

Comorbidities associated with symptoms of cognitive decline



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INTRODUCTION

Early cognitive decline occurs when an individual experiences memory loss or other cognitive impairment but does not meet the criteria for Alzheimer’s disease or dementia.^{1,2} Up to 80% of people with early cognitive decline progress to one of these severe diseases within 5 years of diagnosis.²⁻⁴ Alzheimer’s disease and many other causes of dementia are incurable.

Early recognition of cognitive decline can allow healthcare providers to reduce the risk of disease progression. Literature is scarce on factors which can increase the incidence of cognitive decline, especially in early ages; this is further exacerbated by a difficulty tracking the prevalence of mild cognitive symptoms.^{3,5}

OBJECTIVES

- To determine which sociodemographic groups are at greater risk for subjective cognitive decline (SCD)
- To demonstrate comorbidities which are associated with worsening SCD
- To investigate whether certain comorbidities are associated with SCD in earlier age groups (45-54) compared to later age groups (55-64)
- To determine if any of the investigated comorbidities were more likely to be associated with severe symptoms

The above information will allow medical professionals to identify individuals who are at greater risk for SCD for early screening and treatment.

METHODS

We conducted a cross-sectional analysis of data from the Subjective Cognitive Decline module of 2017-2021 Behavioral Risk Factor Surveillance System. Applying survey design and sampling weights, we constructed binary logistic regression models to assess associations, via odds ratios (OR), between comorbidities and subjective cognitive decline. Alpha was set at .05 and confidence intervals are reported at 95%.

Individuals who self-reported worsening symptoms of memory loss or confusion were designated with “SCD.” If they indicated that these symptoms ever impact their ability to work or perform household tasks, they were designated with “severe SCD.”

RESULTS

Table displaying AOR for SCD among individuals 45-54 and 55-64 across various comorbidities

Comorbidities	All individuals age 45-64		Only 45-54	Only 55-64
	Binary model OR (95%CI)	Adjusted Model AOR (95%CI)	Adjusted Model AOR (95%CI)	Adjusted Model AOR (95%CI)
Diabetes	2.29 (2.09-2.51)	1.79 (1.61-1.99)	1.92 (1.58-2.32)	1.74 (1.55-1.96)
Hypertension	1.98 (1.81-2.17)	1.67 (1.51-1.85)	1.7 (1.45-1.98)	1.69 (1.49-1.91)
Stroke	4.61 (4.07-5.22)	2.99 (2.58-3.45)	2.94 (2.29-3.77)	3.08 (2.59-3.66)
Heart attack	3.09 (2.73-3.49)	2.13 (1.85-2.44)	2.43 (1.86-3.18)	2.02 (1.73-2.35)
Coronary heart disease	3.26 (2.88-3.69)	2.32 (2.01-2.68)	2.77 (2.09-3.67)	2.17 (1.86-2.53)
Depression	5.65 (5.21-6.11)	4.45 (4.06-4.87)	4.96 (4.28-5.75)	4.04 (3.63-4.51)
Chronic kidney disease	3.08 (2.66-3.58)	2.3 (1.92-2.74)	2.05 (1.56-2.68)	2.49 (1.98-3.12)

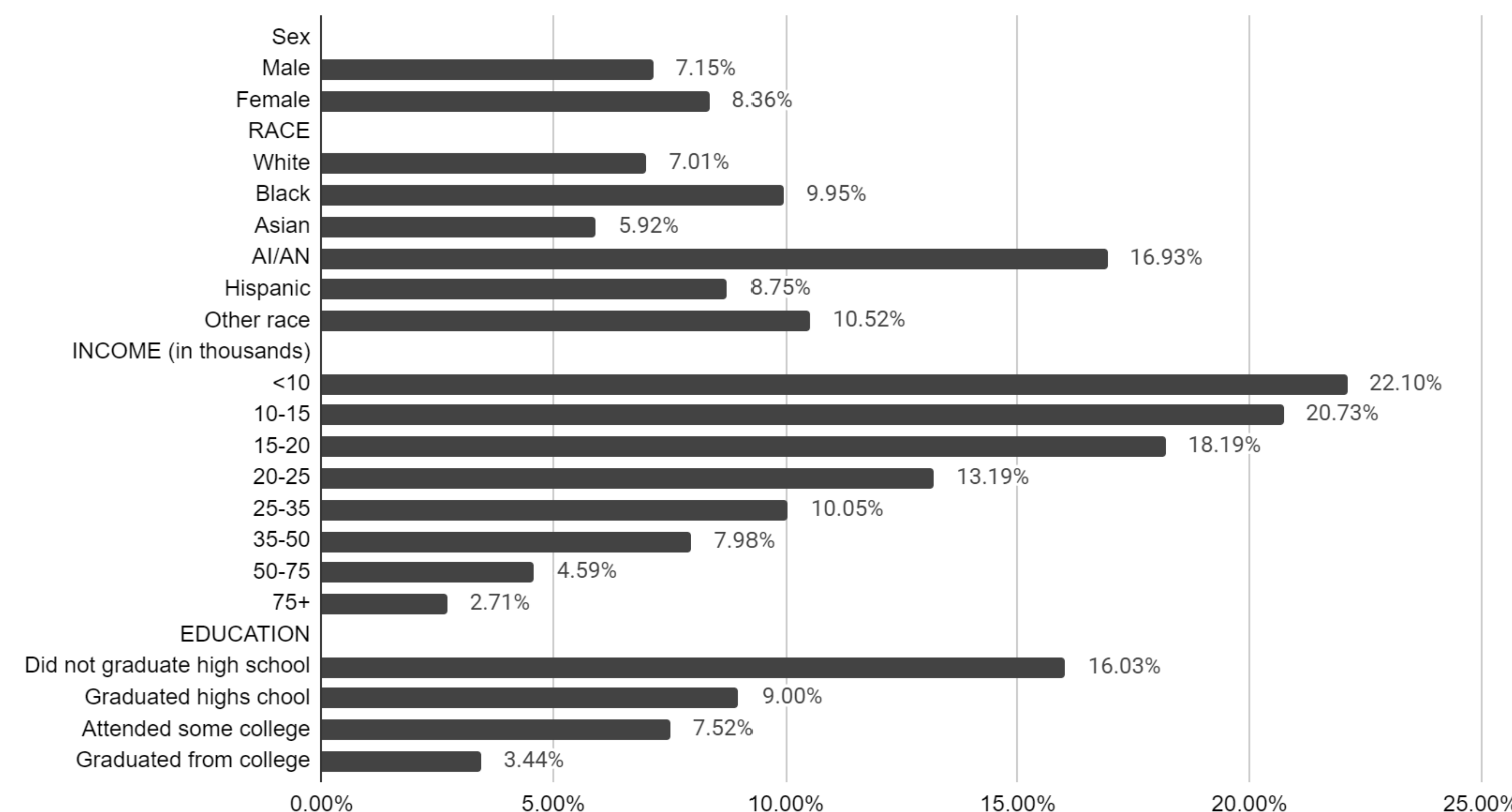
Adjusted models controlled for race, income, and education.

Table displaying the AOR for SCD among individuals 45-64 on the number of the above comorbidities reported

No. of comorbidities	No. (%)	Binary model OR (95%CI)	Adjusted Model AOR (95%CI)
0	28083 (43.14)	1 (Ref)	1 (Ref)
1	21207 (32.54)	1.95 (1.76-2.16)	2.31 (1.97-2.72)
2	10219 (15.59)	3.63 (3.26-4.05)	4.23 (3.53-5.07)
3	3833 (5.71)	5.86 (5.19-6.61)	7.12 (5.82-8.71)
4	1391 (1.99)	7.3 (6.25-8.51)	7.38 (5.78-9.43)
5+	724 (1.04)	12.26 (10.23-14.7)	12.36 (8.94-17.1)

Adjusted models controlled for race, income, and education.

Rates of Severe SCD by various sociodemographic variables



Results indicate that all the reported comorbidities are associated with an increased incidence of SCD. The only comorbidity which was not significant for severe SCD was hypertension (95%CI:0.94-1.41). Additionally, there is a linear relationship between the number of comorbidities and the AOR for SCD.

Race, income, and educational attainment also showed significant variance in the rates of severe SCD. However, non-severe SCD remained consistent among all groups around 2-3%. Generally, lower incomes, lower educational attainment, and AI/AN groups were found to have the highest rates of severe SCD.

CONCLUSION

Our findings show that all comorbidities listed were correlated with higher rates of memory loss or confusion. Investigation of factors which are associated with an increased risk of developing new or worsening cognitive decline allows healthcare professionals to properly screen and treat these individuals early, before progressing to incurable conditions. Future studies into the mechanisms of these diseases in contributing to cognitive decline can illuminate specific effective treatment options.

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