UNIVERSITI TEKNOLOGI MARA

ASSOCIATION BETWEEN NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) AND CARDIOVASCULAR DISEASE (CVD) RISK CATEGORIES AMONG PATIENTS ATTENDING UITM PRIMARY CARE CLINICS

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Background and Aim: Non-alcoholic fatty liver disease (NAFLD) is an emerging novel cardiovascular disease (CVD) risk factor and its prevalence is increasing globally. However, there is paucity in the evidence showing the association between NAFLD and CVD risk in primary care setting. Therefore, the objectives of this study were to determine the prevalence of NAFLD according to CVD risk categories and the factors associated with NAFLD among patients attending UiTM Primary Care Clinic

Method: A cross sectional study was conducted in UiTM Primary Care Clinics. Patients aged ≥18 years with ≥1 risk factor for NAFLD or CVD were recruited using convenience sampling. Participants with history of established liver disease or chronic alcohol use were excluded. Socio-demographics, clinical related data and anthropometric measurements were recorded in a proforma. Blood investigation results were traced from the medical records. Abdominal ultrasound was performed and diagnosis of NAFLD was made using a standardised criteria by a radiologist.. The 10-year CVD risk for each participant was calculated using the general Framingham Risk Score (FRS) calculator for use in primary care. Multiple logistic regression was performed to identify independent associated factors for NAFLD.

Results: A total of 263 participants were recruited. The mean age was 52.3 ± 14.7. Male and female were equally distributed with 50.2% of the participants were male. Regarding ethnicity, 79.8% were Malays, 15.2% were Chinese and 7% were Indian/others.. The overall prevalence of NAFLD was 54.4% (95%CI 48%, 60%) and it was higher in males (62.9%, p=0.005). NAFLD was also more prevalent in participants who were employed (60.3%, p=0.023). Regarding FRS category, participants in the high FRS category have higher prevalence of NAFLD (65.5%), followed by those in the moderate category (55.4%) as compared to those in the low category (46.3%), p=0.025. On multiple logistic regression analysis, independent factors associated with NAFLD were being employed (OR=2.44, 95% CI 1.26-4.70, p=0.008) obesity (OR=2.89, 95% CI 1.21-6.91, p=0.017), elevated fasting glucose ≥5.6mmol/L (OR=2.79, 95% CI 1.44-5.43, p=0.002), ALT ≥34U/L (OR=3.70, 95% CI 1.85-7.44, p<0.001) and high FRS category (OR=2.82, 95% CI 1.28-6.23, p=0.010).

Conclusion: NAFLD is highly prevalent in UiTM Primary Care Clinics, especially among those in the high FRS category. Patients who were obese, have elevated fasting glucose, elevated ALT and in the high FRS category were more likely to have NAFLD. This study underscores the importance of screening for NAFLD in those with risk factors in primary care. Aggressive intervention must be targeted in those with NAFLD in order to reduce CVD complications and risk of progression.

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