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## Prevalence Of Type 2 Diabetes Mellitus In A Middle-Age North-East Portuguese Population: An Exploratory And Preliminary Study

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### Resumo

**Background:** Type 2 Diabetes Mellitus (T2DM) is a chronic metabolic disease with a growing impact on morbidity and mortality worldwide. Previous studies detected a high prevalence of T2DM in Portugal, however the latest Portuguese epidemiological reports about Diabetes were performed in 2010 and 2015. Thus, the aim of this study was to evaluate the prevalence of T2DM in a middle-age Portuguese population from a North-East Portuguese region.

**Methods:** An exploratory study was conducted between January 2019 and December 2020 from two primary health care centers in a North-East Portuguese region. A total of 673 individuals aged 40–69 years were analyzed, among which 400 women (53.34 ± 7.33 years) and 273 men (53.01 ± 7.20 years). T2DM diagnosis were based on World Health Organization (WHO) and International Diabetes Federation (IDF) criteria (2006).

Impaired fasting glucose (IFG) was included for analysis ( $\geq 110.0$ mg/dL and  $< 126.0$  mg/dL). Categorical variables were expressed by counts and proportions with a 95% confidence interval (CI). Chi-squared test or fisher exact test was applied whenever appropriate.

**Results:** The prevalence of T2DM in this middle-age Portuguese population was 14.9%. Significant differences among sexes were found ( $p < 0.05$ ) with a higher prevalence for men (17.9%) than women (12.8%). Also, T2DM prevalence was significant different among age-groups with an increase with age ( $p < 0.001$ ). T2DM prevalence represented 5.8%, 16.0% and 25.5% of the cases on age groups 40–49 years, 50–59 years and 60–69 years, respectively. Analyzing the prevalence of T2DM in each age group according to sex, women had 4.7%, 12.4% and 24.5% diabetic cases in the age groups 40–49 years, 50–59 years and 60–69 years, respectively. Otherwise, men had 7.4%, 21.6% and 26.9% of the diagnosed T2DM for the same age groups. Regarding to IFG, 5.1% of the non-diabetics presented some degree of change in fasting glucose in the blood. Of those, the higher percentage of IFG cases was present in men (4.5%) than women (0.6%). Individuals with 60–69 years have higher percentage of IFG (12.5%) than other age-groups (4.3% and 5.0% for 40–49 and 50–59 years, respectively). Women had ab normal-values for fasting glucose in 4.9%, 1.3% and 8.5% of the 40–49 years, 50–59 years and 60–69 years' age-groups, respectively. Conversely, men presented 3.4%, 11.5% and 18.4% of IFG prevalence for the same age-groups.

**Conclusion:** A high prevalence of T2DM was reported in the studied middle-age North-East Portuguese population. Men have a higher number of diabetics, however an age-related increase for both sexes. The results also suggest potential cases of pre-diabetes, which should be carefully monitored. Further epidemiological reports

should include the influence of socio-demographic factors, physical activity patterns and health-risk behaviors on prevalence of T2DM.

**Keywords:** diabetes mellitus, impaired fasting glucose, regional, epidemiology.

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**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study. The experimental approach was approved and followed by the local Ethical Committee from North East Local Health Unit (CNPD n°2020/149).