



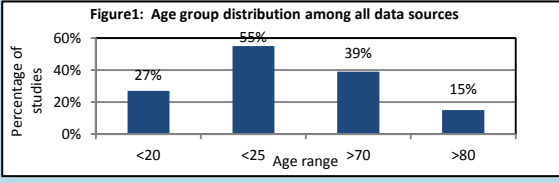
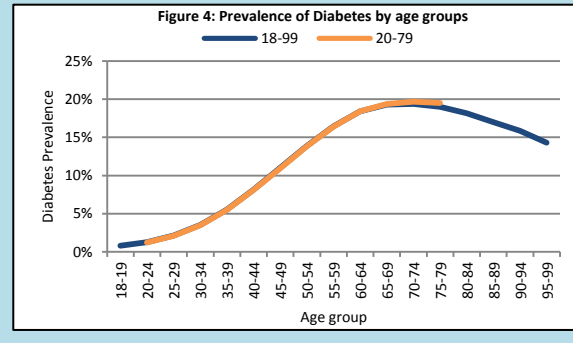
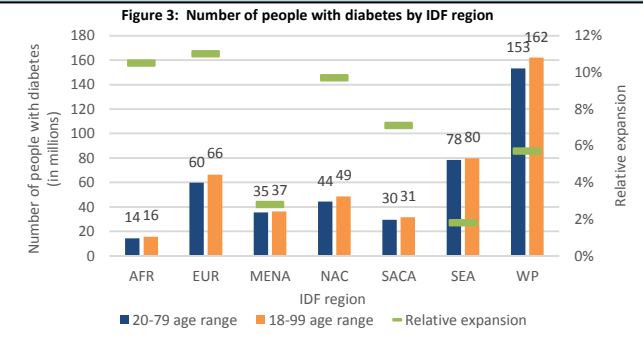
**Introduction:** Diabetes is one of the largest global health emergencies of the 21<sup>st</sup> century. There is a global increase in the number of people living with diabetes resulting in significant increase in mortality and health expenditures. In 2015, the International Diabetes Federation reported that there were 415 million adults aged 20 to 79 with diabetes, and this number is expected to increase to 642 million in 2040. However, the number did not include diabetes in people older than 80, and as there are some countries that report high diabetes prevalence in people older than 80, therefore, new estimations were made for an expanded age group from 18 to 99 years.

**Methodology:** The method of the country level diabetes prevalence estimation is the same as described in the methodology chapter of IDF Diabetes Atlas 7<sup>th</sup> Edition (1). Approximately, 27% of data sources reported diabetes prevalence in ages lower than 20, and about 15% of data sources reported diabetes prevalence in age older than 80. (Figure 1). Data sources were selected according to study quality, only data sources high in quality were selected for analysis. A generalized linear model was used to estimate the country level age-dependent diabetes prevalence per data sources. The main methodological change introduced was the expansion of age groups considered, from 20-79 years to 18-99 years. For countries without any data sources, extrapolation was used based on studies from similar countries in respect to their geography, economic classification, and ethnicity. (Figure 2)

**Results:**

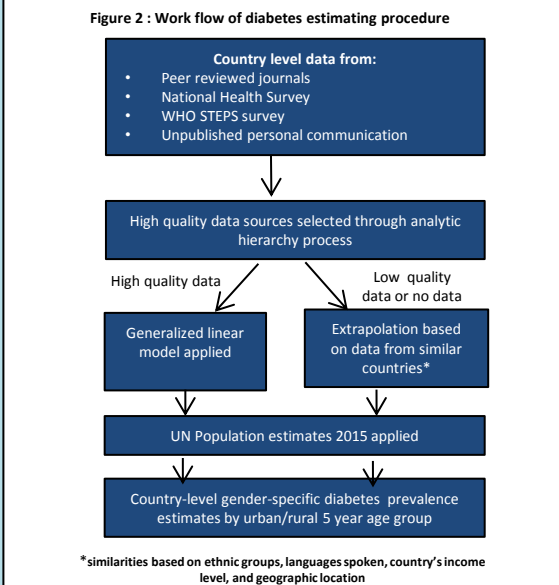
The diabetes prevalence was estimated to be 8.8% from ages 20 to 79 years in 2015 by IDF. (1) After age expansion to 18 to 99 years, the diabetes prevalence was estimated to be 8.7% and the total number of people living with diabetes from age 18 to 99 years was estimated to be approximately 440 million in 2015, which was 25 million more than the number of people with diabetes from age 20 to 79 years.

After age expansion from 20-79 to 18-99 years, there was also a shift in the top 10 countries with the most people living with diabetes. China, India, US, Brazil, Russia, Mexico, Indonesia still keep the same rank of the most people living with diabetes after age expansion. However, Japan (from 9<sup>th</sup> to 8<sup>th</sup>) and Germany (from 12<sup>th</sup> to 10<sup>th</sup>) ranked higher after age expansion, which is an indication that those countries have higher population older than 80 years. (Table 1)



The total number of people with diabetes, aged 18-99 years, in the seven IDF regions were estimated to be: 162 million in Western Pacific (WP); 80 million in South East Asia (SEA); 66 million in Europe (EUR); 49 million in North America and Caribbean (NAC); 36 million in Middle East and North Africa (MENA); 32 million in South and Central America (SACA); and 16 million in Africa (AFR). (Figure 3) The number of people living with diabetes was 11% higher when the age range was expanded from 20-79 to 18-99 years in Europe, which was the largest percentage increase among all seven IDF regions. South East Asia had the smallest percentage increase (3%) among all seven IDF regions. (Figure 3)

The prevalence of diabetes in the world population increased from age 19 until 74 years, with age group 70-74 years having the highest prevalence (19.4%) among all age groups. After the 70-74 year age-group, however, diabetes prevalence slightly decreased. (Figure 4)



**Table 1: Top 10 countries of most people living with diabetes**

Rank	Country (18-99)	Number of People with Diabetes (18-99)	Country (20-79)	Number of People with Diabetes (20-79)
1	China	114.1 million	China	109.6 million
2	India	70.2 million	India	69.2 million
3	US	32.8 million	US	29.3 million
4	Brazil	15.4 million	Brazil	14.3 million
5	Russia	12.6 million	Russia	12.1 million
6	Mexico	11.9 million	Mexico	11.5 million
7	Indonesia	10.2 million	Indonesia	10 million
8	Japan*	8.2 million	Egypt*	7.8 million
9	Egypt*	8.1 million	Japan*	7.2 million
10	Germany*	7.8 million	Bangladesh*	7.1 million

\*The countries which ranks are changed after age expansion

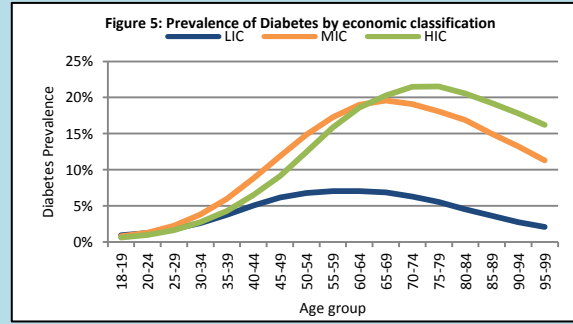


Figure 5 shows that Low-income countries (LIC) had the lowest diabetes prevalence at all age groups, while Middle-income countries (MIC) had the highest diabetes prevalence for ages over 64 years. The prevalence of diabetes peaked in the 55-59 year age-group (7.1%) in LICs, at the 65-69 year age group (19.6%) in MICs, and at the 75-79 year age-group in HICs (21.5%). (Figure 5)

**Conclusion:** in the year 2015, the estimated total number of people aged 18-99 years living with diabetes was 440 million. Work is needed in order to implement action plans for the prevention and control of diabetes and related complications to reduce the social and economic burden.

References: 1. International Diabetes Federation. IDF Diabetes Atlas, 7ed. Brussels, Belgium : International Diabetes Federation 2015

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