Obesity prevalence and associations with socio-economic and behavioral factors in population-based studies in Russia and Norway, 2015–2017

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Background: Obesity is an epidemic of XXI century, as its prevalence doubled during the last forty years. As Russia and Norway are countries with different life expectancy there could be differences in obesity and its correlates.

Purpose: To investigate and compare prevalence and socio-economic and behavioral factors associated with obesity in Russia and Norway with data from population-based studies.

Methods: We used multivariable logistic regression to examine associations of obesity (body mass index>30 kg/m^2) with socio-economic factors (age, education, marital status, and poor financial situation defined as difficulty to afford clothes) and behavioral characteristics (smoking, alcohol use) in participants aged 40–69 years from the Know Your Heart study (Russia, 2015–2017, N=4 106) and the seventh Study (Norway, 2015–16, N=17 604). All results for covariates are mutually adjusted. Between-study comparisons of the associations of obesity with the same covariates were performed through investigation of their interactions with the "study" variable.

Results: The age-standardized prevalence of obesity was higher in Russia among women (36.8 vs 22.0%, p<0.001) and did not differ among men (26.7 vs 25.7%, p=0.224). In Russian women, obesity was positively associated with age of 50–69 years relative to 40–49 years (OR=2.5, 95% CI 2.0–3.1), no university education (OR=1.5, 95% CI 1.2–1.8), and poor financial situation (OR=1.5, 95% CI 1.2–1.9). In Norwegian women, obesity was negatively associated with the age of 50–69 years (OR=0.8, 95% CI 0.8–1.0), current smoking (OR=0.8, 95% CI 0.7–1.0) and drinking alcohol $\geq$2 times per week (OR=0.6, 95% CI 0.5–0.6), and positively associated with no university education (OR=1.5, 95% CI 1.3–1.7), previous smoking (OR=1.3, 95% CI 1.1–1.4), and drinking $\geq$5 alcohol drinks per occasion (OR=1.7, 95% CI 1.3–2.2). In Russian men, obesity was positively associated with living with spouse/partner (OR=1.5, 95% CI 1.1–2.2), drinking alcohol $\geq$2 times per week (OR=1.4, 95% CI 1.1–1.8), and negatively associated with current smoking (OR=0.6, 95% CI 0.4–0.8). In Norwegian men, obesity was positively associated with no university education (OR=1.4, 95% CI 1.2–1.6), previous smoking (OR=1.3, 95% CI 1.2–1.5), and drinking $\geq$5 alcohol drinks per occasion (OR=1.7, 95% CI 1.5–1.9), and negatively associated with current smoking (OR=0.8, 95% CI 0.7–1.0) and drinking alcohol $\geq$2 times per week (OR=0.7, 95% CI 0.6–0.7). Interactions with the "study" variable in women were significant for age, financial situation, frequency of alcohol use; in men - for living with spouse/partner, frequency of alcohol use, number of alcohol drinks taken per occasion.

Conclusion: The prevalence of obesity was higher in Russian compared to Norwegian women, but there was no difference between Russian and Norwegian men. There were different between-country patterns of the associations of obesity with the socio-economic and behavioral characteristics.