

Association between Migration and Cognitive Status among Middle-Aged and Older Adults

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Disclosure

- The authors declare that they have no conflict of interest.

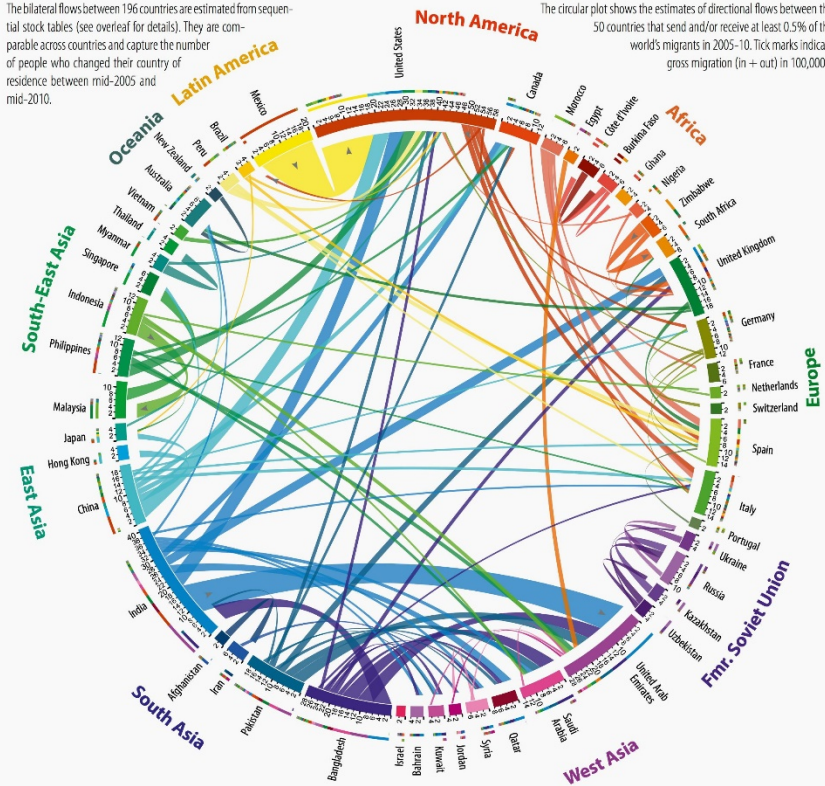
Background

Globally, at the end of 2013

- International migrants: 232 million
- Internal migrants: 740 million
- Most moved from less developed areas/regions to more developed ones

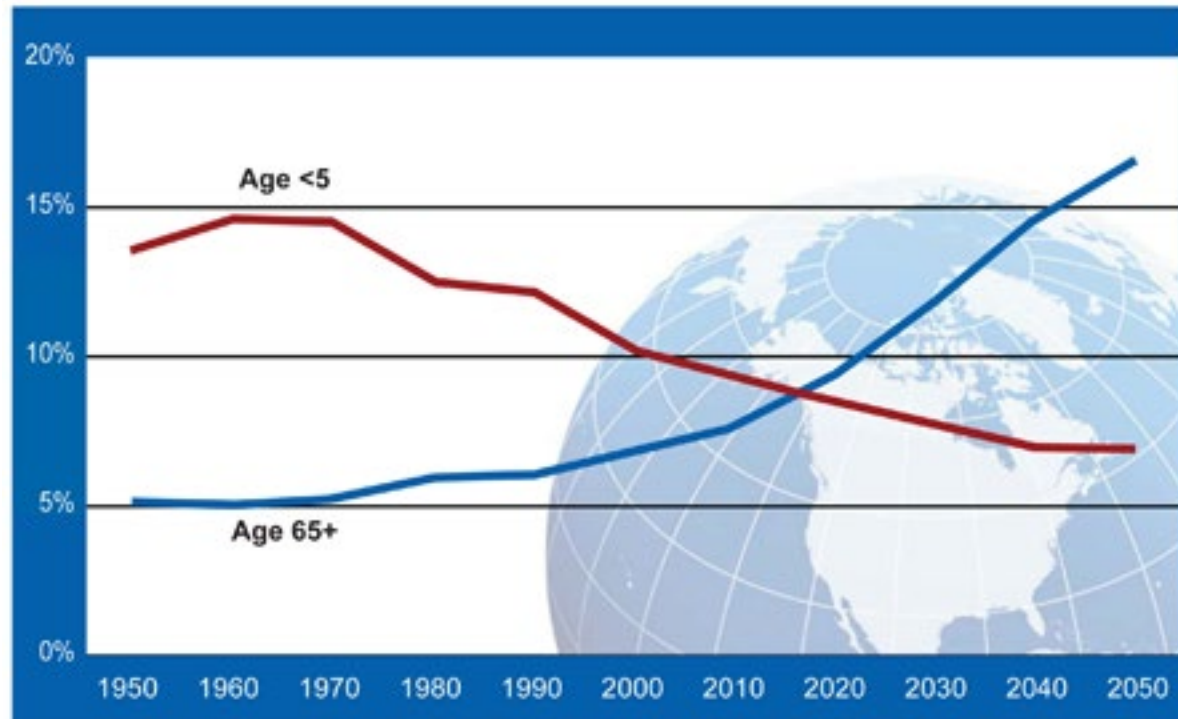
The bilateral flows between 196 countries are estimated from sequential stock tables (see overview for details). They are comparable across countries and capture the number of people who changed their country of residence between mid-2005 and mid-2010.

The circular plot shows the estimates of directional flows between 50 countries that send and/or receive at least 0.5% of the world's migrants in 2005-10. Tick marks indicate gross migration (in + out) in 100,000's.



Abel, Guy J., and Nikola Sander. "Quantifying global international migration flows." *Science* 343.6178 (2014): 1520-1522.

Background (cont'd)

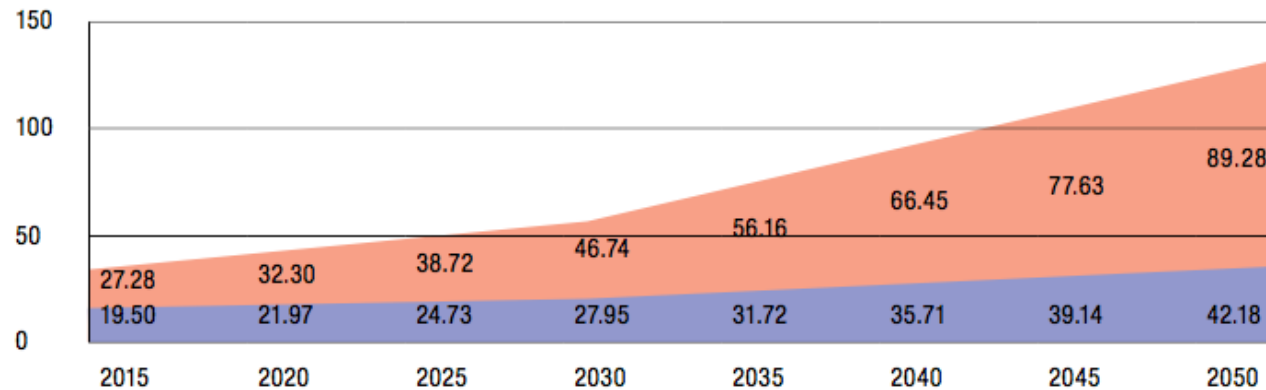


Source: United Nations. World Population Prospects: The 2010 Revision.

Background (cont'd)

- Cognitive impairment is common in older adults
- The number of elderly with cognitive decline increases

The growth in numbers of people with dementia (millions) in high income (HIC) and low and middle income countries (LMIC)



Source: United Nations (2015)
World Population Prospects: The 2015 Revision.

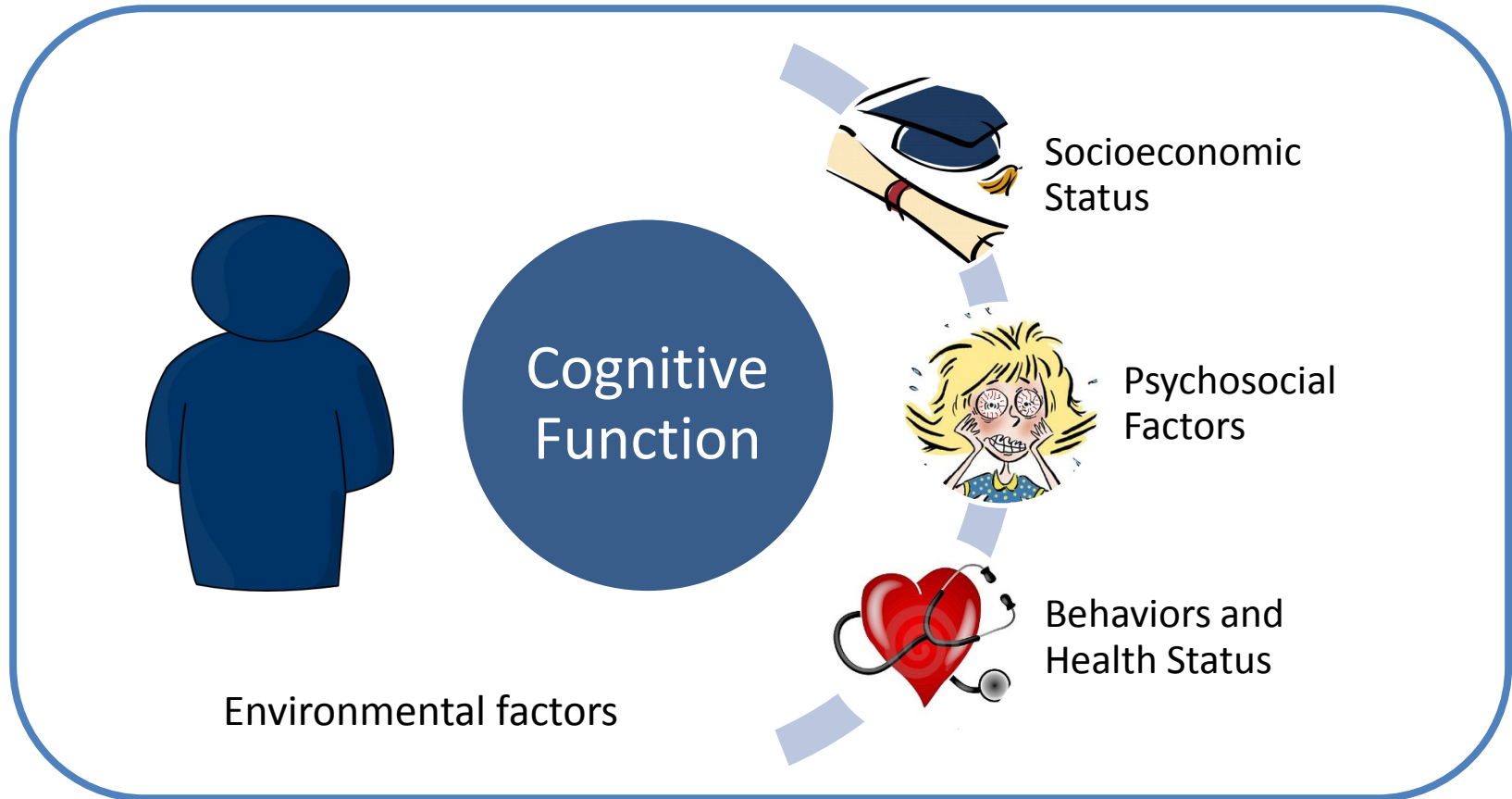
- The burden of cognitive impairment has significant medical, social, and economic implications.

Background (cont'd)

- Cognitive decline is common among older adults
- Increasing number of migrants are aging



Potential linkages

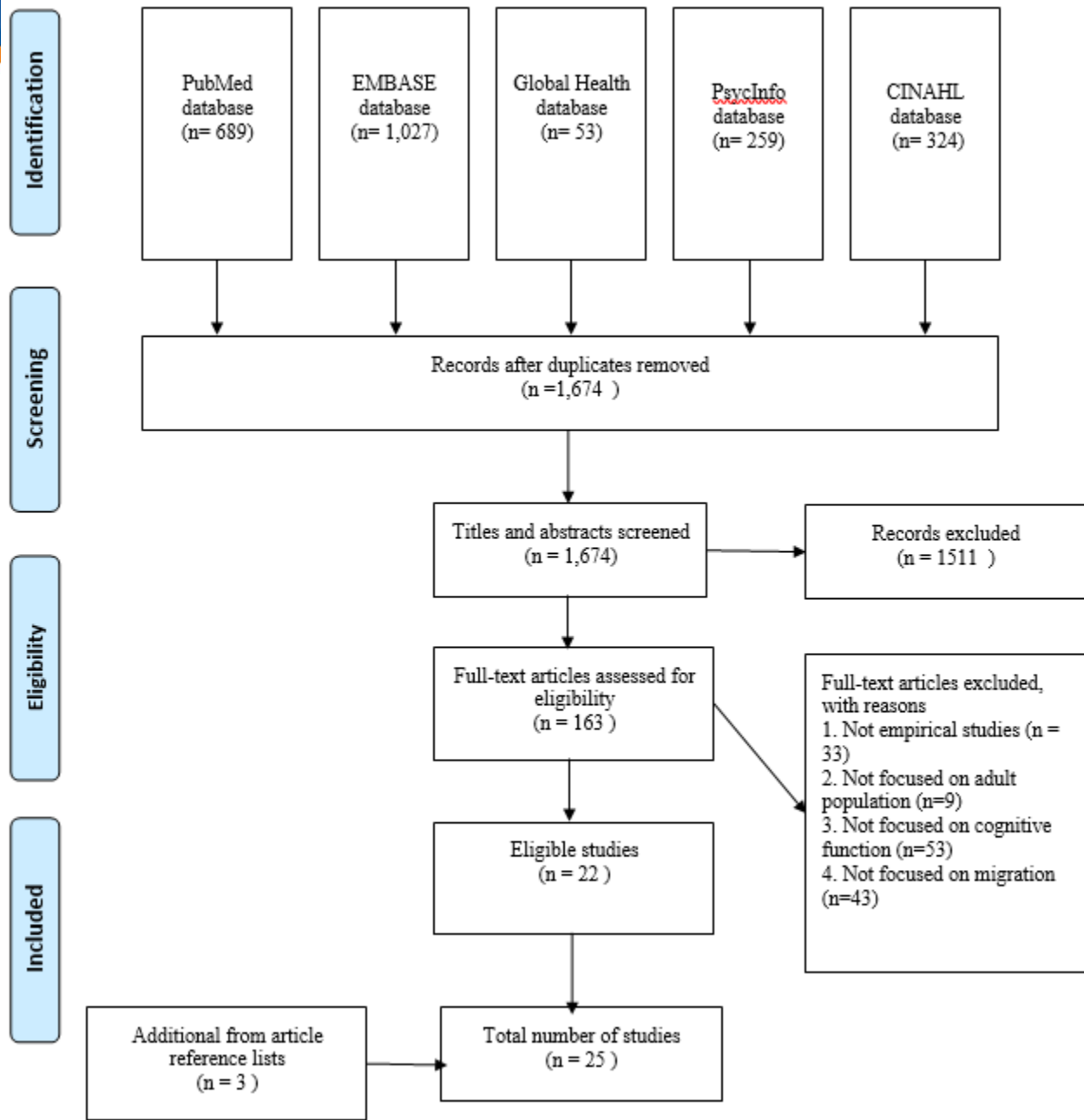


Aim

- A systematic review in order to examine the association between migration and cognitive function and provide direction for future research

Method

- Databases
 - PubMed, EMBASE, Global Health, PsycInfo, and CINAHL
- Search terms
 - Memory Disorders OR Cognition OR Cognition Disorders OR Dementia
 - emigration OR immigration OR emigrants and immigrants OR residential mobility OR transients and migrants OR migration OR migrant*
- Screening
- Extracting



Author, publication year	Sample	Study design	Cognitive Measures
Adelman, S., et al. (2011)	436 aged ≥ 60 living in UK (218 African-Caribbean immigrants, 218 White UK-born) Community and institute setting	Cross-sectional study	Cognitive status: 1. CAMDEX 2. MMSE Dementia: ICD-10 DSM-IV NINCDS-ADRDA NINDS-AIREN

Migration Measures	Primary Covariates	Key findings
Country of birth	Age, Education, Gender, Marital status	Compared to native Whites, the prevalence of dementia is significantly higher in the African-Caribbean immigrants group

Characteristics of the eligible studies

Included articles

- Migration type:
 - 22 International migration
 - 3 Internal migration
- Countries the studies being conducted:
 - 14 in the United States
 - 8 specifically focused on Mexican Americans
 - Other countries: UK, Israel, India, Australia, Denmark, etc
- Design
 - Cross sectional: 16
 - Longitudinal: 9
 - Follow-up years: 1-23 years

Findings

Measures of cognitive function

- Dementia diagnosis:
 - DSM-III, DSM-IV, ICD-10
 - NINCDS-ADRDA, NINDS-AIREN
- Cognitive status:
 - MMSE (most widely used)
 - Modified Mini Mental Status Exam (3MSE)
 - Cambridge Mental Disorders of the Elderly Examination (CAMDEX)

Findings (cont'd)

Measures of migration

- International migration
 - Whether they were born in the hosting country: 21
 - Country of birth: 19
 - Length of stay: 6
 - First language: 1
- Internal migration: no clear definition
- No information on reason for migration

Findings (cont'd)

Covariates

- Demographic characteristics
- Functional disability
- Chronic diseases
- Health behaviors
- Depressive symptoms
- Early- and middle-life socioeconomic conditions
- Environmental factors
- Genetic biomarkers

Findings (cont'd)

Comparisons between immigrants and residents in hosting countries

- Cognitive function
 - Between 1st and 2nd generation immigrants
 - Between immigrants and native-born residents
- Incidence of dementia
- Results were inclusive

Findings (cont'd)

Comparisons between immigrants and residents in sending countries

- 3 studies
 - Mexico-U.S. : 2
 - No significant difference
 - Poorer cognitive function among emigrants
 - Greece-Australia: 1
 - Poorer cognitive function among emigrants

Findings (cont'd)

Comparisons across immigrant groups (4 studies)

- Two studies found no significant difference
- One study showed that compared to European immigrants, non-European immigrants had poorer cognitive function measured by the MMSE
- One study showed immigrants from Dominican Republic showed poorer initial performance on memory and language tests, but not the rate of change in any cognitive domains

Findings (cont'd)

Comparisons between internal migrants and non-migrants (3 studies)

- Two studies showed migrants had poorer cognitive function
- The third study showed urban residents had a higher prevalence of cognitive impairment

Findings (cont'd)

Findings from longitudinal studies

- Four studies indicated the negative effect of migration on cognitive decline or poorer cognitive function
- Still other studies found no significant effect
- One study showed that among males, middle-life immigration demonstrated a protective effect on cognitive function and cognitive decline

Summary of the findings

- Inconsistent findings
- Different migration patterns may have different associations with cognitive function in later life.
- May largely due to the wide variation in the study design, sample size, sample characteristics, and measures across studies.

Discussion

Possible explanations:

- Low level of acculturation: language skills
- Disadvantages in SES
- Life style changes
- Unfavorable early-life socioeconomic positions

Discussion (cont'd)

Future research:

- More comprehensive measures of the migration process are needed
- Include information on participants' reasons for migration
- Include more sensitive, valid and culturally appropriate measures of cognitive impairment and dementia
- Covariates such as social network and social isolation
- More studies focused on internal migrants are needed



Thank you

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