

Background

Diabetes is a serious and increasing global public health burden, and accurate estimates of the burden are essential to allocate resources appropriately. The number of people (20-79 years) living with diabetes in the North American and Caribbean region was estimated for 2014 for the International Diabetes Federation (IDF) Diabetes Atlas.

Aims and Objectives

Previous estimates of the prevalence of diabetes have demonstrated a large and increasing burden, with significant regional variability¹⁻⁶. The current estimates provide the latest figures based on the highest quality data on diabetes prevalence for the 29 countries and territories in the North American and Caribbean region.

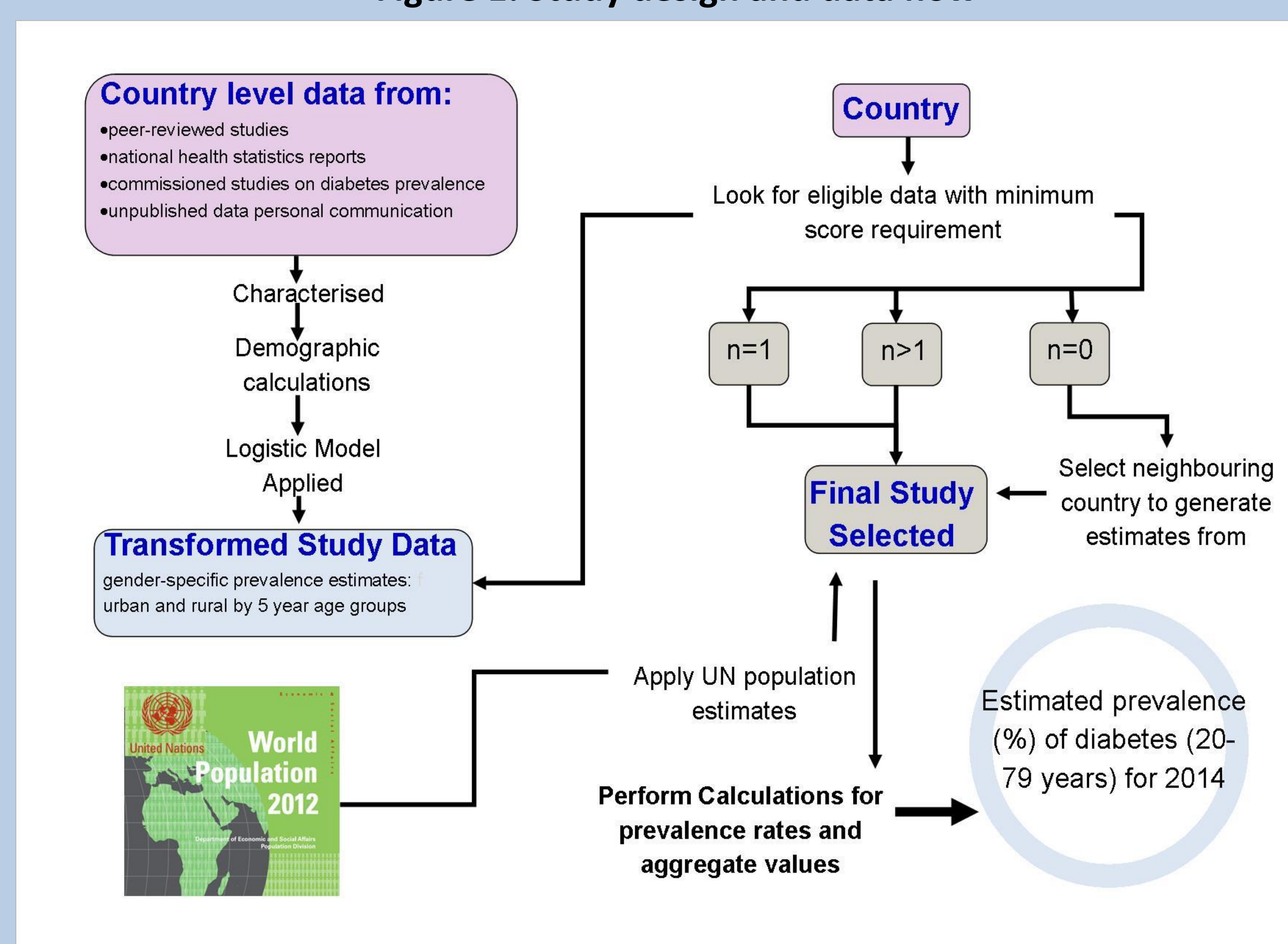
Methods

We conducted a literature search of studies reporting the age-specific prevalence for diabetes and used the Analytic Hierarchy Process to systematically select studies to generate estimates for 220 countries and territories worldwide (Figure 1).

Data sources included country-level data from peer-reviewed studies, national health statistics reports, STEPS studies, and unpublished data obtained through personal communication. Estimates for countries without available source data were modelled from countries with similar ethnicity, geography, and World Bank country income group.

Logistic regression was applied to generate smoothed age-specific prevalence estimates for adults 20-79 years, which were then applied to UN population estimates for 2014. The national* comparative** prevalence was generated for each country and territory.

Figure 1: Study design and data flow



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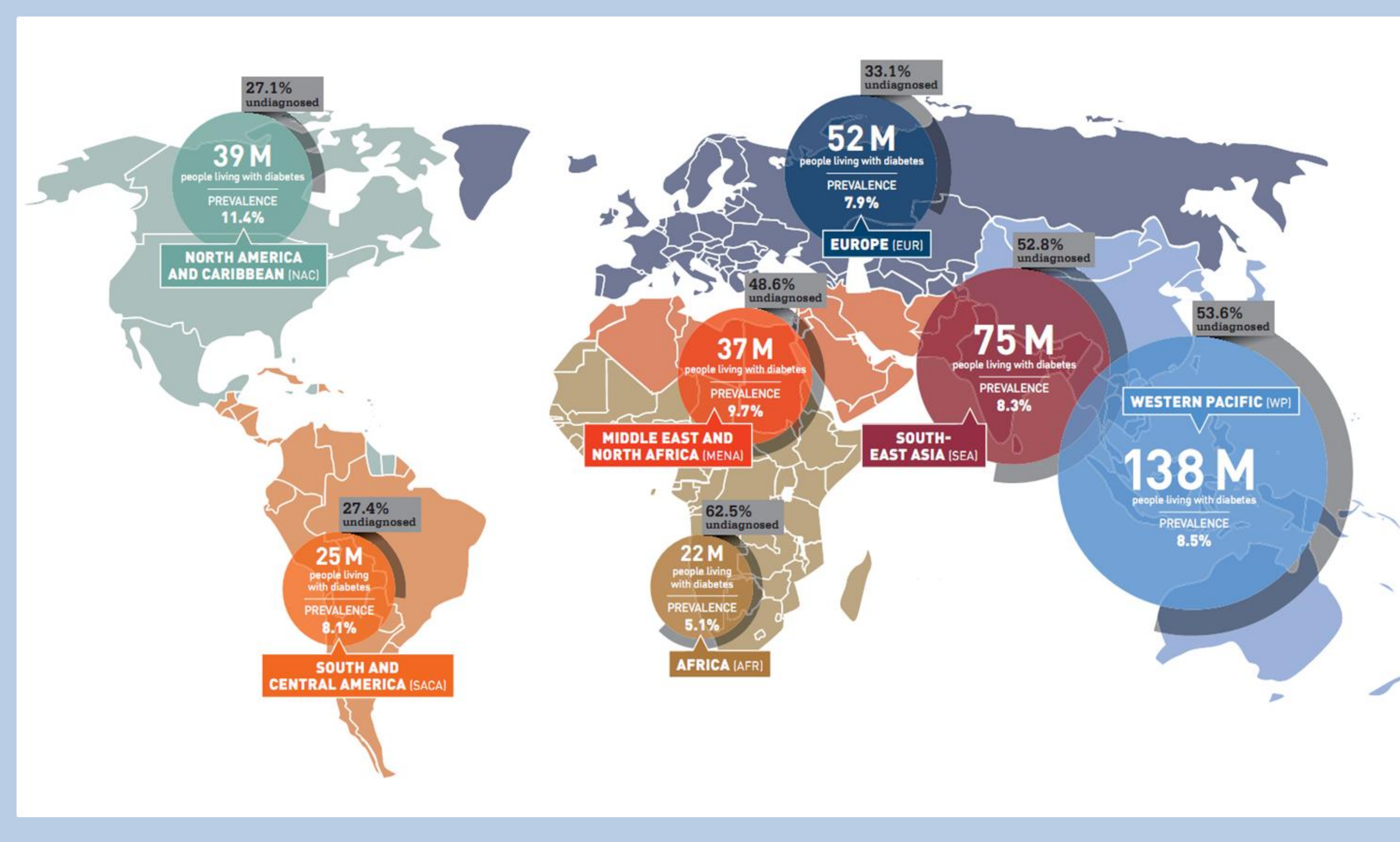
References

1. IDF Diabetes Atlas, 1st Ed. Brussels, Belgium: International Diabetes Federation; 2001.
2. IDF Diabetes Atlas, 2nd Ed. Brussels, Belgium: International Diabetes Federation; 2003.
3. IDF Diabetes Atlas, 3rd Ed. Brussels, Belgium: International Diabetes Federation; 2006.
4. IDF Diabetes Atlas, 4th Ed. Brussels, Belgium: International Diabetes Federation; 2009.
5. IDF Diabetes Atlas, 5th Ed. Brussels, Belgium: International Diabetes Federation; 2011.
6. IDF Diabetes Atlas, 6th Ed. Brussels, Belgium: International Diabetes Federation; 2013.

*National or regional prevalence is the percentage of each country's or region's adult population that has diabetes. It is ideal for assessing the burden of diabetes for each country or region. However, because the prevalence of diabetes increases with age, it cannot be used for comparing diabetes prevalence between countries or regions which have different age structures.

**Comparative prevalence has been calculated by assuming that every country and region has the same age profile. This removes the differences of age between countries and regions, and makes this figure ideal for making comparisons.

Figure 2 : Regional Prevalence (%) of diabetes (20-79 years) by IDF region, 2014



Results

A total of 773 data sources were considered and 173 included, representing 125 countries globally. For the North American and Caribbean region, 47 sources were considered and 13 were included, representing 11 of the 29 countries in the region.

This study estimated that 387 million adults worldwide (8.3% of all adults) had diabetes in 2014. In the North American and Caribbean region, 38.8 million people had diabetes, translating to a prevalence of 11.4% (Figure 2, Table 2). With a comparative** prevalence of 9.9%, the North American and Caribbean region had the highest comparative prevalence among the IDF regions.

Of the people living with diabetes in the region, 27.1% (10.5 million) with diabetes were undiagnosed. This was the lowest proportion of undiagnosed diabetes among the regions; globally, almost half of all adults with diabetes (46.4%) were not aware of their condition.

As the population of the North American and Caribbean region is growing and ageing, it is predicted that 50.4 million people will be living with diabetes in this region by 2035⁶.

Table 1 : Top countries/ territories for number of cases and prevalence (%) of diabetes (20-79 years) 2014 in the North American and Caribbean region for 2014**

Country/Territory	Number	Country/Territory	%
United States of America	25.8 million	Belize	15.9%
Mexico	9.02 million	Guyana	15.8%#
Canada	3.03 million#	Trinidad and Tobago	13.1%#
Haiti	318,000	Antigua and Barbuda	13.1%#
Jamaica	184,000	Montserrat	13.1%#

**Comparative prevalence #Based on extrapolation from similar countries

Table 2 : Diabetes in adults (20-79) the North American and Caribbean region and the world

	NAC	WORLD
Adult population	339.2 million	4.6 billion
Number of people with diabetes	38.8 million	387 million
Regional prevalence	11.5%	8.3%
Comparative prevalence	9.9%	---
Undiagnosed cases	10.5 million	179.2 million
Total diabetes-related deaths	297,200	4,904,000
Proportion of diabetes-related deaths that occurred under the age of 60	41.1%	48.2%
Total diabetes-related health expenditure	US\$310 billion	US\$612 billion

Discussion

The new estimates of diabetes in adults quantifies the large burden of people living with diabetes in the North American and Caribbean Region. While the US and Mexico contained the largest number of people living with diabetes in the region, some of the Caribbean islands are estimated to be home to the highest proportion of people with diabetes in the region (Table 1).

The prevalence of diabetes increases with age (Figure 3). This trend is especially visible in middle income countries in the region where the prevalence of diabetes among older people is much higher compared to high income countries in the region (Figure 4).

Figure 3 : Prevalence (%) of diabetes (20-79 years) by age and sex in the North American and Caribbean region for 2014

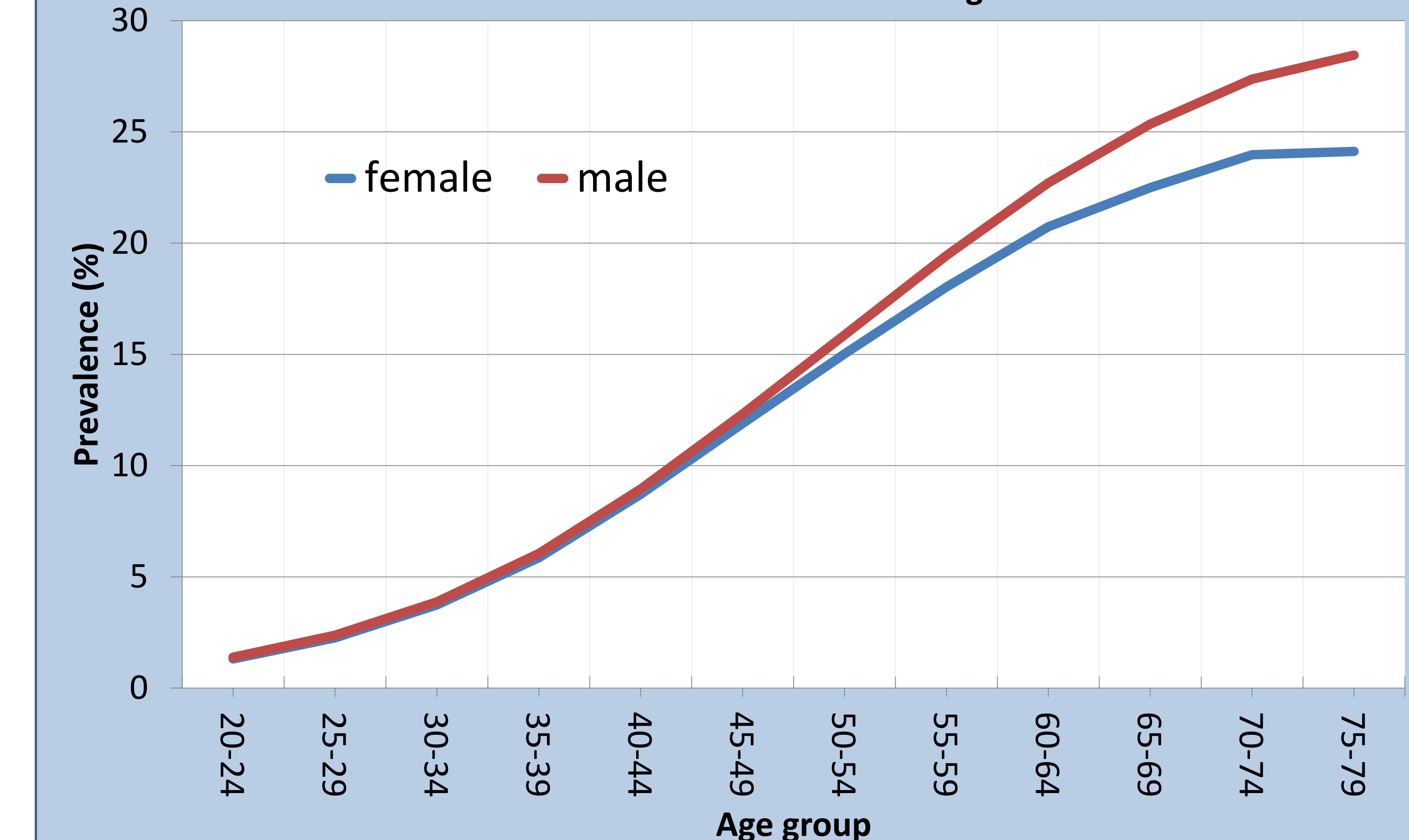
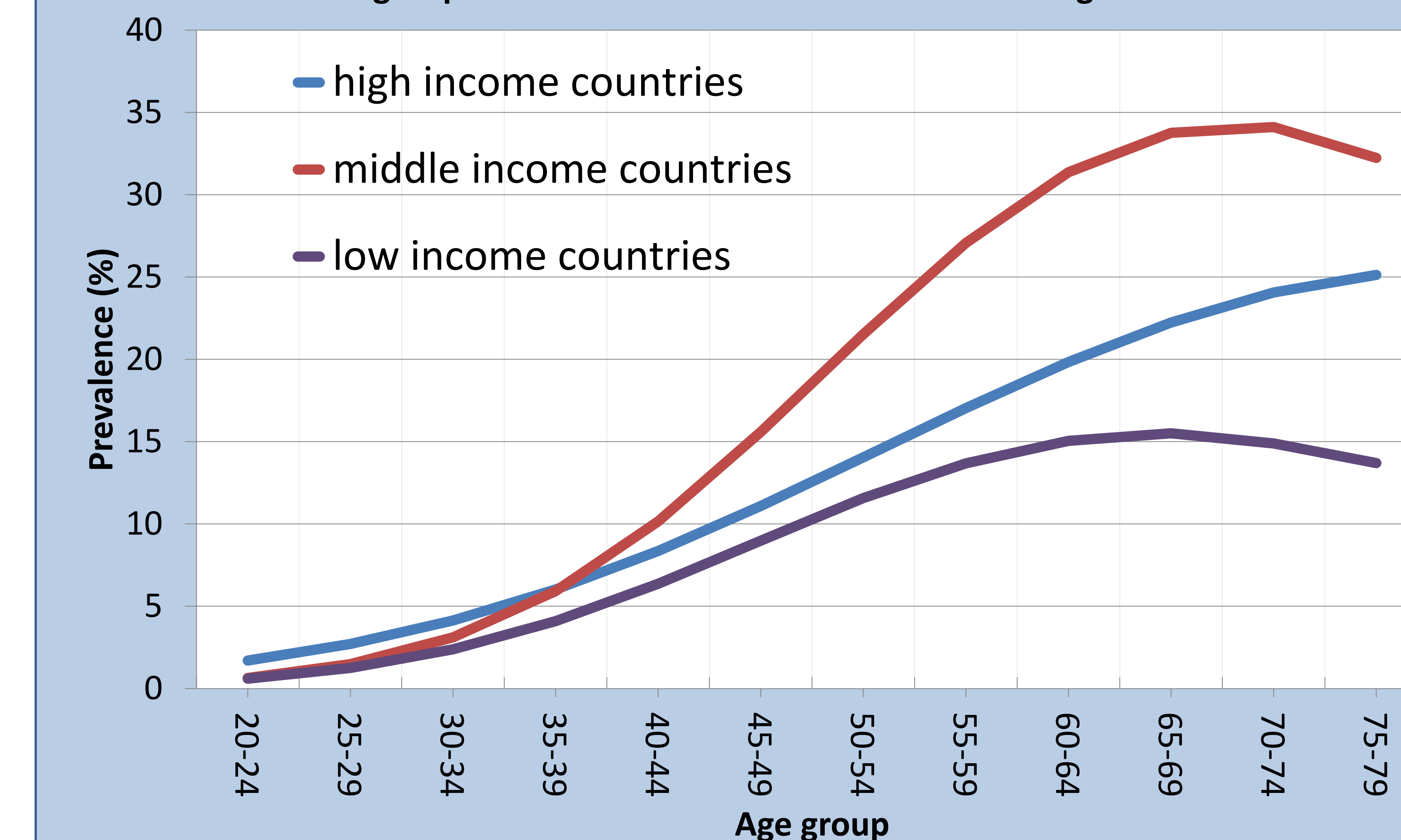


Figure 4 : Prevalence (%) of diabetes (20-79 years) by age and country income group in the North American and Caribbean region for 2014



Conclusion

In 2014, 38.8 million adults in the North American and Caribbean region had diabetes. Work is needed to implement the WHO Global Action Plan for the prevention and control of diabetes and other non-communicable diseases to reduce the societal and personal burden and maximise healthy life expectancy.