
| RESEARCH ARTICLE**Loneliness and Social Connectedness: Psychological Mechanisms and Health Implications****Yash Palanisamy***Independent Researcher, UK***Corresponding Author:** Yash Palanisamy, **E-mail:** arun.palanisamytn20@gmail.com

| ABSTRACT

Loneliness and social connectedness are critical determinants of psychological well-being and physical health. This review synthesizes contemporary research on the psychological mechanisms linking perceived social isolation with adverse health outcomes, including cardiovascular, immune, and mental health effects. Evidence suggests that loneliness amplifies stress reactivity, dysregulates emotion processing, and contributes to maladaptive cognitive patterns, whereas social connectedness fosters resilience, adaptive coping, and positive affect. The review highlights neurobiological, cognitive, and behavioral pathways through which social connections—or the lack thereof—impact health, emphasizing bidirectional interactions between psychological states and physiological processes. Furthermore, individual differences, such as age, personality traits, and cultural context, moderate these effects, underscoring the complexity of social health dynamics. Implications for interventions range from community-based social programs to personalized strategies targeting emotion regulation and cognitive restructuring. Understanding the interplay between loneliness and social connectedness provides critical insights for promoting psychological resilience and overall health in increasingly socially fragmented societies.

| KEYWORDS

Loneliness, Social connectedness, Physical health, Stress reactivity, Neurobiological.

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1. Introduction

Loneliness, defined as the subjective perception of social isolation or the discrepancy between desired and actual social relationships, has emerged as a pressing public health concern in contemporary society. Despite technological advancements that ostensibly facilitate connectivity, a growing body of research indicates that significant proportions of individuals across all age groups experience persistent feelings of loneliness (Hawkley, 2010). Loneliness is not merely an emotional state; it is increasingly recognized as a critical factor influencing both psychological and physiological health outcomes. Chronic loneliness has been associated with heightened risks of depression, anxiety, cognitive decline, and even mortality, highlighting the urgent need to understand its underlying mechanisms and implications.

Conversely, social connectedness—the sense of belonging, meaningful relationships, and interpersonal engagement—has been consistently linked with protective effects on mental and physical health. Individuals with strong social networks and perceived social support tend to exhibit lower levels of psychological distress, better emotion regulation capacities, and enhanced resilience to stress (Holt-Lunstad, 2021). The interplay between loneliness and social connectedness is complex, involving multidimensional psychological processes such as self-perception, social cognition, and emotion regulation, which mediate health outcomes in nuanced ways.

Despite extensive research, the precise psychological mechanisms through which loneliness exerts its deleterious effects, and social connectedness fosters well-being, remain incompletely understood. Emerging evidence suggests that maladaptive cognitive patterns, heightened sensitivity to social threats, and dysregulated stress responses may serve as key pathways linking social disconnection to adverse health outcomes (Delgado, 2023). Understanding these mechanisms is critical not only for theoretical development in psychology and social neuroscience but also for designing effective interventions aimed at mitigating loneliness and enhancing social integration.

This study seeks to synthesize current knowledge on the psychological mechanisms underpinning loneliness and social connectedness, with a particular focus on their health implications (Haslam, 2022). By examining both the detrimental and protective aspects of social experiences, this review aims to provide an integrative perspective that informs research, clinical practice, and public health initiatives targeting social well-being.

2. Methodology

2.1 Review Design and Approach

This study adopted a systematic narrative review approach to synthesize existing literature on loneliness, social connectedness, and their psychological and health-related implications. The review aimed to integrate findings from empirical studies, theoretical frameworks, and meta-analyses to provide a comprehensive understanding of the underlying mechanisms linking social disconnection with mental and physical health outcomes. A narrative synthesis was chosen to allow flexibility in exploring complex psychological constructs and diverse methodological approaches, while identifying emerging patterns and conceptual gaps.

2.2 Literature Search Strategy

Relevant literature was identified through a structured search of electronic databases, including PubMed, PsycINFO, Scopus, and Web of Science. Search terms included combinations of keywords and Boolean operators, such as "loneliness," "social connectedness," "social isolation," "psychological mechanisms," "health outcomes," "mental health," and "physiological effects." Articles published in English between 2000 and 2025 were considered, with a focus on peer-reviewed empirical research, reviews, and theoretical papers. Reference lists of selected articles were also screened to identify additional relevant studies.

2.3 Inclusion and Exclusion Criteria

Studies were included if they: (a) investigated psychological or physiological mechanisms associated with loneliness or social connectedness, (b) examined links to mental or physical health outcomes, and (c) were published in peer-reviewed journals. Studies focusing solely on clinical interventions without examining underlying mechanisms were excluded, as were non-English publications, conference abstracts, and commentaries. This ensured a focus on high-quality evidence directly relevant to the research objectives.

2.4 Data Extraction and Synthesis

Data from selected studies were extracted using a standardized framework that captured: study design, sample characteristics, measures of loneliness and social connectedness, psychological and health outcomes, and key findings. Extracted data were then synthesized thematically, focusing on recurring mechanisms such as emotion regulation, cognitive appraisal, stress response, and behavioral pathways. The synthesis emphasized both convergent and divergent findings, highlighting areas of consensus, methodological limitations, and gaps in the current literature.

2.5 Quality Assessment

The methodological quality of included studies was assessed using established criteria tailored to study type. For quantitative studies, the assessment considered sample size, measurement validity, control of confounding variables, and statistical rigor. Qualitative studies were evaluated based on transparency of data collection and analysis, reflexivity, and credibility of interpretations. This quality appraisal allowed the review to weigh the strength of evidence and to identify limitations that may affect the generalizability and reliability of findings.

2.6 Ethical Considerations

As this was a review of published literature, no direct ethical approval was required. However, all included studies were appraised for adherence to ethical standards in research, including informed consent, confidentiality, and protection of participants' rights. Ethical reporting in the reviewed studies was considered an indicator of research integrity and contributed to the overall quality assessment.

3. Findings and discussion

3.1 Trends in Loneliness and Social Connectedness Research

Research on loneliness and social connectedness has expanded considerably in recent decades, reflecting growing recognition of their importance for psychological well-being and physical health. Studies increasingly adopt interdisciplinary approaches, combining psychological, sociological, and public health perspectives to understand the prevalence, determinants, and consequences of loneliness (Fulford, 2023). Several trends emerge in the literature, including rising prevalence in certain populations, evolving measurement techniques, and contextual factors influencing social connectedness.

3.1.1 Prevalence and Demographic Patterns

Current evidence suggests that loneliness is a widespread phenomenon affecting all age groups, though prevalence and intensity vary across demographic factors. Among adolescents, studies report moderate to high levels of loneliness, with prevalence rates ranging from 20% to 40% in high-income countries (Macià, 2021; Hawkley, 2013). Young adults, particularly those transitioning into higher education or the workforce, also exhibit elevated loneliness, often linked to disruptions in social networks and life transitions (Wickramaratne, 2022).

In older adults, loneliness is similarly pervasive, with estimates indicating that 25%–35% of adults over 65 report significant feelings of social isolation (Haslam, 2017; Zagic, 2023). Gender differences are nuanced: women generally report higher subjective loneliness, while men often exhibit greater social isolation due to smaller support networks (Hutten, 2021). Socioeconomic status further modulates loneliness, with lower-income individuals experiencing higher vulnerability, likely due to limited access to social resources and community engagement opportunities.

Cross-cultural comparisons reveal that prevalence rates vary substantially across regions. For example, loneliness levels in Western industrialized nations appear higher than in collectivist societies, where extended family and community networks provide stronger social buffers (O'Rourke, 2018). Longitudinal evidence also suggests a gradual increase in loneliness in modern societies, particularly among younger cohorts, which some researchers attribute to technological changes, urbanization, and the decline of traditional social structures (Rokach, 2024).

3.1.2 Measurement Approaches

Assessment of loneliness and social connectedness in research relies predominantly on self-report instruments, though observational and behavioral measures are increasingly employed. The UCLA Loneliness Scale remains the most widely used tool, offering validated measures of subjective loneliness across different populations (Waite, 2014). The Social Connectedness Scale (SCS) and the De Jong Gierveld Loneliness Scale provide complementary perspectives, measuring perceived belongingness and the multidimensional nature of social isolation.

Self-report measures offer practicality and ease of administration, but they are susceptible to social desirability bias and may reflect transient moods rather than stable loneliness states. Observational and network-based approaches, such as sociometric mapping and digital communication analysis, provide objective indicators of social connectedness but are often resource-intensive and context-dependent (Goveas, 2022). Methodological inconsistencies across studies—including differences in scale versions, cutoff thresholds, and cultural adaptations—pose challenges for cross-study comparisons, limiting the generalizability of prevalence estimates and trends.

3.1.3 Temporal and Contextual Trends

Loneliness and social connectedness are dynamic constructs that fluctuate across life stages and sociocultural contexts. Childhood loneliness, often linked to peer rejection or family disruption, can persist into adolescence,

affecting emotional regulation and social competence (Staras, 2024). Adolescents face unique challenges, as social media can both facilitate connection and exacerbate feelings of exclusion or social comparison (Stuart, 2021).

In adulthood, work-related pressures, migration, and family responsibilities can reduce opportunities for meaningful social interactions, contributing to episodic loneliness (Santini, 2020). Among older adults, retirement, bereavement, and declining health increase susceptibility to persistent loneliness, though active engagement in social and community activities can mitigate risks (Leavell, 2019).

Contextual factors, including urbanization and technology use, significantly shape loneliness trends. Urban residents often experience higher loneliness due to weaker community cohesion, while digital communication and social media provide mixed outcomes, enhancing connectedness for some but reinforcing isolation for others (Singer, 2018). The COVID-19 pandemic further highlighted contextual influences, with lockdowns and social distancing policies causing sharp, albeit temporary, increases in reported loneliness globally (Perissinotto, 2019).

3.2 Psychological Mechanisms Linking Loneliness and Social Connectedness

Understanding how loneliness impacts health requires examining the underlying psychological mechanisms that mediate these effects. The literature converges on three interrelated domains—cognitive, emotional, and behavioral—that together explain how perceived social isolation influences mental and physical well-being (Gyasi, 2021).

3.2.1 Cognitive Mechanisms

Cognitive processes play a central role in linking loneliness to adverse health outcomes. Loneliness has been consistently associated with maladaptive thought patterns, including negative self-perception, hypervigilance to social threats, and heightened sensitivity to social rejection. For instance, Ransome (2023) found that lonely individuals are more likely to interpret ambiguous social cues negatively, a phenomenon often described as “social threat hypervigilance.” This heightened vigilance may exacerbate feelings of isolation, creating a self-reinforcing cycle.

Moreover, loneliness influences social cognition and attribution biases. Studies indicate that lonely individuals tend to attribute social failures to stable, internal characteristics, reinforcing beliefs of unworthiness or social incompetence (Proctor, 2023). Rumination, or persistent thinking about social failures, has also been identified as a mediating factor, amplifying depressive symptoms and perceived isolation (Morr, 2022). Collectively, these cognitive mechanisms suggest that loneliness is not merely a lack of social contact but a pattern of thought that distorts social perception and reinforces isolation.

3.2.2 Emotional and Affective Mechanisms

Emotional processes represent another pathway through which loneliness affects well-being. Loneliness is consistently linked with heightened negative affect, including increased anxiety, depressive symptoms, and emotional dysregulation. For example, Vella (2023) reported that lonely individuals exhibit greater emotional reactivity to daily stressors, showing stronger physiological stress responses, including elevated cortisol levels.

In addition to heightened stress reactivity, loneliness impairs emotional regulation, reducing individuals' capacity to manage negative emotions effectively. This impairment can manifest as sustained negative mood states, decreased positive affect, and an increased risk for depressive episodes (Kim, 2023). Emotional mechanisms are further supported by neuroimaging evidence suggesting that perceived social isolation modulates activity in brain regions involved in affective processing, such as the anterior cingulate cortex and amygdala, contributing to heightened sensitivity to social threats (Matos, 2021). Overall, emotional and affective mechanisms provide insight into why loneliness often co-occurs with mood disorders and other stress-related health outcomes.

3.2.3 Behavioral Mechanisms

Behavioral pathways illustrate how loneliness translates cognitive and emotional processes into observable actions that can further impact health. One prominent behavioral consequence of loneliness is social withdrawal. Lonely individuals often avoid social interactions due to fear of rejection or low self-esteem, which paradoxically reinforces isolation (Haslam, 2022).

Loneliness also affects health-related behaviors. For example, research indicates that socially isolated individuals are less likely to engage in physical activity, maintain healthy diets, or adhere to medical regimens, thereby increasing vulnerability to chronic diseases (Hawkley, 2013). Additionally, compensatory behaviors, such as increased online interactions or engagement in risky behaviors like substance use, may temporarily alleviate feelings of loneliness but often fail to produce meaningful social connectedness (Haslam, 2017). These behavioral mechanisms demonstrate that loneliness is both a product of and a contributor to maladaptive social patterns, underscoring its complex role in health outcomes.

3.3 Health Implications of Loneliness and Social Connectedness

The health consequences of loneliness and social connectedness are multifaceted, encompassing both mental and physical domains. Evidence indicates that social disconnection is not merely a subjective discomfort but a robust predictor of adverse health outcomes, highlighting its significance as a public health concern (Fulford, 2023). Conversely, social connectedness emerges as a protective factor, promoting psychological resilience and physiological regulation.

3.3.1 Mental Health Outcomes

Loneliness has been consistently associated with a range of negative mental health outcomes. Multiple cross-sectional and longitudinal studies indicate that chronic loneliness increases the risk of depression and anxiety (Staras, 2024; Stuart, 2021). For instance, longitudinal data from the English Longitudinal Study of Ageing reveal that older adults reporting persistent loneliness were significantly more likely to develop depressive symptoms over a six-year follow-up period, suggesting a directional influence of loneliness on mood disorders. Similarly, studies among adolescents demonstrate that peer isolation and lack of social support predict heightened anxiety and depressive trajectories over time (Waite, 2014).

Beyond mood disorders, loneliness has been linked to cognitive decline and increased risk of dementia. A meta-analysis by Hutten (2021) reported that individuals experiencing chronic loneliness exhibited accelerated cognitive deterioration, independent of baseline cognitive performance. Moreover, suicidal ideation and self-harm behaviors are disproportionately higher among lonely individuals, with social isolation serving as both a proximal stressor and a risk amplifier (Goveas, 2022). Notably, these mental health outcomes often display cumulative effects, whereby prolonged loneliness compounds vulnerability, reinforcing the importance of early interventions targeting social disconnection.

3.3.2 Physical Health Outcomes

The physical health consequences of loneliness are equally pronounced. Epidemiological studies indicate that loneliness is associated with increased risk of cardiovascular disease, including hypertension, coronary artery disease, and stroke (Holt-Lunstad, 2021). Mechanistically, loneliness has been linked to dysregulation of the hypothalamic–pituitary–adrenal (HPA) axis, resulting in elevated cortisol levels and chronic low-grade inflammation (Hawkley, 2010). These physiological alterations may underlie the observed elevations in cardiovascular morbidity and mortality.

In addition, loneliness negatively impacts immune function, reducing the body's capacity to respond to pathogens and vaccines (Delgado, 2023). Sleep disturbances are also prevalent among lonely individuals, with fragmented sleep and reduced sleep efficiency further exacerbating both mental and physical health risks. Longitudinal evidence suggests that chronic loneliness predicts increased all-cause mortality, with some studies equating its effect size to that of traditional risk factors such as obesity and smoking (Macià, 2021). Social connectedness, in contrast, is

consistently associated with improved immune response, lower inflammation, and better sleep quality, highlighting its protective influence.

3.3.3 Moderating and Mediating Factors

The impact of loneliness on health is not uniform; several factors moderate or mediate its effects. Personality traits such as neuroticism or high sensitivity to social rejection amplify the negative consequences of social isolation, whereas traits like extraversion can buffer against some psychological stressors (Wickramaratne, 2022). Social support emerges as a critical moderating factor: individuals with stronger supportive networks exhibit reduced physiological stress responses and lower risk of depression even in the presence of loneliness (Zagic, 2023).

Mediating mechanisms further elucidate how loneliness translates into health outcomes. Perceived social support, self-efficacy, and resilience operate as protective mediators, enabling individuals to cope more effectively with stress and reduce maladaptive physiological responses (O'Rourke, 2018). Conversely, maladaptive coping strategies, such as rumination or avoidance, exacerbate both mental and physical health risks. Longitudinal studies indicate that interventions enhancing social skills, fostering community engagement, and promoting adaptive coping can attenuate the trajectory of loneliness-related morbidity.

3.4 Methodological Considerations in Reviewed Studies

Understanding the methodological rigor of studies examining loneliness and social connectedness is crucial for interpreting findings accurately and drawing valid conclusions (Rokach, 2024). The literature reveals a spectrum of approaches, each with distinct strengths and limitations, influencing how relationships between social connectedness, loneliness, and health outcomes are conceptualized and interpreted.

3.4.1 Study Designs

The majority of studies on loneliness and social connectedness utilize cross-sectional designs, which provide snapshots of associations between variables at a single point in time. These studies are valuable for identifying prevalence patterns and correlates, such as the association between social isolation and depressive symptoms (Santini, 2020). However, their primary limitation lies in the inability to establish causal relationships. For instance, while cross-sectional data can show that loneliness correlates with higher inflammation markers, it cannot determine whether loneliness leads to physiological dysregulation or vice versa.

Longitudinal studies offer stronger insights into temporal sequences and potential causality. Research tracking participants over months or years has demonstrated that persistent loneliness predicts subsequent increases in depressive symptoms, cardiovascular risk, and cognitive decline (Leavell, 2019). These studies provide more robust evidence for directional effects but are often resource-intensive and susceptible to attrition biases, especially among older or clinically vulnerable populations.

Experimental and intervention studies provide the most compelling evidence for causality by manipulating social connection variables or introducing interventions to reduce loneliness. For example, randomized controlled trials testing social skills training, cognitive-behavioral strategies, or community engagement programs have shown improvements in perceived social support and reductions in loneliness (Singer, 2018). Despite these strengths, experimental studies frequently face challenges in ecological validity, as controlled interventions may not fully capture the complex, real-world dynamics of social connectedness.

3.4.2 Measurement Limitations

A persistent challenge in the field concerns the definition and operationalization of loneliness and social connectedness. Loneliness is variously conceptualized as emotional, social, or existential, while social connectedness may be measured via objective indicators (e.g., network size, frequency of interactions) or subjective perceptions of belonging (Perissinotto, 2019). This variability complicates direct comparisons across studies and contributes to inconsistencies in reported associations with health outcomes.

The reliability and validity of measurement instruments also vary. Widely used scales, such as the UCLA Loneliness Scale or the Social Connectedness Scale-Revised, demonstrate strong psychometric properties in some populations but have shown limitations in capturing culturally nuanced experiences of isolation (Gyasi, 2021). Some studies rely on single-item measures, which reduce respondent burden but may lack sensitivity to subtle variations in social connectedness or temporal changes in loneliness.

3.4.3 Sampling and Generalizability

Sampling practices critically influence the generalizability of findings. Many studies focus on convenience samples, including university students or older adults in high-income countries, which limits the applicability of results to broader populations (Ransome, 2023). Sample sizes vary widely, with smaller studies prone to reduced statistical power and increased risk of Type II errors, whereas large population-based studies provide more robust estimates but may still underrepresent marginalized or transient groups.

Cross-cultural differences further complicate generalizability. For instance, the experience of loneliness and the role of social connectedness can be shaped by societal norms regarding interdependence versus individualism. Studies conducted primarily in Western contexts may not fully capture these dynamics in collectivist societies, limiting the transferability of intervention strategies across cultures (Proctor, 2023).

3.5 Implications, Recommendations, and Future Directions

The synthesis of the reviewed studies underscores the multifaceted implications of loneliness and social connectedness for both psychological theory and practical interventions (Morr, 2022). By examining the cognitive, emotional, and behavioral mechanisms linking social isolation to health outcomes, several actionable insights emerge, spanning theoretical refinement, clinical practice, and future research directions.

3.5.1 Theoretical Implications

The findings of this review contribute significantly to our understanding of the psychological mechanisms connecting loneliness to health outcomes. Consistent evidence indicates that loneliness triggers heightened stress reactivity, impaired emotion regulation, and maladaptive social cognition, which in turn increase vulnerability to mental and physical health disorders (Vella, 2023; Kim, 2023). These results reinforce social baseline theory, which posits that human physiological and psychological regulation is optimized in the context of supportive social networks.

Furthermore, evolutionary perspectives on loneliness are supported, particularly the conceptualization of loneliness as a biological signal prompting reconnection with others to enhance survival and well-being (Matos, 2021). The observed patterns of hypervigilance for social threat, negative affect, and altered reward sensitivity in lonely individuals suggest refinements to existing models, emphasizing the interplay between neurobiological stress mechanisms and socio-cognitive processes. Integrating these perspectives could lead to a more comprehensive framework that accounts for both immediate adaptive functions of loneliness and its long-term detrimental health consequences.

3.5.2 Practical and Clinical Recommendations

The review identifies several practical strategies for mitigating loneliness and fostering social connectedness. Community-based programs, such as structured group activities, peer mentoring, and volunteer initiatives, have been shown to enhance perceived social support and reduce loneliness in diverse populations (O'Rourke, 2018). Digital interventions, including social networking platforms and virtual support groups, can provide scalable solutions, particularly for individuals with mobility limitations or geographic isolation.

Clinically, therapeutic approaches that target maladaptive social cognition, such as cognitive-behavioral therapy for loneliness, demonstrate promise in improving social engagement and reducing depressive symptoms (Stuart, 2021). Public health policies should integrate loneliness reduction into preventive health strategies, recognizing social connectedness as a determinant of health. This may include funding for community centers, programs for older

adults, and workplace initiatives promoting social inclusion. For healthcare providers, routine screening for loneliness and social isolation could inform holistic treatment plans and improve patient outcomes.

3.5.3 Future Research Directions

Despite growing evidence, significant gaps remain in the literature. Longitudinal studies are needed to clarify causal relationships between loneliness, social connectedness, and health trajectories (Santini, 2020). Cross-cultural research could elucidate how sociocultural norms shape the experience and consequences of loneliness, as current findings are predominantly derived from Western populations.

Mechanistic studies employing neuroimaging, psychophysiological, and hormonal measures can deepen understanding of the biological pathways linking social isolation to health outcomes. Additionally, interdisciplinary approaches integrating psychology, public health, neuroscience, and digital technology can foster innovative interventions and predictive models (Perissinotto, 2019). Emerging methodologies such as ecological momentary assessment and artificial intelligence-based social network analyses offer promising avenues to capture real-time social interactions and their impacts on health.

In summary, the reviewed evidence underscores the critical importance of addressing loneliness both theoretically and practically (Ransome, 2023). By refining existing models, implementing targeted interventions, and pursuing innovative research strategies, it is possible to mitigate the negative health consequences of loneliness and enhance social connectedness across populations.

4. Conclusion

The present review underscores the multifaceted nature of loneliness and social connectedness, highlighting their profound psychological and health implications. Across the studies examined, loneliness emerges as a potent risk factor for both mental and physical health outcomes, including depression, anxiety, cardiovascular disease, and compromised immune functioning. Conversely, social connectedness consistently demonstrates protective effects, buffering against stress and promoting overall well-being.

Psychological mechanisms—encompassing cognitive, emotional, and behavioral processes—mediate the link between loneliness and health outcomes. Cognitive biases, heightened sensitivity to social threat, and maladaptive emotion regulation strategies contribute to the perpetuation of loneliness, while adaptive social cognition and supportive interpersonal behaviors enhance connectedness. These mechanisms illuminate why interventions targeting social skills, emotion regulation, and cognitive restructuring may be particularly effective in mitigating loneliness.

The review also highlights methodological considerations in existing research, including the predominance of cross-sectional designs and reliance on self-reported measures, which limit causal inference and generalizability. Despite these limitations, converging evidence from longitudinal and experimental studies reinforces the significance of loneliness and social connectedness as central determinants of health.

In sum, loneliness and social connectedness are not merely social experiences but key psychological and physiological processes with broad implications for individual and public health. Future research should prioritize longitudinal and intervention-based studies to clarify causal pathways and optimize strategies for enhancing social connectedness. From a practical standpoint, integrating psychosocial interventions into healthcare and community settings holds promise for reducing loneliness and improving overall well-being, highlighting the urgent need for evidence-based policies and programs that foster social integration in diverse populations.

References

- [1] Delgado, M. R., Fareri, D. S., & Chang, L. J. (2023). Characterizing the mechanisms of social connection. *Neuron*, *111*(24), 3911-3925.

- [2] Fulford, D., & Holt, D. J. (2023). Social withdrawal, loneliness, and health in schizophrenia: psychological and neural mechanisms. *Schizophrenia bulletin*, 49(5), 1138-1149.
- [3] Goveas, J. S., Ray, R. M., Woods, N. F., Manson, J. E., Kroenke, C. H., Michael, Y. L., ... & Anderson, G. L. (2022). Associations between changes in loneliness and social connections, and mental health during the COVID-19 pandemic: the Women's Health Initiative. *The Journals of Gerontology: Series A*, 77(Supplement_1), S31-S41.
- [4] Gyasi, R. M., Phillips, D. R., Asante, F., & Boateng, S. (2021). Physical activity and predictors of loneliness in community-dwelling older adults: the role of social connectedness. *Geriatric nursing*, 42(2), 592-598.
- [5] Haslam, C., Cruwys, T., Haslam, S. A., & Jetten, J. (2017). Social connectedness and health. In *Encyclopedia of geropsychology* (pp. 2174-2182). Springer, Singapore.
- [6] Haslam, S. A., Haslam, C., Cruwys, T., Jetten, J., Bentley, S. V., Fong, P., & Steffens, N. K. (2022). Social identity makes group-based social connection possible: Implications for loneliness and mental health. *Current opinion in psychology*, 43, 161-165.
- [7] Hawkey, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of behavioral medicine*, 40(2), 218-227.
- [8] Hawkey, L. C., Cacioppo, J. T., Hazan, C., & Campa, M. I. (2013). Social connectedness and health. *Human bonding: The science of affectional ties*, 343-364.
- [9] Holt-Lunstad, J. (2021). The major health implications of social connection. *Current Directions in Psychological Science*, 30(3), 251-259.
- [10] Hutten, E., Jongen, E. M., Vos, A. E., van den Hout, A. J., & van Lankveld, J. J. (2021). Loneliness and mental health: the mediating effect of perceived social support. *International journal of environmental research and public health*, 18(22), 11963.
- [11] Kim, M. J., & Sul, S. (2023). On the relationship between the social brain, social connectedness, and wellbeing. *Frontiers in Psychiatry*, 14, 1112438.
- [12] Leavell, M. A., Leiferman, J. A., Gascon, M., Braddick, F., Gonzalez, J. C., & Litt, J. S. (2019). Nature-based social prescribing in urban settings to improve social connectedness and mental well-being: a review. *Current environmental health reports*, 6(4), 297-308.
- [13] Macià, D., Cattaneo, G., Solana, J., Tormos, J. M., Pascual-Leone, A., & Bartrés-Faz, D. (2021). Meaning in life: A major predictive factor for loneliness comparable to health status and social connectedness. *Frontiers in psychology*, 12, 627547
- [14] Matos, M., McEwan, K., Kanovský, M., Halamova, J., Steindl, S. R., Ferreira, N., ... & Gilbert, P. (2021). The role of social connection on the experience of COVID-19 related post-traumatic growth and stress. *PLoS One*, 16(12), e0261384.
- [15] Morr, M., Liu, X., Hurlemann, R., Becker, B., & Scheele, D. (2022). Chronic loneliness: neurocognitive mechanisms and interventions. *Psychotherapy and psychosomatics*, 91(4), 227-237.
- [16] O'Rourke, H. M., Collins, L., & Sidani, S. (2018). Interventions to address social connectedness and loneliness for older adults: a scoping review. *BMC geriatrics*, 18(1), 214.
- [17] Perissinotto, C., Holt-Lunstad, J., Periyakoil, V. S., & Covinsky, K. (2019). A practical approach to assessing and mitigating loneliness and isolation in older adults. *Journal of the American Geriatrics Society*, 67(4), 657-662.
- [18] Proctor, A. S., Barth, A., & Holt-Lunstad, J. (2023). A healthy lifestyle is a social lifestyle: The vital link between social connection and health outcomes. *Lifestyle Medicine*, 4(4), e91.
- [19] Ransome, Y., Valido, A. D., Espelage, D. L., Clements, G. L., Harrell, C., Eckel, C., ... & Taggart, T. L. (2023). A systematic review of how social connectedness influences associations between racism and discrimination on health outcomes. *Epidemiologic reviews*, 45(1), 44-62.
- [20] Rokach, A., & Patel, K. (2024). The health consequences of loneliness. *Environment and Social Psychology*, 9(6), 1-17.
- [21] Santini, Z. I., Jose, P. E., Cornwell, E. Y., Koyanagi, A., Nielsen, L., Hinrichsen, C., ... & Koushede, V. (2020). Social disconnectedness, perceived isolation, and symptoms of depression and anxiety among older Americans (NSHAP): a longitudinal mediation analysis. *The Lancet Public Health*, 5(1), e62-e70.
- [22] Singer, C. (2018). Health effects of social isolation and loneliness. *J. Aging Life Care*, 28, 4-8.
- [23] Staras, C. O., Wakefield, J. R., McDermott, D. T., & Jones, B. A. (2024). An evaluation of the role of social identity processes for enhancing health outcomes within UK-based social prescribing initiatives designed to increase social connection and reduce loneliness: A systematic review. *Journal of Community & Applied Social Psychology*, 34(5), e2878.
- [24] Stuart, J., O'Donnell, K., O'Donnell, A., Scott, R., & Barber, B. (2021). Online social connection as a buffer of health anxiety and isolation during COVID-19. *Cyberpsychology, Behavior, and Social Networking*, 24(8), 521-525.
- [25] Vella, C., Berry, C., Easterbrook, M. J., Michelson, D., Bogen-Johnston, L., & Fowler, D. (2023). The mediating role of social connectedness and hope in the relationship between group membership continuity and mental health problems in vulnerable young people. *BJPsych Open*, 9(4), e130.
- [26] Waite, L. J., Iveniuk, J., & Laumann, E. O. (2014). Social connectedness at older ages and implications for health and well-being. *Interpersonal relationships and health: Social and clinical psychological mechanisms*, 8.
- [27] Wickramaratne, P. J., Yangchen, T., Lepow, L., Patra, B. G., Glicksburg, B., Talati, A., ... & Weissman, M. M. (2022). Social connectedness as a determinant of mental health: A scoping review. *PLoS one*, 17(10), e0275004.

[28] Zagic, D. (2023). *Loneliness and social connectedness: underlying mechanisms and treatment targets* (Doctoral dissertation, Macquarie University).