Importance of accounting for regional differences in modifiable risk factors for Alzheimer’s disease and related dementias: The case for tailored interventions in California

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Abstract

Background: We previously estimated that 37% of Alzheimer’s disease and related dementias (ADRD) cases in the U.S. may be attributable to modifiable risk factors, and that the most important risk factors differ based on race/ethnicity, but it’s not known whether national estimates generalize to specific states or regions. The aim of the present study was to (1) compare the proportion of ADRD cases that are potentially attributable to modifiable risk factors in California, to the U.S., overall and by sex and race/ethnicity, and (2) to estimate how many cases are potentially preventable by reducing the prevalence of key modifiable risk factors by 25%.

Method: Participants included adults ≥18 years from the California (n = 9,836) and the U.S. (n = 378,615). We calculated population attributable risks (PARs) using prevalence data from the national and California Behavioral Risk Factor Surveillance Survey (BRFSS) and relative risks from recent meta-analyses. We estimated individual and combined PARs for ADRD in California and compared them to our U.S. estimates.

Results: In California, overall, 29% of ADRD cases were potentially attributable to the combination of 8 modifiable risk factors evaluated in this study, compared to 37% in the U.S. The top 3 ADRD risk factors were the same in California and the U.S., but their relative importance differed (low education [CA:15%; U.S.:12%], midlife obesity [CA:15%; U.S.:17.7%], and physical inactivity (CA:10%; U.S.:12%). The combined PAR was lower in California compared to the U.S. in men (CA:28%; U.S.:36%) and Blacks (CA: 30%; U.S.:40%), but was similar in women and other race/ethnic groups. This was primarily due to lower risk factor prevalence within these groups. Low education was especially important in the Hispanic population (CA:30%; U.S.:26%). The total number of ADRD cases currently attributable to combined risk factors was 199,246 in California and 2,287,683 in the U.S. If the combined risk factors were reduced by 25%, we could potentially prevent approximately 40,665 cases in California and 445,737 in the U.S.

Conclusion: The potential impact of modifiable ADRD risk factors differed in California and the U.S., overall and within sex and race/ethnic groups, highlighting the importance of tailoring dementia risk reduction campaigns.