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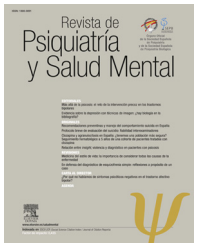

ORIGINAL ARTICLE

# Suicide in Castellon, 2009–2015: Do sociodemographic and psychiatric factors help understand urban–rural differences?☆

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**KEYWORDS**
Suicide;
Public health;
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**Abstract**
*Introduction:* Studies have pointed to rurality as an important factor influencing suicide. Research so far suggests that several sociodemograpic and psychiatric factors might influence urban–rural differences in suicide. Also, their contribution appears to depend on sex and age. Unfortunately, studies including a comprehensive set of explanatory variables altogether are still scare and most studies have failed to present their analyses split by sex and age groups. Also, urban–rural differences in suicide in Spain have been rarely investigated. The present study aimed at explaining rural–urban differences in suicidality in the province of Castellon (Spain). A comprehensive set of sociodemographic and psychiatric factors was investigated and analyses were split by sex and age.
*Material and method:* The sample comprised all suicides recorded in the province of Castellon from January 2009 to December 2015 (n = 343). Sociodemographic data included sex, age, and suicide method. Psychiatric data included the history of mental health service utilization, psychiatric diagnosis, suicide attempts, and psychiatric hospitalization.
*Results:* Consistent with past research, suicide rates were highest in rural areas, especially in men and older people. We also found that urban–rural differences in sociodemographic and psychiatric variables were sensitive to sex and age. Our results indicated that specialized

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mental health service use and accessibility to suicide means might help understand urban–rural differences in suicide, especially in men. When exploring urban–rural differences as a function of age, general practitioner visits for psychiatric reasons were more frequent in the older age group in rural areas.
*Conclusions:* Study implications for suicide prevention strategies in Spain are discussed.


**PALABRAS CLAVE**
Suicidio;
Salud pública;
Diferencias sexuales;
Psiquiatría;
Edad

**El suicidio en Castellón entre 2009 y 2015: ¿ayudan los factores sociodemográficos y psiquiátricos a entender las diferencias entre los ámbitos urbano y rural?**

**Resumen**
*Introducción:* El nivel de la ruralidad ha demostrado ser un factor importante en el suicidio. Las diferencias en suicidio según ruralidad parecen explicarse por factores sociodemográficos y psiquiátricos y su importancia depende del sexo y la edad. Hasta ahora, se han explorado pocos factores sociodemográficos y psiquiátricos a la vez, siendo aún más infrecuentes los análisis separando por sexo y edad. Además, en España, las diferencias en suicidio según ruralidad han sido poco investigadas. Este trabajo explora las diferencias en suicidio entre áreas rurales y urbanas en la provincia de Castellón (España). Para ello, se evaluó un amplio conjunto de factores sociodemográficos (sexo, edad y método de suicidio) y psiquiátricos (historia de uso de servicios de salud mental, diagnóstico psiquiátrico, intentos de suicidio y hospitalización psiquiátrica). Los análisis se dividieron por sexo y edad.
*Material y método:* La muestra incluyó todos los suicidios registrados en la provincia de Castellón entre enero de 2009 y diciembre de 2015 (n = 343).
*Resultados:* En línea con trabajos anteriores, encontramos tasas de suicidio más altas en las zonas rurales, especialmente en hombres y personas mayores. El efecto de las variables sociodemográficas y psiquiátricas sobre las diferencias en suicidio dependieron de sexo y edad. Así, el uso de salud mental y la accesibilidad a métodos de suicidio explicarían las diferencias de ruralidad en suicidio sobre todo en hombres, mientras que la frecuencia de visitas psiquiátricas con el médico de familia haría lo mismo en personas mayores.
*Conclusiones:* En el texto se discuten las implicaciones de estos resultados para la prevención del suicidio en España.


## Introduction

Suicide is a serious public health problem.[1,2] In 2012 suicide became the 15th leading cause of death and accounted for 1.4% of all deaths worldwide.[3] In Spain, suicide was the first cause of unnatural death and the 11th leading cause of death in 2014.[4]

Research has pointed to rurality as an important factor explaining suicide. Higher suicide rates are frequently found in rural compared to urban areas and these differences have increased in the past decades.[5–8]

Several sociodemographic and psychiatric factors have been proposed to influence urban–rural differences in suicide. For example, urban–rural differences in suicide rates are largest among men[5,6,9–11] and suicide risk for immigrants is highest in rural areas.[12] Also, while urban–rural differences in mental disorders appear to be negligible,[11,13,14] the use of mental health services is less frequent in rural areas,[11,15] suggesting accessibility problems (i.e., reduced number of specialists per capita or distance to health care facilities) or cultural differences (i.e., prejudice toward psychiatric treatment or asking for assistance) in rural areas.

Interestingly, research has also indicated that the influence of psychiatric and social factors on urban–rural differences in suicide is sensitive demographic characteristics, such as sex and age. For example, a higher accessibility to firearms and a lower proportion of general practitioner visits have been proposed to explain higher suicide rates rural areas, but only in males.[9,11] With regards to age, hanging has only been found to be more frequent in rural males aged 20–34 years, but not in older adults.[11]

Despite previous findings are promising, the extent to which sociodemographic and psychiatric factors might help understand urban–rural differences in suicide still needs more investigation. On the one hand, because sociodemographic and psychiatric variables are rarely explored altogether in the same study, arguably due to difficulties in gathering extensive clinical information in large-scale nation-wide studies. On the other, because research suggests that the effect of psychiatric and sociodemographic factors on urban–rural differences in suicide should be explored separately for men and women and across different ages, which is not a frequent practice.

In Spain, lower suicide rates have been reported in rural areas,[16] contrary to most research in the topic. It is