LATE NIGHT EATING OUT BEHAVIOUR: HAS IT BECOME CULTURE IN KUANTAN, PAHANG?

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ABSTRACT

Introduction: The prevalence of eating out practice is increasing as a result of lifestyle changes. Almost half of Malaysians eat out at food premises these days. Due to the availability of food services outside of the usual mealtimes, eating out is no longer confined to mealtimes. The main objective of this study was to explore the practice of eating out late at night among adults in Kuantan, Pahang. Method: A cross- sectional study design was applied to determine the association between sociodemographic factors and the frequency of eating out late at night. A newly developed and validated questionnaire on practice of eating out late at night was utilized . A total of 135 adults (43 males and 92 female) aged between 19 and 59 years old who lived in rural (Beserah) and urban (Kuala Kuantan) areas of Kuantan, Pahang, were involved in this study. Data were collected through an online questionnaire that was disseminated through group chat applications and face-to-face interviews at the study areas.. The data obtained were analysed using SPSS Version 26: descriptive analysis and Fisher's Exact Test. Results: The results showed that more than two-thirds of the respondents ate out late at night 1 to 2 times a week. However, there was no significant association between sociodemographic data (gender, age, ethnicity, marital status, living area, educational level, working status, working hours, and monthly household income) and the frequency of eating out late at night. **Conclusion:** Public awareness is important to prevent any further increase in this behaviour, as the practice of late night eating behaviour has been linked to negative health consequences.

KEYWORDS: Eating out, Late night eating behaviour, Sociodemographic factors

INTRODUCTION

Eating out is increasing in prevalence as a result of lifestyle changes, which are influenced by a variety of social, individual, environmental, socioeconomic, biological, and psychological factors, as well as the unique cultural characteristics of each nation or location (Choi et al., 2011). The patterns of eating have changed with social transformation vis-a-vis urbanization in recent years. The culture of eating out is one of the manifestations of the changes. These environmental changes, such as the growing number of food outlets in residential areas, are connected to lifestyle changes, which include a noticeable shift in eating culture (Bodicoat et al., 2015). The growth of restaurants such as fast-food make eating out convenient and economical. Eating out commonly being practiced in most of the country worldwide, including Malaysia. Malaysian Adult Nutrition Survey (MANS) 2014 found that almost half of Malaysian adults obtain food outside home, higher among those who live in Peninsular Malaysia and in urban areas (IPH, 2014). Malaysian Food Barometer Survey was consistent with MANS 2014 with high prevalence of food away from home reported. About 64% of Malaysians had at least one meal per day outside of home, 23.4% had meals at home, and 12.5% will eat at home with outside food (Fournier et al., 2016).

Due to the availability of food services outside of the usual mealtimes, eating out is no longer confined to mealtimes. Thus, people can eat whenever and wherever they want. Teenagers, night labourers, and late sleepers have been influenced by the availability of 24-hour eateries to eat late at night. The post-pandemic transition phase of business premises' operating hours allowed the owners of the premises to implement their operating hours based on their premises' operating license. This is quite worrying as Malaysians are back to the habit of having meals late at night outside at restaurants or convenience stores. 24-hour eateries are part of the culture in Malaysia before the pandemic as they can freely enjoy their meals at the food premises in the middle of the night. Therefore, this study defined eating out late at night as eating anything between 11PM and 4AM, regardless of the number of calories ingested. The foods can be prepared by food vendors such as in food courts, *warung*, *mamak* restaurants, fast food chains, or ordered through food delivery services such as GrabFood or FoodPanda.

Late-night eating is associated with an increase in risk for cardiometabolic health complications including obesity and metabolic syndrome (Simon et al., 2022). In addition, food prepared away from home is high in calories, fat, and sodium intake. There is a positive association between the frequency of consumption of food prepared outside the home and both fat intake and body fatness. These will lead to multiple health complications if associated with the frequency of eating out especially late at night (Simon et al., 2022).

Many studies in Malaysia have explore eating out habit during various mealtime, but the comprehensive data on this subject remain scarce. Moreover, there is a gap in research focusing on late night eating out habit among Malaysian. Thus, this study aimed to explore the practice of eating out late at night among adults in Kuantan, Pahang. This study will explore frequency and sociodemographic correlates of eating meals out and take-away meals at home late at night by conducting an online survey and interview.

MATERIALS AND METHOD

Subjects

Study Design and Population

A cross-sectional study design was used in this study. A total of 135 adults (male, n=43 and female, n=92) aged between 19 to 59 years old who lived in rural (Beserah) and urban (Kuala Kuantan) areas of Kuantan, Pahang, were recruited to participate in the study. Consent of participation was obtained from the respondents prior to answer the sets of questionnaires distributed. The study protocol was approved by Kulliyyah Postgraduate and Research Committee (KPGRC) and International Islamic University Malaysia Research Ethical Committee (IREC), ID number: KAHS 2/23.

Development of Questionnaire

This questionnaire was self-developed via the understanding of literature review because currently there was no study that developed questionnaire regarding eating out late at night either local or international. The questionnaire was constructed in Malay and consist of two parts:

a) Part 1: Sociodemographic

It consists of the respondent's demographic profile including age, gender, ethnics, marital status, living area, education level, employment status, working hours and monthly household income.

b) Part 2: The Practice of Eating Out Late at Night

This was a newly developed questionnaire that focuses on respondent's practice of eating out late at night. An eight-item questions designed to assess an individual's practice of eating out late at night. Respondents must choose one best answer because it was designed as multiple-choice question for this part.

Validation of Questionnaire

Six questions were validated by six experts, but two out of six questions did not achieve the Content Validation Index (CVI) acceptable values of at least 0.83 (Lynn, 1986; Yusoff, 2019). The CVI values for questions 1 to 3 were 1.0, question 4 was 0.61, question 5 was 0.78, and question 6 was 0.86. It was shown that question 4 and 5 did not achieve the acceptable value for CVI. The content validation of this questionnaire required minor corrections before proceeding to face validation by the target populations. Eight questions were evaluated using the Face Validation Index (FVI). The results showed that all questions achieved FVI value of 1.0, and no amendments necessary were needed.

Procedure of Study

A set of questionnaires was distributed through group chat applications among adults in Kuantan, Pahang by sharing a Google Form link to the participants. This study also conducted via face-to-face interview at the study areas.

The method used to categorize the frequency of eating out late at night in this study was to analyze the responses provided by each respondent to two specific questions: 'Soalan 1: Berapa kerapkah anda makan lewat malam di luar?' and 'Soalan 2: Berapa kerapkah anda memesan makanan menggunakan perkhidmatan penghantaran makanan pada lewat malam?' to determine the frequency of eating out late at night according to the study's definition. The higher frequency reported in both questions was chosen to categorize respondents' frequency of eating out late at night and used to determine the association between sociodemographic data and the frequency of eating out late at night.

Meanwhile, the method used to categorize the working hours in this study was to analyze the responses provided by each respondent. It was categorize based on the definition of normal working hours and other than normal working hours. Normal working hours are the standard working hours established by an organization or industry. These hours typically range from 9AM to 5PM, Monday to Friday. Other than normal working hours include evening shifts, night shifts, rotating shifts, or any other schedule that falls outside the typical 9AM to 5PM timeframe.

Statistical analysis

SPSS Version 26 was used to assess and analyze the data that had been obtained. The descriptive analysis was performed to identify the frequency (n), percentage (%), mean and standard deviation of the sociodemographic data, and the information on practice of eating out late at night. Besides, Fisher's Exact Test was used to determine the association between sociodemographic characteristics and frequency of eating out late at night. The value of p < 0.05 shows a significant association.

RESULTS

Sociodemographic data

As shown in Table 1, a total of 135 adults aged 19 to 59 years from Kuantan, Pahang participated in the study. Most of the respondents in this study were female (n=92, 68.1%), aged 19-29 years old (n=77, 57%), Malay (n=130, 96.3%), single (n=75, 55.6%), living in a rural area (n=91, 67.4%), possessing tertiary education (n=85, 63%), employed (n=91, 67.4%) working within normal hours (n=61, 67%), and earning an income less than RM4850 (n=63, 46.7%).

Practice of eating out late at night

Table 2 provides an overview of the respondents' practice of eating out late at night. The data shows that most respondents eat out late at night 1-2 times per week (n=97, 71.9%). Meanwhile, the most common frequency of ordering food using delivery services late at night was never (n=75, 55.6%). The average time of eating out late at night was 23:17, indicating a wide range of dining times among the respondents. The most common types of food premises visited or ordered late at night were fast food and *mamak* restaurants, each with 37.8% (n=42) of the responses and followed by *restoran masakan panas* (n=36, 32.4%). In terms of companions, friends were the most common company for eating out late at night (n=47, 42.3%), and followed by family members (n=32, 28.8%).

Table 1: Descriptive analysis of respondents' sociodemographic data (N=135)

Sociodemographic characteristics	Frequency (n)	Percentage (%)	
Gender			
Male	43	39.1	
Female	92	68.1	
Age			
19 - 29 years old	77	57	
30 – 39 years old	23	17	
40 – 49 years old	23	17	
50 - 59 years old	12	8.9	
Ethnicity			
Malay	130	96.3	
Chinese	3	2.2	
Indian	2	1.5	
Marital status			
Single	75	55.6	
Married	55	40.7	
Divorced/Widowed	5	3.7	
Living area			
Rural	91	67.4	
Urban	44	32.6	
Educational level			
Non-formal school	2	1.5	
Primary education	0	0	
Secondary education	48	35.6	
Tertiary education	85	63	
Working status			
Working	91	67.4	
Not working	17	12.6	
Students	27	20	
Working hours			
Normal working hours	61	67	
Other than normal working hours	30	33	
Monthly household income			
<rm4850< td=""><td>63</td><td>46.7</td></rm4850<>	63	46.7	
RM4850 - RM10959	24	17.8	
Above RM10960	19	14.1	
No income	29	21.5	

The frequency of eating out late at night based on the definition of this study, encompassing both eating out and ordering food using delivery services. The results align with Table 2, indicating that the most common frequency of eating out late at night was 1-2 times per week (n=92, 68.1%).

Table 2: Descriptive analys	sis of respondents	' practice of eating of	out late at night (N=135)
Table 2. Describing analys	on respondents	Dractice of earlie	Jul late at Inglit (IN-133)

Practice of eating out late	Frequency	Percentage	Mean ± SD
at night	(n)	(%)	
Frequency of eating out late			
at night			
Never	25	18.5	
1 - 2 times in a week	97	71.9	
3 - 4 times in a week	13	9.6	
More than 5 times in a week	0	0	
Frequency of ordered food			
using delivery services late at			
night			
Never	75	55.6	
1 - 2 times in a week	52	38.5	
3 - 4 times in a week	7	5.2	
More than 5 times in a week	1	0.7	
Time eating out late at night			23:17 ± 23:07
Type of food premises visited or			
ordered late at night			
Fast food	42	37.8	
Mamak	42	37.8	
Restoran makanan panas	36	32.4	
Convenience stores	28	25.2	
Hawker food	11	9.9	
Companion to eat out late at night			
Friends	47	42.3	
Family members	32	28.8	
Self	19	17.1	
Partner	13	11.7	
Average spending per meal			
eating out late at night			
Less than RM5	2	1.8	
RM5.01 - RM10	32	28.8	
RM10.01 - RM15	23	20.7	
RM15.01 - RM20	17	15.3	
RM20.01 - RM25	16	14.4	
More than RM25.01	21	18.9	

Duration time spends eating out			
late at night			
Less than 15 minutes	3	2.7	
15 – 30 minutes	40	36	
30 – 45 minutes	36	32.4	
45 – 60 minutes	16	14.4	
More than 1 hour	16	14.4	
Duration between eating out late at night and bedtime			
Less than 30 minutes	10	9	
30 – 60 minutes	37	33.3	
1 – 2 hours	51	45.9	
More than 3 hours	13	11.7	
Frequency of eating out late at night			
Never	23	17	
1 to 2 times in a week	92	68.1	
3 to 4 times in a week	19	14.1	
More than 5 times in a week	1	0.7	

Association Between Sociodemographic Data and Frequency of Eating Out Late at Night

Table 3 displays the associations between sociodemographic data and the frequency of eating out late at night, using Fisher's Exact Test. The results indicate that gender, age, ethnicity, marital status, living area, educational level, working status, working hours, and monthly household income do not have a significant association with the frequency of late-night dining out (all p-values > 0.05).

Specifically, among female respondents, 44.4% (n=60) reported dining out late at night 1-2 times per week, while 23.7% (n=32) of male respondents reported the same frequency. The highest percentage of respondents who ate out late at night 1-2 times per week were aged 19 to 29 years old (n=53, 39.3%). The majority of respondents were Malay (n=90, 66.7%) and reported eating out late at night 1-2 times per week. Single individuals (n=53, 39.3%) and rural residents (n=64, 47.4%) were more likely to dine out late at night at the specified frequency. Tertiary-educated and working individuals also reported higher rates of late-night dining. However, no significant associations were found between any of these factors and the frequency of eating out late at night.

Table 3: Association between sociodemographic data and frequency of eating out late at night (N=135)

Variable		ncy of eatir a we	X ² - statistic (df)	<i>p</i> - value		
	Never n	1-2	3-4	More than		
	(%)	times	times	5 times		
0 1		n (%)	n (%)	n (%)		
Gender	_	22	(0		
Male	5	32	6	0	1.042	0.670
г 1	(3.7)	(23.7)	(4.4)	(0.0)	1.842	0.672
Female	18	60	13	1	(3)	
	(13.3)	(44.4)	(9.6)	(0.7)		
Age						
19-29 years	9	53	15	0		
old	(6.7)	(39.3)	(11.1)	(0.0)		
30-39 years	6	16	1	1	11.427	0.222
old	(4.4)	(11.9)	(0.7)	(0.7)	(9)	
40 - 49 years	5	15	2	0		
old	(3.7)	(11.1)	(1.5)	(0.0)		
50 – 59 years	3	8	1	0		
old	(2.2)	(5.9)	(0.7)	(0.0)		
Ethnicity						
Malay	22	90	17	1		
•	(16.3)	(66.7)	(12.6)	(0.7)		
Chinese	1	2	0	0	12.449	0.081
	(0.7)	(1.5)	(0.0)	(0.0)	(6)	
Indian	0	0	2	0		
	(0.0)	(0.0)	(1.5)	(0.0)		
Marital status						
Single	8	53	14	0		
O	(5.9)	(39.3)	(10.4)	(0.0)		
Married	14	36	4	1	10.834	0.072
	(10.4)	(26.7)	(3.0)	(0.7)	(6)	
Divorced/	1	3	1	0	` '	
Widowed	(0.7)	(2.2)	(0.7)	(0.0)		
Living area						
Rural	15	64	12	0		
	(11.1)	(47.4)	(8.9)	(0.0)	2.428	0.506
Urban	8	28	7	1	(3)	
	(5.9)	(20.7)	(5.2)	(0.7)	` /	

Educational level						
Non-formal	0	2	0	0		
school	(0.0)	(1.5)	(0.0)	(0.0)		
Secondary	7	34	7	0	4.016	0.948
education	(5.2)	(25.2)	(5.2)	(0.0)	(6)	
Tertiary	16	56	12	1		
education	(11.9)	(41.5)	(8.9)	(0.7)		
Working status						
Working	16	58	6	1		
	(11.9)	(43.0)	(11.9)	(0.7)		
Not	7	34	7	0	5.883	0.460
working	(5.2)	(25.2)	(5.2)	(0.0)	(6)	
Students	5	19	3	0		
	(3.7)	(14.1)	(2.2)	(0.0)		
Working hours						
Normal	10	36	14	1		
	(7.4)	(26.7)	(10.4)	(0.7)	8.628	0.147
Other than	6	22	2	0	(6)	
normal	(4.4)	(16.3)	(1.5)	(0.0)		
Monthly household income						
B40	8	41	13	1		
	(5.9)	(30.4)	(9.6)	(0.7)		
M40	6	16	2	0		
	(4.4)	(11.9)	(1.5)	(0.0)	8.289	0.518
T20	13	1	0	5	(9)	
	(9.6)	(0.7)	(0.0)	(3.7)		
No income	4	22	3	0		
	(3.0)	(16.3)	(2.2)	(0.0)		

DISCUSSION

The practice of eating out late at night

This study found that most respondents (68.1%) in Kuantan, Pahang ate out late at night. The frequency of eating out was 1-2 times in a week. This is a reasonable frequency, as it is not too often, but it is also not too infrequent. It is a frequency that many individuals may find to be a good fit for their lifestyle. There is no research that has specifically looked at the common frequency of eating out late at night. Nevertheless, this frequency aligns with the mealtime habits observed in Malaysia, where individuals frequently dine out during dinner and lunch (Rakuten, 2023). This suggests that eating out is a common practice in Malaysia, and it is not surprising that many people would also eat out late at night.

This study found that the habit of eating out late at night among respondents aligns with previous studies in Malaysia and China, where a significant percentage of people (27%) engage in late-night dining between 10PM until midnight (Rakuten, 2023; Xiaoyu, 2019). The availability of food establishments operating during late hours contributes to this trend. The study also revealed that respondents frequently visit fast-food restaurants, *mamak* stalls, and *restoran masakan panas*, which is consistent with previous studies highlighting Malaysians' preference for casual dining and fast food (Rakuten 2023; Ali & Abdullah, 2012). This study found out most respondents prefer to eat out late at night with friends, followed by family members. This aligns with a previous study indicating that Malaysians generally dine out with family members (Rakuten, 2023), but prefer to gather with friends for late-night dining (Ali & Abdullah, 2012).

Association between sociodemographic data and frequency of eating out late at night

The majority of respondents in this study were young, single Malay females with tertiary education, living in rural areas, and earning below RM4850. However, the frequency of eating out late night was not associated with any specific sociodemographic characteristics. This contrasts with previous studies on eating out, suggesting that factors such as personal preferences or lifestyle choices may have a greater influence on this practice than sociodemographic factors.

This finding contrasted with previous studies conducted in Shanghai and Malaysia, which found that men tend to eat out more often than women (Zang et al., 2018; Ashari et al., 2022; Orfanos et al., 2007). Additionally, the previous studies were not conducted specifically for eating out late at night. Therefore, it is also possible that the findings of this study were simply a reflection of the current trends in eating out late at night. This suggests that there may be a cultural or social norm in Kuantan, Pahang that encourages women to eat out more often than men. Respondents aged 19-29 were the most likely to eat out late at night. There is a lack of research on the frequency of eating out late at night among young people in Malaysia. Nevertheless, Kleynhans (2003) and Rakuten (2023) found that the younger generation tends to eat out more often than older generations in general meal timing.

This study discovered a discrepancy in the association between living area and the frequency of eating out late at night. It was found that more respondents residing in rural areas reported eating out late at night 1-2 times per week compared to those in urban areas. This contradicts the findings of a previous study by Tan (2010), which suggested that urban residents are more likely to dine out. The contrasting result in this study may be attributed to the higher proportion of rural areas (70%) compared to urban areas (30%) in Kuantan, based on the data from *Majlis Bandaraya Kuantan* (*MBK*). It was observed that the rural area had numerous food establishments that operated until midnight, and food delivery services were also available. Therefore, it is possible that the data from this rural area differ from other rural areas due to environmental and social differences, leading to the inconsistent result.

The data on working individuals with normal working hours (9AM to 5PM) contradicts the findings of other studies on eating out. In a study conducted by Ali and Abdullah (2012), individuals who work late-night shifts or irregular hours find it necessary to eat out late at night. This is because it is a convenient option to satisfy their hunger when there are various limited food options available during late-night hours, such as 24-hour fast-food restaurants, *mamak* restaurants, or food delivery services. However, the data on working individuals with normal working hours suggests

that they may be eating out late at night for other reasons. For example, they may be socializing with friends or family, or they may be simply enjoying the convenience of having food delivered to their door.

CONCLUSION

In conclusion, the findings of this study suggest that eating out late at night is a common practice in Kuantan, Pahang. The most frequency of eating out was 1-2 times in a week, which is a reasonable frequency. The findings of this study on frequency of eating out late at night were not associated with any of the sociodemographic factors. This may be due to the cultural or social norm in Kuantan, Pahang, where eating out late at night is a common practice regardless of age, gender, or other factors.

Although the current frequency of eating out late at night appears to be reasonable and acceptable, it is crucial to raise public awareness in order to prevent any further increase in this behaviour. Eating out late at night has been linked to negative health consequences, such as weight gain, obesity, and other chronic diseases. Therefore, it is essential to promote awareness regarding the potential health risks associated with eating late at night. Health professionals and authorities should take action by implementing public education campaigns through various channels, including social media. For example, they could collaborate with local authorities, restaurants, and community organizations to implement targeted interventions. These efforts would contribute to the development of a healthier eating lifestyle among the general public.

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