

EPH 153 - A systematic review of risk factors in adolescents' predictors of high blood pressure in adulthood

This systematic review was registered in PROSPERO database ID: CRD42020172254. The aim was to assess published evidence on adolescent risk factors for hypertension and their contribution to developing the disease in adulthood. Eligibility criteria: adolescents (aged 12 to 17 years); cohort studies that measured adolescent risk factors and documented their long-term association with hypertension occurring in adulthood. Exclusion criteria: specific populations known to have a higher incidence of hypertension. The quality of studies was assessed by Newcastle-Ottawa Scale. A search was performed in the Embase, LILACS, ADOLEC, MEDLINE, Cochrane Library databases, and manual search (cross-reference of included studies). Six articles were included for qualitative synthesis (N = 37,901). It was not possible to perform meta-analysis due to heterogeneity in data extraction and outcome measures. All studies included were cohorts with a mean follow-up of 20 years (ranging from 6 to 35 years). Overall, the articles had a low risk of bias. The main results are: obese adolescents are more likely to report high blood pressure in young adulthood than normal-weight adolescents, N = 14,322, adjusted odds ratio (aOR) = 1.96; 95% confidence interval (CI) = 1.50-2.57. The increase in systolic and diastolic blood pressure results in adult hypertension (N= 1,082) = systolic blood pressure OR= 1.45, 95% CI 1.09-1.91 for men and OR 1.32 (95% CI 1.02-1.71) for women, diastolic blood pressure OR=1.17, 95% CI 0.89-1.53 for men; and OR= 1.75 (95% CI 1.32-2.31) for women. In men, excessive alcohol consumption is a strong predictor of adult hypertension; adding it to models with childhood systolic and diastolic blood pressure and BMI increases the odds ratio for systolic blood pressure, OR= 2.46, 95% CI 1.18-5.77 and for diastolic blood pressure, OR= 2.41, 95% CI 1.17-1.97. For women, alcohol consumption: systolic blood pressure, OR= 0.70, 95% CI 1.17-2.99, and for diastolic blood pressure, OR= 1.04, 95% CI 0.22-4.97. In this systematic review, overweight and obesity practically doubled the chance of hypertension in adulthood; systolic and diastolic blood pressure increased the chance by 1.5 times. Alcohol consumption increases the predicting power in men. Salt intake and physical activity/sedentary lifestyle, independently, were not related to the development of hypertension. Family history and socioeconomic factors were not assessed.

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