Complex Interplay of Age, Sex, Education, and Cardiovascular Health in Dementia Risk among Elderly Individuals.

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Background:

Dementia is a major public health concern that results from complex interactions between age, sex, education, and cardiovascular health.

Objectives:

To investigate how age, sex, education, and heart rate affect dementia risk in older adults.

Methods:

This cross-sectional study recruited 106 participants aged ≥ 65 years with Alzheimer's disease and related dementia (ADRD) from two sub-counties in Wakiso district, Uganda. Data collection involved questionnaires, medical examinations, and the Montreal Cognitive Assessment (MoCA) tool. Logistic regression was used to analyze the data and identify potential risk factors.

Results:

Age, sex, education, and heart rate were significantly associated with dementia risk. Age increased the risk of mild cognitive impairment (MCI) and dementia by 1.19 and 1.22 times, respectively. Male sex was associated with a 67% reduction in the risk of MCI. Education decreases the risk of MCI by 28% per year. Heart rate increased the risk of MCI and dementia by 6% and 8% per beat per minute, respectively.

Table 1: Factors and Relative Risk Ratios (RRR) for MCI and Dementia

Respectively		MCI		Dementia	
Factor	level	RRR (95%CI)	p-value	RRR (95%CI)	p-value
Age	Per year increase	1.19 (1.04;1.38)	0.015*	1.22(1.07;1.40)	0.003*
Gender	Male	0.17(0.02;1.38)	0.097	0.14(0.03;0.81)	0.028*
Education in years	Per year increase	0.28(0.15;0.55)	<0.001*	0.72(0.52;1.01)	0.053
Previous illness	Yes	0.19(0.01;2.15)	0.178	0.13(0.01;1.08)	0.060
Concomitant medications	Yes	5.52(0.52;57.75)	0.153	3.34(0.43;26.01)	0.248
Musculoskeletal	Good	1.17(0.05;5.18)	0.921	1.88(0.11;31.72)	0.663
Hypertension	Yes	0.62(0.05;8.31)	0.719	0.55(0.06;4.94)	0.601
Heart rate	increased	13.3(9.72;19.62)	0.013*	11.66(8.16;15.21)	0.004*
BMI	Per unit increase	0.97(0.88;1.07)	0.563	1.01(0.94;1.09)	0.698

Conclusion:

The study revealed the influence of age, sex, education, and heart rate on dementia risk in older Ugandans. These findings suggest that routine cognitive screening, gender-specific interventions, and education promotion are important for dementia prevention and care. The study also highlights the need for further research on the role of cardiovascular health in dementia, as well as the generalizability of the results to other sub-Saharan African populations.

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