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Assessment of Knowledge, Attitude and Practice toward Dengue Fever among University Students in Makkah

Ashraf Eid Saadi Alsubhi[1], MassadJumah Al Khattabi[2], Naif Saleem Alrefaei[3], Ashraf Abdullah natto[4], Mishal Saad Al Nofaie[5], Alaa Salem Bahttab[6], Emad Mohammed Ali Alzahrany[7], Abdullah Fozy Almegren[8], Abbas Khalil Sala[9], Majed Abdulmoghth A. Al Harby[10]

[1]Nursing technician, Al-Zaher Primary Health Care Center, Makkah, Saudi Arabia.

[2]Epidemiology Technician, Health Inspector, THE Ministry of Health, Makkah, Saudi Arabia.

[3]optical technicians, Al Noor Specialized Hospital, Makkah, Saudi Arabia.

[4]Technician, HEALTH INSPECTOR, Public health department, Makkah, Saudi Arabia.

[5]Technician, HEALTH INSPECTOR, THE Ministry of Health, Makkah, Saudi Arabia.

[6]Nursing, Managing vectors and common diseases, Makkah, Saudi Arabia.

[7]Nurse, Phs, Makkah, Saudi Arabia.

[8]Nursing, infection & prevention control, Makkah, Saudi Arabia.

[9]TECHNICIAN RADIOLOGY, King Faisal Hospital, Makkah, Saudi Arabia.

[10]Nursing Technician, HEALTH INSPECTOR, THE Ministry of Health, Makkah, Saudi Arabia.

Abstract

Background: The incidence of dengue fever (DF) is rapidly increasing globally.A large number of university students are at a high risk for DF.Nowadays, DF is considered as one of the most important vector-borne diseases in terms of mortality and morbidity. The primary prevention of DF is one of the most important priorities because of the continuous increases in the number of cases globally.

Objective: To assess level of knowledge, attitude, and practice (KAPs) about DF among university students in Makkah City, Saudi Arabia.

Materials and Methods: A cross-sectional study was designed and was conducted at Makkah universities during the educational year 2021/2022. A multistage stratified random sample method with a proportional allocation technique was used in the study. Ten universities were

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randomly selected in Makkah to evaluate KAPs of students about DF. A total of 362 questionnaires were completed.

Results: This study showed that knowledge about DF was deficient; 60%of the students obtained poor, 47.7 had poor attitude and 64 had poor practice.

Conclusion: KAP toward DF was deficient among target populations. They are needed to raise the awareness and to translate knowledge into sound practice within all universities in Makkah City.

Key WordS: Dengue fever, knowledge, attitude, practices, university students.

Introduction

The incidence of dengue fever (DF) in the past five decades has doubled to 30, which makes it a global public health problem**(Azhar, Hashem, El-Kafrawy ,Abol-Ela , Abd-Alla, and Sohrab, 2015).**It has been designated a major international public health concern by the World health Organization (WHO) as it accounts for 400 million cases annually among 3.97 billion people at risk of infection. It has been reported that 128 countries all over the world are endemic by DF and around 20,000 deaths were estimated to occur yearly**(Mustafa, Rasotgi, Jain, and Gupta, 2015; and Ebi, and Nealon 2016).**

There is no prophylaxis or effective vaccine for DF or treatment available yet for dengue fever so, a lot of efforts to control the numbers of DF cases must focus on limiting populations of the vector and preventing their expansion to other regions. The mosquito, aegypti, Aedes, are considered the primary vector of DF. Therefore, the presence of stagnant water creates perfect breeding sites for the mosquito. Many factors contribute to spreading ofmosquito populations including the rainy season, high humidity, and low temperatures, and these factors play important roles in DF spreading and transmission**(Coudeville, Baurin, Shepard,2020;).**

It was estimated that the global disability-adjusted life year as a consequence of DF was 700,000 per year. The incidence rates of DF and dengue haemorrhagic fever (DHF) have increased over the past few years, and they continue to pose public health problems in the western region of Saudi Arabia. In the Kingdom of Saudi Arabia (KSA), the DF incidence was 21.71 per 100,000 people in 2013. There was an increase in the number of cases from April to July. Moreover, laboratory-confirmed dengue cases were higher in 2019 as compared to 2017

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and 2018, suggesting an outbreak of dengue in Makkah, KSA, in 2019. The incidence of confirmed dengue cases was 204 in 2017, 163 in 2018 and 748 in 2019 **(Alhaeli, Bahkali, Ali, Househ, and El-Metwally,2016; Melebari,s., Bakri, R., Hafiz, A., Qabbani, F., Khogeer, 2021).**

University students are a critical group of learners in any community because they have access to authentic knowledge. The authority can easily reach them through universities or different social and digital media platforms. If these students bear enough knowledge and positive attitudes, they can transfer it to their community. In collaboration with university students, the community can then translate knowledge and attitudes about DF into preventative practices**(Rahman, Jhinuk, Nabila, Yeasmin, Shobuj, et al.; and Rahman, Khan, Sakib, Halim, Rahman, et al.; 2021).** Thus, students can act as a crucial hub for community readiness. This study was done as, there is no cross-sectional study has been conducted in Makkah to assess the knowledge, attitude, and practice (KAP) of universities students about DF.

Material and Methods

Cross-sectional study was conducted at universities in Makkah City during the 2021–2022 educational year. The study populations were the universities students who attended the day of the study and accepted to participate in it. Multistage stratified random sampling method was applied. All of the Makkah districts were equally represented using a proportional allocation technique. Stratifications considered the students' sex, the type of school (private or government), the location of the university, the students' specialties, and the students' unversity years. Ten universities were selected. The ratio of government to private universities is the same for boys' and girls' university, we randomly selected one private boys' university and one private girls' university. The sample size was calculated using Epi Info program formula. Hence, the sample size to achieve a precision of ±4 with a 95% confidence interval (CI) was 172, with this sample size there was a 90% likelihood that the study will yield a statistically significant result. During the fieldwork, the sample was increased to reach 300 students. A standardized, confidential, anonymous, self-administered questionnaire was used in this study. It had been constructed and used previously**(Ibrahim, Al-Bar, Kordey, Fakeeh ;2009).**Some modifications were made. Internal consistency reliability of the current questionnaire was assessed for the whole sample and it was 0.91. Questionnaire comprising 70 questions was used.

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It inquired aboutsociodemographic data, and history of DF. Furthermore, it contained three parts to assess participants' knowledge, attitude, and self-reported practice toward DF. Pilot study was conducted to on 5% of sample size to assess the clarity and applicability of the questions and the time required to acomplish the questionnaire. A written informed consent was taken from every student willing to participate in the study. Administrative approvals for conduction of the study were taken from administration of the selected universities. The data from the questionnaires were coded and entered into a computer using SPSS software version 20 (SPSS).

The responses to the knowledge questions were coded with a score of (2) was given to each correct and complete answer, (1) for correct and incomplete answer and zero (0) for incorrect or did not know. The responses to the attitude questions were based on a 3-point Likert Scale with disagree, neutral, and agree as the possible responses for each statement. The mean scores from the Likert Scale were calculated. The responses to DF practice questions were coded as one (1) if correct practice and zero (0) if incorrect practice. The maximum score achievable for all of the practices was 23. A total practice score was calculated.

Total score of each section was calculated and transferred to percent score. The level of student's knowledge, attitude and practice was presented as follows: scoring of less than 50% was considered as poor, scoring of 50% to 64% was considered as fair and scoring of more than or equal 65% was considered as good.

All p-values were two tailed and were considered statistically significant at $p < 0.05$

Result

Table (1): Shows frequency distribution of the studied students regarding their sociodemographic characteristics. Regarding age, mean age 18.7 and SD 0.7. 52.7% were females. 46.7% were in the first year in university. More than half (53.3) of students' fathers were less than university level, whereas 61.3 of students' mothers were less than university level

Table (1): Frequency Distribution of the Studied students Regarding Their Sociodemographic Characteristics (N = 300).

Socio-demographic data	No.	%

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Mean age ± SD	18.7±0.7	
Sex		
Male	142	47.3
Female	37	52.7
Educational year		
First	140	46.7
Second	72	24.0
Third	53	17.7
Forth	35	11.6
Father's educational level		
Less than university level	160	53.3
University level or higher	140	46.7
Mother's educational level		
Less than university level	184	61.3
University level or higher	116	38.7

Table (2): illustrate frequency distribution of the studied universities students regarding their knowledge and previous family histories of dengue fever(n = 300). The majority (85.0%) of the studied students were hear about dengue fever. 81.7% didn't receive any health teaching about dengue fever. 14.3% of students' families had previous history of dengue fever.

Table (2): Frequency Distribution of the Studied universities students Regarding Their Knowledge and previous family histories of dengue fever(N = 300).

Socio-demographic data	No.	%
Did you hear before about dengue fever?		
Yes	255	85.0
No	45	15.0
Did you receive any health teaching about dengue fever?		

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Yes	55	18.3
No	245	81.7
Did you have any family history for dengue fever?		
Yes	43	14.3
No	257	85.7

Table (3): frequency distribution of the studied universities students regarding their overall level of knowledge, attitude and practice on dengue fever. As for overall knowledge level three fifths (60.0%) had poor knowledge. Regarding overall Attitude level 47.7% had poor attitude. 64.0% had poor practice.

Table (3): Frequency Distribution of the Studied universities students Regarding Their overall level of Knowledge, Attitude and practice on Dengue Fever.(N=300)

Item	No.	%
Overall knowledge level		
Poor	180	60.0
Fair	70	23.3
Good	50	16.7
Overall Attitude level		
Poor	143	47.7
Fair	88	29.3
Good	69	23.0
Overall Practice level		
Poor	192	64.0
Fair	78	26.0
Good	30	10.0

Discussion

This study was carried out to assess the knowledge, attitudes and practice related

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todengue fever among university students. Community awareness and participation is vital to prevent and control the spread of DF. Dengue fever symptoms include Fever, joint pains and **headache (Kamel, Gnanakkan, Selvarajah, Jabar and Hamid; 2017).**Dengue has no cure, only symptomatic management, while the current vaccine has moderate efficacy and does not provide equal protection against all four serotypes **(Stanaway J., et al.; 2016).**This study showed that there was poor level of knowledge regarding dengue fever among university students. This finding is in line with**Sultan et al.; 2016** their study result showed that knowledge about DF. was deficient; 59%, 32.7%, and 8.3of student were poor, fair and satisfactory knowledge level respectively. Whereas, the present study result in contradicting with**Yussof et al.; 2017** who revealed that 83.9% of the population had a high level of knowledge; which can probablybe attributed to the difference in the study setting.

The current study result showed that nearly half of the participants had poor attitude in relation to dengue fever. This result is compatible with study done by **Selvarajoo et al.;** 2020their study results showed that 53.2% of people had poor attitude. The current study result is antagonism with **Dhimal, et al.; 2014**study their results revealed that attitude towards DF control, the majority of participants (82%) in our study were classified as having good attitude, this is may be attributed to differences in study participants. They mentioned that their results influenced by the Nepalese culture of trying to please the enumerators, who are regarded as guests, by agreeing or strongly agreeing to interview questions. In fact, none of the respondents indicated that they strongly disagreed with any of the statements, possibly due to the same cultural context.

The present study results referred thatmore than three fifths of the studied sample were had poor level practice. This may be related to poor level of knowledge and poor level of attitude. In similar studies conducted in**Shuaib, et al.; 2010**who studied Knowledge, attitudes and practices regarding dengue infection in Westmoreland that their results indicate that translation from knowledge to practice among participants was poor.

limitations of this study: Their KAP levels are also assessed one time only, so the overall responses might change according to time. Futhermore, respondents might had provided answers not reflective of their actual attitude and practices, as a self-reporting questionnaire was used,

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which may increase bias level.

Conclusion: KAP toward DF was deficient among target populations. They are needed to raise the awareness and to translate knowledge into sound practice within all universities in Makkah City.

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