



Undergraduate

INTRODUCTION

- The COVID-19 pandemic has raised concerns among the public regarding food safety, especially among university students, who have been known to have riskier food handling behaviour¹.
- Food packaging contaminated with SARS-CoV-2 may be a possible transmission route of COVID-19³ – this risk of transmission cannot be completely disregarded².
- Individuals who reported good food safety attitudes were more likely to practice COVID-19 prevention measures⁷, which highlights the importance of good food safety knowledge, attitude & practice (KAP) during the pandemic.
- Identifying the food safety KAP level of students allows for a more directed approach in intervention efforts & food safety education of students

OBJECTIVES

- To determine the level of food safety KAP among undergraduates during the COVID-19 pandemic.
- To study the association between food safety KAP levels of undergraduates during the COVID-19 pandemic.
- To determine the difference of food safety KAP in different sociodemographic variables among undergraduates during the COVID-19 pandemic.

METHODOLOGY

Study design:
Cross-sectional study

Sampling method:
Convenience sampling

Instrument:
Self-administered questionnaire (developed by Soon et al., 2021) distributed via online platforms

Respondents:
156 Malaysian undergraduates aged ≥18

Ethical approval:
Granted by UTAR Scientific and Ethical Review Committee (Ethical code U/SERC/181/2021)

- Data analysis:**
- Analysed using SPSS version 26 at significance level of $p < 0.05$
 - Descriptive statistics
 - Chi-square test
 - ANOVA test
 - T-test

RESULTS

Table 1: Food safety KAP scores & classification

	Poor score n (%)	Good score n (%)	Mean score	
			Mean ± SD	%
Knowledge	67 (42.95)	89 (57.05)	6.67 ± 1.35	74.1%
Attitude	38 (24.36)	118 (75.64)	38.07 ± 5.81	84.6%
Practice	61 (39.10)	95 (60.90)	36.46 ± 5.45	81.0%

Table 2: Association between food safety KAP

	p-value		
	Knowledge	Attitude	Practice
Knowledge		0.527	0.550
Attitude	0.527		0.000*
Practice	0.550	0.000*	

* $p < 0.0001$

Table 3: Comparison of KAP scores among different sociodemographic variables

	Knowledge		Attitude		Practice	
	Mean ± SD	p	Mean ± SD	p	Mean ± SD	p
Gender						
Female	6.46 ± 1.27	0.04	38.62 ± 6.02	0.23	37.18 ± 5.47	0.09
Male	6.90 ± 1.41		37.51 ± 5.57		35.71 ± 5.36	
Ethnicity						
Chinese	6.67 ± 1.38	0.97	38.06 ± 5.91	0.99	36.32 ± 5.45	0.54
Indian	6.75 ± 1.14		38.17 ± 4.61		37.58 ± 5.35	
Malay	6.50 ± 0.71		38.50 ± 9.19		39.50 ± 7.78	
Current CGPA						
2.0-2.49	5.40 ± 1.43 ^b	0.02	35.50 ± 4.74 ^{ab}	0.003	35.20 ± 6.60 ^{ab}	0.04
2.5-2.99	6.79 ± 1.27 ^a		38.97 ± 4.97 ^{ab}		36.94 ± 5.07 ^{ab}	
3.0-3.49	6.68 ± 1.39 ^a		39.65 ± 5.57 ^a		37.68 ± 5.71 ^a	
3.5-4.0	6.84 ± 1.25 ^a		36.00 ± 6.16 ^b		34.84 ± 4.78 ^b	
Course of Study						
Science-related course	7.20 ± 1.25	0.00*	38.65 ± 6.57	0.2	36.76 ± 5.51	0.47
Non-science-related course	6.12 ± 1.24		37.46 ± 4.86		36.13 ± 5.41	

Note: Mean values with the same letter (a, b) in the same column do not have significant differences between each other, by the Tukey test at $p < 0.05$

* $p < 0.0001$

DISCUSSION

- Moderate** level of food safety **knowledge**. Findings similar to a previous study⁷.
- Good** level of food safety **attitude**. Findings similar to a previous study⁴.
- Good** level of food safety **practice**. Findings similar to previous studies done on Malaysian university students^{5, 6}.
- A **significant association** was found between **attitude & practice** scores ($p < 0.001$), which was in line with previous studies conducted in Malaysia^{5, 7}.
- No significant association** was found between **knowledge & attitude** scores, as well as **knowledge & practice** scores – findings similar to a previous study⁷.
- Male** respondents ($p = 0.042$) had significantly **higher knowledge** scores. This could be contributed by increased hygiene awareness due to the pandemic regardless of gender.
- Those studying **science-related courses** ($p < 0.001$) had significantly **higher knowledge** scores. This could be due to modules and classes related to food safety or required strict hygiene practices were offered to these students as part of their curriculum.
- Undergraduates with a CGPA of **2.0–2.49** had significantly **lower** ($p = 0.019$) food safety **knowledge** than all other respondents.
- Those with a CGPA of **3.0–3.49** had significantly **higher attitude** ($p = 0.003$) & **practice** ($p = 0.037$) scores than those with CGPA of 3.5–4.0. Further research is necessary to better understand the association between CGPA scores and food safety KAP levels.

CONCLUSION

- Respondents had a moderate food safety knowledge level, as well as high food safety attitude & practice levels.
- A significant association was found between food safety attitude & practice, but no significant association between knowledge & attitude, as well as knowledge & practice were found.
- Food safety knowledge scores differed depending on gender, current CGPA & course of study.
- Food safety attitude & practice scores differed depending on current CGPA.
- Food safety & nutrition knowledge intervention programmes should be conducted to encourage positive changes in food handling behaviours & hygiene practices among undergraduates.

REFERENCES

- [1] Al-Shabib, N., Husain, F. and Khan, J., 2017. Study on food safety concerns, knowledge and practices among university students in Saudi Arabia. *Food Control*, 73, pp.202-208.
- [2] German Federal Institute for Risk Assessment, 2021. Can the new type of coronavirus be transmitted via food and objects? [online] BfR. Available at: <https://www.bfr.bund.de/cm/349/can-the-new-type-of-coronavirus-be-transmitted-via-food-and-objects.pdf> [Accessed 28 February 2022].
- [3] Liu, L., Quintela, I., Lin, C., Lin, T., Lin, C., Wu, Y. and Lin, C., 2021. A review of epidemic investigation on cold-chain food-mediated SARS-CoV-2 transmission and food safety consideration during COVID-19 pandemic. *Journal of Food Safety*, 41(6).
- [4] Luo, Y., Chen, L., Xu, F., Gao, X., Han, D. and Na, L., 2020. Investigation on knowledge, attitudes and practices about food safety and nutrition in the China during the epidemic of corona virus disease 2019. *Public Health Nutrition*, 24(2), pp.267-274.
- [5] Moy, F.M., Alias, A., Janti, R., Abdul Halim, H. and Low, W., 2018. Determinants of self-reported food safety practices among youths. *British Food Journal*, 120(4), pp.891-900.
- [6] Sayuti, Y., Albattat, A., Ariffin, A., Nazzin, N. and Silahudeen, T., 2020. Food safety knowledge, attitude and practices among management and science university students, Shah Alam. *Management Science Letters*, 10, pp. 929-936.
- [7] Soon, J., Vanany, I., Abdul Wahab, I., Hamdan, R. and Jamaludin, M., 2021. Food safety and evaluation of intention to practice safe eating out measures during COVID-19: Cross sectional study in Indonesia and Malaysia. *Food Control*, 125, pp.107920.