

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

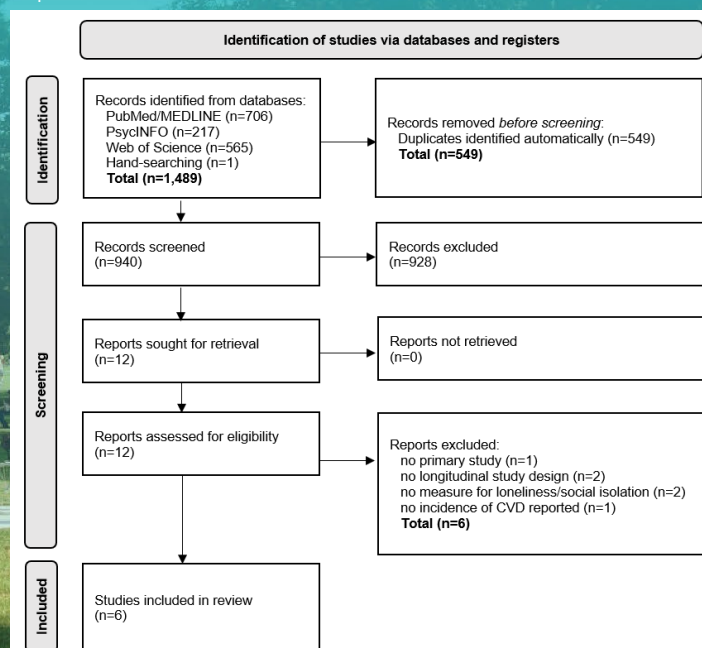


Fig. 1. PRISMA 2020 flowchart⁵



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

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

References:

¹Pettit T, et al. Systematic Review of Loneliness and Common Chronic Physical Conditions in Adults. *Open Psychol J.* 2015;8(Suppl 2):113. ²Hitze B, et al. How the selfish brain organizes its supply and demand. *Frontiers in Neuroenergetics.* 2010;2:1. ³Coll-Planas L, et al. Nature-based social interventions to address loneliness among vulnerable populations: a common study protocol for three related randomized controlled trials in Barcelona, Helsinki, and Prague within the RECETAS European project. *BMC Public Health.* 2024;24(1):172. ⁴Litt JS, et al. Nature-based social interventions for people experiencing loneliness: the rationale and overview of the RECETAS project. *Cities & Health.* 2024;8(3):418. ⁵Page MJ, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ.* 2021;372:n71. ⁶Wells GA, et al. 'The Newcastle-Ottawa Scale (NOS) for assessing the quality of nonrandomised studies in meta-analyses'. In 2025 https://www.ohri.ca/programs/clinical_epidemiology/oxford.asp.