

## ABSTRACT

*Background:* DM is a major public health concern in Malaysia and has been shown to be closely related to increased premature and preventable mortality, as well as macro and microvascular complications. Literature proved that diabetes KAP are significantly related to the acceptance of the disease, improved QoL of diabetic patients and prevention of complications. *Objective:* The objectives of present study were to assess the level of diabetes KAP, identify its associated factors and determine the correlation between diabetes KAP of T2DM patients in Kuala Muda District. *Methods:* A self-administered questionnaire based descriptive cross-sectional study was conducted on a convenience sample of 386 T2DM patients. Males and females aged  $\geq 18$  years with at least one year past the initial diagnosis of T2DM were included in this study. A questionnaire composed of questions related to KAP was utilized for this study. The questionnaire was translated into Malay language by two researchers. A pre-test study was conducted to determine validity and reliability. We calculated scores as the sum of correct answers to the knowledge, attitude and practice items and converted this score to a percentage. Descriptive statistics were used to present mean  $\pm$  SD of scores in number and percentages and to describe the demographic and disease-related characteristics of the patients. Spearman correlations were determined between KAP scores. Chi-square test was used to determine the association level among study variables. All statistical analysis was performed by using SPSS version 24.0. *Results:* Males (n=183; 47.41%) and females (n=203; 52.59%) from Malay (n=151; 39.12%), Chinese (n=131; 33.94%) and Indian (n=104; 26.94%) ethnicity with mean age of  $54.2 \pm 7.78$  years participated in this study. Majority of participants were married (97.15%), had secondary education (40.93%) and reported their monthly income below RM 2500 (72.54%). Majority of participants (44.56%) reported the duration of their disease as 5 to 10 years followed by 28.76% with 2 to 4 years disease duration. An approximately equal proportion was taking either oral medicine only (n=164; 42.49%) or combination of oral medicines and insulin (n=170; 44.07%). Hypertension was highly reported comorbidity (n=236; 61.14%) followed by heart related diseases (n=59; 15.28%). A larger number of participants (n=280; 72.54%) were satisfied with their current health status. Majority of participants possessed levels above the cut-off points for poor levels in knowledge (63.21%), attitude (62.69%) and practices (58.03%). Age was positively correlated with knowledge ( $r = 0.173$ ;  $P = 0.001$ ), attitude ( $r = 0.145$ ;  $P = 0.004$ ) and practice ( $r = 0.173$ ;  $P = 0.001$ ). Gender was only correlated with attitude ( $r = 0.109$ ;  $P = 0.033$ ). Academic qualification was strongest correlation for knowledge ( $r = 0.785$ ;  $P < 0.001$ ), attitude ( $r = 0.725$ ;  $P < 0.001$ ) and practice ( $r = 0.709$ ;  $P < 0.001$ ).

< 0.001). Occupation was also correlated with knowledge ( $r = 0.358$ ;  $P < 0.001$ ), attitude ( $r = 0.348$ ;  $P < 0.001$ ) and practice ( $r = 0.317$ ;  $P < 0.001$ ). Monthly income had medium correlation with knowledge ( $r = 0.556$ ;  $P < 0.001$ ), attitude ( $r = 0.357$ ;  $P < 0.001$ ) and practice ( $r = 0.558$ ;  $P < 0.001$ ). Current therapy type was weakly correlated with knowledge ( $r = 0.133$ ;  $P = 0.009$ ). Exposure to diabetes education had weak correlation with knowledge ( $r = 0.113$ ;  $P = 0.035$ ). Health status satisfaction had weak correlation with knowledge ( $r = 0.147$ ;  $P = 0.004$ ) and practice ( $r = 0.167$ ;  $P = 0.001$ ). Knowledge level had large positive correlation with attitude ( $r = 0.735$ ;  $P < 0.001$ ) and practice level ( $r = 0.786$ ;  $P < 0.001$ ). Attitude level had positive correlation with practice level ( $r = 0.679$ ;  $P < 0.001$ ). *Conclusion:* The results of present study showed that patients with T2DM in Kuala Muda District overall have moderate levels of diabetes KAP. However, there is some proportion of diabetic patients with poor diabetes KAP which is obviously influenced by diabetes KAP determining factors such as socio-economic conditions.