

Anthropometric indices, overweight, obesity and their association with lifestyle and unhealthy behavior among European adolescents

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Background and goal: Body weight status of adolescents depends on their dietary patterns, physical activity and sleep duration, which are crucial elements of lifestyle. Regional social conditions and modern global processes such as digitalization and westernization with their negative dimensions on the daily routine of teenagers are leading triggers for the epidemic proportions of pediatric overweight and obesity. The presented study aimed to perform a systematic review on the role of anthropometric adiposity indices used to determine the prevalence of overweight and obesity as a result of unhealthy lifestyles in teenagers influenced by „Western models “.

Materials and methods: A systematic review were conducted on the application of anthropometric adiposity metrics in relation to the lifestyle of teenagers by using the online databases Web of Science, Science Direct, Scopus, Research gate and PubMed. Only available original published in English for the period January 2014- January 2024 was included in the study. The unoriginal and unrepresentative surveys, conference abstracts and unavailable full texts were removed.

Results: Forty surveys with a total number of examined adolescents- 161 587 from twenty- two countries of the European continent, were included in the present study. The surveys were carried out in the following countries: Iceland, Netherland, Hungary, Britain, Spain, Italy, Montenegro, Estonia, Germany, Poland, Greece, Sweden, France, Austria, Lithuania, Romania, Turkye, Croatia, Slovakia, Bulgaria, Belgium, Cyprus. Six publications presented the results of research conducted on several European countries, leading of which: Greece, Germany, France, Hungary, Italy, Sweden, Austria, Spain, Belgium, Cyprus, Estonia, Hungary, Iceland, Netherland, Romania, Estonia.

The most commonly used anthropometric index to identify the risk of overweight or obesity caused by unhealthy behavior among adolescents in the scientific surveys was BMI (100.00 %, n=40). Waist circumference was the next obesity metric that was actively applied in the research (37.50 %, n=15). The application of WHtR to detect pediatric overweight or obesity related with lifestyle of teenagers in scientific circles has decreased (22.50 %, n=9). In 97. 50 % (n= 39) of the included studies, the nutritional status and eating habits of teenagers were exanimated and in 82. 50 % (n= 33) of them- level of physical activity and sedentarism. The number of publications that shared data on the influence of the surrounding environment on the habits of the target group was relatively high- 65. 00 % (n=26). The percentage of studies that examined sleep duration and alterations in sleep patterns in teenagers along with other criteria and anthropometric measures was the lowest- 37. 50 % (n=15).

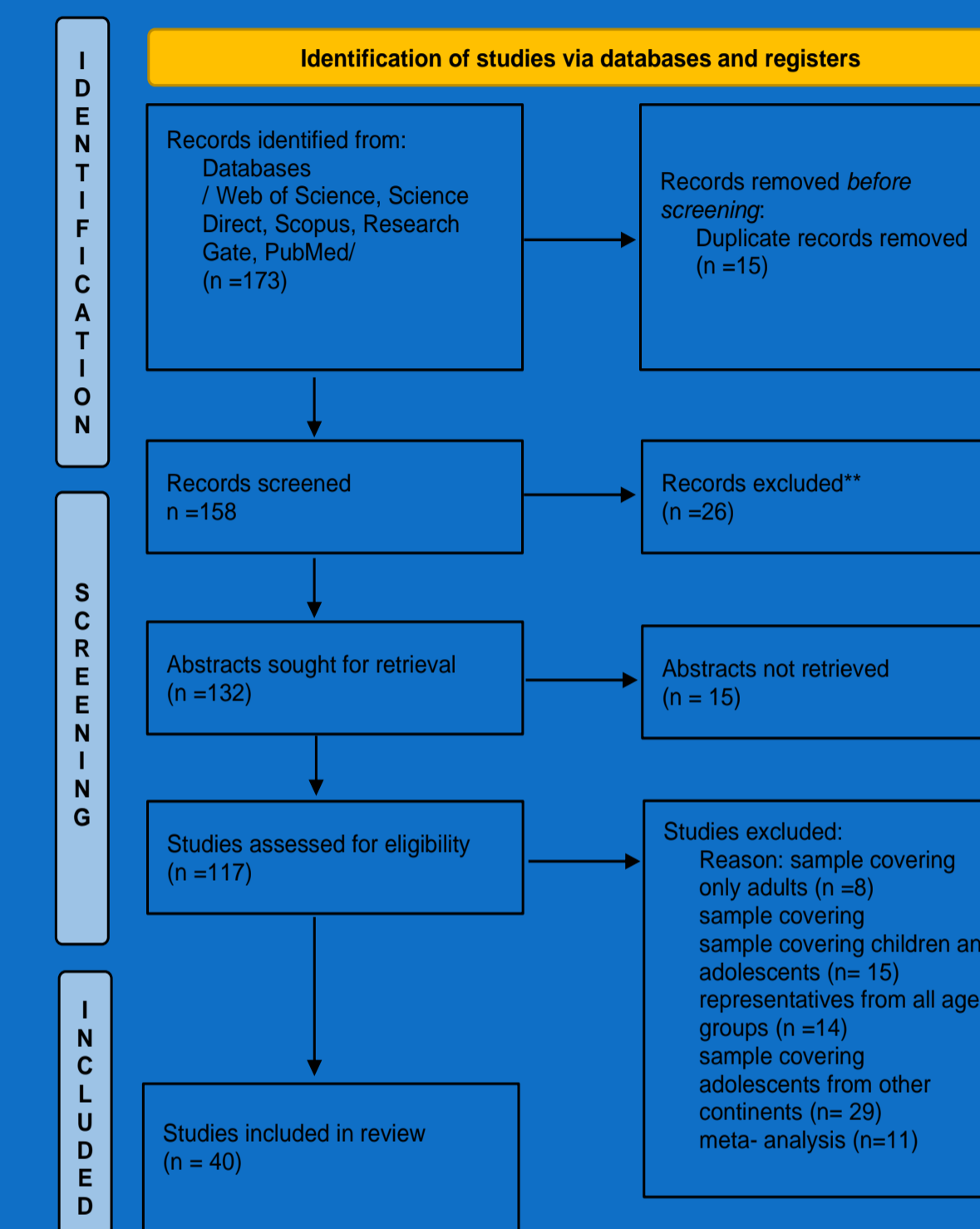


Figure 1. Flow diagram of the steps of the systematic review according to the guidelines of PRISMA

Conclusion: The surrounding social environment plays a key role in the well-being of teenagers through its infrastructure, geographical, public, economic, cultural and educational features. Along with the observed deviation to “Western patterns” of existence are of the crucial culprits implicated in the widespread prevalence of overweight and obesity among the young. Processes such as urbanization and technological advancements with their negative dimensions additionally explain the reason for the high incidence of unhealthy behavior, leading to risky weight in adolescents which is easily detectable through the application of anthropometric indices. BMI, WC and WHtR are great predictor of pediatric health, especially adiposity as a result of sedentarism and bad, unbalanced nutrition regume. Despite the presented limitations of the studies included in the review, the mentioned anthropometric measures are one of the simple and quickly applicable, and reliable indicators in determining the frequency of juvenile overweight and obesity caused by unhealthy lifestyle.