PREDICTORS OF PRACTICES RELATED TO DENGUE FEVER PREVENTION AMONG INTERNATIONAL STUDENTS IN UNIVERSITI PUTRA MALAYSIA, SERDANG

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ABSTRACT

Background: Dengue fever is a vector-borne, notifiable and preventable communicable disease. This study aim to determine the practices and the contributing factors related to dengue fever prevention among the international students in Universiti Putra Malaysia, Serdang.

Materials and Methods: A cross sectional study was conducted using cluster sampling proportionate to size. Data were collected using a validated, self-administered questionnaire which consist of six sections namely socio-demographics factors, knowledge, attitude, influence of mass media, previous history of dengue fever and practices related to dengue fever prevention. Data was analyzed using IBM Statistical Package for Social Science (SPSS) version 21.0 comprising descriptive, bivariate and multivariate analysis and level of significance was set P<0.05.

Result: A total of 641 respondents were involved with the response rate of 95.7%. The mean age of the respondents was 33.41±6.56 years old. Majority of the respondents were Asian (74.6%), male (65.5%), married (61.5%), had poor knowledge (45.9%), showed negative attitude (51.6%) and demonstrated good practices related to dengue fever prevention practices (53.7%). The significant predictor for poor practices were negative attitude towards practice (aOR=3.705, 95%CI=2.532–5.421, P<0.001), low influence of mass media towards practice (aOR=0.274, 95%CI=0.188–0.399, P<0.001), poor knowledge (aOR=0.169, 95%CI=0.090–0.319, P<0.001) and moderate knowledge on dengue fever (aOR=0.439, 95%CI=0.234–0.825, P<0.010).

Conclusion: The findings revealed good practices among the respondents despite their poor knowledge and negative attitude towards dengue fever. Therefore knowledge based health education and cultivating positive attitude should be further reinforced to strengthen the dengue fever preventive practice.

Keywords: Practices, Dengue fever, Prevention, International students, Universiti Putra Malaysia
1.0 Introduction

Dengue fever is a mosquito-borne viral infection that is transmitted by female mosquitoes mostly of the Aedes aegypti and to a lesser extent Aedes albopictus (WHO, 2012). Dengue fever cases have grown drastically in recent years and have become a public-health concern throughout the world mainly in the tropical and sub-tropical regions of the world (WHO, 2012). Dengue fever possesses a serious threat to public health however, it is preventable. Various measures have been implemented to overcome the rising trend of dengue fever however primary prevention remains the most effective (Naing et al., 2011).

In Malaysia, dengue fever is perceived as a healthcare threat as a result of escalating trend of dengue fever incidence. Despite concerted efforts by various organization, dengue fever remains to be a major public health challenge. Dengue fever was identified as a significant cause of illness among international travelers with high incidence among the travelers returning from dengue-endemic countries (Ratnam, Leder, Black, & Torresi, 2013). Universiti Putra Malaysia, (UPM) which is a tertiary education centre, both regionally and internationally has a number of international students from different countries. Therefore, there is a need to explore the prevalence and associated factors related to dengue fever prevention among the international students in UPM, Serdang.

2.0 Materials and Methods

A cross-sectional study was conducted in Universiti Putra Malaysia (UPM) Serdang Campus from January to Jun 2016 among the international students. All the international students who already registered and reported to UPM, Serdang and having an active status included in this study while those not available during the data collection or international students under UPM institutes, centers and colleges were excluded from this study. Sample size were calculated using the two proportions formula (Lwanga and Lemeshow, 1991) which the estimated sample size was 670. Cluster sampling proportionate to size were used in this study where the respondents were randomly selected using Table of Random Numbers. Five faculties were chosen randomly as clusters which were Faculty of Computer Science, Faculty of Economics and Management, Faculty of Engineering, Faculty of Food Science and Technology and Faculty of Modern Languages and Communication, Universiti Putra Malaysia.

There is total of 43 items in the questionnaire which were divided into six main sections namely; socio-demographic characteristics (age, gender, nationality, education level and marital status), previous history of dengue fever, knowledge on dengue fever, attitude towards dengue fever, influence of mass media towards practice and practices related to dengue fever prevention. Knowledge consisted of ten questions which respondents have to answer based on 3-point Likert’s scale which were categorized as yes, no and unsure. Respondent was given score one for yes answer while score zero for both no and unsure answers. The scores obtained were divided into 3 categories which were poor (0%-59%), moderate (60%-79%) and good (≥80%) after the total score converted into percentage. There 10 items on attitude towards dengue and measured on a five point Likert’s scale 5 (strongly agree), 4 (agree), 3 (neither agree nor disagree), 2 (disagree) and 1 (strongly disagree). The score varied from 10
to 50 and was divided into 2 categories which were negative attitude (<80%) and positive attitude (≥80%). Influence of mass media consisted of 6 items and were assessed using five point Likert’s scale. The scores obtained classified into 2 categories which were low influence (<80%) and high influence (≥80%). Previous history of dengue fever, the respondent were given option to answer either yes, no or unsure. Practices related to dengue fever prevention comprised 10 questions (scores ranged from 10 to 50) and were classified into poor practice (<80%) and good practice (≥80%).

Data were collected using a validated, guided self-administrated questionnaire. Content of the questionnaires were discussed with the panel of experts and necessary correction were made accordingly. Pre-test was conducted twice to ensure good internal consistency and final Cronbach’s Alpha value ranged from 0.847 to 0.942. Data was analyzed using IBM Statistical Package for Social Science (SPSS) version 21.0 comprising descriptive, bivariate and multivariate analysis. Descriptive statistics was used to describe characteristics of the respondents. Bivariate analysis of Chi-Square ($\chi^2$) or Fisher’s Test was used to measure associations between two categorical variables and recorded as frequency (n) and percentages (%). The final model of predictor was determined using the multiple logistic regression and $P$ value of less than 0.05 were considered significant in this study. Ethical approval from Ethical Committee for Research involving Human Subjects of University Putra Malaysia (JKEUPM) and respondent’s concern were obtained prior to data collection.

3.0 Result

3.1 Characteristics of Respondents

A total of 641 respondents completed the questionnaires from a total of 670 eligible respondents, making the response rate of 95.7%. Among the problems encountered were refusal to give consent and reluctant to answer that point of time. Normality test was conducted for continuous variables and normal distribution of the data were found for all the continuous variables.

The mean age of the respondents was 33.41 ± 6.562 and ranged from 21 to 59 years old. Majority of the respondents aged between 31-40 years old (46.3%). Male (65.5%) were predominant compared to women (34.5%) with the ratio of 1 women to 1.9 male. Three quarter of the respondents were from Asian (74.6%), having PhD (53%) and married (61.51%). Socio-demographic characteristics of the respondents towards practice are shown in the Table 1.

<table>
<thead>
<tr>
<th>Variable (Years)</th>
<th>Practice</th>
<th>Test Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poor n(%)</td>
<td>Good n(%)</td>
</tr>
<tr>
<td>Age group (Years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30</td>
<td>104(45.2)</td>
<td>126(54.8)</td>
</tr>
<tr>
<td>31-40</td>
<td>149(47.8)</td>
<td>163(52.2)</td>
</tr>
<tr>
<td>41-50</td>
<td>41(45.6)</td>
<td>49(54.4)</td>
</tr>
<tr>
<td>&gt;51</td>
<td>3(33.3)</td>
<td>6(66.7)</td>
</tr>
</tbody>
</table>

Table 1: Socio-demographic characteristics of the respondents towards level of practice.
Gender
Male 210(50.0) 210(50.0) 6.585 a 1 0.010*
Female 87(39.4) 134(60.6)

Nationality
Asian 225(47.1) 253(52.9)
African 70(44.0) 89(56.0) 0.467 b 2 0.792
Europe 2(44.0) 2(50.0)

Education Level
Bachelor 14(40.0) 21(60.0)
Master 126(47.4) 140(52.6) 0.683 a 2 0.711
PhD 157(46.2) 183(53.8)

Marital Status
Single 86(37.6) 143(62.4)
Married 203(50.9) 196(49.1) 11.619 a 2 0.003*
Divorcee 8(61.5) 5(38.5)

*Significant at P<0.05  a Chi-Square test (X²)  b Fisher’s Exact test

3.2 Factors Associated with Practice

Significant association were recognized between practices related to dengue fever prevention and gender (χ²=6.585, df=1, P<0.010), marital status (χ²=11.619, df=2, P=0.003), knowledge on dengue fever (χ²=70.447, df=2, P<0.001) and attitude towards dengue fever (χ²= 98.561, df=1, P<0.001). Knowledge on dengue fever were influenced by mass media (χ²=99.462, df=1, P<0.001) and previous history of dengue fever (χ²=7.937, df=2, P=0.019). Factors associated with dengue fever preventive practice shown in Table 2.

Table 2: Factors associated with dengue fever preventive practice.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Poor Practice</th>
<th>Good Practice</th>
<th>Test Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n(%)</td>
<td>n(%)</td>
<td>χ²</td>
</tr>
<tr>
<td>Knowledge on dengue fever</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>188(63.9)</td>
<td>106(36.1)</td>
<td>70.447</td>
</tr>
<tr>
<td>Moderate</td>
<td>88(34.0)</td>
<td>171(66.0)</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>21(23.9)</td>
<td>67(76.1)</td>
<td></td>
</tr>
<tr>
<td>Attitude towards dengue fever</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>216(65.3)</td>
<td>115(34.7)</td>
<td>98.561</td>
</tr>
<tr>
<td>Positive</td>
<td>81(26.1)</td>
<td>229(73.9)</td>
<td></td>
</tr>
<tr>
<td>Influence of mass media towards practice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low influence</td>
<td>198(67.8)</td>
<td>94(32.2)</td>
<td>99.462</td>
</tr>
<tr>
<td>High influence</td>
<td>99(28.4)</td>
<td>250(71.6)</td>
<td></td>
</tr>
<tr>
<td>History of Dengue Fever</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>39(35.1)</td>
<td>72(64.9)</td>
<td>7.937</td>
</tr>
</tbody>
</table>

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3.3 Predictors of Poor Practice

Multiple logistic regression analysis (Table 3) showed respondents with negative attitudes towards dengue were more likely (aOR=3.705, 95% CI = 2.532 – 5.421, P<0.001) to have poor dengue preventive practices compared to those with positive attitudes towards dengue fever. Meanwhile those married (aOR=0.378, 95% CI = 0.251 – 0.571, P<0.001) and divorced (aOR=0.243, 95% CI = 0.064 – 0.923, P=0.038), respondents with low influence of mass media towards practice (aOR=0.274, 95% CI = 0.188 – 0.399, P<0.001), and respondents with moderate (aOR=0.439, 95% CI = 0.234 – 0.825, P<0.010) and poor knowledge (aOR=0.169, 95% CI = 0.090 – 0.319, P<0.001) on dengue fever were protectors for poor practices related to dengue fever prevention practices. However, the predictors accounted for 38.3 % of the total variation (Nagelkerke R² = 0.383) and the model correctly classified 60.9% of the poor practices related to dengue fever prevention.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>Adjusted Odds Ratio</th>
<th>95% CI</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td></td>
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<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>-1.416</td>
<td>0.682</td>
<td>4.314</td>
<td>0.243</td>
<td>0.064</td>
<td>0.923</td>
</tr>
<tr>
<td>Married</td>
<td>-0.972</td>
<td>0.209</td>
<td>21.581</td>
<td>0.378</td>
<td>0.251</td>
<td>0.571</td>
</tr>
<tr>
<td><strong>Level of knowledge on dengue fever</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>-0.822</td>
<td>0.321</td>
<td>6.551</td>
<td>0.439</td>
<td>0.234</td>
<td>0.825</td>
</tr>
<tr>
<td>Poor</td>
<td>-1.776</td>
<td>0.324</td>
<td>30.140</td>
<td>0.169</td>
<td>0.090</td>
<td>0.319</td>
</tr>
<tr>
<td><strong>Level of attitude towards dengue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>1</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Negative</td>
<td>1.310</td>
<td>0.194</td>
<td>45.498</td>
<td>3.705</td>
<td>2.532</td>
<td>5.421</td>
</tr>
<tr>
<td><strong>Level of influence mass media towards practice</strong></td>
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<td></td>
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<td></td>
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<tr>
<td>High</td>
<td>1</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>-1.296</td>
<td>0.192</td>
<td>45.320</td>
<td>0.274</td>
<td>0.188</td>
<td>0.399</td>
</tr>
</tbody>
</table>

*Significant at P<0.05 [ ] = Reference group Nagelkerke R² 0.383
4.0 Discussion

Most of the respondents have a good practices in Aedes mosquito prevention. Majority of them (80.2%), cleans up surrounding of their houses to prevent mosquitoes breeding, followed by 78.7% keeps drains free from blockage and 75.2% covers all the water containers to prevent mosquito breeding. Similar preventive practices can be seen among the pre-university college students in Karnataka, India. Majority respondents (81.37%) felt it was necessary to remove standing water while 67.97% cover their water container to reduce mosquitoes (Payghan et al., 2014). Positive preventive practices could also be seen in a nationwide study of the Malaysian public on factors affecting dengue prevention practices which found that 97.6% cleaned up surrounding area, 90% cleared out debris that may block water flow and 86.7% took mosquito preventive measures by covering all water drains (Wong et al., 2015). In another research study, it showed that 93.9% cleaned up surrounding area, 94.3% cleared out debris that may block water flow in drain and 77.8% covered all water used for storing (Chandren, Wong, & AbuBakar, 2015). These preventive practices are more towards individual action which does not require much of their time or money. It is a simple act that could be practiced easily. A high number of respondents with good practices in mosquito prevention resulted from their good knowledge in dengue fever prevention towards good preventive practices.

Least practiced (58.3%) method in prevention of mosquito are by putting abate or chemical in water storage to eradicate mosquitoes. This could be probably because inadequate knowledge regarding Abate and poor availability of it in the stores. Abate also gives a negative perception that once water mixed with Abate, it gives an unpleasant taste. In addition, in a study by Rahman, Zainuddin, Minhat, Juni, & Mazeli, (2014), it was discovered that 24.2% assumed that Abate in the water can be bad for health. Health authority should educate the proper usage and benefits of Abate among international students mainly as they are unfamiliar.

Other preventive measures that practiced by respondents to avoid mosquitoes were installation of mosquito nets or screen to prevent from mosquito bites (70.5%) and application of mosquito repellant to expose body parts (62.2%). This prevention practices can be seen in many studies but varies in results. Among the military cadets in National Defence University of Malaysia, 27.2% used mosquito bed net while 23% used window or doors screen. A study in Jamaica among the parents attending health clinics showed that only 22.9% use screen windows to reduce mosquitoes and minority (4.8%) use bed nets to reduce mosquitoes meanwhile mosquito coils (79.3%) and insecticide sprays (71.7%) are favored practices (Shuaib, Todd, Campbell-Stennett, Ehiri, & Jolly, 2010). In contrast, a study of knowledge, attitude and practice regarding dengue fever among patients of rural tertiary care hospital in Bihar, study finding showed that 96.4% use mosquito net which was most preferred, 56.5% use screen windows to reduce mosquitoes and only 15.7% used mosquito repellent cream which least practiced (Mohapatra & Aslami, 2016).

Use of personal protective items for dengue fever preventive practice influenced by the respondent’s economic status, individual preference and perception towards it. Those affordable would not mind spending money to fix mosquito nets or screen whereas some of them might think it is unnecessary as they are staying in rented house. Comparatively, some prefer to use mosquito repellent and some may not as they think it is not effective. This study also identified that only 55.7% of the respondents wear a long sleeved shirt and trousers to
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protect themselves from dengue. Respondents obey the university dress code but they don’t believe that wearing long sleeved shirt and trousers will protect them from dengue fever. Similar finding can be seen in a local study, that only 45.8% of the respondents wear long-sleeved shirt and pants to avoid mosquitoes bites (Wong et al., 2015). In contrast, study among UPM medical students demonstrated that 62.5% wear long-sleeved clothing and trousers to prevent mosquito bites (Alfa et al., 2015)

From the multivariate analysis, there were four significant predictors that were identified as contributing factors towards poor practices related to dengue fever prevention. They were marital status, knowledge on dengue fever, attitude towards dengue fever and influence of mass media towards practice. Respondents with negative attitude towards dengue fever are 3.7 times more likely to have poor practices compared with respondents with positive attitude. Meanwhile respondents who are divorced or married, have a moderate or poor knowledge on dengue fever and a low influence of mass media towards practice were the protectors against poor practices related to dengue fever prevention.

Those with negative attitude are most likely to have poor practices probably because they have wrong perception and beliefs in relation to dengue fever prevention practices. Respondents may not be aware of the severity of dengue fever and overlook practices related to dengue fever. For instance, 39.2% of the respondents in this study believed that elimination of mosquitoes breeding sources are waste of time. This negative attitude is mainly influenced by poor knowledge on practices related to dengue fever prevention. Negative attitude is individual dependent but this could be overcome with adequate knowledge and positive preventive practices enlightenment. In order to create awareness on dengue fever preventive practices, health authorities should implement strict preventive practice measures, routine checks and fines. This would impact the individual with negative attitude to change their attitude. Besides implementing, strict preventive practices, health authority should disseminate good knowledge to educate via mass media. A good knowledge on practices related to dengue fever prevention would cultivate a positive attitude.

Several factors have been found to have significant associations with practices related to dengue fever prevention from the inferential statistics. These factors include socio-demographic factors (gender and marital status), knowledge on dengue fever, attitude towards dengue fever, influence of mass media towards practice and previous history of dengue fever.

Gender plays a role in preventive practices, there is a significant association between gender and practices related to dengue fever prevention in this study. Among female 60.6% showed good practice compared to 39.4% showed poor practice despite female were minority in this study. Possible explanation to this that, women are more concern towards dengue fever than men. This data could be supported by the understanding that most house hold chores are handled by women. This can be reinforced by a study in Puerto Rico which women have thoughts that dengue fever is a serious disease and can be a liability to the society, therefore they were more responsible in eliminating mosquito breeding sites (Pérez-Guerra, Zielinski-Gutierrez, Vargas-Torres, & Clark, 2009). A study by Ahmed et al, (2008) found similar associations to this study and females (60%) had better preventive practices compared to males. In contrast, study of factors affecting dengue fever knowledge, attitudes and practices among the selected urban, semi-urban and rural communities in Malaysia demonstrated that gender has no association with practice (Al-Dubai et al., 2013). There also no association between gender and practice in a study among medical students in
Marital status showed a significant association with practices related to dengue fever prevention. Respondents who were single had a good preventive practice in comparison to married and divorced respondents. Probably, respondents who are single seem to have more time in preventive practices compared to others. Respondents who were married and divorce might be burden with house chores and other family commitment. This findings is opposite to the findings by author Ahmed et al. (2008) which majority single (60%) respondents showed a poor practice of dengue prevention and there is no association between marital status and practices related to dengue prevention ($P=0.37$).

There were 76.1% of the respondents who had good preventive practices with good knowledge and there was a significant association between them. This results can be correlated with the fact that majority of the respondents in this study are having higher education level and therefore they seem to have a better knowledge on dengue fever and could carry out a good practice. This study finding similar to a study on risk assessment on dengue among UPM students which showed there was a significant association between knowledge and practice ($P<0.05$) despite only 9.2% have high knowledge on dengue fever (Hamizah, Olivia, & Anita, 2016). In contrary, a study on knowledge, attitude and practice towards dengue prevention among medical student in Faculty of Medicine and Health Sciences, UPM showed there was no significant association between knowledge and practice ($P>0.05$) (Alfa et al., 2015).

Positive attitude towards dengue fever showed a significant association with practices related to dengue fever prevention. This study depicted that majority of the respondents have understood the risk of dengue fever and portray a positive attitude which results in a good practices. This result is similar with a study in Thailand and Sri Lanka, which found a significant association between attitude and practices for dengue fever prevention (Makornkan et al., 2015; Chanyasanha et al, 2014). However, these results were contraindicated by the study of knowledge, attitude and practice on dengue fever among the residence in Kuala Lumpur which concluded that there is no significant association between attitude and practice ($P>0.05$) (Wan Rozita, Yap, Veronica, Mohammad, & Lim, 2006). Also, in a study of risk assessment on dengue among UPM students, there was no relationship between attitude and practice on dengue control ($P=0.873$) despite 56.2% of the respondents showed positive attitude (Hamizah, Olivia, & Anita, 2016).

There was significant association between influences of mass media and practices related to dengue fever prevention. Mass media plays a significant impact in educating the international students in relation to practices. In other hand, the Ministry of Health in collaboration with the Ministry of Communications and Multimedia have implemented broadcasting of dengue fever preventive practice campaign in all media especially television and radio channels, during the prime time broadcast at least 3 times a day (Ministry of Health, 2016). Mass media mainly the television, enables the respondent to see and learn the proper techniques of dengue fever prevention practices. This results in a good practice and positive attitude towards dengue fever prevention practices. However, this finding was in contrary to a study finding in Male, Maldives which there was no association between information regarding dengue fever and level of preventive practice (Ahmad & Taneepanichskul, 2008).
Significant relationship can be seen between previous history of dengue fever and practices related to dengue fever prevention. However, study conducted by Wong et al, (2015) and Aung et al, (2015) showed that, there was no association between previous history of dengue fever and practices related to dengue fever prevention. Whereas, in this study a history of dengue fever showed a good practice. This could be contributed by a better knowledge and awareness after a struggle being exposed with dengue fever. This is supported by a finding in a study where patients with a history of dengue seem to be more knowledgeable about dengue sign and symptoms, complication, treatment and practices compared to those uninfected previously (Pérez-Guerra, Zielinski-Gutierrez, Vargas-Torres, & Clark, 2009). However, those without history of dengue fever previously (51.9%) scored good practice too. This could be probably, experienced gained from taking care of closed ones infected with dengue fever or it could be through the knowledge perceived own selves. Respondents who were unsure of their diagnosis may not be able to practice good preventive practice due to poor awareness and knowledge.

5.0 Conclusion and Recommendation

This study found that 53.7% of the international students had good practices related to dengue fever prevention despite poor knowledge and negative attitude. The significant factors associated with practices related to dengue fever prevention were gender, marital status, knowledge on dengue fever, attitude towards dengue fever, influence of mass media towards practice and previous history of dengue fever. Whereas the predictor related to poor practices towards dengue fever prevention was attitude towards dengue fever. Meanwhile respondents who were married or divorced, having moderate or poor knowledge on dengue fever and a low influence of mass media towards practice were the protectors against poor practices related to dengue fever prevention. Therefore, a positive attitude should be cultivated by exposing the international students with adequate knowledge through mass media to sustain a good preventive practices.

This study has several strengths. The sample size that was used in this study (N=641) and response rate (95.7%) was higher in comparison to other similar studies. In addition, this study used a validated questionnaire with good internal consistency. This study, must be interpreted in caution as there are several potential limitations. The most apparent was the study design itself which was a cross-sectional study. The results measured in this study was carried out over a short period of time, it was only a ‘snapshot’ of the estimated prevalence in the community, at a specific period of time. Secondly the questionnaire for this study was adopted from (Chanyasanha et al, 2014) which was preventive behavior study for dengue infection among housewives in Colombo, Sri Lanka, however this study was among the international student which have different education level. Thirdly was the data collection method. Guided self-administrated questionnaire was used, therefore there could be information bias as respondents tend to give socially desirable answers.

Recommendations for future research would be a more detailed study using a cohort study for a longer period of time. Such study design would allow researcher to follow respondents prospectively and evaluate initial risk factors and factor associated with it. It is recommended that, attempt to study preventive practices using social cognitive model like Health Belief Model (HBM) which could contribute to in-depth individual health behaviour.
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Declaration

Author(s) declare that they have contributed to this research and manuscript.

Author’s contribution

Author 1: Writing the proposal, data collection and analysis, writing the initial draft manuscript.
Author 2: Data verification, editing of the manuscript for publication.
Author 3: Editing of manuscript and final review of manuscript.

References


