Brazilian
JOURNAL OF HEALTH AROMATHERAPY AND ESSENTIAL OIL

Mini-Review

The Impact of Loneliness on the Lives of Older Adults: A Bibliographic Review

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Abstract: Objective: Objective: To analyze the impact of loneliness on older adults from a biopsychosocial perspective, emphasizing its determinants, biological and clinical consequences, and the effectiveness of preventive and therapeutic strategies. Data Sources: A bibliographic and integrative review was conducted using publications indexed in PubMed, SciELO, and the Cochrane Library, including cross-sectional studies, longitudinal studies, systematic reviews, and meta-analyses focused on adults aged 60 years and older. Data Synthesis: The literature shows that loneliness and social isolation are strongly associated with depression, anxiety, sleep disturbances, cognitive decline, increased healthcare utilization, and higher all-cause mortality. These conditions are also linked to dysregulation of the hypothalamic-pituitary-adrenal axis, increased cortisol levels, chronic low-grade inflammation, and accelerated biological aging, including telomere shortening and increased epigenetic age. Conclusion: Loneliness in later life should be understood as a major public health concern. Multicomponent interventions, digital inclusion, group-based activities, psychological support, and community-based engagement appear to be the most promising strategies to mitigate its effects and improve quality of life in older adults.

Keywords: Older adults; Loneliness; Social isolation; Healthy aging; Inflammation; Mortality; Digital inclusion; Public health.

Citation: Lopes MFG. The Impact of Loneliness on the Lives of Older Adults: A Bibliographic Review. Brazilian Journal of Aromatherapy and Essential Oil. 2026;3: bjhae.

doi: https://doi.org/10.62435/2965-7253.bjhae.2026.bjhae

Received: 26 March 2026
Accepted: 10 April 2026
Published: 30 April 2026

1. Introduction

According to the World Health Organization, older adults are commonly defined as individuals aged 60 years or older. Population aging has intensified the relevance of psychosocial conditions that threaten healthy aging, particularly loneliness and social isolation. Although these terms are often used interchangeably, they are conceptually distinct. Social isolation refers to the objective scarcity of social contacts or social network ties, whereas loneliness is a subjective and distressing experience arising from the discrepancy between desired and actual social relationships [1,2]. From an evolutionary perspective, loneliness may function as a form of social pain that alerts the individual to the risks of disconnection and motivates the restoration of interpersonal bonds [3]. In older age, however, barriers such as bereavement, chronic illness, reduced mobility, retirement, sensory impairment, and financial vulnerability may transform this adaptive signal into a chronic state. Persistent loneliness has been associated with depression, anxiety, insomnia, cognitive decline, cardiovascular disease, and worsening of chronic degenerative conditions [1,4-6]. The present review aims to synthesize current evidence on the effects of loneliness in older adults, with emphasis on biopsychosocial determinants, physiological and

epigenetic consequences, healthcare burden, and evidence-based strategies for prevention and management.

2. Methodology

This study is an integrative bibliographic review focused on the impact of loneliness on older adults. The literature search was based on publications indexed in PubMed, Sicelo, and the Cochrane Library, with emphasis on observational studies, longitudinal cohorts, systematic reviews, and meta-analyses. Eligibility criteria included studies involving adults aged 60 years or older and addressing one or more of the following domains: loneliness, social isolation, biological markers of stress or inflammation, cognitive or mental health outcomes, morbidity and mortality, healthcare utilization, and interventions designed to reduce loneliness. Classic conceptual references were included to support definitional and theoretical framing. The synthesis was narrative and thematic, structured around major domains identified across the selected literature: determinants of loneliness, mental and physical health outcomes, biological embedding, healthcare use, mortality, and intervention strategies.

3. Results

The reviewed literature consistently indicates that loneliness has broad and clinically significant repercussions for older adults. Risk factors: Widowhood, divorce, living alone, poor physical health, functional impairment, low income, and recent loss of significant relationships are among the most robust predictors of loneliness and social isolation in later life [1,2]. These factors often interact, producing cumulative vulnerability. Mental and physical health: Loneliness is strongly associated with depressive symptoms, anxiety, sleep disturbances, and accelerated cognitive decline, with increased risk for dementia-related outcomes [4-6]. In addition, loneliness and social isolation independently predict higher rates of stroke and acute myocardial infarction [5,6]. Biological and epigenetic markers: Loneliness has been linked to neuroendocrine dysregulation, particularly hyperactivation of the hypothalamic-pituitary-adrenal axis and elevated cortisol levels. It is also associated with chronic low-grade inflammation, including higher levels of C-reactive protein, interleukin-6, and tumor necrosis factor-alpha [4,7]. At the cellular level, recent evidence suggests associations with accelerated epigenetic aging, particularly Grim Age acceleration, and with biological wear consistent with multimorbidity in older adulthood [4]. Healthcare utilization and mortality: Socially isolated or lonely older adults are more likely to use healthcare services more frequently, including emergency department visits and unplanned hospitalizations [6]. Meta-analytic evidence indicates that loneliness is associated with an increased risk of all-cause mortality of approximately 14%, whereas social isolation may increase mortality risk by about 35% in older populations [5,6].

4. Discussion

The current evidence supports the view that loneliness in older adults is not merely an emotional complaint but a multidimensional condition with behavioral, biological, and clinical consequences. Its effect appears to extend beyond psychological suffering, influencing immune regulation, endocrine function, inflammatory tone, and patterns of healthcare demand [4-7]. In this sense, loneliness may be understood as a form of biological embedding of adverse social experience. The comparison of loneliness with traditional health risk factors such as smoking and obesity should be interpreted cautiously; however, the literature consistently suggests that the magnitude of its health burden is clinically meaningful and relevant for public health planning [5,6]. For healthcare systems, loneliness contributes to avoidable service use and may amplify frailty, multimorbidity, and dependence in aging populations. Intervention studies suggest that the most effective programs are multicomponent rather than single-focus approaches. Group-based interventions that combine social participation, psychoeducation, supportive interaction, and skill-building tend to show

better results than strategies limited to simple social contact [8]. Psychological interventions, particularly those targeting maladaptive social cognition, such as cognitive behavioral approaches, may also be beneficial [8]. Digital inclusion has emerged as an important strategy, especially for older adults with mobility limitations or geographic barriers. Training in the use of the internet, smartphones, messaging platforms, and videoconferencing may reduce perceived isolation and expand access to meaningful interaction [8,9]. In addition, interventions involving animal-assisted therapy, social robots, intergenerational programs, arts, horticulture, and physical activity may improve purpose, belonging, and emotional engagement [8,9]. These findings reinforce the need to move beyond an exclusively biomedical model of aging. Proactive identification of lonely older adults in primary care, social assistance, and community settings should become part of integrated healthy aging strategies.

5. Conclusion

Loneliness and social isolation among older adults constitute a complex public health problem that compromises psychological well-being and is associated with inflammation, accelerated biological aging, multimorbidity, greater healthcare utilization, and premature mortality. The evidence indicates that effective responses should include social participation, digital empowerment, therapeutic support, and strengthening of family and community networks. Healthcare and social systems should adopt proactive, interdisciplinary, and community-based approaches capable of identifying vulnerable older adults early and promoting inclusion, dignity, and meaning in the aging process.

Research Ethics Committee Approval: None.

Acknowledgments: None.

Conflicts of Interest: None.

Supplementary Materials: None.

References

1. Cacioppo JT, Cacioppo S, Boomsma DI. Evolutionary mechanisms for loneliness. Cogn Emot. 2014;28(1):3-21. doi:10.1080/02699931.2013.837379.
2. de Jong Gierveld J, van Tilburg TG. Social isolation and loneliness. In: Friedman HS, editor. Encyclopedia of Mental Health. 2nd ed. Oxford: Academic Press; 2016. p. 175-178. doi:10.1016/B978-0-12-397045-9.00118-X.
3. Freilich CD, Markon KE, Mann FD, Cole SW, Krueger RF. Associations between loneliness, epigenetic aging, and multimorbidity through older adulthood. J Gerontol B Psychol Sci Soc Sci. 2024;79(12):gbae169. doi:10.1093/geronb/gbae169.
4. Van Bogart K, Engeland CG, Sliwinski MJ, Henson JM, Smyth JM, Almeida DM, et al. The association between loneliness and inflammation: findings from an older adult sample. Front Behav Neurosci. 2022;15:801746. doi:10.3389/fnbeh.2021.801746.
5. Holt-Lunstad J, Smith TB, Baker M, Harris T, Stephenson D. Loneliness and social isolation as risk factors for mortality: a meta-analytic review. Perspect Psychol Sci. 2015;10(2):227-237. doi:10.1177/1745691614568352.
6. Hou T, Ho MH, Lederman Z, Cheung DST, Rainer TH, Lin CC. Associations of social isolation and loneliness with healthcare utilization among older adults: a systematic review and meta-analysis. Innov Aging. 2026;10(1):igaf136. doi:10.1093/geroni/igaf136.
7. Nakou A, Dragioti E, Bastas N, Zagorianakou N, Kakaidi V, Tsartsalis D, et al. Loneliness, social isolation, and living alone: a comprehensive systematic review, meta-analysis, and meta-regression of mortality risks in older adults. Aging Clin Exp Res. 2025;37(1):29. doi:10.1007/s40520-024-02925-1.
8. Patil U, Braun KL. Interventions for loneliness in older adults: a systematic review of reviews. Front Public Health. 2024;12:1427605. doi:10.3389/fpubh.2024.1427605.
9. Yang Y, Wang C, Xiang X, An R. AI applications to reduce loneliness among older adults: a systematic review of effectiveness and technologies. Healthcare (Basel). 2025;13(5):446. doi:10.3390/healthcare13050446.