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Review Article

# Mindfulness to Reduce Loneliness and Social Isolation in Older Adults: A Scoping Review

**Jeremy Holloway*, Tatiana Roberts, Donald Jurivich**

University of North Dakota, USA

***Corresponding author:** Jeremy Holloway, University of North Dakota, USA

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## Abstract

Social isolation and loneliness in older adults have significant negative implications for their mental and physical well-being. Mindfulness is a non-pharmacological way to address mental health and should be investigated the older adult population. This scoping review maps the literature available on mindfulness in older adults to reduce social isolation and loneliness. The researchers systematically searched for articles using multiple databases and performed a grey literature review from the selected articles to identify articles that addressed social isolation and loneliness in older adults.

8 studies were included in this review: one case report, one review, one non-randomized pre-post examination study, two randomized controlled trials, one journal article, one integrative review, and one prospective study. Of the eight studies, four included information on demographics, showing Caucasian women from urban areas with some higher education experiences were selected (or self-selected) for participation. While the intervention did not vary much between studies, the scales of measurement to assess outcomes varied greatly, but the assessment of loneliness remained the same among the articles with their use of the UCLA Loneliness Scale. Each study reported improvement in loneliness or social isolation in older adults with the use of mindfulness. There is also research showing that a reduction in social isolation and loneliness may improve physical health, making mindfulness an important intervention. This research, in combination with the research reporting positive outcomes from intergenerational interventions, makes pursuing the incorporation of mindfulness into intergeneration programs an area of future research with promising outcomes.

**Keywords:** Mindfulness; Older adult; Social isolation; Loneliness; Interventions

## Introduction

Social isolation and loneliness are a concern with our aging population, especially considering the COVID-19 pandemic. Social distancing restrictions impacted relationships, worsening mental health among vulnerable populations [1]. Social isolation and loneliness are linked to mental health issues such as depression, anxiety, and stress, and physical health issues, including early death [2]. According to one article, "Older adults who report feeling lonely are more likely to develop Alzheimer's disease and depression and with social isolation there is an association with poorer physical health, reduced cognition, mobility, and increased difficulties with activities of daily living" [3,4]. Likewise, another study noted reduced frailty with less social isolation and loneliness [5]. This is also a healthcare and community issue that needs to be addressed early as the older adult population increases. "With a rise in single-person households, lower rates of inter-generational living, and decreased social contact, older populations are at the greatest risk of loneliness" [3]. There is an integrative review exploring different interventions used to reduced social isolation and loneliness in older adults, identifying many different interventions showing promise; however, it concludes that more research is needed into these interventions and the mechanisms behind them [6].

Mindfulness is not new, but has been brought to light recently in the Western world to address intrapersonal processes, such as loneliness [7,8]. Different mindfulness techniques have been introduced for specific human conditions, such as Mindfulness-Based Stress Reduction (MBSR) for stress and pain, or Mindfulness-Based Cognitive Therapy (MBCT) for depression [8].

Mindfulness is defined as "the practice of moment-to-moment awareness without judgment; it is a meditative state focusing on one's presence; a cognitive state of self-awareness that promotes emotional regulation and change in self-perspective" [9]. It provides a non-pharmacological way of addressing mental health disorders, such as social isolation and loneliness [8,10,11].

Mindfulness can be practiced anywhere, benefiting older adults dealing with transitions of care in their life, temporary stays in facilities, or a more permanent move out of an independent living environment [12]. Mindfulness can also be useful for those with mobility issues, making it difficult for them to travel or practice other forms of self-care [13].

This review defines the types of mindfulness discussed in this scoping review. While some research references "mindfulness" or "mindfulness meditation", these are not well-defined, but there are two types presented that are defined. MBSR is an 8-week intervention involving a small group of participants that learn standardized mindfulness practices [8]. MBCT also consists of eight weekly training sessions and uses a combination of cognitive therapy with mindfulness techniques and shows promise for helping with depression [8].

Since mindfulness is a novel intervention for social isolation and loneliness in older adults, it's important to determine the scope of literature on this topic and where the future research should be focused. There are multiple mindfulness interventions that focus on changing a person's perspective of their emotions, mental health, and life and how the improvement in mental health from mindfulness practices can lead to improvements in physical health. Older adults have also been shown to have a higher adherence rate to mindfulness practices [10]. However, there is limited research about mindfulness affecting social isolation and loneliness in older adults, making it difficult to assess the efficacy of this practice in this population. This scoping review sets out to examine the emerging evidence of mindfulness interventions to reduce social isolation and loneliness in older adults, as well as report on the types of evidence addressing this topic and the way the research has been conducted [14].

## Materials and Methods

### Research Question

This scoping review investigates the literature available about mindfulness to address social isolation and loneliness in older adults. Our question is, "What is the available literature on the use and efficacy of various mindfulness interventions in improving social isolation and loneliness in older adults?"

### Eligibility Criteria

- The review will include articles that have a patient population of 65 years of age or older, articles that use a younger patient demographic for comparison, or the average age of the population studied is above 65 years old. This definition of an older adult is used because it is the age required for Medicare, and is the age defined by the National Institute of Health for an older adult.
- The study must take place in the USA as this scoping review will assist with understanding and incorporating mindfulness in a virtual intergenerational intervention targeting older adults. The review will exclude abstracts, posters, and dissertations.

### Search Strategy

- This scoping review was conducted using PubMed, PsychInfo, Embase, Academic Search Premier, and CINHAL Complete. Searches were conducted in June 2022, with a grey literature search in July 2022. There was no restriction on publication date.
- The terms used were combinations of "social isolation," "loneliness," "mindfulness," as well as "aged," "older adult," and "elderly." While the term older adult is the correct term to use for persons over 65 years old, "elderly" and "aged" were used to be more inclusive of the literature available.
- Screening was performed in two stages; first, the articles were evaluated for eligibility by review of the title and abstract. Then, the full texts were assessed for inclusion (Figure 1).

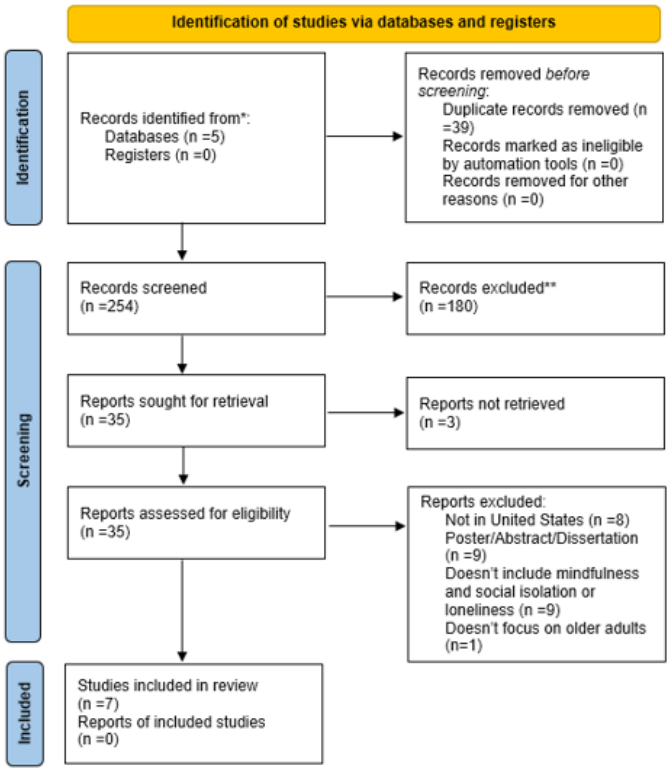


**Figure 1:** Identification of studies via databases and registers.

### Data Extraction

The data extracted from the articles included the authors, year published, mindfulness interventions used, outcomes evaluated, scales of measurement for outcomes, type of study, and demographics of participants included in the articles.

### Data Analysis

Data was summarized into a table for ease of comparison between the articles and due to the heterogeneity of results found within each article.

## Results

### Study Characteristics

The study characteristics are presented in the table and include the author, year published, mindfulness intervention used, outcomes evaluated, scales used to measure the changes in outcomes, type of study, and demographic information included. Demographic information varied, as did scales of measurement of the outcomes, which were primary areas of interest.

### Demographics and Study Areas of Interest

An area of interest for the researchers were the demographics. Only four of the eight studies included detailed demographic information. The case report is about a 70-year-old woman, but does not specific race, education level, marital status, or living situation [12]. The systematic review and integrative review only reference older adults without specifying the age cut-off, which is important as some papers have included adults younger than 65 years old as "older adults" [3,10]. A journal article reviewing research of mindfulness in older adults references the demographics of the studies analyzed, but that is the extent [15]. The two Randomized Controlled Trials (RCTs), one prospective study, and one non-randomized pre-post examination study all included detailed demographics that we will explore here [9,11,16,17].

Of the four studies, only two include loneliness or social isolation as their primary outcome of interest, while the other two include these factors as a secondary outcome of interest. The prospective study was a pilot online mindfulness study and its primary goal was to evaluate if an online mindfulness intervention would be able to attract and retain informal caregivers who are older adults compared to an in-person mindfulness intervention because of the responsibility these older adults have [9]. This study was also the only study to specifically target informal caregivers who are older adults as their study population, which we suggest to be a continued area of research because of the negative ramifications of caregiver burden [9]. The prospective study's secondary hypothesis evaluated the impact of the online mindfulness intervention on "caregiver burden, quality of life, and psychological well-being, including stress, loneliness, anxiety, and social support" [9].

Another study (a RCT), focused on evaluating if MBSR would increase stimulated IL-6 *in vitro* compared to another intervention that doesn't focus on mindfulness [17]. The secondary goal of that study was to compare the changes in IL-6 to the changes in loneliness experienced by the participants, based on the assumption that immunocompetence would be better when loneliness was decreased [17]. This assumes that a "higher IL-6 production reflects immunocompetence," but this paper notes a limitation because the *in vitro* analysis of IL-6 may not reflect the *in vivo* production of IL-6 [17]. Also, this study did not analyze the long-term effects of MBSR on immunocompetence past the three month mark [17]. However, this paper aspires to be a good basis for future research into the connection between mindfulness and healthy aging due to the results obtained.

The primary goal of the other RCT was to assess the loneliness with MBSR practice, but also assessed biomarkers associated with inflammation (CRP and IL-6) and the relationship between the two as a secondary hypothesis [11]. With MBSR, CRP was reduced compared to the control group, although the significance of the reduction is not clear according to this study [11]. However, in this study, IL-6 was not reduced with MBSR, and the study called for future research in this area [11].

The non-randomized pre-post examination study had a secondary outcome an unexpected outcome due to recruiting prior to COVID-19 and during COVID-19, showing different results between the two groups. The study showed that there may be confounding factors because while non-significant, there was an increase in loneliness in the post-COVID enrollees while the pre-COVID enrollees had a significant decrease in loneliness, showing that outside factors may contribute to reduced loneliness [16].

All the studies recruited from urban areas, and combined with the limited number of studies, highlights a future area of research in rural or tribal populations to determine if the same results would be seen. The study investigating online mindfulness showed that the combination of rural and online may also be the area of research to be pursued. The studies also did not specify if the older adults included were institutionalized or community dwelling, but it is assumed that they are community dwelling given other facts presented in the papers.

In the four studies discussed, there was a total of 320 participants, with 297 participants completing the studies. Only one study excluded participants below 65 years old [17]. The average of three of the studies was above 65 years old, while one study had an average age of 57.1 years old. The youngest person among the participants was 40 years old, while the oldest was over 80 years old, with the upper end of the range being undetermined as the study only provided age ranges [9,16]. Every study had more females than males, with the total among the four studies being 249 females and 76 males, meaning males made up less than 25% of the participants. The gender distribution could be a future area of research to examine the recruitment and retention of males versus females.

Only three studies analyzed race, with one study categorizing race and ethnicity together, another study categorizing them separately, and one only included race [11,16,17]. Most participants were white and non-Hispanic, with Black/African American and Asian also participating in higher numbers than other races. Three of the studies included amount of education attained, with the majority of the participants having some college [9,16,17]. One study also included higher education in categories, showing the majority of participants had either a bachelor's degree

or master's degree [17]. Two studies collected data on employment status, which showed one study had primarily retired participants, whereas the other study had an even distribution between full-time employment, part-time employment, unemployment, and retirement [9,16]. However, the study with more employed participants accepted younger participants [16].

Three papers included participants' marital status, and in only one of those papers were the majority of participants married [9,16,17]. Other categories included single, divorced, widowed, separated, and other [9,16,17]. Two studies collected information on the participants' living situation, but only one study published those results with the majority of participants living with another person, followed by participants living alone, and one participant living in a independent, assisted living home [9,16].

**Scales of Measurement and Outcomes**

There was variation in how the outcomes were measured; however, every study used the UCLA Loneliness Scale, with one study using the Revised UCLA Loneliness Scale, to measure changes in loneliness [9,11,16,17]. One study used the 39-item Kentucky Inventory of Mindfulness Skills assessment to assess if MBSR increases the self-reported use of mindfulness skills [11]. The non-randomized pre-post examination study utilized the WHO QoL-Brief, an assessment that assesses quality of life, the PHQ-9 to assess depression, and the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R) to assess mindfulness, specifically attention, present-focus, awareness, and acceptance [16]. This study also used the Mini Neuropsychiatric Interview 7.0.2 at baseline to determine if there were mental health disorders among the participants prior to starting [16].

The prospective study used multiple scales of assessment. The Zarit Short Burden Interview was used to assess caregiver burden, as this study was focused on informal caregivers [9]. Quality of life was assessed with the 12-item Veteran's Rand, stress with the 4-item Perceived Stress Scale, anxiety with the 7-item Generalized Anxiety Disorder Test, and social support using the 12-item Interpersonal Support Evaluation List [9]. This study discovered using these scales that with this online mindfulness intervention, there were significant positive changes in mental health, caregiver burden, stress, loneliness, and anxiety [9]. The other three studies also showed improvement in their target outcomes, encouraging the idea that mindfulness should be further explored as an intervention for older adults.

## Discussion

This scoping review evaluated the literature to map the topic of mindfulness and its effect of reducing loneliness and social isolation in older adults as this is a new topic being explored and will help with key areas of future research by presenting the current research and noting gaps that need to be addressed.

In the eight articles selected, mindfulness has a positive impact on the older adult's mental health through the reduction of loneliness or social isolation. The eight studies were heterogeneous, with one case report, three reviews, two RCTs, one non-randomized pre-post examination, and one prospective study. The RCTs only evaluate MBSR, not the other types of mindfulness. However, the other studies evaluate some of the other types and different outcomes. For example, one article explores many studies and notes an improvement in cognitive impairment, sleep quality, loneliness, post-traumatic stress disorder, cardiovascular disease, diabetes mellitus, rheumatoid arthritis, Parkinson's disease, urge urinary incontinence, and chronic pain after mindfulness intervention [10]. The implications of these studies could affect how we approach the immune system and healthy aging in older adults as we investigate non-pharmacological ways to improve health outcomes in the older adult population.

According to the research investigated in this paper, MBSR, MBCT, and mindfulness have shown efficacy in the older adult population. There is not a comparison study of these interventions in older adults, and these different approaches should be investigated to determine which intervention has the largest impact on loneliness and social isolation and which type has the highest adherence rate. Futures studies could analyze which demographics of older adults benefit from specific mindfulness interventions or if there is a specific type that works best with specific clinical diagnoses.

Universal definitions for "social isolation" and "loneliness" should be established, especially when conducting research in these areas. In the literature, these terms were left undefined or had varied definitions between articles. Some articles noted a difference between the two, while others used them interchangeably. Other research included these two terms in their definition of "depression" or in relation to depression. In an integrative review about interventions to reduce loneliness in caregivers, the authors defined "loneliness" and "social isolation" separately, while acknowledging that the distinction is not often made[3]. "While loneliness and social isolation are often used interchangeably, they represent two distinct concepts. Social isolation is an objective measure of one's social network, whereas loneliness is defined as the subjective experience of social isolation- even if one is not alone, they can still feel alone" [3]. A distinction between the two may lead to different non-pharmacological interventions for social isolation and loneliness (Table 1).

| Author | Year published | Mindfulness intervention | Outcomes evaluated | Scales of measurement used | Type of study | Was detailed demographic information included? |
|---|---|---|---|---|---|---|
| Yang, Wilhelmi, McGlynn [12] | 2018 | Mindfulness meditation-unspecific; discussed ACT and MBSR | Depression, anxiety, and pain | None | Case report-anecdotal | 70 y/o woman |
| Felsted [10] | 2020 | MBSR, MBCT | Cognitive impairment, sleep quality, loneliness, PTSD, Cardiovascular disease, Diabetes, Rheumatoid arthritis, Parkinson‘s disease, Urge urinary incontinence, chronic pain | biological and self-report measures; inflammatory markers; cortisol levels; blood pressure; hemodynamics; Hemoglobin A1c; RA symptoms and CRP levels; physical function, well-being, depression, anxiety, and stress; urinary bother, severity, and stress; qualitative grounded theory study for pain | Review | Older adults |
| Gould, et al. [16] | 2021 | mindfulness | Mental Health QoL, loneliness | WHO QoL Brief psychological health and UCLA loneliness scale, PHQ-9, Mini Neuropsychiatric Interview 7.0.2, CAMS-R | Non-randomized pre-post examination | Age, gender, race-ethnicity, marital status, employment |
| Creswell, et al. [11] | 2012 | MBSR | Loneliness, pro-inflammatory gene expression | 39-item Kentucky Inventory of Mindfulness Skills (KIMS); UCLA-R Loneliness Scale; Genome-wide transcriptional profiling from blood sampling, CRP and IL-6 | RCT | Age, gender, race |
| Sorrell [15] | 2015 | Mindfulness meditation, MBSR | Depression, anxiety, sleep quality, emotional distress, mood, chronic pain, loneliness, caregiver burden | MRI, Profile of Mood States-Short Form (POMS-SF), Pittsburgh Sleep Quality Index (PSQI), diaries detailing pain, UCLA-R loneliness scale, surveys, and qualitative interviews | Journal article | None |
| Velloze, et al. [3] | 2022 | Mindful meditation, MBSR | reduction in loneliness | None | Integrative review | None |
| Tkatch, et al. [9] | 2017 | 8-week online Mindfulness intervention with in-person mindfulness sessions | Caregiver burden, quality of life (mental and physical wellbeing), and psych well-being measures, including stress, loneliness, anxiety, and social support | Zarit Short Burden Interview; 12-item Veteran‘s Rand; 4-item Perceived Stress Scale; 7-item Generalized Anxiety Disorder Test; 3-item UCLA Loneliness Scale; 12-item Interpersonal Support Evaluation List | Prospective w/o control | Age, gender, marital status, education, living situation, and employment |
| Lindsay, et al. [17] | 2022 | 8-week MBSR | IL-6 production from cells *in vitro* exposed to lipopolysaccharide | UCLA Loneliness Scale; Stimulated IL-6 production | RCT | Age, gender, race, ethnicity, education level, marital status, BMI |

**Table 1:** Detailed Demographic Information.

Finally, older adult accessibility should be investigated for virtual encounters that address social isolation. Some studies excluded older adults without compatible smartphones for the intervention which reduces the generalizability of the research. Therefore, loaning the necessary technology to a group of older adults in a RCT would be useful to assess ways to overcome barriers for future virtual interventions.

**Intergenerational Interventions to Address Social Isolation and Loneliness in Older Adults**

This scoping review's purpose was to search for literature on mindfulness for social isolation and loneliness in older adults. The secondary purpose was to search for intergenerational programs that reduce social isolation and loneliness through mindfulness. Intergeneration programs influence quality of life in older adults and incorporating mindfulness practices should be a future goal because of the positive influence on quality of life that these practices have [19]. Papers incorporating mindfulness into intergenerational programs were not found during this review. Future research would involve intergenerational connection between older adults and younger adults that use mindfulness practices to address social isolation and loneliness. For example, the Big and Mini project, an intergeneration program addressing loneliness in younger and older adults implemented during COVID-19, showed that intergeneration closeness was correlated with lower levels of loneliness [20]. A combination of mindfulness with an intergeneration program may benefit participants in reducing loneliness.

Another emerging intergeneration program to address loneliness and social isolation is Tellegacy founded by Dr. Holloway, which connects college students with older adults, thus creating a meaningful connection. They discuss the older adult's life experiences and wisdom gained. The students are "Legacy Builders," asking questions about the older adult's life. The Legacy Builders are trained in vision and goal setting, mindfulness, growth mindset, and legacy interviewing before beginning the program, therefore preparing them to be fully engaged in the conversation. The older adult is the "Legacy Holder," and their responses drive the conversation with help from the Legacy Builder. It allows the older adult to reminisce about experiences in their lives, process how these events have impacted them, and share important lessons learned. Data is currently being collected and analyzed using the UCLA Loneliness Scale and Satisfaction of Life scale to show how the intervention may decrease social isolation and loneliness experienced by the older adult, and also foster an increased sense of satisfaction of life through reminisce, brief mindfulness practices, and social connection.

**Limitations**

Other countries have done studies on this topic, but were not included in this review, so more data may be available on this topic. Our focus on U.S. studies addresses what interventions could be implemented and what gaps need to be addressed. Older adults care also varies between countries, and by limiting this review to U.S. studies, we minimize how different cultures could differentially influence the analysis of social isolation and loneliness. The articles did not include the demographics of who was teaching mindfulness, and could represent research ideas that explore intergenerational interventions of social isolation and loneliness in older adults using mindfulness.

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