



Systematic Review on the Association of Loneliness and Social Isolation with Diabetes Mellitus

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Introduction

Loneliness and social isolation are recognized as psychosocial factors that may influence the development of chronic diseases, such as diabetes mellitus type 2 (T2DM).¹ Research suggests that psychosocial stress, such as caused by loneliness or social isolation, can increase carbohydrate intake and suppress insulin levels, which contributes to an increase in diabetes risk.² Our systematic review aimed to synthesize longitudinal evidence on the association between loneliness, social isolation, and T2DM in adults. Our study is part of the EU-Horizon 2020 project RECETAS.^{3,4}

Methods

To identify relevant studies, we performed a comprehensive search according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines⁵ in PubMed/MEDLINE, PsycINFO, and Web of Science, focusing on longitudinal, quantitative research published in English or German after 2003. Eligible studies assessed the association of loneliness or social isolation with DM in adults. Two reviewers independently performed screening, data extraction, and quality assessment using the Newcastle-Ottawa Scale (NOS).⁶

Results

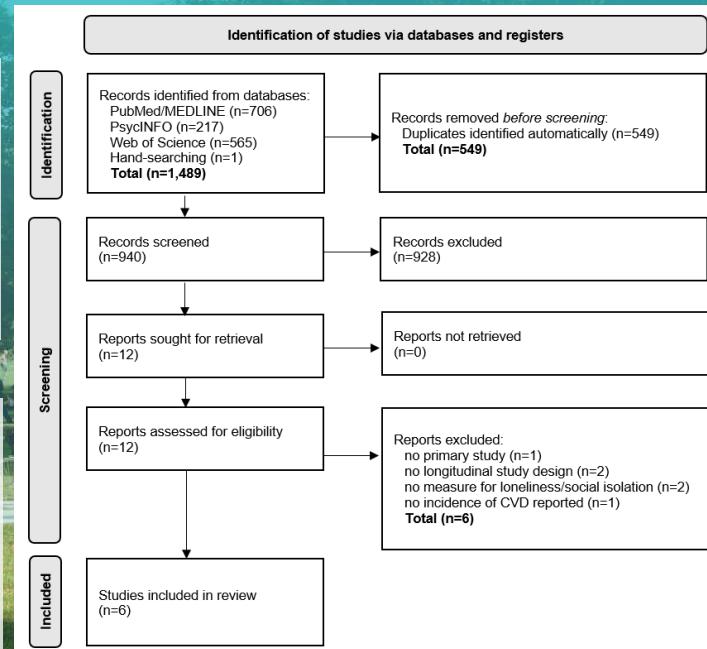


Fig. 1. PRISMA 2020 flowchart⁵

Studies included: n=6 (Fig. 1)
Sample Size: 4,112-437,303

Loneliness (L): n=2
Social Isolation (SI): n=1
Both: n=3
Prevalence L: 4.6-29.5%
Prevalence SI: 9.1-37%

Mean Age: 43-65 years
Gender:
Proportion of women: 47.8%-56.0%

UCLA three-item Loneliness Scale
Berkman-Syme Social Network Index
Non-validated questionnaires

UK Biobank & CHARLS: n=1
English LSA: n=1
Trøndelag Health Study (HUNT): n=1
HILDA Survey: n=1
Danish NHS: n=1
MONICA study: n=1



UK: n=2
China: n=1
Norway: n=1
Germany: n=1
Denmark: n=1
Australia: n=1

Cox-proportional hazard models: n=4
Logistic regression: n=1
Generalized estimating equations: n=1

Loneliness:
Stat. sig. effect: n=5
No stat. sig. effect: n=0
Social isolation
Stat. sig. effect: n=3
No stat. sig. effect: n=1
NOS: good quality

Conclusion

Evidence from longitudinal studies indicates that both, loneliness and social isolation are associated with an increased risk of diabetes mellitus type 2. Consequently, our findings highlight the importance of addressing psychosocial factors in diabetes prevention strategies.

Abbreviations: CHARLS: China Health and Retirement Longitudinal Study; LSA: Longitudinal Study of Ageing; HILDA: Household, Income and Labour Dynamics Australia; MONICA: Monitoring of Trends and Determinants in Cardiovascular Disease; ; NHS: National Health Survey; UK: United Kingdom

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