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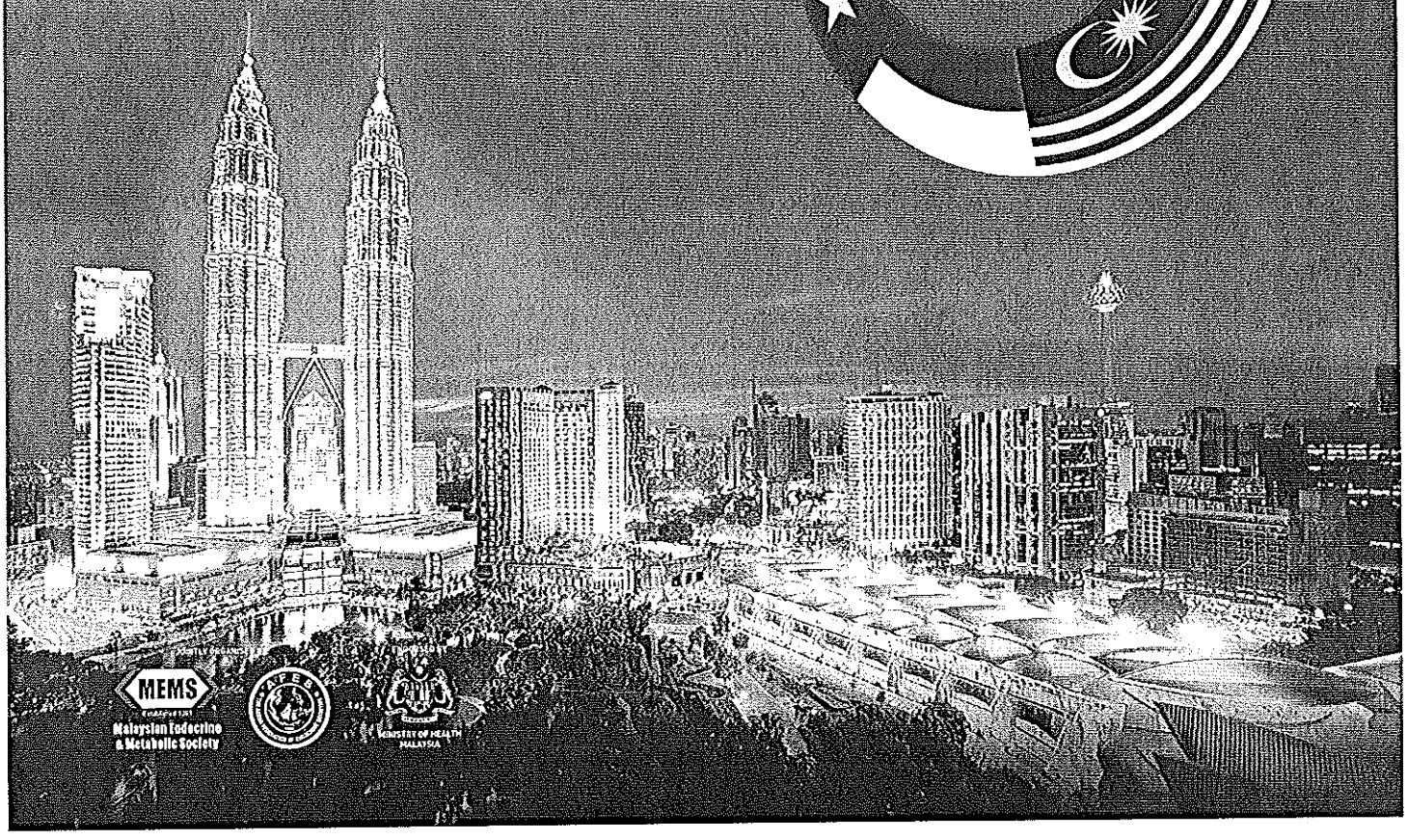

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Prevalence of Thyroid Disorders and Thyroid Autoantibodies Among Coastal Communities of Malaysia (Part of Nationwide Study of Thyroid Disorders in Malaysia)

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Objectives: To determine the prevalence of thyroid disorders and thyroid autoantibodies in the coastal communities of Malaysia. This study is part of a nationwide study looking into the prevalence of thyroid disorders.

Methods: A cross sectional study was performed in two coastal districts of rural Selangor. A village from each district was chosen where a participant from each household from the village was selected using KISH tables. Sociodemographic data, medical history, anthropometric measurement and thyroid examination were performed. The presence of goiter was recorded according to the World Health Organization (WHO) goiter grading system. Blood withdrawn was tested for thyroid function and thyroid autoantibodies. Thyroid antibodies analyses were done using ELISA Immulite 2000 system. Lowest detectable limit for anti-thyroperoxidase (antiTPO) and anti-thyroglobulin (antiTG) are 10 IU/mL and 20 IU/mL respectively. Low, moderate and high titre is defined 40 - 100 IU/mL, 101-1000 IU/mL and >1000 IU/mL respectively.

Results: A total of 418 subjects were recruited with a mean age of 54.1 ± 14.2 years. Majority were Malays (86.8%), followed by Indians (11.7%) and Chinese (1.4%). Among respondents, 2.9% had Grade 1 and 8.9% had Grade 2 goitres. A mere 3.4% had clinically palpable thyroid nodules. A total of 411 blood samples were available for thyroid level assessment, with 1.9% of respondents were found to have hypothyroidism while 85.6% had TSH in the range of 0.32-2.5 mIU/L. The prevalence of overt and subclinical hypothyroidism were 0.2% and 1.7% respectively. On the otherhand, 3.4% of respondents were hyperthyroid (TSH < 0.32 mIU/L) with prevalence of overt and subclinical hyperthyroidism being 0.5% and 2.9% respectively. Among 405 samples which were available for antiTPO analysis, 9.1% has detectable antiTPO titre (>40.0 IU/mL), with 4.4% had moderate and 2.5% had high antiTPO titres. One respondent (10%) from among those with high antiTPO titres was found to have T3 thyrotoxicosis. Fourty percent of euthyroid respondents with high titre and 38.9% with moderate titre had high normal TSH, in the range of 2.51 – 5.00 mIU/L ($p<0.001$). Among 408 samples which are available for antiTG analysis, 3.4% and 5.4% had low detectable and moderate antiTG titres respectively. Only 0.5% (2 respondents) had high antiTG titre (>1000 IU/mL) and found to be hypothyroid. Among those with moderately positive titre, 9.1% were hyperthyroid and majority (63.6%), although euthyroid, had TSH levels between 0.32 – 2.50 mIU/L ($p<0.001$).

Conclusion: The low prevalence of thyroid antibodies and thyroid disorders in coastal communities could be attributed to the iodine sufficient status in those areas. Euthyroid respondents with moderate and high antiTPO titres tend to have higher TSH levels, while those with moderate and high antiTG titres had lower TSH levels.