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KNOWLEDGE OF THE WOLBACHIA-AEDES MOSQUITO PROJECT AND DENGUE PREVENTIVE BEHAVIOUR: EVIDENCE FROM DESA MENTARI, SELANGOR

Siti Nurhanim **Mohamed Aimanan**[1*], Nurashma **Juatan**[1], Noorhayati **Kassim**[1], Rosnani **Kassim**[1], Nadia **Amirudin**[1], Nursyazwani **Jabir**[1], Ain Aqiela **Azamuddin**[1]

1. Institute for Health Behavioural Research, National Institutes of Health, Ministry of Health, 40170 Shah Alam, Selangor, Malaysia

BACKGROUND

Malaysia ranked third in ASEAN with 33,367 dengue cases as of June, 2026 representing an increase of 20.7% compared to the same period in 2025 (Miwil, 2026). In response to this public health challenge, the Aedes-Wolbachia mosquito project was pioneered in March 2017 to help curb the disease transmission in Malaysia (Nazni et al., 2019). However, since the success of this strategy relies fundamentally on community cooperation and public trust, evaluating localized community awareness and preventive behaviours is vital to guide future public health communication campaigns.

OBJECTIVES

This study aimed to determine differences in knowledge of the Wolbachia-Aedes Mosquito Project and dengue preventive behaviour according to selected sociodemographic characteristics among residents of Desa Mentari.

METHODOLOGY

STUDY DESIGN	Cross-sectional study
STUDY AREA	Desa Mentari, Petaling Jaya, Selangor
PARTICIPANTS	519 residents aged 18 years and above
SAMPLING	Multistage random sampling
DATA COLLECTION	Self-administered validated questionnaire
ANALYSIS	Descriptive statistics and Independent Sample t-test using SPSS Version 28
ETHICS APPROVAL	NMRR-24-01867-MHY

RESULTS

Table 1 shows that knowledge of the Wolbachia-Aedes Mosquito Project was significantly higher among Malaysian citizens, residents with secondary education or above, homeowners, and those who perceived dengue as a serious health issue ($p < 0.001$). No significant differences were observed according to gender, age group, or length of residence.

Table 2 shows significant differences in dengue preventive behaviour according to citizenship, educational level, length of residence, and perceived dengue severity. Malaysian citizens, residents with secondary education or above, those who had lived in Desa Mentari for more than five years, and those who perceived dengue as a serious health issue demonstrated significantly better dengue preventive behaviour ($p < 0.05$). No significant differences were observed according to gender, age group, or house ownership.

Table 1. Knowledge on Wolbachia-Aedes Mosquito project (n=519).

Variables	n	Mean (SD)	t	Sig.
Gender				
Male	233	1.97 (2.182)	-0.509	0.611
Female	286	1.87 (1.874)		
Age Group				
≤49 years old	289	2.02 (2.172)	1.200	0.231
≥50 years old	230	1.79 (2.077)		
Citizenship*				
Citizen	416	2.10 (2.150)	4.395	<0.001
Permanent or non-Citizen	103	1.17 (1.884)		
Highest Education*				
No formal and primary	143	1.47 (2.102)	-2.979	<0.001
Secondary and above	376	2.09 (2.120)		
Length of Residence				
≤5 years	131	1.82 (2.133)	-0.623	0.534
>5 years	388	1.95 (2.133)		
House Ownership*				
Rent	194	1.51 (2.049)	-3.437	<0.001
Own house	325	2.16 (2.145)		
Seriousness of the Dengue Issue*				
Not serious	257	1.56 (1.980)	-3.831	<0.001
Serious	262	2.27 (2.219)		

Table 2. Dengue preventive behaviour (n=519).

Variables	n	Mean (SD)	t	Sig.
Gender				
Male	233	4.52 (1.740)	-0.580	0.562
Female	286	4.61 (1.711)		
Age Group				
≤49 years old	289	4.47 (1.706)	-1.561	0.119
≥50 years old	230	4.70 (1.738)		
Citizenship*				
Citizen	416	4.72 (1.634)	3.561	<0.001
Permanent or non-Citizen	103	3.98 (1.940)		
Highest Education*				
No formal and primary	143	4.17 (1.796)	-3.330	<0.001
Secondary and above	376	4.73 (1.671)		
Length of Residence				
≤5 years	131	4.03 (1.789)	-4.230	<0.001
>5 years	388	4.76 (1.663)		
House Ownership*				
Rent	194	4.54 (1.746)	-0.317	0.752
Own house	325	4.59 (1.711)		
Seriousness of the Dengue Issue*				
Not serious	257	4.35 (1.759)	-2.982	0.003
Serious	262	4.79 (1.660)		

CONCLUSION

Knowledge of the Wolbachia-Aedes Mosquito Project and dengue preventive behaviour differed according to several sociodemographic characteristics. Residents with higher educational attainment and greater perception of dengue severity demonstrated better knowledge and preventive practices. These findings highlight the need to strengthen health education and risk communication, particularly among residents with lower educational levels, non-citizens, and newly arrived residents. Providing simple, clear, and consistent information through community engagement activities may improve understanding of the Wolbachia-Aedes Mosquito Project and encourage sustained dengue preventive behaviour.

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