

(>18 y.o.). The association between loneliness and total, general practitioner (GP), specialized, pharmaceutical, and mental healthcare expenditure was tested using Poisson and Zero-inflated negative binomial models, controlling for numerous potential confounders (i.e. demographic, socioeconomic, lifestyle-related factors, self-perceived health, and psychological distress), for multiple age groups. Excess expenditure attributed to loneliness was extrapolated to the entire population.

**Results:**

Controlling for demographic, socioeconomic, and lifestyle-related factors, loneliness was indirectly (via poorer health) associated with higher expenditure in all categories. In fully adjusted models, it showed a direct association with higher expenditure for GP and mental healthcare (0.5% and 11.1%, respectively). The association with mental healthcare expenditure was stronger in younger than in older adults (for ages 19-40, the contribution of loneliness represented 61.8% of the overall association).

**Conclusions:**

Loneliness contributes to health expenditure both directly and indirectly, particularly in younger age groups. This implies a strong financial imperative to address this issue.

**Key messages:**

- Loneliness is associated with increased healthcare expenditure independent of demographic and socioeconomic factors.
- Excess healthcare expenditure related to loneliness are particularly apparent in mental healthcare and in younger age groups.

## Costs of loneliness: the association between loneliness and healthcare expenditure

Rachelle Meisters

R Meisters<sup>1</sup>, D Westra<sup>1</sup>, P Putrik<sup>1,2</sup>, H Bosma<sup>3</sup>, D Ruwaard<sup>1</sup>, M Jansen<sup>1,2</sup>

<sup>1</sup>Health Services Research, CAPHRI, Maastricht University, Maastricht, Netherlands

<sup>2</sup>Academic Collaborative Center for Public Health Limburg, GGD Zuid Limburg, Heerlen, Netherlands

<sup>3</sup>Social Medicine, CAPHRI, Maastricht University, Maastricht, Netherlands  
Contact: r.meisters@maastrichtuniversity.nl

**Background:**

Loneliness is a growing issue. It has been associated with a range of unhealthy behaviors, poorer health, and increased morbidity. However, the healthcare costs of loneliness are poorly understood as limited existing research on loneliness focused on older age populations, few expenditure categories, and controlled for just a few potential confounders. Our study aims to fill this evidence gap.

**Methods:**

Multiple sources were combined into a dataset containing a nationally representative sample (n = 341,376) of Dutch adults