

AUTHORS

Nancy El Helou¹,
Khalil Asmar²,
Maëlénn Guerchet¹³,
Monique Chaaya²

¹ Inserm U1094, IRD UMR270, Univ. Limoges, CHU Limoges, EpiMaCT — Institute of Epidemiology and Global Health
Michel Dumas, OmegaHealth, Limoges, France
² Department of Epidemiology and Population Health, Faculty of Health Sciences, American University of Beirut, Lebanon
³ LEMACEN, University of Abomey-Calavi, Cotonou, Benin

Poster Code
aaic2026.17972827
Wednesday-1085

KEY TAKE-AWAY



Dementia prevalence was nearly **twice as high** in rural Lebanon as in urban areas: 14.6% vs 7.8% ($p = 0.003$). Urban dementia was independently associated with physical inactivity, hypertension, and age ≥ 85 , while the rural burden reflected broader life-course disadvantage, including older age structure, low education, monolingualism, and greater vascular disease. These findings support place-sensitive, life-course prevention strategies focused on rural primary care, vascular prevention, education, cognitive reserve, and physical activity.

OVERALL
PREVALENCE

11.0 %

(n= 716)

URBAN

7.8 %

(n= 374)

RURAL

14.6 %

(n= 342)

Significant urban—rural disparity | $p = 0.003$

INTRODUCTION

Dementia is a growing public-health challenge, particularly in low- and middle-income countries.

Rural populations may face higher risk due to lower education, vascular disease, reduced cognitive reserve, and limited access to care.

In Lebanon, dementia burden is high among older adults, but urban—rural differences remain understudied.

This study compares dementia prevalence and risk factors among urban and rural adults aged ≥ 65 years.

OBJECTIVES

Estimate dementia prevalence among adults aged ≥ 65 years in urban and rural Lebanon.

Identify setting-specific sociodemographic, cardiovascular, and lifestyle factors associated with dementia.

METHODOLOGY

1 Study Design
Secondary analysis of two cross-sectional, community-based studies conducted in Lebanon in 2013 and 2018.

4 Sampling & Data Collection
Multi-stage, probability-based cluster sampling was used, with structured interviews of participants and informants.

2 Participants
716 adults aged ≥ 65 years were included: 374 urban and 342 rural residents.

5 Dementia Assessment
Dementia was diagnosed using the validated Arabic 10/66 Dementia Research Group diagnostic algorithm.

3 Study Sites
Participants were recruited from Beirut, Aley, Chouf, and Beqaa.

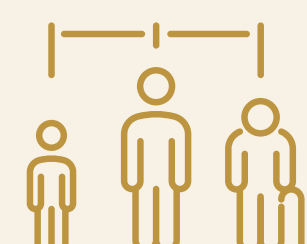
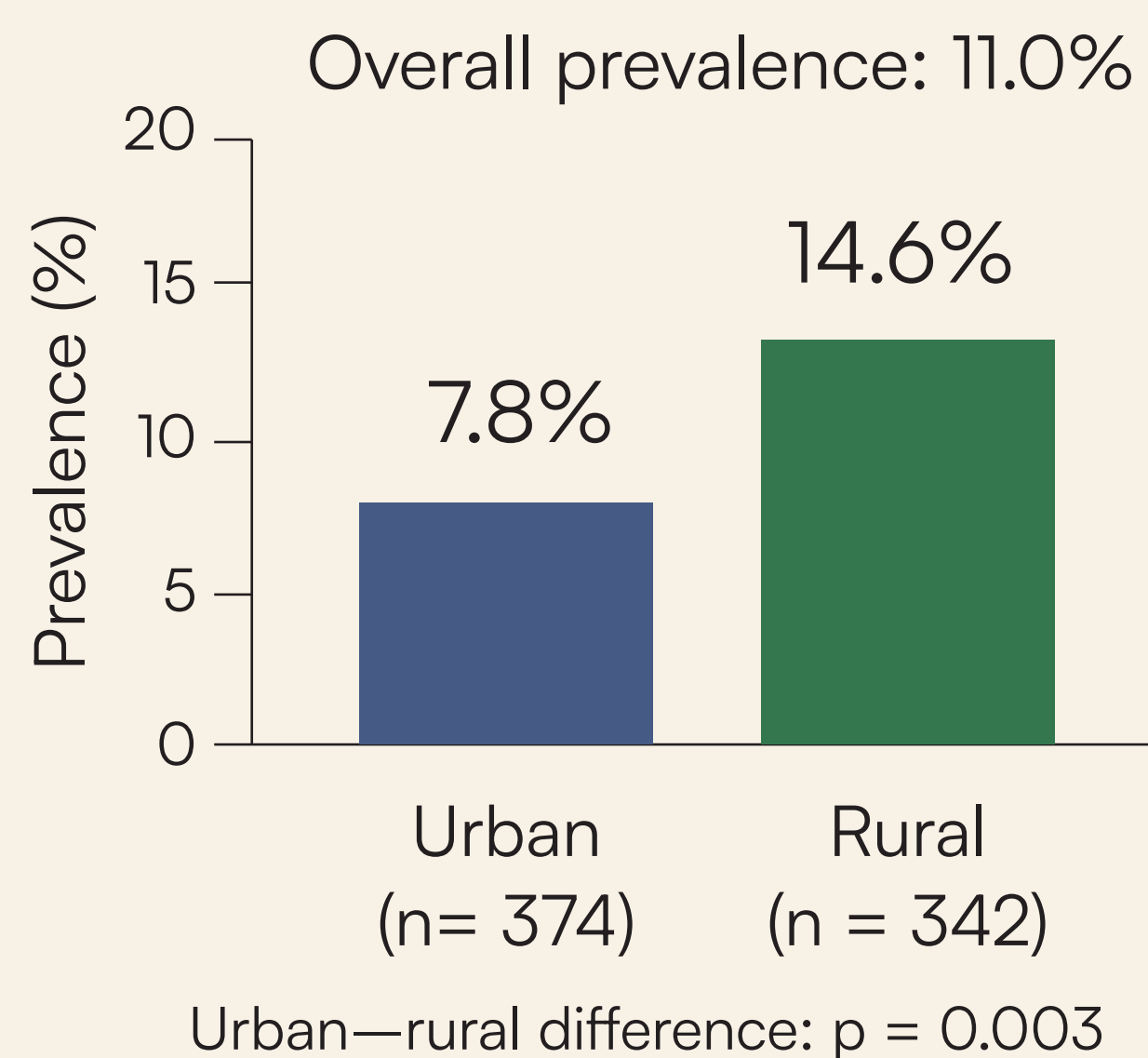
6 Statistical Analysis
Descriptive, bivariate, and stratified multivariable GEE analyses were performed using cluster-robust standard errors.

RESULTS



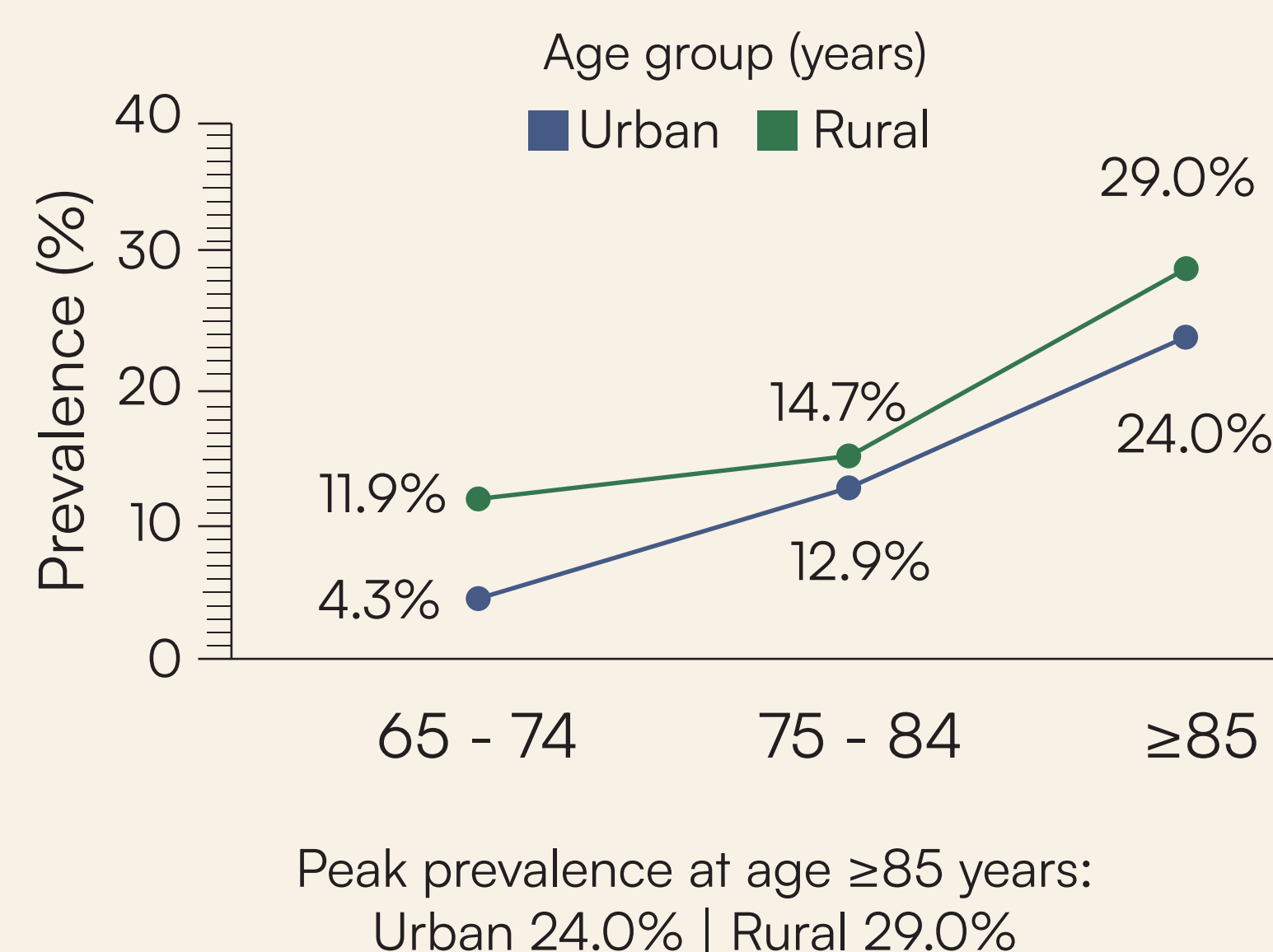
DEMENTIA PREVALENCE BY RESIDENCE

Rural prevalence was significantly higher than urban prevalence.



AGE GRADIENT IN DEMENTIA PREVALENCE

Prevalence increased across age groups in both settings.



ADJUSTED OR FOR DEMOGRAPHICS AND CARDIOVASCULAR RISK FACTORS ASSOCIATED WITH DEMENTIA BY PLACE OF RESIDENCE (URBAN/RURAL)

Factor	Urban AOR (95% CI)	Urban AOR (95% CI)	Urban p value	Rural AOR (95% CI)	Rural p value
Female sex	3.75 (0.93—17.17)	3.75 (0.93—17.17)	0.064	0.70 (0.47—1.03)	0.069
Age 75–84 years	1.44 (0.89—2.34)	1.44 (0.89—2.34)	0.142	1.16 (0.76—1.75)	0.497
Age ≥ 85 years	4.71 (1.93—11.47)	4.71 (1.93—11.47)	<0.001	2.76 (0.88—8.65)	0.082
Primary-intermediate education	0.84 (0.34—2.04)	0.84 (0.34—2.04)	0.696	0.75 (0.38—1.48)	0.405
Secondary and above	0.43 (0.38—4.85)	0.43 (0.38—4.85)	0.490	0.71 (0.12—4.14)	0.689
Single/divorced/widowed	0.72 (0.15—3.38)	0.72 (0.15—3.38)	0.681	0.93 (0.47—1.86)	0.844
Hypertension	5.55 (1.43—21.61)	5.55 (1.43—21.61)	0.013	—	—
Ex-smoker	0.70 (0.22—2.18)	0.70 (0.22—2.18)	0.534	1.49 (0.99—2.23)	0.053
Current smoker	2.28 (0.76—6.90)	2.28 (0.76—6.90)	0.143	1.23 (0.67—2.25)	0.510
Physical inactivity	10.25 (4.51—23.29)	10.25 (4.51—23.29)	<0.001	0.90 (0.62—1.29)	0.553

Urban dementia was independently associated with age ≥ 85 years (AOR 4.71), physical inactivity (AOR 10.25), and hypertension (AOR 5.55). In rural residents, no variable remained significant after adjustment; age ≥ 85 showed a non-significant trend (AOR 2.76, $p = 0.082$).



CONCLUSION & IMPLICATIONS

- This cross sectional analysis demonstrates a high dementia burden and a pronounced rural—urban gap, with prevalence almost twice as high in rural communities.
- Rural elders experience cumulative disadvantages: older age structure, low education, monolingualism, and greater vascular disease, that parallel those documented in East Asia, Latin America, sub Saharan Africa and other LMICs.

- Urban findings highlight the role of lifestyle, particularly physical inactivity and hypertension, as key independent correlates of dementia.
- Within the MENA and global LMIC context, these data underscore the urgency of place sensitive, life course dementia prevention and care strategies, with particular emphasis on rural primary care strengthening, vascular risk control, educational and cognitive reserve investments, and longitudinal research to monitor trends and evaluate interventions.



REFERENCES

1. World Health Organization. Dementia. WHO.int.
2. Alzheimer's Disease International. World Alzheimer Report 2023.
3. Nichols E, et al. Global prevalence of dementia in 2019 and forecasted prevalence in 2050. Lancet Public Health. 2022;7(2):e105—e125.
4. Amiri F, et al. Alzheimer's disease and other dementias in the Middle East and North Africa, 1990—2021. Scientific Reports. 2025;15:7058.
5. Safiri S, et al. Burden of dementia in the Middle East and North Africa, 1990—2019. Age and Ageing. 2023;52(3):afad042.
6. Phung KTT, et al. Dementia prevalence, care, and access in Lebanon: a pilot study. Alzheimer's & Dementia. 2017;13(12):1317—1326.
7. Mollalo A, et al. Rural—urban disparities in Alzheimer's disease dementia prevalence: systematic review and meta-analysis. Journal of Prevention of Alzheimer's Disease. 2025;12(9):100305.
8. Livingston G, et al. Dementia prevention, intervention, and care: 2020 Lancet Commission. Lancet. 2020;396:413—446.
9. Chaaya M, et al. Socio-demographic and cardiovascular disease risk factors associated with dementia in Lebanon. Preventive Medicine Reports. 2018;9:1—5.
10. Phung KTT, et al. Validation of the 10/66 Dementia Research Group assessment in Arabic. Journal of Geriatric Psychiatry and Neurology. 2014;27(4):282—290.
11. Livingston G, et al. Dementia prevention, intervention, and care: 2024 Lancet standing Commission. Lancet. 2024;404:572—628.



Nancy El Helou
+961 3 124 261
nancyalhelou@gmail.com