



# Suicide in Portugal: Spatial determinants in a context of economic crisis

**Paula Santana**

Centre of Studies on Geography and Spatial Planning  
University of Coimbra

CEGOT  
Centro de Estudos de Geografia  
e Ordenamento do Território

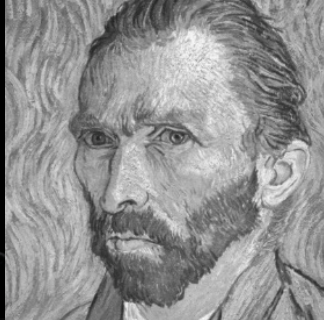
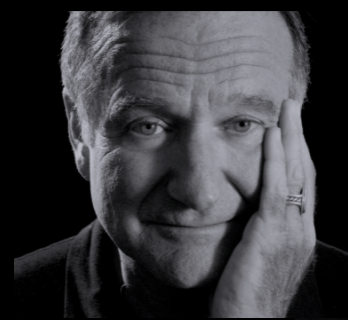
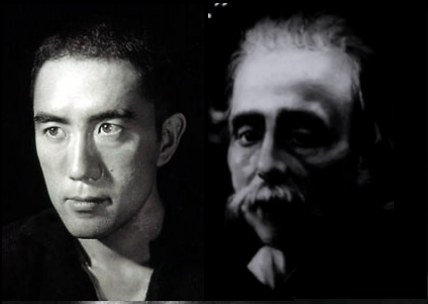
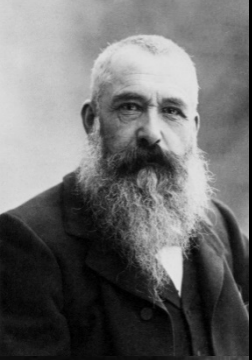


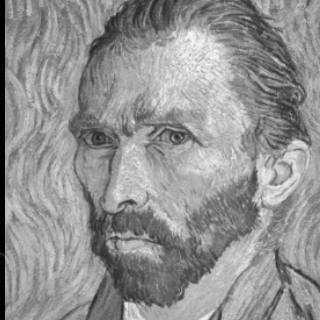
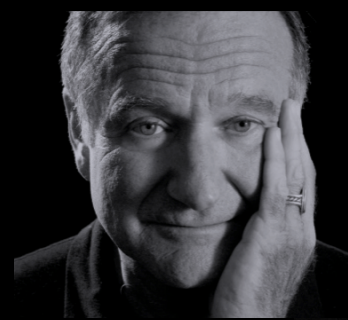
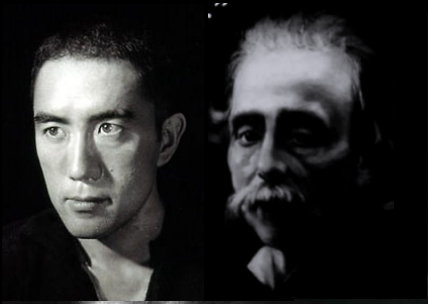
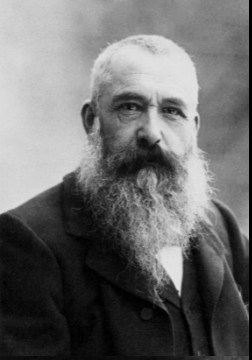
Calouste Gulbenkian Foundation, 24th.november.2016



**Globaly,  
1 suicide occurs every 30  
seconds  
(800,000 suicides per year)**

OMS, 2016





# Suicide in the news of every day

THE  TIMES

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## Suicide pair left notes to warn of gas

John Simpson,  
Crime Correspondent

November 12 2016,  
12:01am,  
The Times



# Suicide in the news of every day

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## Suicide of gas

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John Simpson,  
Crime Correspondent

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November 12 2016,  
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## Plusieurs suicides à La Poste révéleront un profond malaise chez les facteurs

*[Several suicides at "La Poste" reveal a deep malaise among postmans]*

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LE MONDE | 17.10.2016 à 10h38 • Mis à jour le 17.10.2016 à 13h39 |  
Par Anne Rodier

# Suicide in the news of every day

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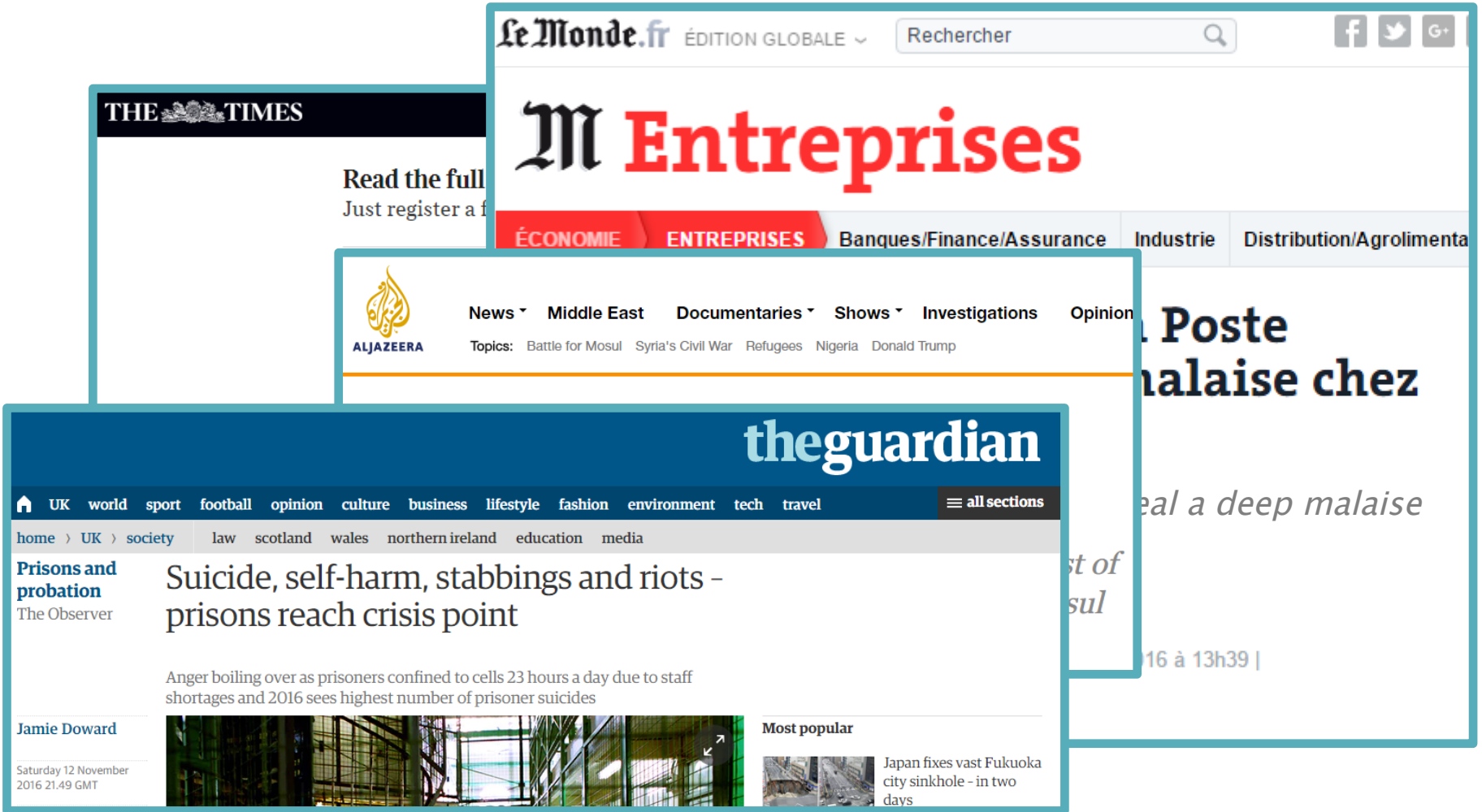
NEWS | IRAQ 9 HOURS AGO  
**ISIL claims suicide attacks in Fallujah, near Karbala**  
*Suicide attacks kill at least 14 south and west of Baghdad, as Iraqi forces' push to retake Mosul makes slow progress.*

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Par Anne Rodier

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# Suicide in the news of every day





# Suicide in the news of every day

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## Suicide prevention services 'deteriorating' due to cuts, Samaritans warns

The charity's chief executive told MPs resources are being overstretched

Jon Stone Political Correspondent | @jonstone | Tuesday 1 November 2016 | 0 comments

home > UK > society | law scotland wales northern ireland e

**Prisons and probation**  
The Observer

## Suicide, self-harm, stabbings and riots - prisons reach crisis point

Anger boiling over as prisoners confined to cells 23 hours a day due to staff shortages and 2016 sees highest number of prisoner suicides

**Jamie Doward**


Saturday 12 November 2016 21:49 GMT



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# U.S. suicide rates up, especially among women, but down for black males

By Carina Storrs, Special to CNN

Updated 2057 GMT (0457 HKT) April 22, 2016



Anger boiling over as prisoners confined to cells 23 hours a day due to staff shortages and 2016 sees highest number of prisoner suicides

**Jamie Doward**

Saturday 12 November  
2016 21:49 GMT



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 Japan fixes vast Fukuoka city sinkhole - in two days

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# Suicide in the news of every day

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≡ **EL PAÍS**

**IN ENGLISH**

MENTAL HEALTH

## What can Spain do to tackle its growing suicide problem?

Experts call for a national strategy to curb the rising number of people taking their own lives



BARBARA AYUSO

Madrid - 16 SEP 2016 - 16:08 CEST

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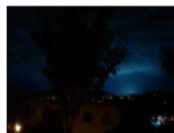


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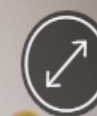
# Aumento de suicídios está relacionado com a crise económica

[Suicide increase is related to the economic crisis]

Saúde

14 DE JUNHO DE 2016  
08:56

Lusa



BARBARA AYUSO

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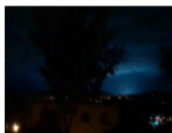


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"Luzes de terramoto" vistas nos céus da Nova Zelândia durante o sismo



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## Aumento de suicídios está relacionado

8 Setembro 2016

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# Concelho com maior taxa de suicídio passa a ter consultas de psiquiatria

Consultas vão funcionar em Santiago do Cacém e Odemira duas vezes por semana.

2015-10-05 15:39 / AM

ort Daily Edition

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**Suicide and  
social determinants in Portugal**

**Suicide**

**Suicide in  
Metropolitan Area**

**Final Remarks**



**Suicide and  
social determinant**



**Suicide  
in Portugal**



**Suicide in  
Metropolitan Area**



**Final Remarks**

# Suicide and social determinants

Low  
global priority  
for mental  
disorders

Global economic  
policies fuelling  
inequalities

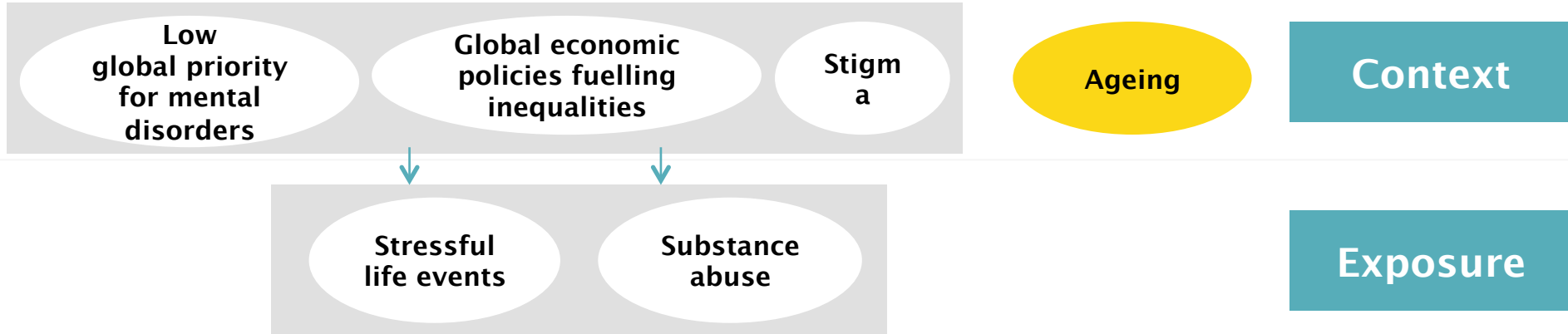
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Ageing

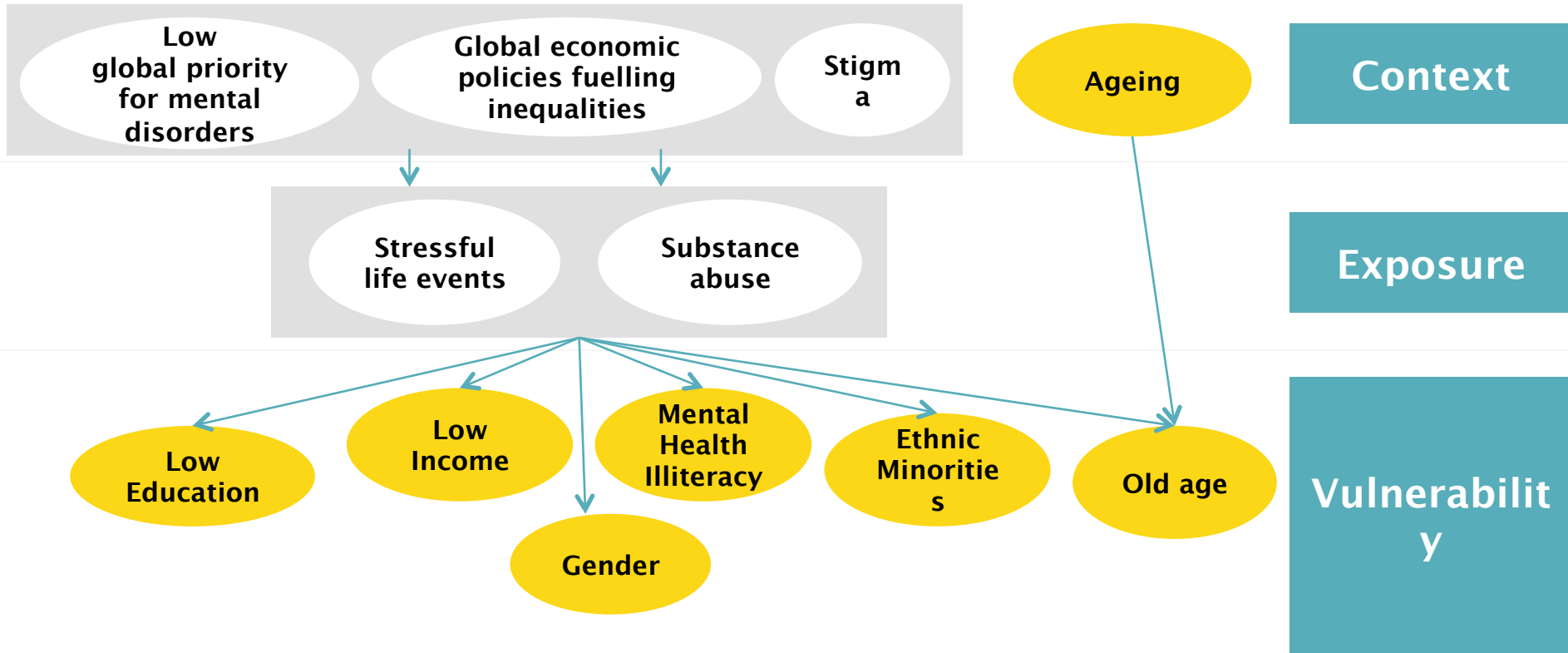
Context



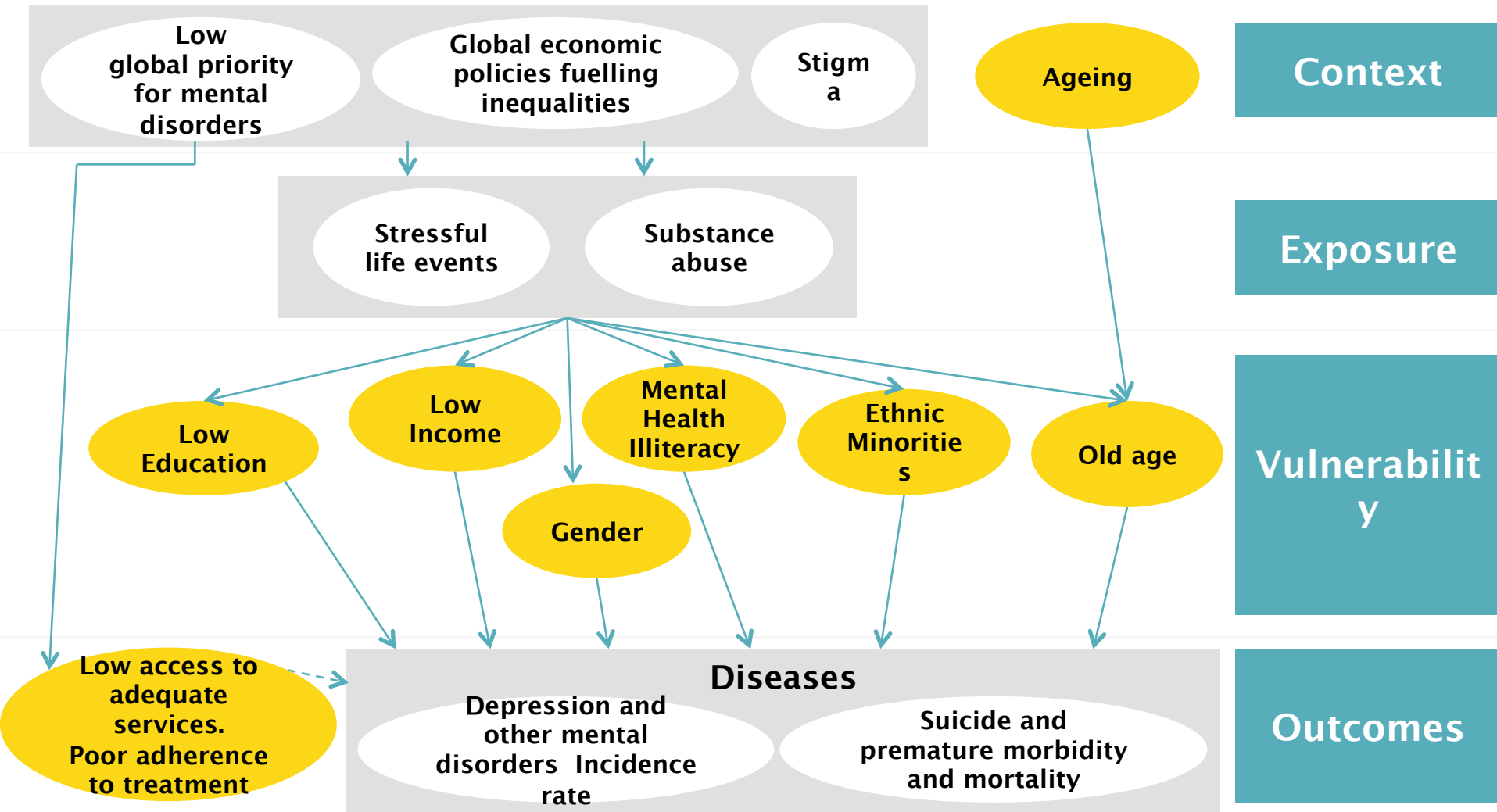
# Suicide and social determinants



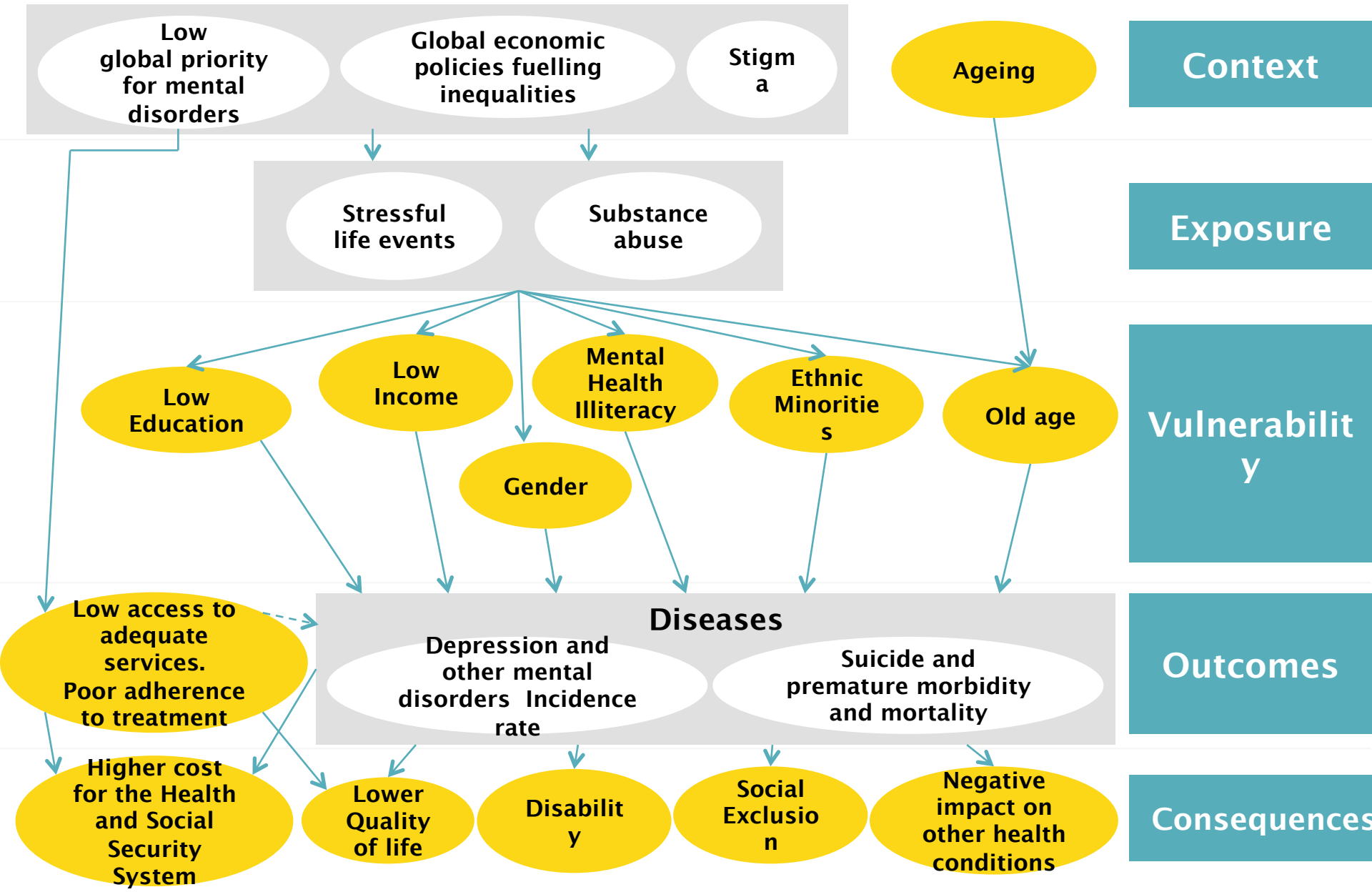
# Suicide and social determinants



# Suicide and social determinants



# Suicide and social determinants





**Suicide and  
social determinants in Portugal**



**Suicide  
in Metropolitan Area**



**Suicide in  
Metropolitan Area**



**Final Remarks**



# Suicide Mortality in Portugal

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**Suicide in Portugal: Spatial determinants in a context of economic crisis**

Paula Santana



**Background**

**Aim**

**Some Results**

# Suicide Mortality in Portugal

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**Suicide in Portugal: Spatial determinants in a context of economic crisis**

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# **Suicide Mortality in Portugal**

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**Suicide in Portugal: Spatial determinants in a context of economic crisis**

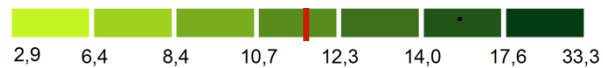
Paula Santana



# Portugal in the European Context

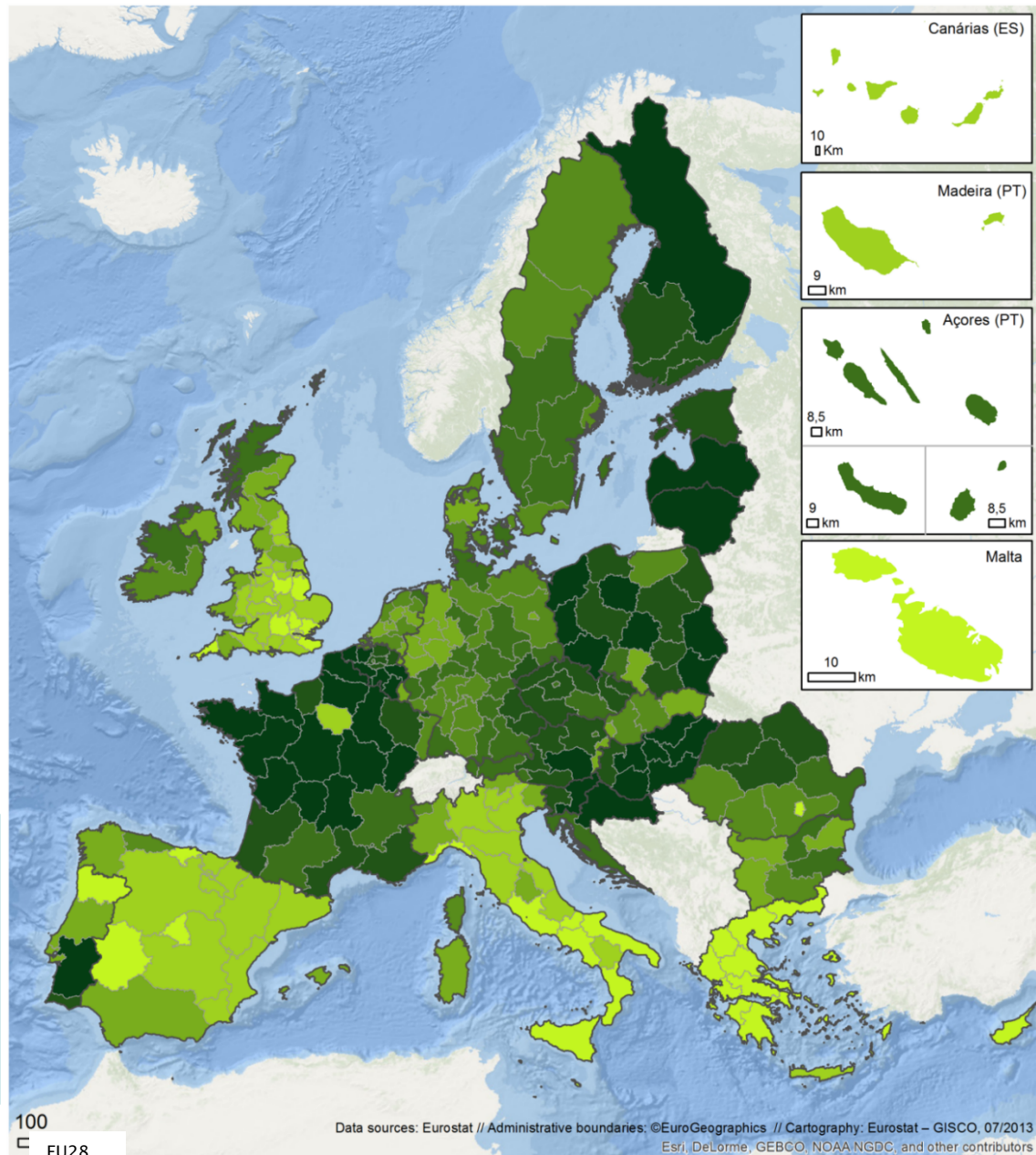
SMR by suicide per 100,000 inhabitants, 2011–2013

**EU = 11,7**



Classification Method: Quantile

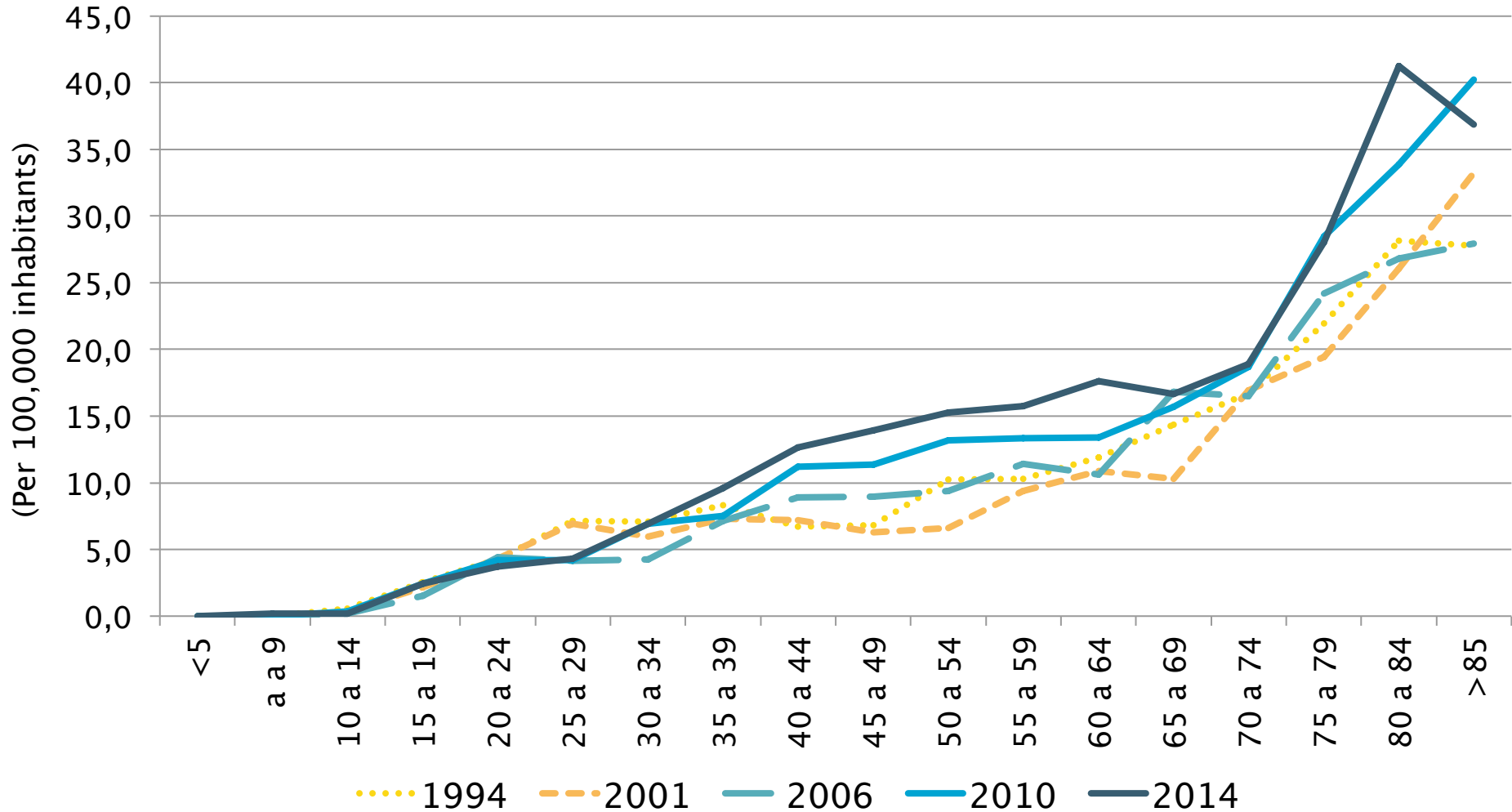
<b>Portugal</b>	<b>9,8</b>
Norte Region	<b>5,8</b>
Centro Region	<b>10,6</b>
Lisboa Metropolitan Area	<b>9,5</b>
Alentejo Region	<b>21,4</b>
Algarve Region	<b>14,4</b>
Açores Islands	<b>13,2</b>
Madeira Islands	<b>7,6</b>



**Suicide in Portugal: Spatial determinants in a context of economic crisis**

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# Suicide mortality rate by age group in Portugal

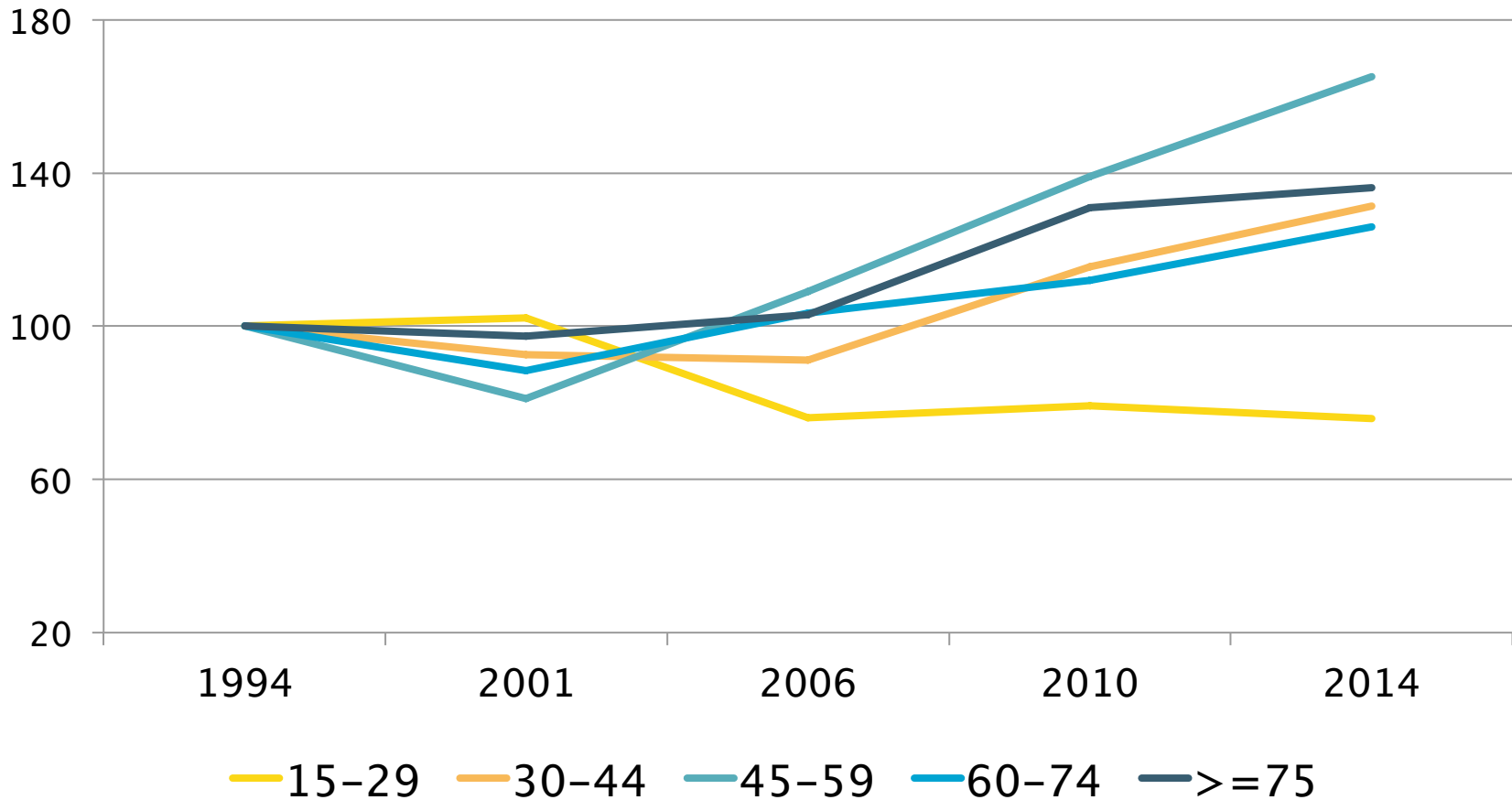


Source: Eurostat

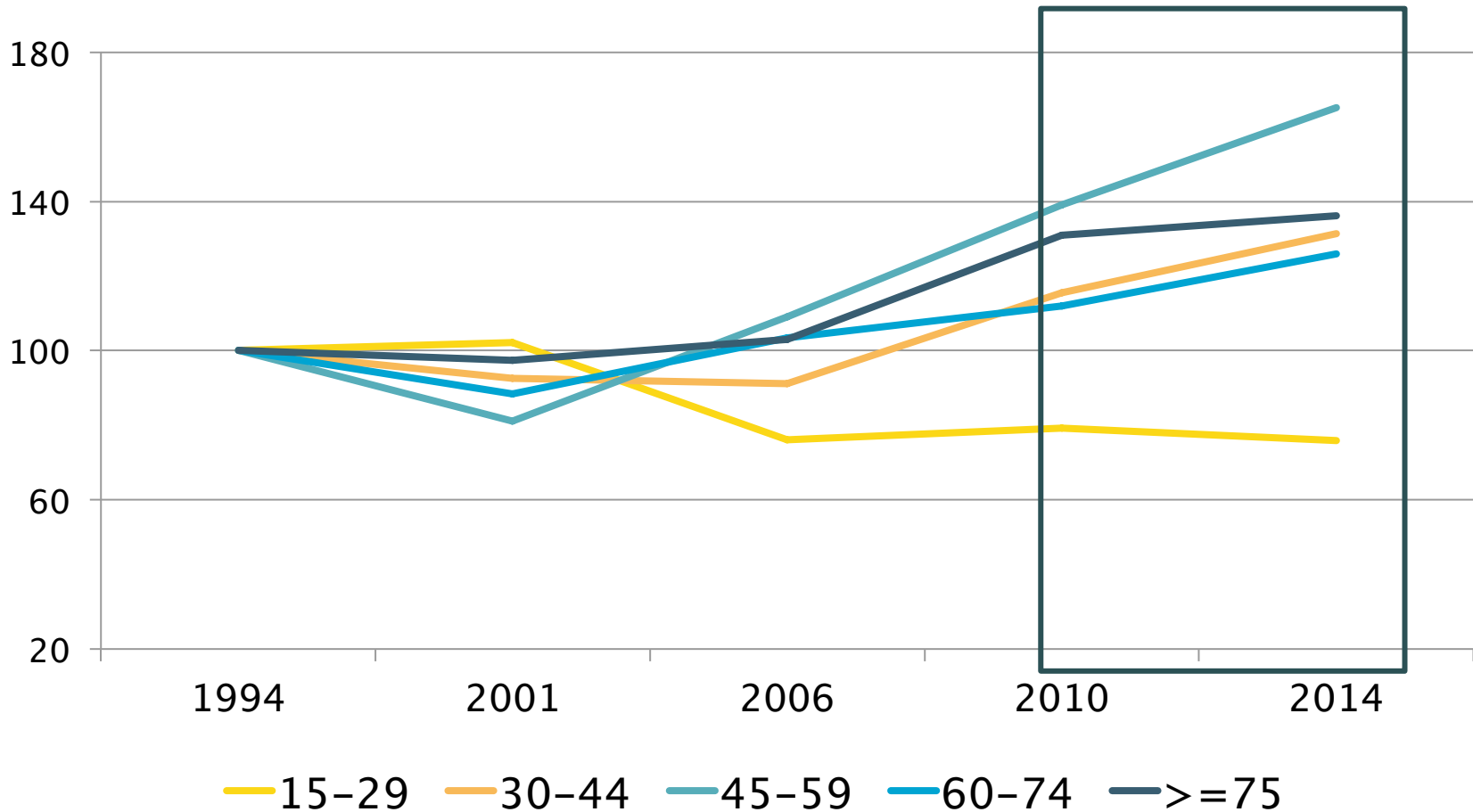
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# Suicide mortality rate by age group in Portugal (1994 = 100)



# Suicide mortality rate by age group in Portugal (1994 = 100)



**Background**

**Aim**

**Some Results**



# Suicide Mortality in Portugal

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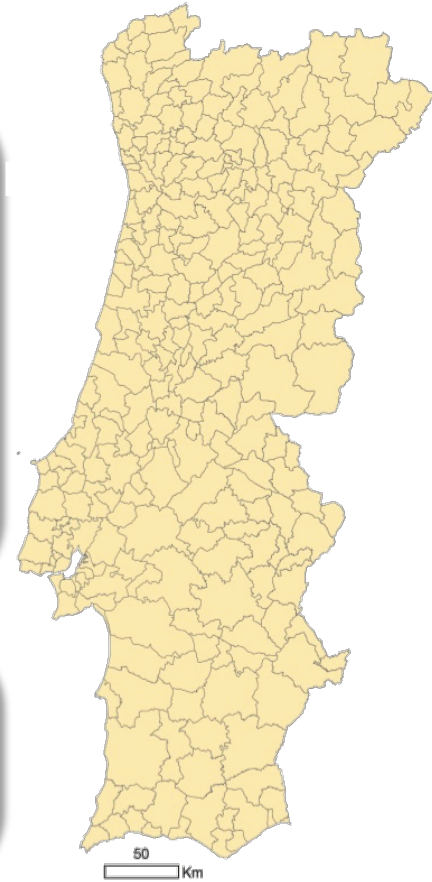
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# Aim

To verify if there is a **statistical association** between the **Mortality by Suicide** and the **spatial determinants** of the Place of residence

**Before and during the economic crisis** (1989–1993, 1999–2003, 2008–2012)  
In the municipalities of Portugal Mainland



**Background**

**Aim**

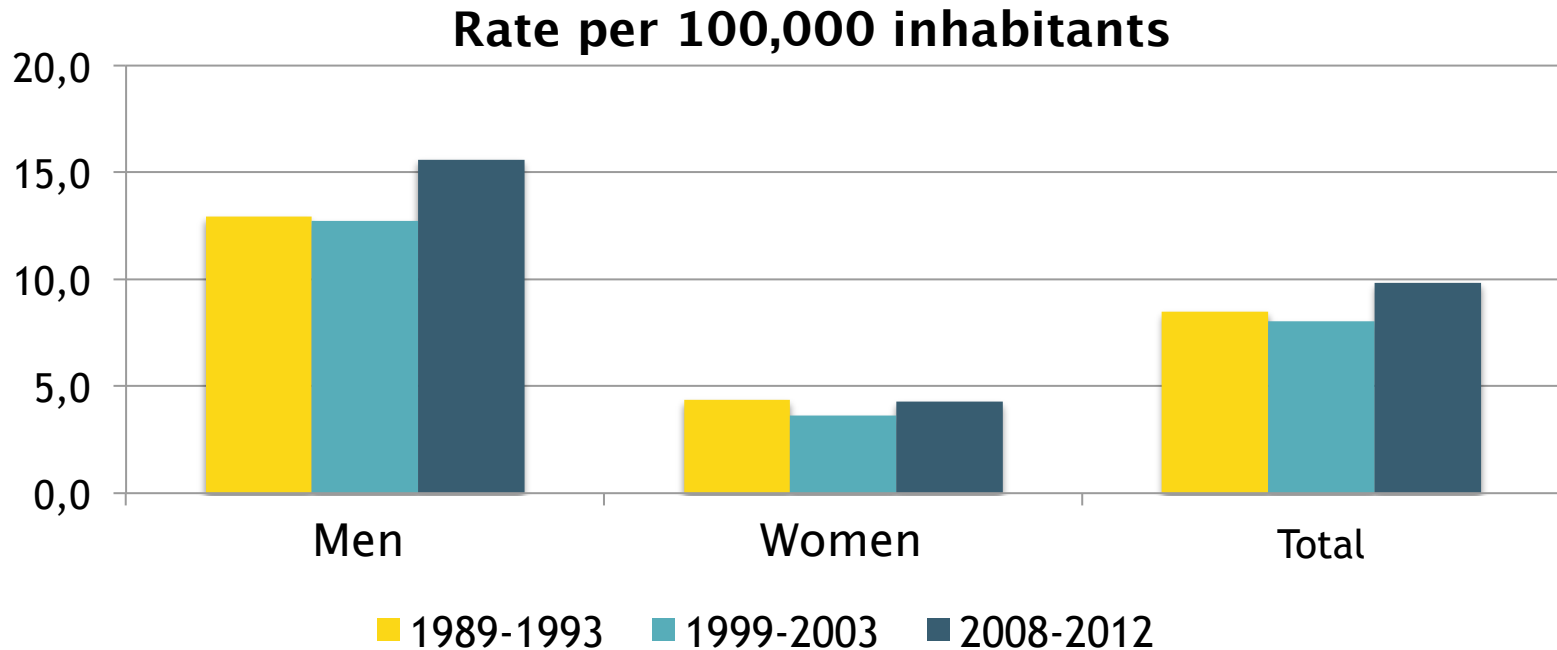
**Some Results**



# Suicide Mortality in Portugal

# Data

**Mortality:** Deaths from suicide and self-inflicted injuries (ICD10: X60-X84; E950-E959)

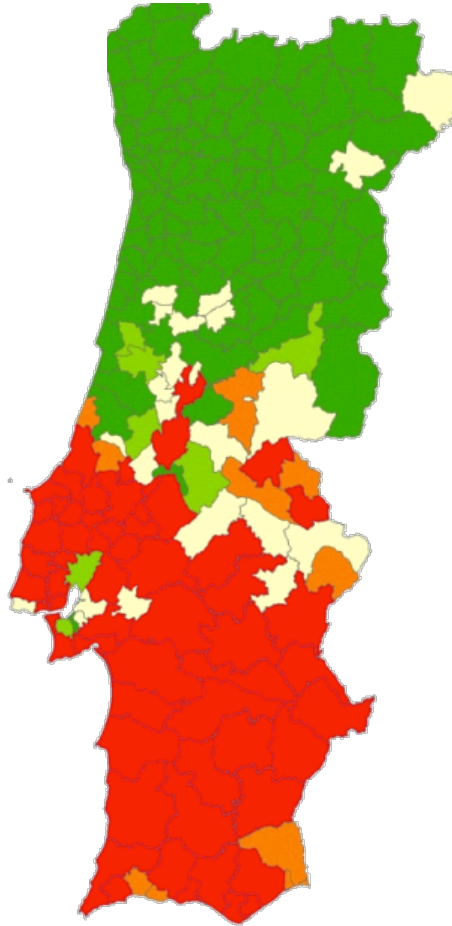


<b>Men</b>	<b>N= 2.921</b>	<b>N= 3.034</b>	<b>N= 3.824</b>
<b>Women</b>	<b>N= 1.061</b>	<b>N= 929</b>	<b>N= 1.124</b>

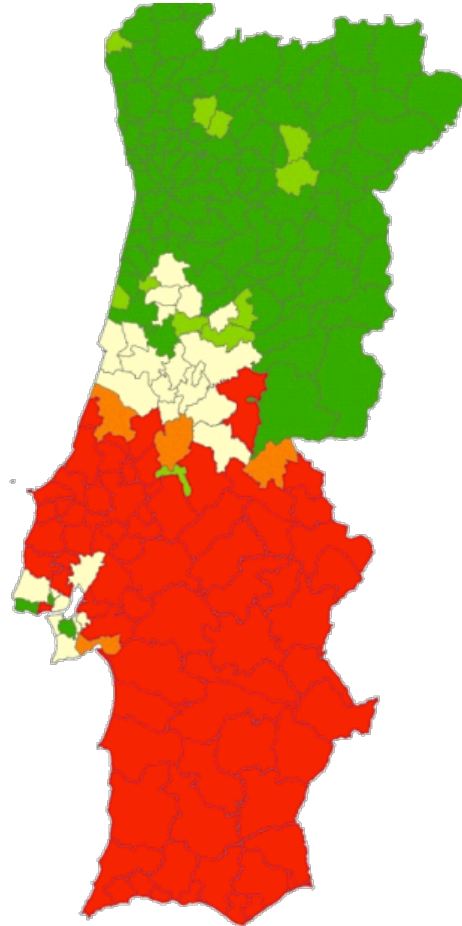


# Risk of mortality by suicide (Mainland=100)

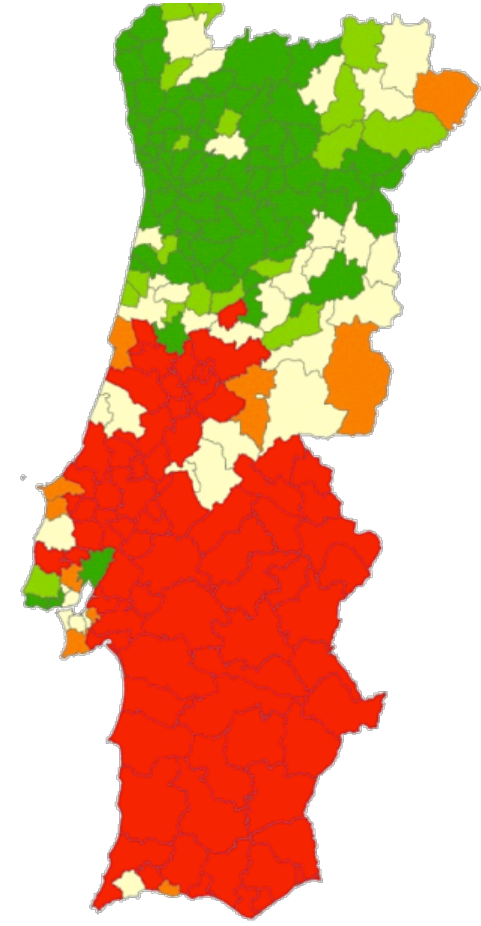
1989 - 1993



1999 - 2003



2008 - 2012



Probability sSMR > 100



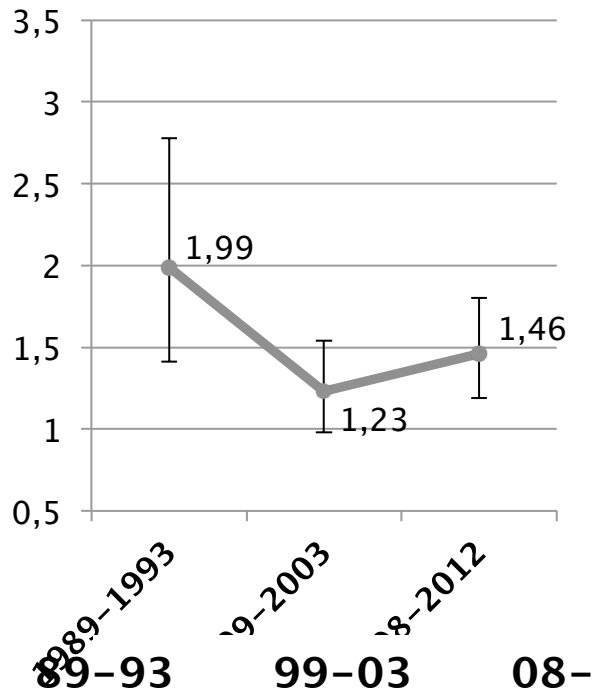
50 Km

# Suicide: Association with Material Deprivation (1989-93

1999-03; 2008-12)

Quintile of higher deprivation vs Quintile of less deprivation  
literacy rate + employment rate + Substandard housing rate

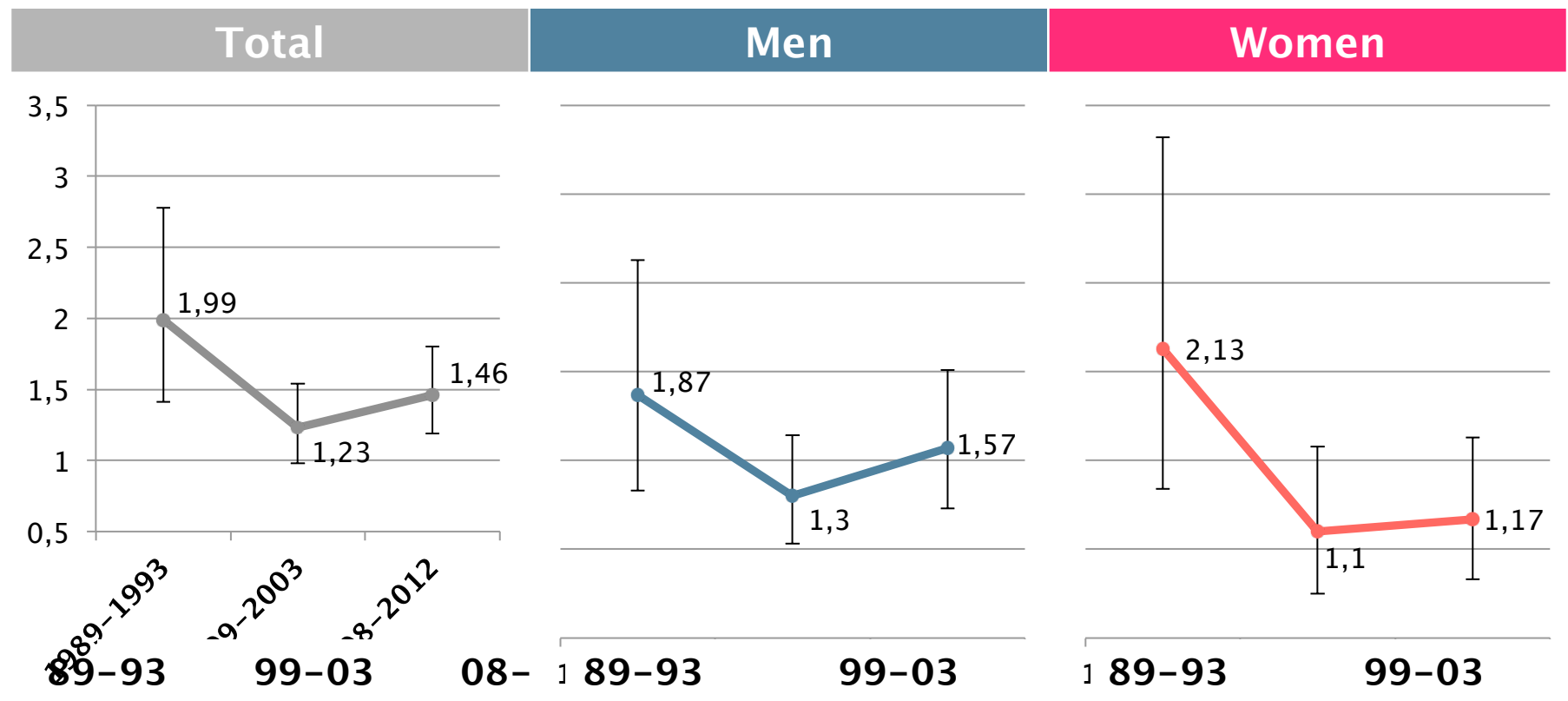
## Total



# Suicide: Association with Material Deprivation (1989-93

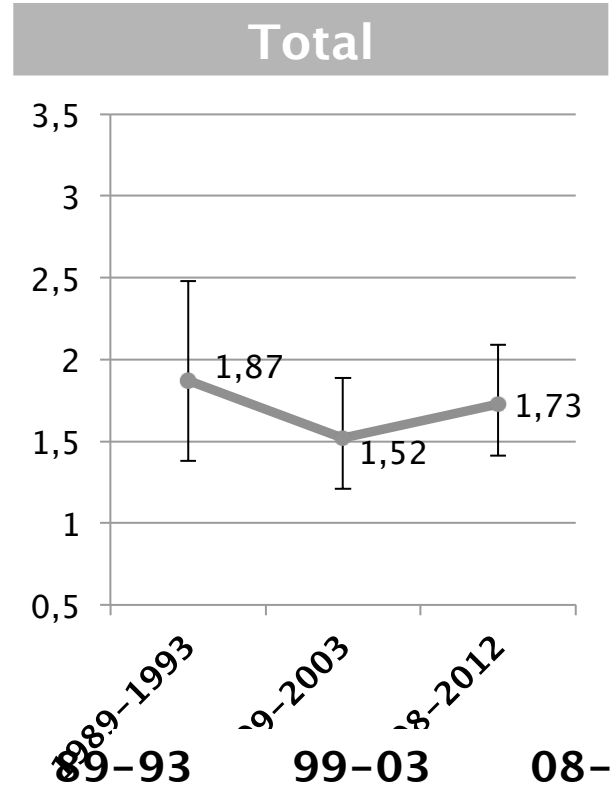
1999-03; 2008-12)

Quintile of higher deprivation vs Quintile of less deprivation  
 (material deprivation + unemployment rate + Substandard housing rate)



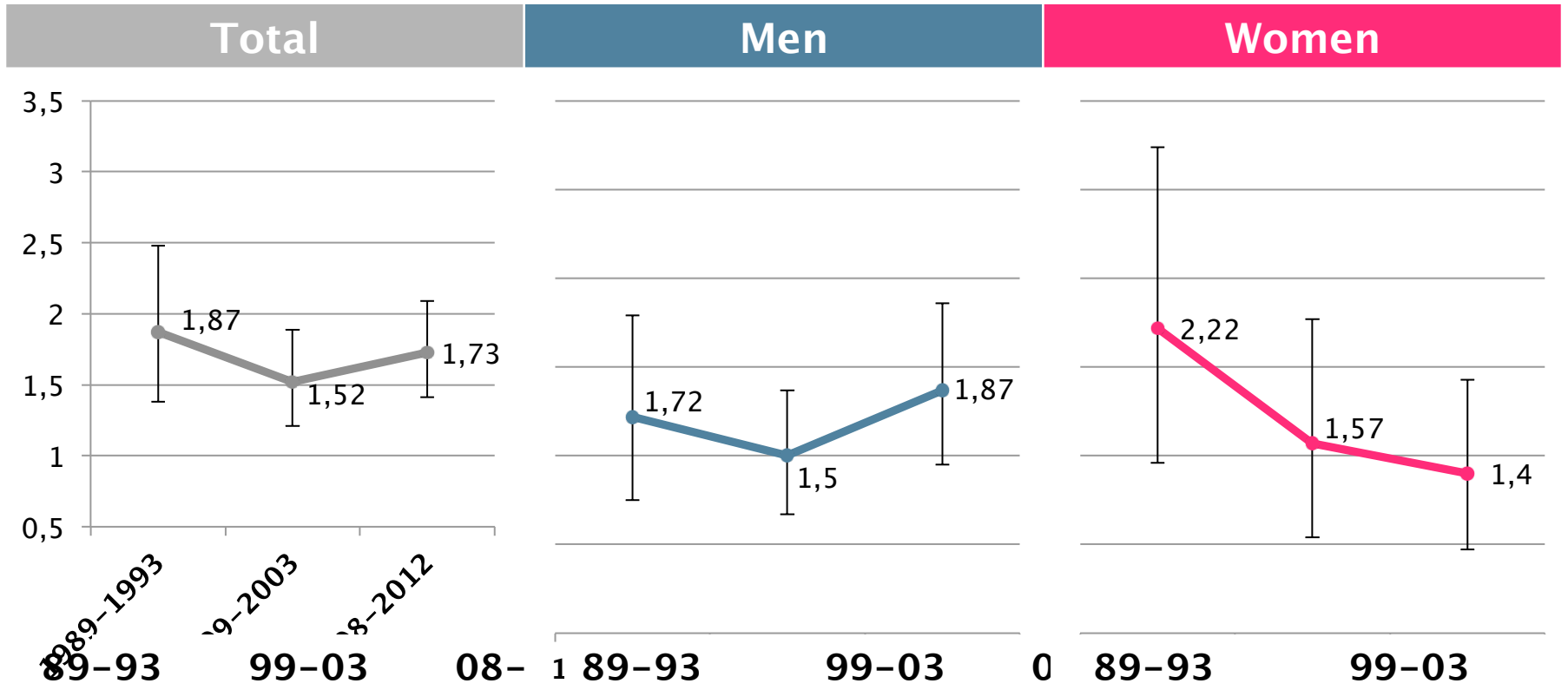
# Suicide: Association with the Rurality (1989-93; 1999-03; 2008-12)

Quintile of higher rurality vs Quintile of less rurality  
(rurality + geographic accessibility to hospitals + rural population)



# Suicide: Association with the Rurality (1989-93; 1999-03; 2008-12)

Quintile of higher rurality vs Quintile of less rurality  
(rurality + geographic accessibility to hospitals + rural population)





**Suicide and  
social determinants in Portugal**



**Suicide  
in Metropolitan Area**



**Suicide in  
Metropolitan Area**



**Final Remarks**



# Suicide Mortality in the Metropolitan Areas

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Suicide in Portugal: Spatial determinants in a context of economic crisis

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**Background**

**Aim**

**Some Results**



# **Suicide Mortality in the Metropolitan Areas**



**Background**



**Aim**

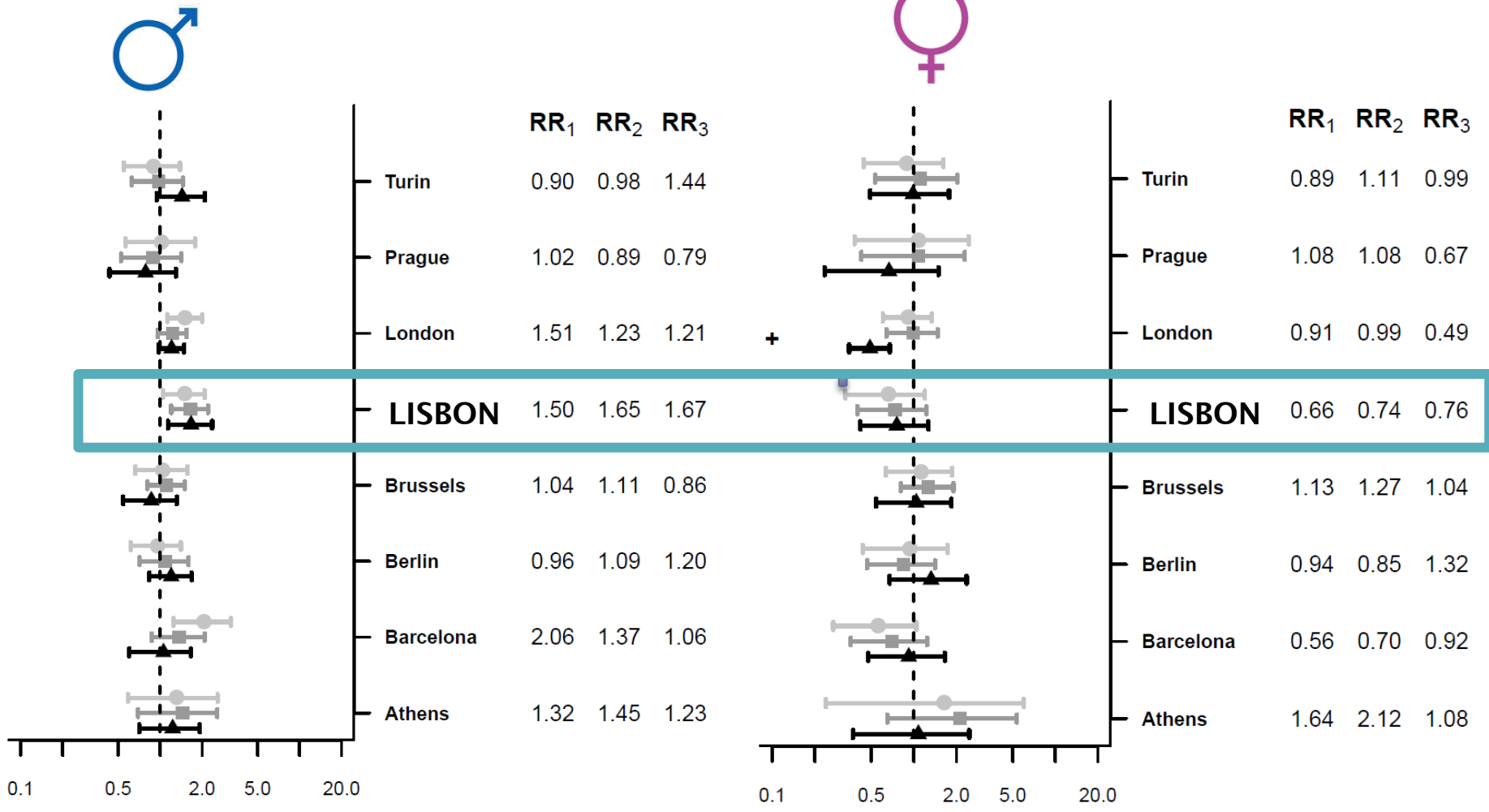


**Some Results**



# Suicide Mortality in the Metropolitan Areas

# Suicide: association with the material deprivation in 8 metropolitan areas (2000–03; 2004–08; 2009–13)



Source: EURO-HEALTHY@Carme Borrell, ASPB RR<sub>1</sub>: 2000–2003\* RR<sub>2</sub>: 2004–2008\* RR<sub>3</sub>: 2009–2013

**Background**

**Aim**

**Some Results**



# Suicide Mortality in the Metropolitan Areas

# Aim

To verify if there is a **statistical association** between the **Mortality by Suicide** and the **spatial determinants** of the place of residence

In the **parishes of Lisbon and Porto Metropolitan Areas**, during a period of 10 years  
(2002-2012)



Background

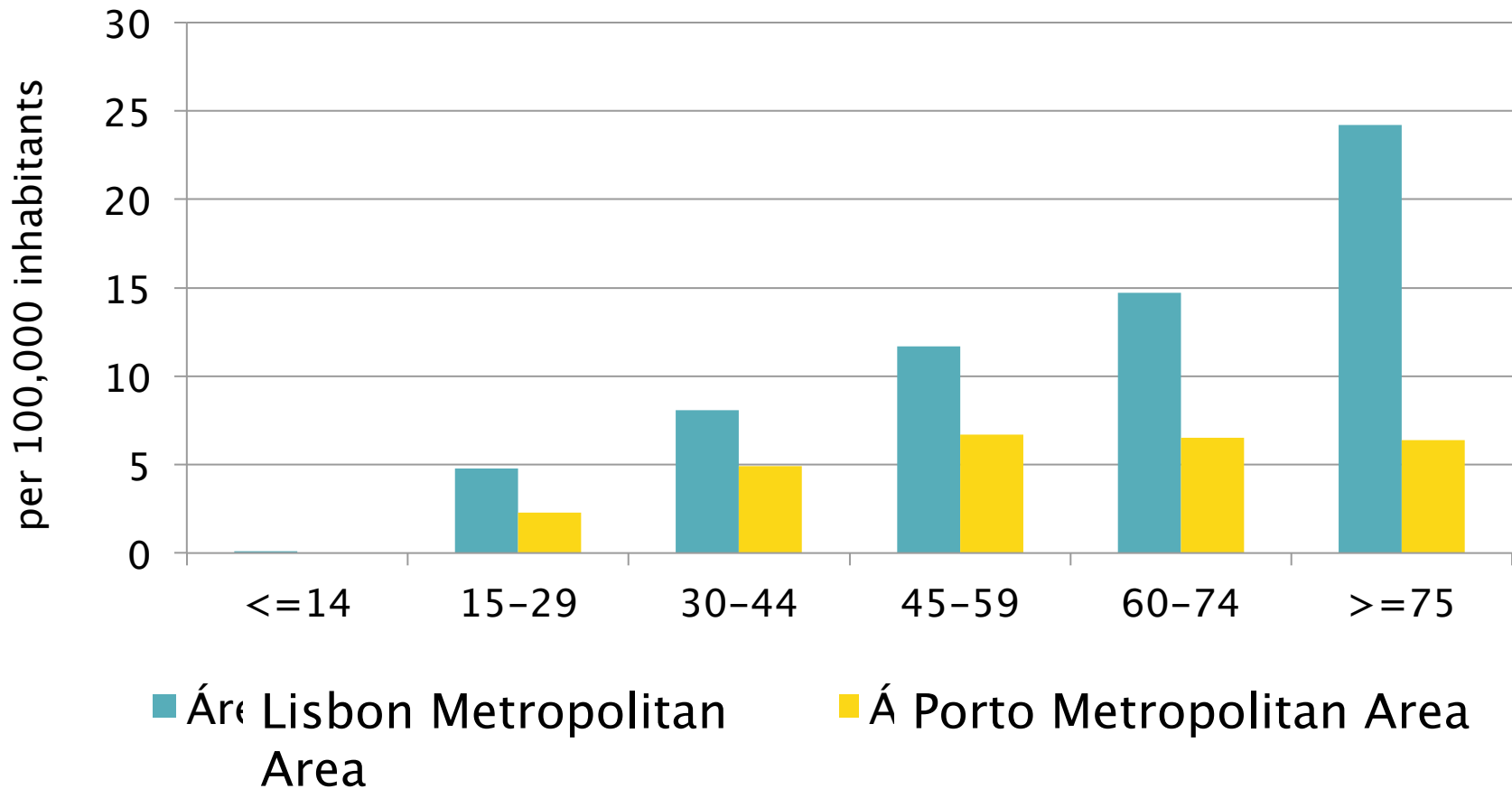
Aim

Some Results



# Suicide Mortality in the Metropolitan Areas

# Suicide by age group, 2002–2012



# Risk of mortality by suicide, 2002-2012

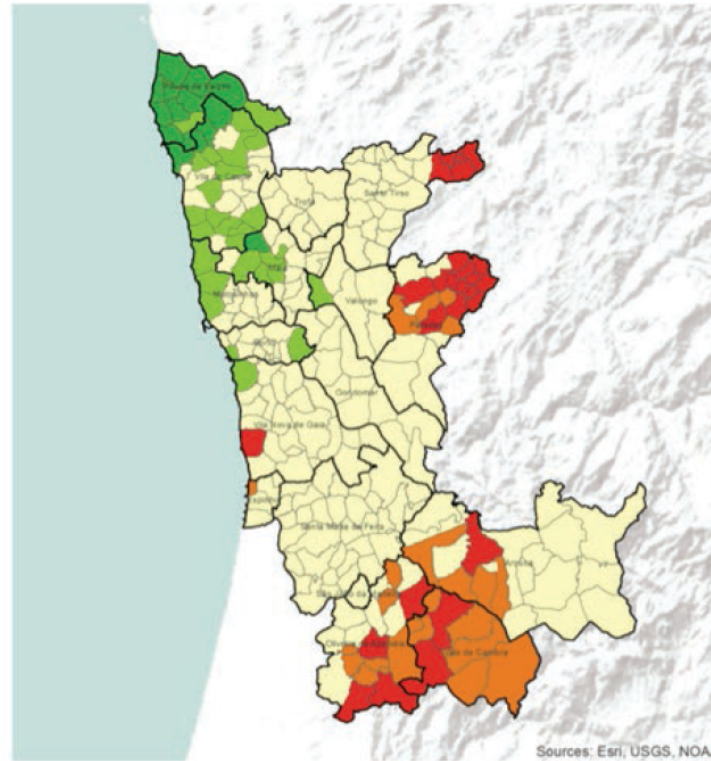
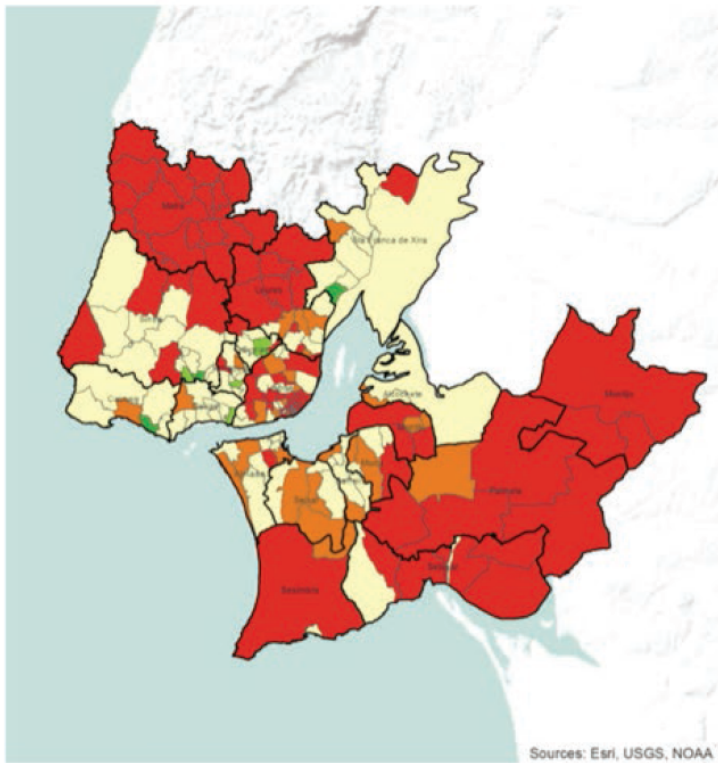
## Lisbon Metropolitan Area



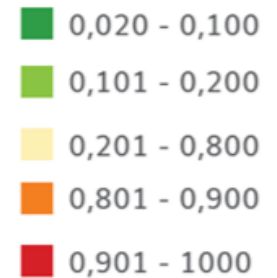
# Risk of mortality by suicide, 2002–2012

## Lisbon Metropolitan Area

## Porto Metropolitan Area



Risk of mortality by suicide

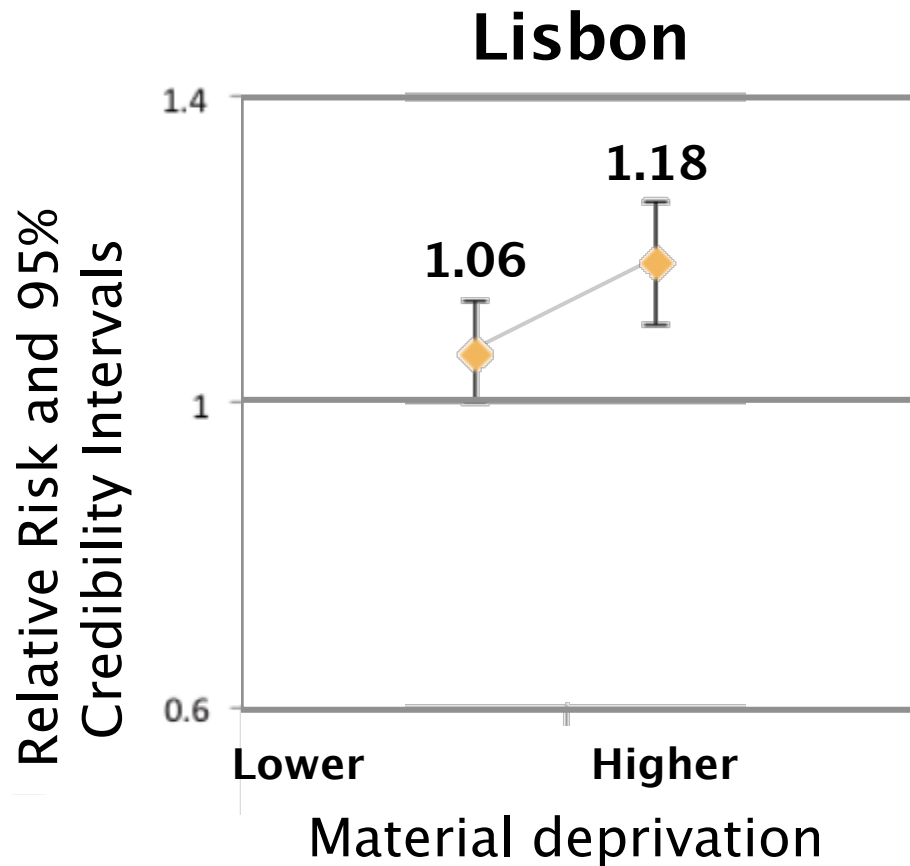


▣ Municipalities

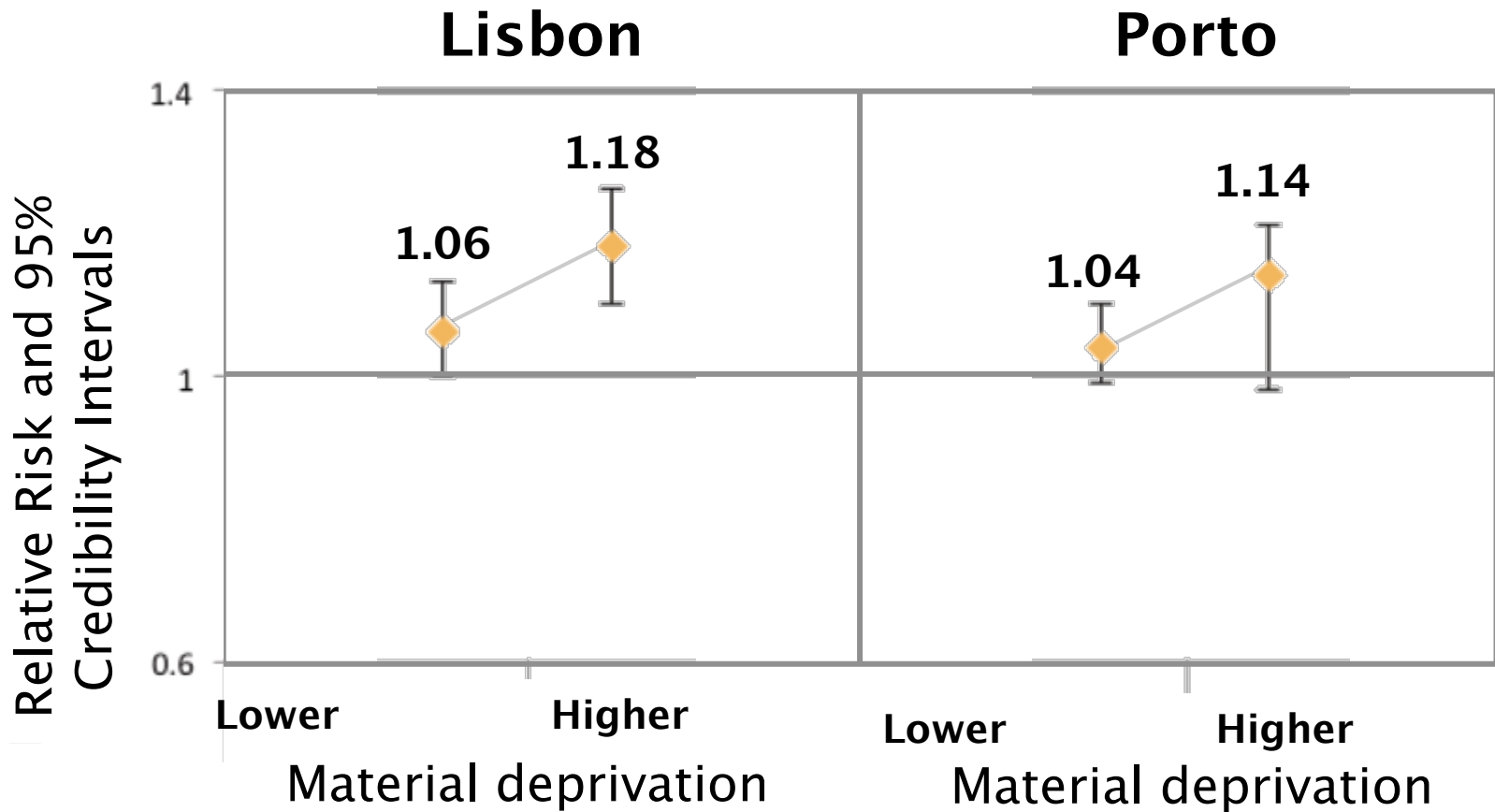
▣ Parishes



# Suicide: association with material deprivation, 2002-2012



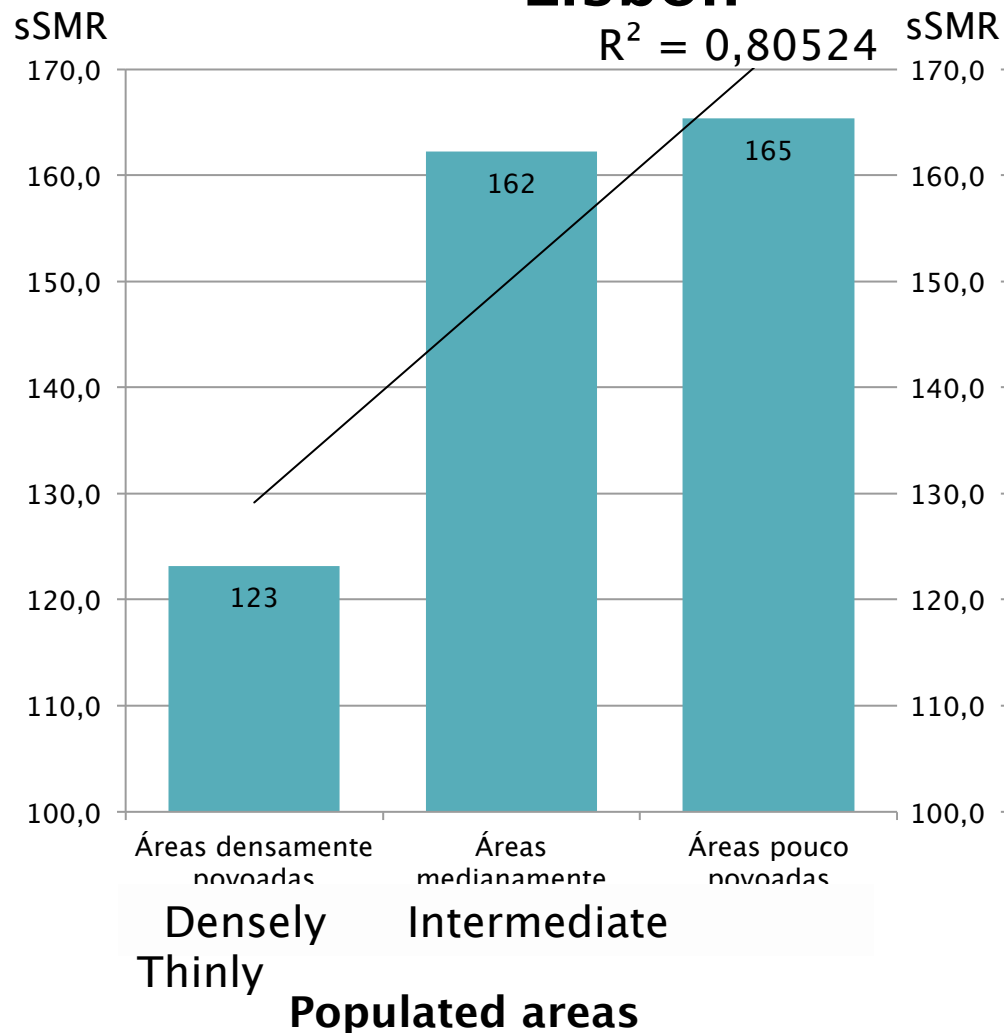
# Suicide: association with material deprivation, 2002-2012



# Suicide: association with degree of urbanization, 2011

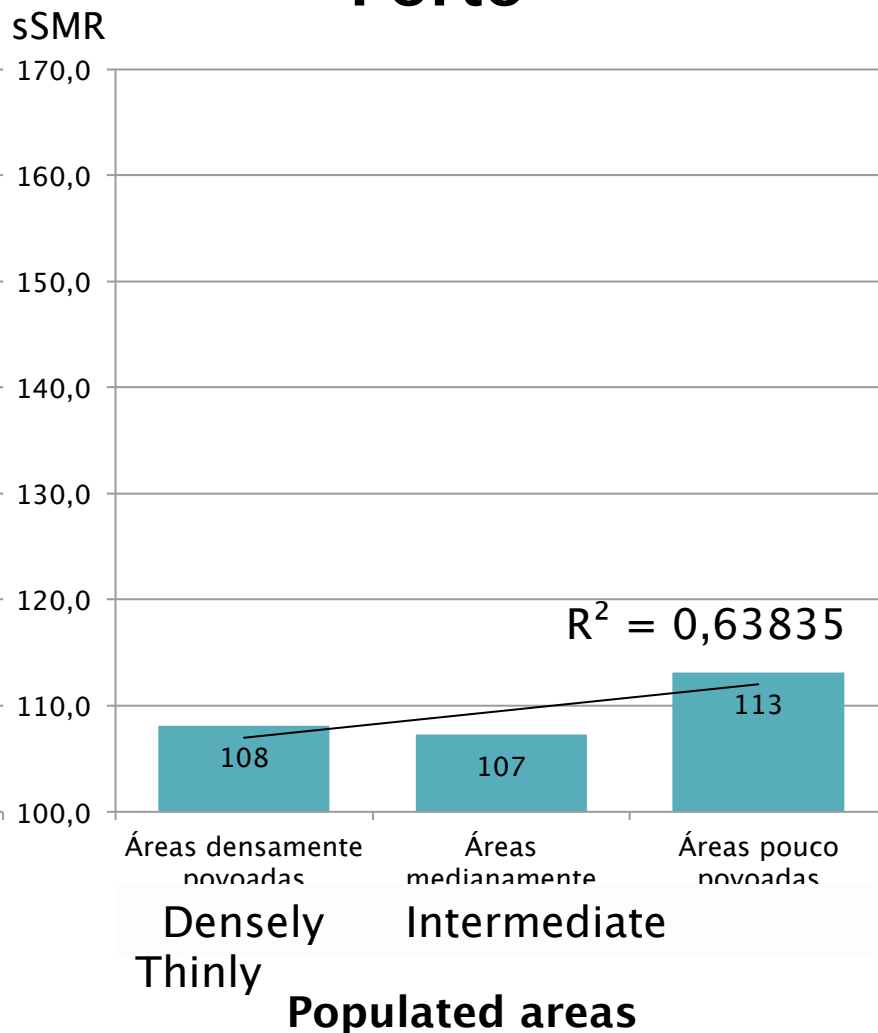
## Lisbon

$R^2 = 0,80524$



## Porto

$R^2 = 0,63835$





**Suicide and  
social determinants in Portugal**

**Suicide**

**Suicide in  
Metropolitan Area**

**Final Remarks**



# Final Remarks

# Suicide in Portugal (20 years: 1989–93 | 2008–12)

- The **North/South pattern** of suicidal behaviour is fading away
- The **urban/rural divide** of suicide mortality has become more pronounced, mainly in the metropolitan areas
- **Higher rurality and material deprivation** lead to higher risk of suicide in Men (not in Women)
- Increased suicide is associated with **context conditions** (spatial and social determinants), that is,
  - It is **accentuated in times of crisis**

It is necessary to develop:  
**Actions/interventions** that promote a reduction of negative effects of rurality and material deprivation to help **reduce suicide mortality**

# Suicide in the Metropolitan Areas (10 years 2002–2012)

**European metropolitan context:** suicide has increased in the Lisbon Metropolitan Area

## **Lisbon Metropolitan Area *versus* Porto Metropolitan Area**

- Higher mortality by suicide in the Lisbon Metropolitan Area
- The tendency is the higher the material deprivation, the higher the suicide risk
  - Only statistically significant in the LMA

It suggests that is necessary to design:  
Interventions and actions that **address the determinants of poverty** related to (e.g.) literacy,  
employment and housing conditions

# The Reliability of the numbers

“Portugal still presents inaccurate statistics for causes of death, with about a 9.6% (2013) rate of ill-defined deaths”

Santana et al, 2015

“The true standardized suicide rates in Portugal will be higher than the official current value (2009)

7.5/100,000 inhabitants  
may be around 12.0 a 14.0/100,000 inhabitants”

Gusmão, 2013



## Research Team:

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José Caldas de Almeida

Manuela Silva

Paula Santana (coord.)

Pedro Pita Barros

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Partidário



# Thank you!

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