

ESC Prevention of Cardiovascular Disease Programme

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Report on unmet prevention needs: Obesity

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Aim: To report the percentage of high-risk cardiac patients with obesity (BMI >30 kg/m²) in Europe.

Methods: Population inclusion criteria were high risk coronary heart disease (CHD) patient, from any country in Europe or region within that country. Searches were carried out with a date limit of 2010 for publication. Studies were included if they reported percentage of the population that were obese. The main reasons for exclusion of studies were: data was not presented as percentage, data from many countries which could not be separated and data presented was from a source already used.

The outcome of this report was percentage of this cardiac population that were obese. Baseline data within studies was used. Data extraction included, percentage obese, main cardiac profile, dates of data collection and countries of origin of data. In papers where data was divided into groups these were merged. Excel was used to derive the descriptive statistics mean, median and mode overall from all sources.

Sources: EUROASPIRE V hospital, SURF and eleven other articles were used in the analysis. EUROASPIRE V hospital arm data was derived from the presentation by De Bacquer at EuroPrevent 2018. Data from SURF was derived from Zhao et al. 2016 and supplementary tables provided. Data was also provided by McKee et al. to supplement their paper. Articles used: Zhao et al. 2016, Sverre et al. 2017, Belle et al. 2017, Fach et al. 2015, Kirchberger et al. 2014, Ruivo et al. 2018, Wallert et al. 2017, Hermann et al. 2018, Gho et al. 2017, Gitsels, Kulinskaya and Steel 2017, Johnston et al. 2016, McKee et al. 2018, Lang et al. 2017, De Bacquer 2018, SWEDEHEART Annual report 2017. All papers specified that >30 kg/m² was the criteria for obesity, except Belle et al. 2017 who did not define obesity.

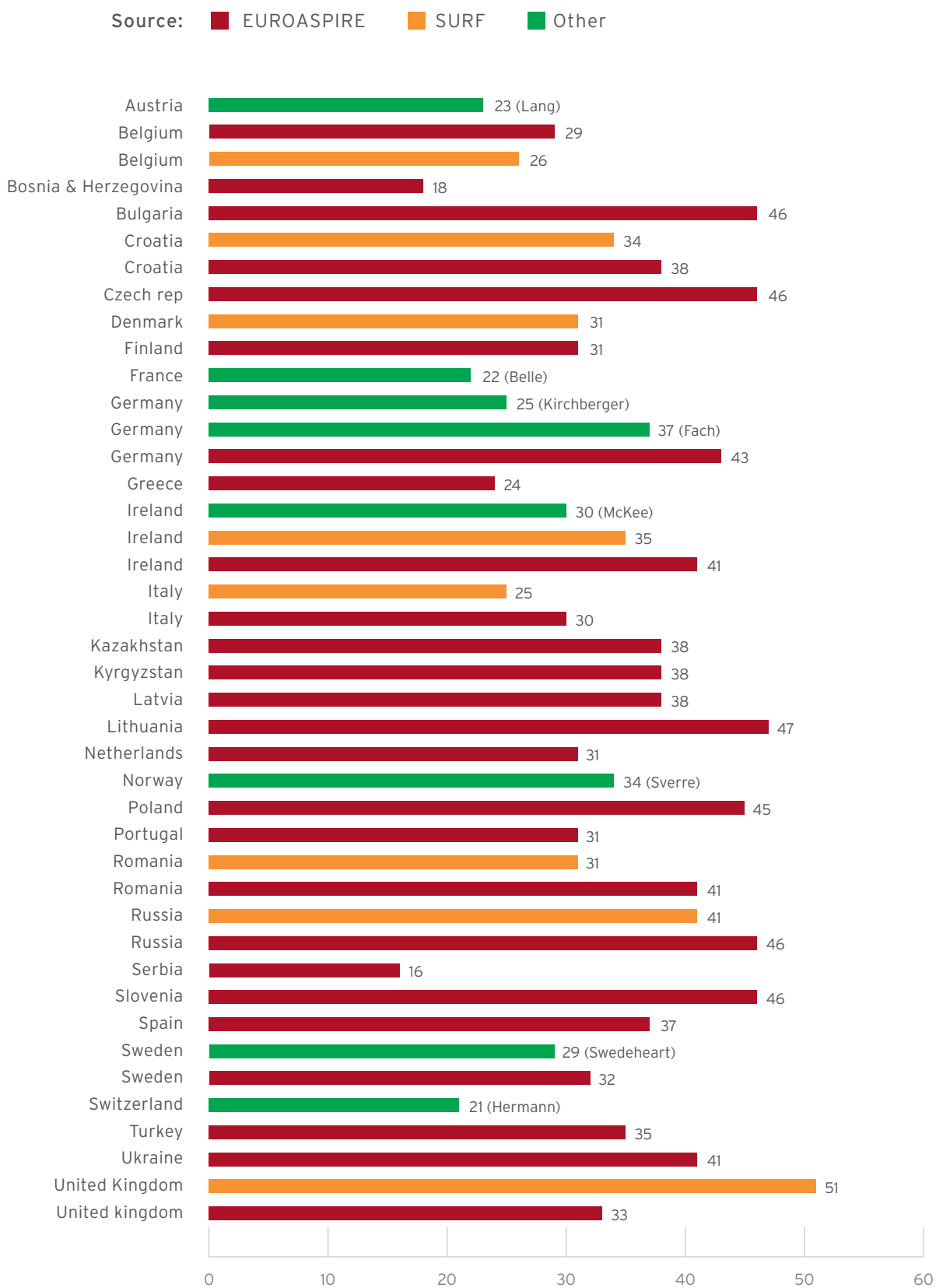
Results: Patients from the different sources had varying types of cardiac disease. EUROASPIRE hospital arm and SURF population were described as CHD patients. Lang et al. 2017 had stable CAD patients, SWEDEHEART, Hermann et al. 2018 and McKee et al. 2018 had ACS patients, Belle et al. 2017, Gho et al. 2018, Johnson et al. 2016, Fach et al. 2017, Kirchberger et al. 2014 and Sverre et al. 2017, Wallert et al. 2017 and Gitsels et al. 2017 had MI patients. Studies included data that mainly ranged back to 2006 with one study including data from 1987-2011 (Gitsels et al. 2017) and one study with data from 1998-2010 (GHO et al. 2018). Data from 31 different countries in Europe was available, 22 countries had data from one source, 7 had data from two sources and 2 countries had data from three sources.

The percentage of the study population with obesity ranged from 16% in Serbia to 51% in the United Kingdom. 77% (24) of the 31 countries reported over 30% of patients as obese, 11 countries (35%) had more than 40% the majority of which are eastern European countries. Taking the percentages from all sources and all countries displayed in Figure 1 the overall mean percentage of obesity was 34.19 ±8.53%, the median was 34% and the most common value - the mode - was 31%. The overall mean obesity across the main studies was highest in the EUROASPIRE hospital arm (38%) while in SURF the average was 34%. Within the countries that had more than two sources (9), three countries had differences between studies of greater than 10% (Ireland 41% (EUROASPIRE) and 30% (McKee et al. 2018), Germany (43% (EUROASPIRE) and 25% (Kirchberger et al. 2014) and United Kingdom (EUROASPIRE 33% and SURF 51%). In two of these cases the EUROASPIRE, coronary heart disease patients, had higher levels of obesity than other studies with MI or ACS patients. In the third case, the United Kingdom, in the same patient type, atypically the obesity levels in the SURF data was higher than EUROASPIRE data, this may in part reflect the fact that the SURF data population was from Northern Ireland only.

Conclusion: Worldwide obesity has nearly tripled since 1975 and in 2016 13% of the adult population were obese (<https://www.who.int/en/news-room/fact-sheets/detail/obesity-and-overweight>). These trends are likely to contribute to the percentage of high-risk CVD we observed in this report continuing to increase as this population gets older, likely to expand the high proportion of obese (34%) we observed in this report. A challenging preventable problem that needs to be addressed the population as a whole as well as the cardiac population.



Figure 1: Percentage obesity in CHD patients across Europe from separate sources



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