Prevalence of dementia in two countries of Central Africa: comparison of rural and urban areas in the EPIDEMCA study.

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Background

- World Alzheimer Report 2009: 2.07% - 4.00% in sub-Saharan Africa
- Increasing number of estimates of dementia prevalence in low and middle income countries
- Africa’s rate of increase of elderly fastest in the world
- Low awareness and dementia still perceived as normal ageing or witchcraft

- 11 Population based studies: estimations of dementia prevalence in only 7 / 54 countries

Eight of them conducted after 2000
The EPIDEMMCA Study

• Multicenter study in Central Africa: Central African Republic and Republic of Congo

• 3 partners in France (Limoges, Bordeaux and Lille)
  2 in Central Africa (Bangui and Brazzaville)

• Funded by the French National Research Agency

• 3 objectives:
  - to compare prevalence between rural and urban areas
  - to investigate associated factors
  - to determine if genetic variations could modify the risk of dementia
Methods

• Design:  2-phase cross-sectional surveys, population-based
• Sampling: Door-to-door in rural areas
  Proportional to the size of each subdivision in urban areas
• Participants: aged ≥65 years old
• Minimum number of subjects: 456 per site
• Period: November 2011 to December 2012

• Sites:
Methods

**SCREENING**

Community Screening Interview for Dementia (CSI-D)
GMS-AGECAT
CERAD’s 10 word list

**Clinical Assessment**

Low performance to the CSI-D (cogscore<24.5)

Neurologist + further psychometrical tests

**DIAGNOSIS**

Criteria: DSM-IV for dementia
NINCDS-ADRDA for AD

10/66 dementia algorithm  ➔  10/66 dementia diagnosis
Results

• 2,002 elderly interviewed in both countries

Central African Republic:
- Nola, n=473
- Bangui, n=500

Republic of Congo:
- Gamboma, n=529
- Brazzaville, n=500

1000 in urban area / 1002 in rural area

• Main characteristics
  
  Sex-ratio = 0.63
  Mean age ± std = 73.28 ± 6.69 (difference in distributions)
  
  Literacy: 23.60% (Brazzaville – 38.15%)
  Subjects never been to school: 68.80% (Brazzaville – 54.11%)
  
  Hypertension: 59.68%, Diabetes: 8.07%, History of stroke: 6.61% (higher in Congo)
Crude DSM-IV prevalences

- No differences between the sites ($p=0.41$ and $p=0.07$)
- Prevalence increases with age ($p=0.001$)
- Prevalence of vascular dementia seems higher in the capitals ($ns$)
Standardized prevalence of DSM-IV dementia (SSA population, UN, 2010)

- No difference between the sites (p=0.259)
- Higher prevalence for women only in rural areas (p=0.016, p=0.009)
Discussion

• Limitations:

  Prevalence in rural areas may not be extrapolated

  2-phase design: lost of follow up

• Strengths:

  Cross-cultural instruments

  1st comparison between rural/urban areas in Africa

• Prevalences similar to previous results in Africa:

  Bangui: 7.6%, 95%CI [5.8-10.8]
  Brazzaville: 5.4%, 95%CI [4.7-9.2]  Guerchet et al., 2010
  Tanzania: 6.4%, 95% CI [4.9-7.9]  Longdon et al., 2012
Conclusion

• No clear indication of a rural / urban pattern for dementia prevalence

• Growing evidence about high prevalences of dementia in Sub-Saharan Africa

• Estimation of dementia prevalences essential in those countries with low awareness to help:
  - lower stigma and discrimination
  - improve quality of life for elderly and caregivers
  - improve care and services
Acknowledgments

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- Faculté des Sciences de la Santé, University of Bangui and the General Hospital of Bangui
- Marien Ngouabi University and General Hospital of Brazzaville
- Local authorities who facilitated our work
- All the doctors, medical workers, secretary and drivers who worked on this project and on the field to obtain data
- All the participants and their families included in this study
Crude DSM-IV prevalences

• Prevalence higher for women:

<table>
<thead>
<tr>
<th>Location</th>
<th>Women (%, CI95%)</th>
<th>Men (%, CI95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangui</td>
<td>7.08 [4.54-10.43]</td>
<td>5.14 [2.38-9.54]</td>
</tr>
<tr>
<td>Gamboma</td>
<td>8.07 [5.34-11.61]</td>
<td>1.93 [0.53-4.87]</td>
</tr>
</tbody>
</table>

(p<0.001)

• Prevalence increases with age:

- 65-74 y.o.: 3.21%, CI95%[2.30-4.35]
- 75-84 y.o.: 9.02%, CI95%[6.88-11.55]
- over 85 y.o.: 28.89%, CI95% [21.42-37.31]

(p<0.001)
## Standardized prevalence of AD (SSA population)

<table>
<thead>
<tr>
<th>Location</th>
<th>Both gender (%, CI95%)</th>
<th>Men (%, CI95%)</th>
<th>Women (%, CI95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazzaville</td>
<td>2.89 [2.87-2.91]</td>
<td>2.81 [2.76-2.86]</td>
<td>2.98 [2.94-3.02]</td>
</tr>
</tbody>
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