19.7 per cent being obese (The Malay Mail, 2020). Obesity is also a problem among the uniform staff, even though all of them underwent intensive training at the very beginning of their careers. The high prevalence of obesity among uniformed personnel has important implications that extend beyond individual health concerns to operational effectiveness and road safety outcomes. Excess body weight has been consistently associated with reduced physical fitness, slower reaction times, impaired mobility, and increased fatigue, all of which may compromise an officer's ability to perform critical road safety–related tasks such as traffic enforcement, accident response, pursuit operations, and emergency interventions (Mohan et al., 2025). In

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high-risk roadside environments, these functional limitations may increase both officer vulnerability and the likelihood of secondary incidents, thereby indirectly affecting overall road safety. From an organisational perspective, obesity among enforcement officers can negatively influence workforce productivity, operational readiness, and service quality. Higher body mass index (BMI) has been linked to increased absenteeism, higher rates of injury, and greater healthcare utilisation, which place additional strain on institutional resources. In enforcement agencies such as the Royal Malaysian Police and the Road Transport Department, these impacts may translate into reduced patrol capacity, slower response times to traffic incidents, and diminished effectiveness in implementing road safety policies.

Furthermore, the physical condition of uniformed officers plays a symbolic and behavioural role in public compliance. Officers are often perceived as role models for discipline and adherence to safety norms; therefore, visible health issues among enforcement personnel may undermine public confidence and weaken the moral authority of road safety messaging. As such, obesity within uniformed services is not solely a health issue but a systemic risk factor that intersects with road safety governance and organisational performance. These considerations reinforce the need for sustained fitness monitoring, preventive health programmes, and organisational-level interventions that integrate occupational health management with road safety objectives, rather than treating officer obesity as an isolated or purely personal concern. In 2016, 11,274 out of 109,304 officers of the Royal Malaysian Police were found to be obese (MStar, 2016). In 2020, the RTD Terengganu state director, Tuan Zulkarnain Yasin, insisted that obese RTD officers in Terengganu undergo the fitness program to ensure they are fit and productive (Omar, 2020).

Moreover, obesity should be recognised at an early stage and prevented, especially among children. According to the Centres for Disease Control and Prevention, nearly half of young people between the ages of 12 and 21 do not take part in any vigorous physical activity. Body Mass Index (BMI) is a derivation of weight and height that can be formulated mathematically by dividing a person's weight by their height to the power of 2 or squared. Furthermore, BMI does not directly measure body fat. Still, studies have shown that BMI correlates with direct measures of body fat, such as underwater weighing and dual-energy X-ray absorptiometry (DXA). BMI is also an affordable and easy-to-perform process for weight classes. For adults 20 years old and above, BMI is interpreted using standard weight status categories that are the same across ages and for both men and women. However, for children and teens, BMI interpretation depends on age and sex. Table 1 presents the standard BMI ranges for adults. Individuals with a BMI below 18.5 are classified as underweight, while those with a BMI between 18.5 and 24.99 are considered to have a normal weight. A BMI above 25 indicates that a person is either overweight or obese (Brazier et al, 2020).

Table 1. BMI standard range

BMI	Category
<18.5	Underweight
18.5-24.99	Normal
25.0-29.99	Overweight
>30	Obese

Meanwhile, to become a member of the enforcement, the physical requirement should be at least 1.57m in height for men and 1.53m for women without shoes, a weight of at least 48kg for men and 46kg for women, with a BMI measurement between 19 and 26 (Portal Rasmi Suruhanjaya Perkhidmatan Awam Malaysia, 2020). MStar (2016) reported that the Federal Police require their officers to undergo a BMI test before receiving a promotion or confirmation. It was to ensure that all Malaysian policemen stay fit to carry out their tasks. Overweight and obesity have been identified as one of the 21st century's most critical public health problems, and a factor, along with the number of sicknesses and deaths. Obesity and being overweight are correlated and have been specified by the WHO (World Health Organisation) as unhealthy or excessive chronic inflammation that may cause health problems. Overweight and obesity are potential risk factors that are connected with diseases like diabetes, cardiovascular disease, lung disease, cancer, high blood pressure, and high cholesterol; hence, they can affect the productivity of people at every level of their lives.

Despite numerous campaigns promoting healthy lifestyles, awareness and sustained behavioural change among RTD officers remain limited. Previous research has shown that physical exercise significantly improves both general and mental health among office workers (Nguyen et al., 2021), underscoring the strong link between occupational lifestyle and health outcomes. Sedentary work patterns and unhealthy lifestyle behaviours have been associated with poorer physical health, which in turn can reduce organisational productivity and work performance. This concern is particularly relevant to RTD Terengganu officers, as a substantial proportion of their duties involve desk-based and administrative tasks, increasing exposure to sedentary behaviour and associated health risks. In light of these concerns, the aim of this study is to examine the prevalence and determinants of overweight and obesity among RTD Terengganu officers, and to assess how occupational and lifestyle factors contribute to excess body weight within this enforcement workforce.

2.0 Literature Review

Recent literature highlights the growing need to reconceptualize transport safety and occupational health through integrative, population-sensitive, and systems-based approaches. Traditional design and evaluation frameworks, particularly in vehicle safety, are seen as inadequate for addressing the heterogeneity of human populations and the complex distribution of crash scenarios. Crandall (2014) argues that conventional design techniques capture only a limited fraction of human variability, constraining progress in injury and fatality reduction. The study positions computational modelling as a transformative tool in passive and integrated safety, enabling injury outcomes to be analysed through causal mechanisms that incorporate statistical representations of population diversity. However, such advances must be accompanied by parallel developments in experimental biomechanics, crash reconstruction, and epidemiology to ensure real-world relevance.

Extending beyond crash mechanics, recent research has strengthened the conceptual link between transport systems and human health. Barros dos Santos and Lima (2024) provide a theoretical contribution by deepening the understanding of the transport health related idea by emphasizing both physical and mental well-being. Their work underscores the role of transport policies not only in mobility and economic development but also in shaping health outcomes. By identifying relevant health indicators, methodological approaches, and data collection instruments, the study offers a foundation for future interdisciplinary research integrating transport planning and public health perspectives. At the occupational level, empirical evidence reveals substantial health burdens among transport-related workers. Akinpeloye et al. (2025) report a high prevalence of hypertension in this population, driven primarily by age and central obesity, alongside modifiable lifestyle factors such as smoking, alcohol consumption, and physical inactivity. These findings highlight the importance of targeted workplace health interventions that address both behavioural and structural risk factors. Similarly, Wu and Liu (2025) demonstrate that obesity among police officers is closely linked to occupational stress and disordered eating behaviours. Their findings reveal notable geographic and contextual disparities, with rural officers experiencing higher stress, disordered eating, and obesity levels. Although effect sizes were modest, the study illustrates how psychosocial stressors embedded within transport-related occupations can indirectly exacerbate adverse health outcomes.

Past studies also examined models of obesity. Tomer (2013) proposed a model that explains the factors contributing to obesity by moving beyond the traditional economic framework and incorporating elements of health sciences to provide a more comprehensive understanding of the issue. Unlike classical economic approaches, this model does not assume that obesity is solely the result of caloric intake without considering energy expenditure. Similarly, Young-Hyman (2006) emphasized that obesity is strongly linked to unhealthy diets and poor behavioural patterns. An unhealthy diet typically includes high levels of sugar, carbohydrates, and unhealthy fats, along with low fibre and antioxidant intake, and a high presence of oxidants. In addition, poor behavioural patterns include frequent consumption of junk food, stress-related eating, inadequate sleep, lack of physical activity, and high exposure to toxins. Together, numerous internal and external factors shape dietary choices and lifestyle behaviours. As illustrated in Fig. 1, these variables can lead to unhealthy eating habits and behavioural trends, which in turn increase the likelihood of obesity in adults.

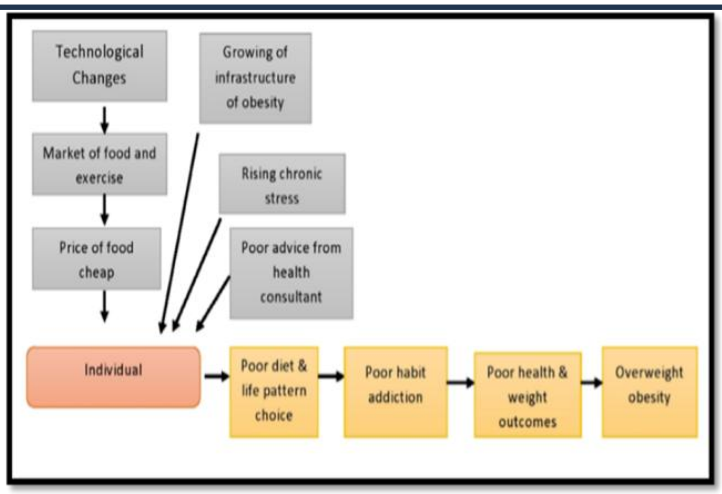

Fig. 1. Factors that might affect an individual's weight

There is substantial evidence that social and environmental factors contribute to obesity. Its prevalence is significantly associated with sex, racial and ethnic identity, and socioeconomic status, creating complex interrelationships among these characteristics (Lee et al., 2019). Nutritionists emphasise that breakfast is an essential component of healthy eating habits; however, research also suggests that breakfast consumption may be associated with being overweight. This behaviour has been identified as a factor influencing weight gain and is summarised in Table 2.

Table 2. Types of eating habits

No	Habits
1	Not involved in physical exercises
2	High food intake
3	Short sleep duration
4	Bid dinner meals
5	Bedtime snake type

The Body Mass Index (BMI) is one of the most widely used methods for assessing obesity. It is calculated using an individual's weight and height and generally serves as a reliable indicator of body fat for most people. Although it does not directly measure body fat, BMI is often used as an alternative to more complex assessments (National Heart and Blood Institute, 2000). Moreover, it is a simple, inexpensive, and practical screening tool for identifying weight categories that may pose health risks. The formula for calculating the BMI is:

$$BMI = \frac{Mass(kg)}{Height(m^2)} \quad (1)$$

There are several studies on using BMI as the measurement of obesity for more than a decade, ranging from studies on its accuracy, predicting obesity based on BMI, measuring the level of prevalence, and many more (Adab et al., 2018; Simmons et al., 2016; Elgar and Stewart, 2008; Must et al., 1999; Al-Nuoaim et al., 1996).

Another method for measuring body fat uses 3D body scanning technology to measure waist circumference (WC), hip circumference (HC), and the waist-to-hip ratio (WHR). This approach helps improve the assessment of abdominal obesity risk. In a study by Japar et al. (2017), a paired t-test was conducted to compare measurements obtained through a 3D body scanner with those taken manually for WC, HC, and WHR. The findings indicated that the 3D body scanner is a more effective assessment tool, as it detected abdominal obesity in more subjects than WC and WHR alone. Furthermore, as 3D scanning technology continues to advance, it has the potential to deliver even more precise and accurate circumference measurements (Jaeschke et al., 2015).

There are also other approaches to measuring fatness, despite their lack of an acceptable gold standard. Liu et al. (2021) utilized the findings that provide important information about adiposity directly measured by dual energy x ray absorptiometry, whereas previous studies usually reported obesity defined by body mass index as a proxy of adiposity. O'Neill (2015) conducted latent class analysis to characterise existing diagnostics by using data on US adults and found that measures based on body mass index and bioelectrical impedance analysis misclassify a large number of individuals. Anthropometric data on body circumferences, namely waist circumference (WC), hip circumference (HC), and waist-to-hip ratio (WHR), are commonly used as basic measures to determine health status, disease risk, and measure the distribution of body fat (Roy and Sharma, 2016).

2.0 Methodology

The target population for this study is all the RTD officers at the operational levels. However, in this study, a purposive sampling technique was used for convenience. Hence, a group of officers from RTD Stesen Penguatkuasa Air Sejuk Setiu and RTD Kuala Terengganu was selected as the study sample. The primary data on the RTD officers were collected using a questionnaire, adapted from Dr Jeya Devi Coomarasamy and others for their research on the Prevalence of Obesity and Daily Lifestyles of the Registered Nurses in Malaysia 2014 (Coomarasamy et al., 2014).

In the survey, a questionnaire was used to obtain information from the respondents, and the information was kept private and confidential. Due to the movement control order (MCO), the questionnaire was distributed online using Google Form. To ensure the questionnaire's validity and reliability, a pilot study was conducted with 30 RTD officers from various departments and locations in Malaysia. Data collection for the pilot study was conducted in February 2020, and the main study in December 2020. The questionnaire was divided into four (4) parts:

1) Demographic information
2) Index Mass Calculation Information
3) Activities
4) Stress Reduction Activities

3.0 Method of Analysis

In this section, the method of analysis is described and divided into two stages. In the first stage, it is a descriptive analysis based on responses from the survey. The demographic profiles of the respondents are summarised and categorised based on their obesity levels. Based on Table 3, Weir and Jan (2019) used the definition of obesity from the World Health Organisation (WHO).

Table 3. Cut-off points proposed by an expert committee for the classification of overweight

BMI	WHO Classification	Popular Description
<18.5 kg/m2	Underweight	Thin
18.5-24.9 kg/m2	Normal	Healthy, normal, or acceptable weight
25.0-29.99 kg/m2	Grade 1 Overweight	Overweight
30.00-39.9 kg/m2	Grade 2 Overweight	Obesity
>40.0 kg/m2	Grade 3 Overweight	Morbid Obesity

Several hypotheses were constructed in order to achieve the research objectives. To measure the difference, the t-test was used. Mathematically, it establishes the problem by assuming that the means of the two distributions are equal (H_0: $\mu_1=\mu_2$). If the t-test rejects the null hypothesis (H_0: $\mu_1=\mu_2$), it indicates that the groups are highly probably different. The p-value is the variable that allows us to reject the null hypothesis (H_0: $\mu_1=\mu_2$). If p-value $\leq \alpha$ (Critical value), the null hypothesis is rejected or there is a significant difference between the two groups at 95 per cent confidence (if the critical value is 0.05).

As for the association between two categories, the chi-square test for association (contingency) was used. The chi-square test is a standard measure for the association between two categorical variables using formula (2).

$$\chi^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)^2}{E_i} = N \quad (2)$$

where χ^2 = Pearson's cumulative test statistic, which asymptotically approaches a χ^2 distribution.
O_i = the number of observations of type *i*.
N = total number of observations
E_i = the expected (theoretical) count of type *i*, asserted by the null hypothesis that the fraction of type *i* in the population is pi

4.0 Results and Discussions

In this section, the results and findings of the research are presented and discussed. The section is divided into two: descriptive statistics and inferential statistics (based on the hypotheses).

The BMI level results were analysed and summarised in Excel. Participants were classified into three BMI levels: underweight, normal, and obese, based on Table 3. From Table 4, it is found that 16 out of 30 respondents (or 53.5 %) in the pilot study are categorised as obese. There were 30 respondents (15 males and 15 females) who participated in the pilot study. The pilot study was conducted to ensure that the questions were reliable and understood by the respondents. Table 4 also highlights that the average weight for the respondents is 62.07 kg, and the average height is 164.23cm. The average BMI is 26.39, which is in the overweight category (25.00-29.99). This indicates that the group of respondents for the pilot study is leaning towards obesity.

Table 4. BMI calculation and its categorisation – pilot study

No	Gender	Weight	Height	BMI	>OBESE (YES/NO)	Category
1	Female	80	157	32.5	Yes	Obesity
2	Female	75	165	27.5	Yes	Obesity
3	Female	74	165	27.2	Yes	Obesity
4	Female	72	157	29.2	Yes	Obesity
5	Male	67	166	24.3	No	Normal
6	Female	60	160	23.4	No	Normal
7	Female	53	159	21	No	Normal
8	Male	68	166	24.7	No	Normal
9	Male	73	172	24.7	No	Normal
10	Male	80	164	29.7	Yes	Obesity
11	Male	110	174	37.2	Yes	Obesity
12	Female	60	154	25.3	Yes	Obesity
13	Female	80	156	32.9	Yes	Obesity
14	Female	70	169	24.5	No	Normal
15	Male	57	167	20.6	No	Normal
16	Male	89	173	30.1	Yes	Obesity
17	Female	68	154	28.7	Yes	Obesity
18	Male	78	174	25.8	Yes	Obesity
19	Male	90	175	29.4	Yes	Obesity
20	Male	67	160	26.2	Yes	Obesity
21	Male	55	160	21.5	No	Normal
22	Male	60	168	21.3	No	Normal
23	Male	65	165	23.9	No	Normal
24	Female	60	158	24	No	Normal
25	Male	89	178	30.1	Yes	Obesity
26	Female	62	162	23.6	No	Normal
27	Female	62	158	24.8	No	Normal
28	Female	65	172	22	No	Normal
29	Female	68	154	28.7	Yes	Obesity
30	Male	73	165	26.6	Yes	Obesity
	Average:	62.07	164.23	26.39	-	-

4.1 Real Data Sample

The real data collection was distributed online (Google Form), and it took less than 5 minutes for the respondents to answer the questionnaire. Since the t-test has no minimum sample size requirement, 101 respondents were collected within 3 days of the questionnaire's distribution. A total of 63 respondents exceeded the normal BMI; 34 are male, and 29 are female. 37 respondents had normal BMIs, while only one respondent was underweight. Based on Table 5, most of those who are obese are those who work in the office (54%), followed by staff at the front desk (28.6%) and staff who work out of sight at only 17.5%.

Table 5. Summary of obese characterization

	Male		Female		Total	
Gender (obese)	No.	Percent	No	Percent	No.	Percent
	34	54.0	29	46.0	63	100.00
Job scope						
Work at the office	19	55.8	15	51.7	34	54.0

Front desk	5	14.7	13	44.8	18	28.6
Outside	10	29.4	1	3.44	11	17.5

4.2 Results from the Survey

Based on the results from Part A of the questionnaire, 54% of obese respondents are male. The majority of obese respondents are married, accounting for 87.3%. In terms of education, 54.0% of obese respondents hold an SPM qualification. By department, 57.1% of them work in the Enforcement Department, and most have between 8 and 10 years of service. Table 6 indicates that 90.5% of obese respondents work five days a week. On average, they spend about 3 hours per day watching television; however, 60% of male respondents reported not eating while watching TV. Data on exercise frequency shows that 54.0% of obese respondents do not engage in any exercise as part of their weekly routine.

Table 6. BMI calculation and its categorisation – pilot study

	Gender				Total
Category	**Male**	**Percent**	**Female**	**Percent**	
Number	34	54.0%	29	46.0%	63
Percentage	54.0%		46.0%		
Status					
Single	2	25.0%	6	75.0%	8
Married	32	58.18 %	23	41.82%	55
Education Level					
SPM	22	61.11 %	14	38.89%	36
Diploma	9	60.0%	6	40.0%	15
Degree	3	30.0%	7	70.0%	10
Master	-	-	2	100%	2
Department					
Integrity	1	25.0%	3	75.0%	4
Cooperate	1	50.0%	1	50.0%	2
Enforcement	21	58.33%	15	41.67%	36
Licensing					
(vehicle)	2	50.0%	2	50.0%	4
Licensing (Driver)	2	66.67%	1	33.33%	3
Others	7	50.0%	7	50.0%	14
Year of Service					
2-5	2	22.22%	7	77.78	9
6-10	14	63.64%	8	36.36%	22
11-15	10	50.0%	10	50.0%	20
16-20	2	66.67%	1	33.33%	3
21-25	3	75.0%	1	25.0%	4
26-30	3	60.0%	2	40.0%	5
Working Day					
1	0	0%	0	0%	0
2	1	100%	0	0%	1
3	0	0%	1	100%	1
4	0	0%	1	100%	1
5	30	53.57%	26	46.43	56
6	2	66.67%	1	33.33%	3
7	1	100%	0	0%	1
Hours while watching TV/Day					
1	10	52.63%	9	47.37%	19

2	8	57.14%	6	42.86%	14
3	10	50.0%	10	50.0%	20
4	5	55.56%	4	44.44%	9
More > 5 days	1	100%	0	0%	1
Eating while watching TV					
Yes	13	52%	12	48%	25
No	21	55.26%	17	44.74%	38
Frequency of exercise/week					
No exercise	16	47.06%	18	52.94%	34
1-2 times	11	55.0%	9	45.0%	20
3-4 times	7	77.78%	2	22.22%	9

In Part D of the questionnaire, the respondents were asked about their activities to reduce stress. Based on the results of respondents in Part D, many obese respondents played games to reduce stress, as shown in Table 7 at 22.3%.

Table 7. Stress reduction activities

Activity	Number	Percentage
Expressing your feelings with others	8	12.70%
Playing games	14	22.30%
Doing physical tasks	11	17.50%
Eating something	8	12.70%
Hearing music	9	14.30%
Others	13	20.60%

Table 8 lists the hypotheses and results. For the first hypothesis, whether there is a difference between being obese and gender, the p-value is 0.5650589, which is greater than 0.05; we accept the null hypothesis. This means that there is NO difference in being obese between genders. For the second hypothesis, a chi-squared test is done. The null hypothesis is that there is no association between obesity and job scope. From Table 8, the calculated chi-square value equals 9.735 compared to the critical value of chi-square value, when the degree of freedom is 2 (number of rows -1) x (number of columns -1) at α=0.05, equals 5.991. Since the p-value is 0.007691285, which is less than 0.05, we reject the null hypothesis. Table 8 also shows the chi-square test for whether there is an association between obesity and exercise. The chi-square value calculated to be 14.44, and the critical value from the table (at α=0.05, degree of freedom equals 1) is 3.841. P-value is 0.0001444, which is smaller than 0.05; hence, the null hypothesis is rejected, meaning that there is an association between being obese and doing exercise. The chi-square test on whether there is an association between being obese and type of stress reduction activities was also done and the chi-square value calculated to be 8.935 and the critical value from table (at α=0.05, degree of freedom equals 5) is 11.070 and p-value equals 0.111685046 which is greater than 0.05, hence, the null hypothesis is accepted which means that there is no association between being obese and type of stress reduction activities.

Table 8. Results of the hypotheses

No	Hypothesis	Test Values	P-values	Results
1	There is a difference in being obese between genders	t-Stat=0.577	0.565	Not significant
2	There is an association between being obese and job scopes	chi-square= 9.735	0.0076	Significant
3	There is an association between being obese and doing exercise	chi-square= 14.444	0.0001444	Significant
4	There is an association between being obese and stress reduction activities	chi-square= 8.935	0.1116	Not significant

5.0 Conclusion and Recommendations

This study provides important insights into obesity among RTD officers in Terengganu; however, several limitations should be acknowledged. First, the reliance on self-reported questionnaire data may introduce recall and social desirability bias, particularly for lifestyle behaviours such as physical activity and stress management. Second, cross-sectional design limits the ability to infer causal relationships between occupational factors, lifestyle practices, and obesity. Third, as the study focused on officers in Terengganu only, the findings may not be fully generalisable to RTD officers in other states with differing operational contexts. In addition, the use of BMI as the sole indicator of obesity does not account for body composition variations, which may be relevant for enforcement personnel.

Despite these limitations, the findings have meaningful organisational and policy implications. The high prevalence of obesity among married male officers, particularly those involved in enforcement duties with mixed indoor and outdoor tasks, indicates a need for targeted workplace health interventions rather than general awareness campaigns. Sedentary work patterns and the lack of structured exercise routines appear to be key contributors to obesity, suggesting that current job designs may inadvertently encourage unhealthy lifestyles. If left unaddressed, these issues may affect officer fitness, productivity, and operational readiness, with potential implications for road safety enforcement effectiveness and organisational performance. Integrating health promotion initiatives into daily work routines and human resource policies could therefore yield long-term benefits for both officers and the organisation.

For future research, longitudinal studies are recommended to better establish causal relationships between occupational demands, lifestyle behaviours, and weight status among RTD officers. Expanding the scope to include officers from multiple states would improve generalisability. Future studies should also incorporate objective health indicators, such as waist circumference or body fat percentage, alongside BMI. Additionally, qualitative or intervention-based research could provide deeper insights into barriers to healthy behaviours and evaluate the effectiveness of workplace fitness and nutrition programmes.

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Paper Contribution to the Related Field of Study

This study extends knowledge in occupational health and organisational studies by focusing on obesity among Road Transport Department (RTD) officers, an area that has received limited academic attention. While obesity in Malaysia is often studied in the general population, this research highlights its prevalence among enforcement agencies, where officers are expected to maintain physical fitness to perform their duties effectively. The findings reveal that obesity is not only influenced by lifestyle choices such as exercise and stress-coping strategies but also shaped by departmental roles and work environments, particularly in enforcement divisions. By establishing a link between obesity and reduced productivity, this study provides practical insights for policymakers and health practitioners to design targeted fitness programs and workplace wellness initiatives.

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