UNIVERSITI TEKNOLOGI MARA

KNOWLEDGE, ATTITUDE, AND PRACTICE IN MANAGING PATIENTS WITH ASYMPTOMATIC HYPERURICEMIA AMONG PRIMARY CARE DOCTORS IN MALAYSIA

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ABSTRACT

Introduction: The prevalence of hyperuricemia is increasing worldwide, especially in developing countries. Hyperuricemia is associated with many comorbidities; however, the quality of care is suboptimal. Primary care doctors (PCDs) play an essential role in identifying and managing asymptomatic hyperuricemia (AH). This study aimed to determine the level of knowledge, attitude (perceived barrier), and practice in managing AH among PCDs in Malaysia, and whether there is a significant difference between PCDs with or without postgraduate qualifications in Malaysia. It also aimed to determine the sociodemographic characteristics, professional background, personal experience, knowledge, attitude (perceived barrier), and its association with adequate AH practice among PCDs in Malaysia.

Methodology: A cross-sectional study was conducted online using a validated questionnaire via Google Forms™. The adequacy rate (AR) for knowledge and practice is set at a score of ≥50%, and attitude (perceived barrier) is described in percentage. Multiple logistic regression was used to examine the relationship between sociodemographic characteristics, professional background, knowledge, and attitude (perceived barrier) with the AH practice adequacy score.

Results: A total of 412 PCDs participated, with the majority being female (76.2%) and Malay (74.0%), and working in public primary care clinics (84.0%). The overall knowledge's mean (±SD) score was 24.78 (±3.01), AR 96.4%. For attitude, the most perceived barrier was a lack of knowledge about the disease (50%), and the guidelines (48.5%). The overall practice's mean (±SD) score was 17.51 (±8.09), AR 53.2%. The final regression model showed only PCDs with experience in rheumatology attachment was significantly associated with adequate practice (OR 1.778, CI: 1.083-2.920, $p<0.05$).

Conclusion: Despite the majority of the PCDs having high knowledge AR, half of them regarded inadequate knowledge of the disease and guidelines as the most perceived barrier, which is reflected in the modest overall practice AR. The effectiveness of PCDs in managing AH should be increased by implementing strategies that address these factors.

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CHAPTER 1
INTRODUCTION

Uric acid is the final product of purine and protein metabolism. Uric acid homeostasis depends on the balance between its production and reabsorption or excretion by the kidney and intestines (Mandal & Mount, 2015). In about 90% of people with hyperuricemia, there is either an overproduction of urate, insufficient urate excretion in the kidney, or both (Li et al., 2020; Mustafa, 2014). There is also a high component of heritability in serum uric acid estimated between 40-70% of patients with hyperuricemia (Halperin Kuhns & Woodward, 2020). In addition, an increase in endogenous purine production and the consumption of a high-purine diet can also contribute to hyperuricemia (Li et al., 2020).

The Malaysian Clinical Practice Guideline (CPG) Management of Gout (Second Edition) defines hyperuricemia as a serum urate concentration of >6.8 mg/dL (408μmol/L) (*MANAGEMENT OF GOUT (Second Edition)*, 2021). While asymptomatic hyperuricemia (AH) is defined as hyperuricemia without prior gout flares or subcutaneous tophi (FitzGerald et al., 2020).

In the last decade, epidemiological studies have shown a progressively increased prevalence of hyperuricemia worldwide. The prevalence of hyperuricemia is around 23% and increasing especially in developing countries (Winder et al., 2021). In Asia, the prevalence of hyperuricemia is reported mainly by India and China with the value of 6.4% (Billa et al., 2018) and 25.8% (Song et al., 2018) respectively. These phenomena can be associated with the increasing prevalence of metabolic disorders, overweight, and obesity, as well as the devouring of purine-rich food, fructose-sweetened drink, and alcohol (Chuang et al., 2011; Desideri et al., 2015). Despite systematic literature searches, there is no data on the prevalence of hyperuricemia in Malaysia.

An increasing number of studies demonstrate that asymptomatic hyperuricemia results in the emergence of comorbid conditions such as hypertension, chronic renal disease, coronary artery disease, and diabetes (Yip et al., 2020). A meta-analysis concluded that hyperuricemia increases the risk of incident hypertension, with each 1mg/dl increase in uric acid associated with a 1.13 increase in the relative risk of incident hypertension. (Grayson et al., 2011). A prospective study shows that