International Science and Technology Journal
المجلة الدولية للعلوم والتقنية

Volume 37 العدد
Part 2 المجلد

http://www.doi.org/10.62341/NASF1001

Received	2025/09/10	تم استلام الورقة العلمية في
Accepted	2025/09/24	تم قبول الورقة العلمية في
Published	2025/10/15	تم نشر الورقة العلمية في

Knowledge and Awareness of Chikungunya Disease among Healthcare Students: A Cross-Sectional Study

Nur Ainun Fasihah Binti Muhammad Asri[1], Shashidharan Menon[1], Firdaus Rashid Al Masqari[2], Yaman Walid Kassab[2,3]

[1]School of pharmacy, KPJ Healthcare University College, Malaysia
[2]Department of pharmacy Practice, College of pharmacy, National University of Science and Technology, Muscat, Oman
[3]College of pharmacy, Al-Bayan University, Baghdad, Iraq

firdaus200480@nu.edu.om

Abstract

Background

Malaysia reported high Chikungunya cases in 2021, exceeding normal levels. Early identification and prevention depend on public knowledge and awareness. This study assessed the knowledge and awareness of Chikungunya among healthcare students.

Methods

A cross-sectional online survey was conducted from April to July 2022 among healthcare students from selected public and private universities in Malaysia. A validated questionnaire was distributed via social media. Data were analysed using SPSS30 .

Results

Out of 204 respondents, 53.9% had good knowledge, 36.3% had good awareness, and 51.0% had good preventive practices. There was no significant association between knowledge and gender, age, race, or level of education. However, significant associations were found between knowledge and both field of study and university ($p<0.001$). Similar patterns were observed in awareness and practice domains.

Conclusion & Recommendations

Healthcare students demonstrated moderate-to-good knowledge and awareness of Chikungunya. Gaps remain, especially in awareness. Integrating vector-borne disease education into healthcare curricula is essential.

http://www.doi.org/10.62341/NASF1001

Keywords: Chikungunya virus, Vector-borne diseases, Chikungunya diseases, Mosquito-borne diseases.

المعرفة والوعي بمرض حمى المفاصل الفيروسية (الشيكونغونيا) بين طلاب التخصصات الصحية: دراسة مقطعية

نور عين الفسيحة بنت محمد عصري[1]، شاشيدهاران مينون[1]، فردوس بنت راشد المسقرية[2]، يمان وليد قصاب[2,3]

[1] كلية الصيدلة، جامعة KPJ للرعاية الصحية، ماليزيا

[2] قسم الممارسة الصيدلانية، كلية الصيدلة، الجامعة الوطنية للعلوم والتكنولوجيا، مسقط، سلطنة عُمان

[3] كلية الصيدلة، جامعة البيان، بغداد، العراق

firdaus200480@nu.edu.om

الملخص

المقدمة:

سجّلت ماليزيا في عام 2021 عددًا مرتفعًا من حالات فيروس الشيكونغونيا، متجاوزًا المعدلات الطبيعية. يعتمد الكشف المبكر والوقاية على مستوى معرفة ووعي الجمهور. هدفت هذه الدراسة إلى تقييم مستوى المعرفة والوعي بفيروس الشيكونغونيا بين طلاب التخصصات الصحية.

المنهجية:

أُجريت دراسة مقطعية عبر الإنترنت في الفترة من شهر إبريل إلى شهر يوليوعام 2022 بين طلاب التخصصات الصحية من عدد من الجامعات الحكومية والخاصة المختارة في ماليزيا. تم توزيع استبيان مُعتمد عبر وسائل التواصل الاجتماعي، وتم تحليل البيانات باستخدام برنامج الحزم الإحصائية للعلوم الإجتماعية (SPSS 30).

النتائج:

من بين 204 مشاركًا، كان لدى 53.9% منهم معرفة جيدة، و36.3% منهم وعي جيد، و51.0% منهم مارسوا سلوكيات وقائية جيدة. لم تُظهر النتائج أي علاقة ذات دلالة إحصائية بين المعرفة وكل من الجنس أو العمر أو العِرق أو المستوى التعليمي. ومع

http://www.doi.org/10.62341/NASF1001

ذلك، وُجدت علاقة ذات دلالة إحصائية ($p<0.001$) بين المعرفة وكل من مجال الدراسة والجامعة. كما لوحظت أنماط مشابهة في مجال الوعي والممارسات.

الخاتمة والتوصيات:

أظهر طلاب التخصصات الصحية مستوى معرفة ووعي متوسط إلى جيد بفيروس الشيكونغونيا، مع وجود فجوات خاصة في جانب الوعي. لذلك، يُعد دمج تعليم الأمراض المنقولة بالنواقل ضمن مناهج التخصصات الصحية أمرًا ضروريًا.

الكلمات الدالة:

حمى المفاصل الفيروسية، فيروس الشيكونغونيا، مرض الشيكونغونيا، الأمراض المنقولة بواسطة البعوض.

1- Introduction

Chikungunya is a mosquito-borne disease transmitted by Aedes aegypti and Aedes albopictus mosquitoes. Despite being non-fatal, the disease often leads to debilitating joint pain. Malaysia has seen periodic outbreaks since 1998. As of December 2021, over 1,400 cases were reported, mostly in Selangor and Kuala Lumpur states.
Healthcare students play a vital role in disease prevention. Their level of knowledge and awareness can influence community health outcomes. This study aims to evaluate the knowledge and awareness of Chikungunya among healthcare students in Selangor and Kuala Lumpur.

2- Methodology

Study Design and Population

- A cross-sectional descriptive study targeted healthcare students aged 18 and above from public and private universities in Selangor and Kuala Lumpur.

Sample Size

- The sample size was calculated at 383, with a 20% allowance for non-response, yielding a final target of 460. A total of 204 valid responses were obtained.

Sampling Method

- Convenience sampling was used. A validated, self-administered questionnaire was distributed online via Google Forms.

Study Instrument

http://www.doi.org/10.62341/NASF1001

- The study used a structured, self-administered questionnaire adapted from an internationally published study conducted in Sudan (Hassan et al., 2020). The tool comprised 25 questions divided into four sections designed to assess socio-demographic characteristics, knowledge, awareness, and preventive practices regarding Chikungunya infection among healthcare students. Section I collected socio-demographic details, including participants' age, gender, educational level, and other relevant background characteristics. Section II assessed knowledge of Chikungunya infection through 15 yes/no questions covering transmission, symptoms, and complications, with knowledge levels categorized as poor (0–5), fair (6–10), or good (11–15). Section III evaluated awareness of the disease using 10 questions focused on preventive measures and health-seeking behaviors, with awareness levels classified as poor (0–3), fair (4–7), or good (8–10). Section IV examined practices for disease prevention through four multiple-choice questions addressing behaviors such as mosquito control and personal protective measures. The questionnaire enabled comprehensive assessment of cognitive and behavioral aspects, allowing quantitative categorization of knowledge, awareness, and practices for statistical analysis.

Data Analysis

- SPSS version 30 was used. Descriptive statistics summarised the data. Associations were tested using Chi-square and Fisher's Exact tests. A p-value <0.05 indicated statistical significance.

- **Ethics**

Ethical approval was obtained from the KPJ Ethical Committee. Participation was voluntary and confidential.

3- Results:

- **Demographics**

Among 204 respondents, 56.9% were female. The majority were aged 22-25 (48.0%) and Malay (53.9%). Most were degree students (64.7%) and from the pharmacy field (28.4%). UITM had the highest representation (18.6%).

- **Knowledge**

Overall, 53.9% had good knowledge, 44.1% moderate, and 2.0% poor. Key gaps included misunderstanding the availability of vaccines and disease etiology. Most respondents correctly identified mosquito transmission and common symptoms.

http://www.doi.org/10.62341/NASF1001

- **Awareness**

36.3% had good awareness, 31.4% moderate, and 32.4% poor. Many did not recognize the disease as preventable or associate it with environmental cleanliness.

- **Practice**

51.0% demonstrated good preventive practices. The most common actions included cleaning water containers and using mosquito repellents.

- **Statistical Associations**

  - Knowledge was significantly associated with the field of education and university ($p<0.001$), but not with gender, age, race, or level of education.
  - Awareness was significantly associated with level of education, field of study, and university ($p<0.05$).
  - Preventive practices were influenced by gender, age, level of education, and field of study.

Table 1: Association between awareness and demographic characteristics

Demographic characteristics		Category of Awareness N = 204			Value	*P-value
		Good n (%)	Moderate n (%)	Poor n (%)		
Gender	Male	30 (14.7)	30 (14.7)	28 (13.7)	0.582	0.769[b]
	Female	44 (21.6)	34 (16.7)	38 (18.6)		
Age	18 – 21				11.180	0.080[b]
	22 - 25	12 (5.9)	12 (5.9)	10 (4.9)		
	26 – 30	34 (16.7)	38 (18.6)	26 (12.7)		
	31 and above	14 (6.9)	8 (3.9)	10 (4.9)		
		14 (6.9)	6 (2.9)	20 (9.8)		
Race	Malay				1.743	0.785[b]
	Chinese	44 (21.6)	32 (15.7)	34 (16.7)		
	Indian	18 (8.8)	20 (9.8)	18 (8.8)		
		12 (5.9)	12 (5.9)	14 (6.9)		

Note: Reported as frequency and percentage; N = total number of samples; a Fisher's Exact Test; b Pearson Chi-Square; *P-value <0.05 shows statistical significance.

Table 2: Association between awareness and level of education

Social demographic characteristics		Category of Awareness N = 204			Value	*P-value
		Good n (%)	Moderate n (%)	Poor n (%)		
Level of education	Certificate	0 (0.0)	4 (2.0)	0 (0.0)	29.042	<0.001[a]
	Diploma	14 (6.9)	4 (2.0)	12 (5.9)		
	Degree	48 (23.5)	52 (25.5)	32 (15.7)		
	Master	6 (2.9)	2 (1.0)	12 (5.9)		
	Phd	6 (2.9)	2 (1.0)	10 (4.9)		

Note: Reported as frequency and percentage; N = total number of samples; [a] Fisher's Exact Test; [b] Pearson Chi-Square; *P-value <0.05 shows statistical significance.

http://www.doi.org/10.62341/NASF1001

Table 3: Overall level of knowledge, awareness and the practice against Chikungunya disease.

Domain	Categorised based on total score		
	Good n (%)	Moderate n (%)	Poor n (%)
Knowledge on Chikungunya disease	110 (53.9)	90 (44.1)	4 (2.0)
Awareness on Chikungunya disease	74 (36.3)	64 (31.4)	66 (32.4)
Practice against prevention of Chikungunya disease	104 (51.0)	96 (47.1)	4 (2.0)

Note: Reported as frequency and percentage; n = resemble number of respondents.

4- Discussion

Knowledge of Chikungunya among healthcare students was generally acceptable. This aligns with previous research indicating moderate knowledge among similar populations. However, the lower awareness levels suggest that students may not fully understand the disease's public health significance.

The association between knowledge and field of study underscores the need to integrate Chikungunya and other vector-borne diseases into medical, pharmacy, and allied health curricula. Respondents from medicine and pharmacy showed better scores.

The moderate practice levels mirror awareness scores, suggesting that knowledge alone may not translate to action. Campaigns should address this gap through behavioural interventions.

5- Conclusion

Most healthcare students have sufficient knowledge but limited awareness about Chikungunya. Preventive practice levels are relatively high but inconsistent. Public health education strategies and curriculum enhancements are needed.

References

Ali, M. et al. (2018). Knowledge and awareness of Chikungunya among healthcare students. *Journal of Tropical Medicine*, 12(3), 230–237.

Cunha, R.V. & Trinta, K.S. (2017). Chikungunya virus: clinical aspects and treatment - A review. *Memorias do Instituto Oswaldo Cruz*, 112(8), 523–531.

Kajeguka, D.C. et al. (2016). Prevalence of Chikungunya virus infections in Tanzania. *PLoS Neglected Tropical Diseases*, 10(2): e0004695.

http://www.doi.org/10.62341/NASF1001

Ministry of Health Malaysia (2021). Chikungunya weekly surveillance report.

Mohamed Hassan, B. et al. (2020). Knowledge, attitude and practice toward Chikungunya infection among Kassala Community in Sudan. *African Health Sciences*, 20(2), 710–717.

Saringe, M. et al. (2019). Knowledge and awareness of Chikungunya among healthcare workers. *East African Medical Journal*, 96(3), 156–162.

WHO. (2020). Chikungunya factsheet.

Zaman, M.M. et al. (2018). Awareness and knowledge of Chikungunya among parents in Dhaka, Bangladesh. *International Journal of Infectious Diseases*, 77, 58–59.