

Should we construct specific growth charts for ethnic subgroups?

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INTRODUCTION

Romania has a 3.3 % Rromanes population according to the latest census, but no specific growth charts for this ethnic minority. Current national protocol recommends using the Swiss growth charts developed in 1989. Specific growth charts exist for ethnic subgroups like Turks in Germany and the Netherlands (1).

OBJECTIVE AND HYPOTHESIS

A comparison between a Rromanes and a Romanian group of children regarding weight and height disturbances' prevalence according to the Swiss, WHO and IOTF charts.

METHODS

Case-control study including 75 children of Rromanes ethnicity and 103 age and sex matched children of Romanian ethnicity evaluated in November 2013 in 2 urban schools from Mures County, Romania. Variables: age, sex, ethnicity, height SDS, BMI SDS. Short stature was defined as height below -2 SDS, and overweight was defined as BMI above 1 SDS. Statistical analysis used M.O. Excel and MedCalc v. 12.0 with a level of significance $\alpha=0.05$.

RESULTS

Mean age (8.5 years for the Rromanes group, respectively, 8.6 years, $p=0.45$) and sex ratio of the two groups were similar (M: F Rromanes 1.1:1, respectively 1.4:1, $p=0.54$) (Table 1). The Rromanes children are significantly shorter (Fig. 1) and thinner ($p<0.001$). Short stature in the Rromanes group had a prevalence of 29.33% according to Swiss charts and 18.67% according to WHO, whereas in the control group it had 2.91% (Swiss) and 1.94% (WHO). For overweight, the prevalence was higher when using WHO and IOTF criteria for both groups, 32.03% in the Romanian group (WHO) and 13.33% in the Rromanes group.

DISCUSSIONS

There isn't a consensus so far regarding the construction of specific ethnic growth charts. Some studies have proved that the WHO standards do not fit all populations (2). There are specific growth charts for ethnic populations in the Netherlands (3) and in Germany (4).

Although our study demonstrated the existence of important differences between the height and weight of the Rromanes and Romanian children, the samples were rather small, so that future research is necessary on this subject.

CONCLUSIONS

There are significant differences for weight and height disturbances between the Rromanes and the native population in Romania, regardless of the growth standards used, with the recommendation to construct specific growth charts as existent in other countries.

Table 1 – General sample characteristics

Parameter	Rromanes group	Romanian group	p value
n	75	103	NA
Mean age (years)	8.5	8.6	0.45
Sex ratio (M:F)	1.1:1	1.4:1	0.54

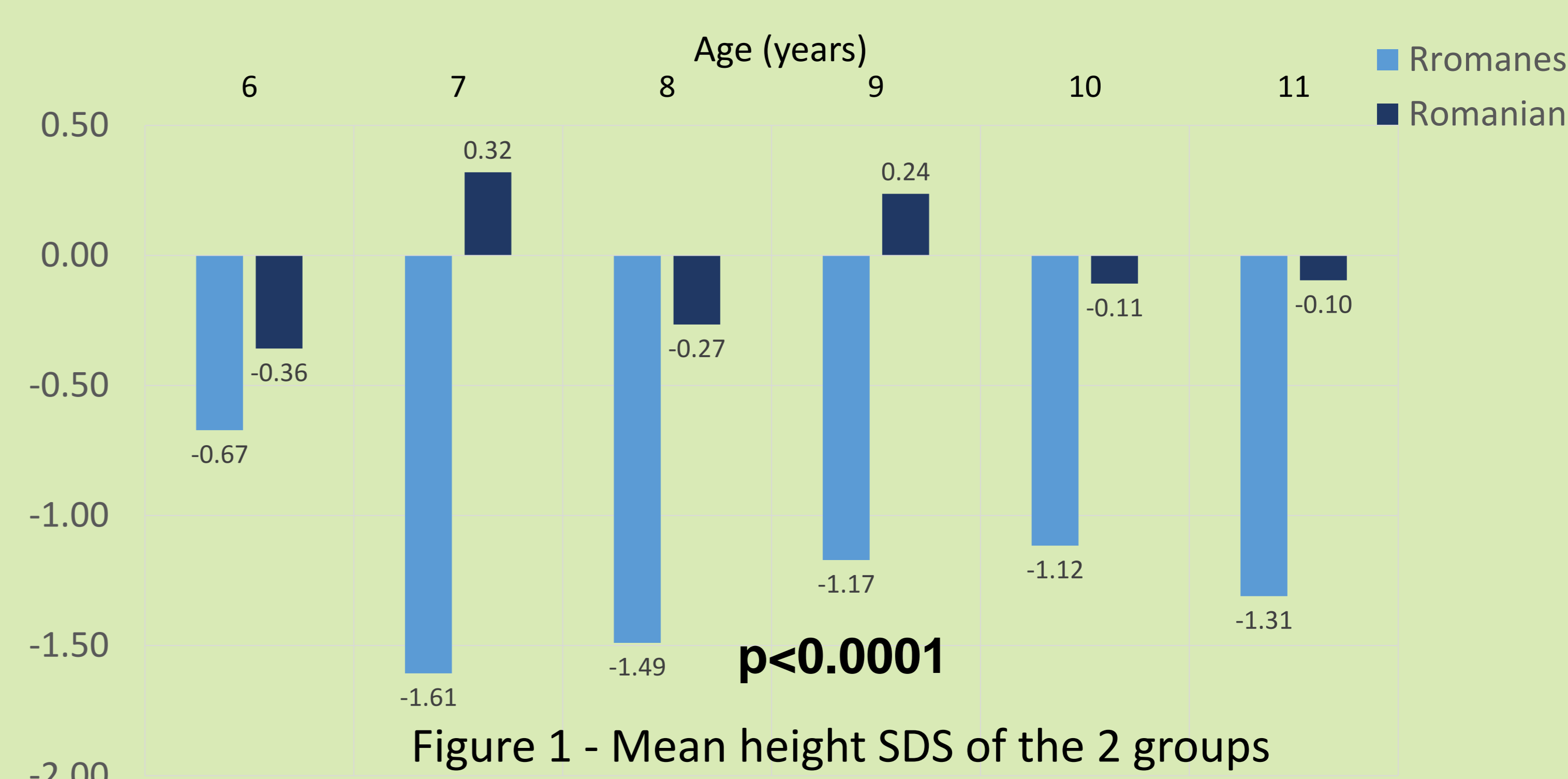


Figure 1 - Mean height SDS of the 2 groups

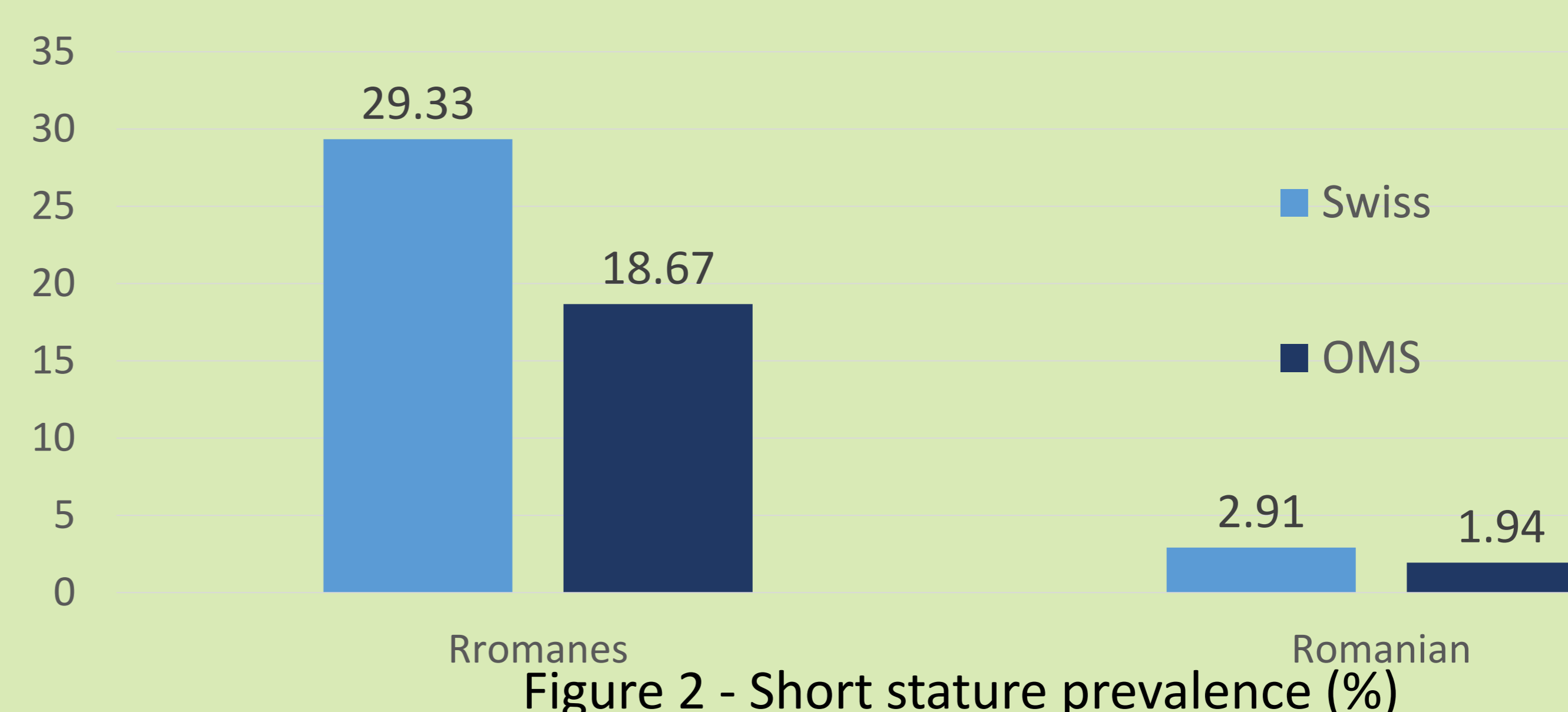


Figure 2 - Short stature prevalence (%)

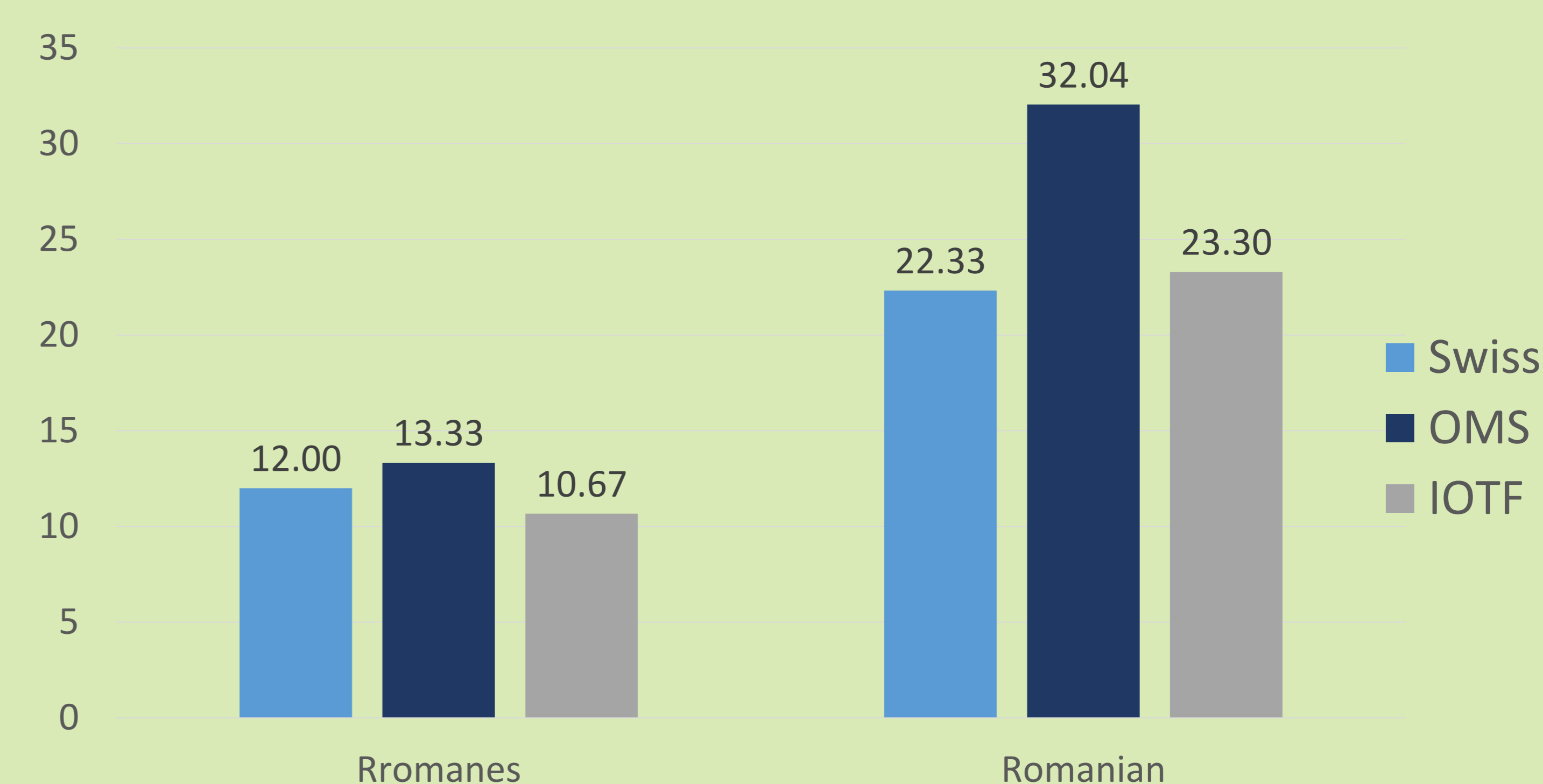


Figure 3 - Overweight and obesity prevalence (%)

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