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Gerontology & Geriatric Medicine
Volume 7: 1–10
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DOI: 10.1177/23337214211036776
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Older Adults' Mental Health Through Leisure Activities During COVID-19: A Scoping Review

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Abstract

Older adults are at high risk for mental health distress due to COVID-19 pandemic restrictions. This scoping review aimed to map emerging evidence on the types of leisure and recreation activities (LRA) adults, 60 years and older, are engaged in for their mental health during the COVID-19 pandemic. We identified 10 studies on LRA for mental health by older adults with COVID-19 mitigation from a search of the following databases: Medline/PubMed, Excerpta Medica database (EMBASE), Cumulative Index of Nursing and Allied Health Literature (CINAHL), Cochrane Database of Systematic Reviews, JBI Evidence Synthesis, and Epistemonicos. A narrative synthesis of the data revealed age cohorts of young-old (60–69 years) and middle-old (70–79 years) engaging mainly in online LRA for mental health compared to the older-old adults (80 years and older). The middle-old (70–79 years) and older-old adults (80–89 years) engaged in more physical LRA for mental health compared to the younger-old adults. Across age cohorts, the older adults engaged in social connectedness LRA for mental health wellbeing. COVID-19–safe LRA mental health support interventions for older adults should be tailored to their age cohort predispositions for optimal benefit.

Keywords

age cohort, older adults, leisure, recreation, mental health, pandemic, smart technologies

Introduction

The older adults' population is the fastest-growing age segment, and the United Nations (2020) estimates the global population 65 years or over to reach 1.5 billion by the year 2050. A large proportion of older adults will require optimizing their functional abilities for healthy aging. Healthy aging includes physical, social, and mental health functioning tailored to one's preferences and predispositions within one's age cohort (World Health Organization, 2020). The advent of COVID-19 resulted in unprecedented mortality among older adults (Ameis et al., 2020), with severe mental health implications from the threat of infection and the older adult population's need to engage in activities to maintain, sustain, and augment their mental health. COVID-19 mortality risk ranged from 3.6% (young-old: 60–69), 8.0% (middle-old: 70–79), and 14.8% (older-old: 80–89) (Brooke & Jackson, 2020). The COVID-19 is a community-spread disease affecting the typical ways people interact in everyday living, including high transition in close contact, physical sharing of materials, and even talking or singing (Kowalik et al., 2020; van Doremalen et al., 2020). Its main symptoms are fever, sore throat, cough, myalgia, fatigue, breathlessness, or lower respiratory infection (Deshmukh et al., 2020). The COVID-19

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has overstretched support systems for older adults to their breaking point (Ameis et al., 2020).

Older adults are highly vulnerable to mental health stress from COVID-19 restrictions on their typical pre-pandemic activities (Centers for Disease Control and Prevention, 2021). Mental health wellbeing encompasses emotional, psychological, and social wellbeing, inclusive of self-efficacy, autonomy, and intergenerational competencies (Centers for Disease Control and Prevention, 2020). Leisure and reaction activities are proven mental health support across the life span (Goodman et al., 2017; Livingston et al., 2020), which would be different for other older adults with COVID-19 mitigation. We aimed to scope and synthesized emerging evidence of mental health wellbeing in older adults based on their leisure and recreation activities during the COVID-19 pandemic.

Review of the Literature

Older Adult's Mental Health Wellbeing

Older adults' mental health varies across the spectrum from young-old (60–69) to older-old (80–89), especially as the older-old (80–89) are at higher risk for social isolation and loneliness (Chung, 2020; den Houting, 2020; Stanford Center on Longevity, 2018) and likely lower engagement in physical leisure and recreation activities (Guisado-Clavero et al., 2018). Older-old adults' digital technology–supported LRA may be impacted by the digital divide, by which they used smart technologies less than younger-old adults (Anderson & Perrin, 2017).

Epidemiological research (Lilford & Hughes, 2020) shows that the worldwide prevalence of mental health disorders in older adults 60 years and older is over 20%. In that population, mental health disorders account for 17.4% of years lived with disability. Depression (7%) and dementia (5%) are the most prevalent mental and neurological disorders in the 60 years and over cohort. The prevalence of other common mental health disorders for that same cohort are anxiety (3.8%), substance use problems (about 1%), and a quarter of deaths are related to self-harm.

Aging and Leisure and Recreational Activities

Participation in leisure and recreation activities is conducive to good mental health (Lee & Allen, 2021). Older adults' participation in leisure and recreation activities varies across age cohorts. For example, the US middle-old (70–79 years) and older-old (80 and above) cohorts committed more time (hours) to reading, relaxing/thinking, playing games, and using the computer during leisure than the younger-old adults (60–69 years) (Bureau of Labor Statistics, 2019; Marcum, 2013).

Nonetheless, there is a broad spectrum of leisure and recreational activities for mental health wellbeing in which older adults can engage, inclusive of social (e.g., spending time with friends), creative or expressive (e.g., artistic pursuits), cognitive (e.g., reading), emotional (e.g., contemplation), spiritual (e.g., meditation), and physical (e.g., walking and gardening) (Singh & Kiran, 2014). Previous studies (Heo et al., 2013; Kuykendall et al., 2015; Paggi et al., 2016) have demonstrated that older adults who engaged in leisure and recreation activities had superior mental health, as well as longevity (Arem et al., 2015; Paggi et al., 2016; Sirgy et al., 2017). Known mental health benefits to older adults arising from engagement in leisure and recreation activities are improvements in mental health by reducing anxiety, depression, and negative mood state, positively affecting self-esteem, cognitive function, and quality of life (Goodman et al., 2017; Jeong & Park, 2020). Older adults would likely select leisure and recreation activities for enjoyment, pleasure, and amusement (Lamanes & Deacon, 2019), and those which they find empowering (Kamioka et al., 2013; Lamanes & Deacon, 2019) and adding to their sense of belongingness (Talmage et al., 2020).

Goal of the Study

We performed a scoping review (Peters et al., 2020 version; Peters et al., 2015) to aggregate the emerging international research evidence on LRA by older adults during the COVID-19 pandemic and the mental health benefits to the older adults from engaging in those activities. Specifically, we sought to examine how the LRA the older adults engaged in supported their mental health benefits by age cohort from young-old (60–69) to older-old (80–89).

Our specific research question was how and what LRA do older adults engage in to sustain mental health wellbeing with COVID-19 mitigation? The findings would inform the design of mental health wellbeing interventions engaging LRA across the age cohorts. Moreover, the findings would provide a basis for further empirical studies on mental health wellbeing resourcing of older adults employing LRA in a community-spread pandemic.

Methods

Research Design

A scoping review is for summarizing the emerging evidence on a newer and under-studied phenomenon for mapping the trends to guide future related studies with the benefit of clarification of concepts and study procedures (Peters et al., 2020 version; Peters et al., 2015). Moreover, scoping reviews are mainly conducted to deliver an overview of the existing evidence regardless of methodological quality or risk of bias since the studies are exploratory and the data, preliminary (Tricco et al., 2018). Therefore, a scoping review was appropriate to this study for aggregating and profiling the emerging research evidence on LRA engaged by older adults for their mental health wellbeing.

Search Procedure

We searched these following electronic databases: (EMBASE), CINAHL, Cochrane Database of Systematic Reviews, JBI Evidence Synthesis, and Epistemonicos for studies on leisure and recreation activities by older adults with COVID-19 mitigation. Table 1 presents an overview of search procedures, including key topics and searched terms.

Eligibility Criteria

The review's inclusion criteria consisted of peer-reviewed empirical studies across the continuum of qualitative randomized controlled trials to that of quantitative. To be included for review, we considered studies from the past 12 months (March 2020 to February 2021) on leisure and recreational activities for sustainable mental health in older adults with COVID-19 mitigation. Studies reported in English were considered. We excluded from review gray literature and other information sources which were not empirical studies. Table 2 shows a summary of the eligibility criteria of potential studies for the present scoping review.

Data Extraction

The lead author performed the literature search supported by the co-authors. We prioritized essential data qualities of study design (i.e., qualitative—randomized controlled trials—quantitative), participant characteristics (i.e., older adults with leisure and recreation activities), interventions (i.e., types of leisure and recreation activities), and outcomes (mental health sustenance, restoration, or augmentation). We each examined the articles for their relevance to the topic and probable link to the inclusion criteria, resolving emerging disagreements by consensus.

Risk Bias Assessment

The "Risk of Bias" across studies, an element from the first PRISMA, is unsuitable for scoping reviews since the latter method is not aimed to appraise a clustered bulk of the evidence analytically. Therefore, in scoping reviews, the critical appraisal of sources that encompass the evidence is usually not critically appraised since the data are typically from a small number of exploratory studies (Tricco et al., 2018).

Study Selection

Figure 1 displays a flow chart of the studies' selection process. The initial database search found 48 pertinent studies, of which three were duplicates. Further screening of the remaining 45 studies led to excluding 32 publications due to marginal relevance and the retention of 13 documents for further screening. That process led to the rejection of three studies due to inclusion criteria issues. The outcome yielded 10 studies used in the present scoping review. The low number of studies meeting the inclusion criteria comes as no surprise as COVID-19 is a new community-spread

Table 1. Overview of the Search Procedure, Key Topics, and Terms.

Topic	Basic search scheme
Older adults, leisure, recreation, mental health, and COVID-19	Older adults OR elderly OR seniors OR old OR geriatrics AND leisure OR leisure activities OR leisure program OR recreation OR recreation activities OR recreation program OR leisure and recreation OR leisure and recreation activities OR leisure and recreation program OR hobbies
Older adults, leisure, recreation, and mental health	Older adults AND mental health OR depression OR anxiety OR isolation OR stress OR resilience OR affect AND
Older adults, leisure, recreation, mental health, and COVID-19	Older adults AND Coronavirus Disease 2019 (COVID-19) OR coronavirus OR severe acute respiratory syndrome (SARS) OR Severe acute respiratory, AND leisure and recreation

Table 2. Inclusion and Exclusion Criteria Per Study Variable.

Variable	Inclusion criteria	Exclusion criteria
Study design	Qualitative, randomized controlled trials, quantitative, and peer-reviewed	Single case studies, literature reviews, non–peer-reviewed studies, and gray literature
	Reported on older adult sample specifying the ages	Did not report on ages of older adults samples mention
Participants	COVID-19–exposed subjects, older adults, and participants in leisure and recreation activities	Nonparticipants in leisure and recreation activities
Intervention	Types of leisure and recreation activities	No mention of specific leisure and recreation
Analysis	Data analysis by the age of participants	Analysis did not include the age of participants
Outcomes	Mental health wellbeing from leisure and recreation activities	No information on mental health wellbeing and participation in leisure and recreation activities

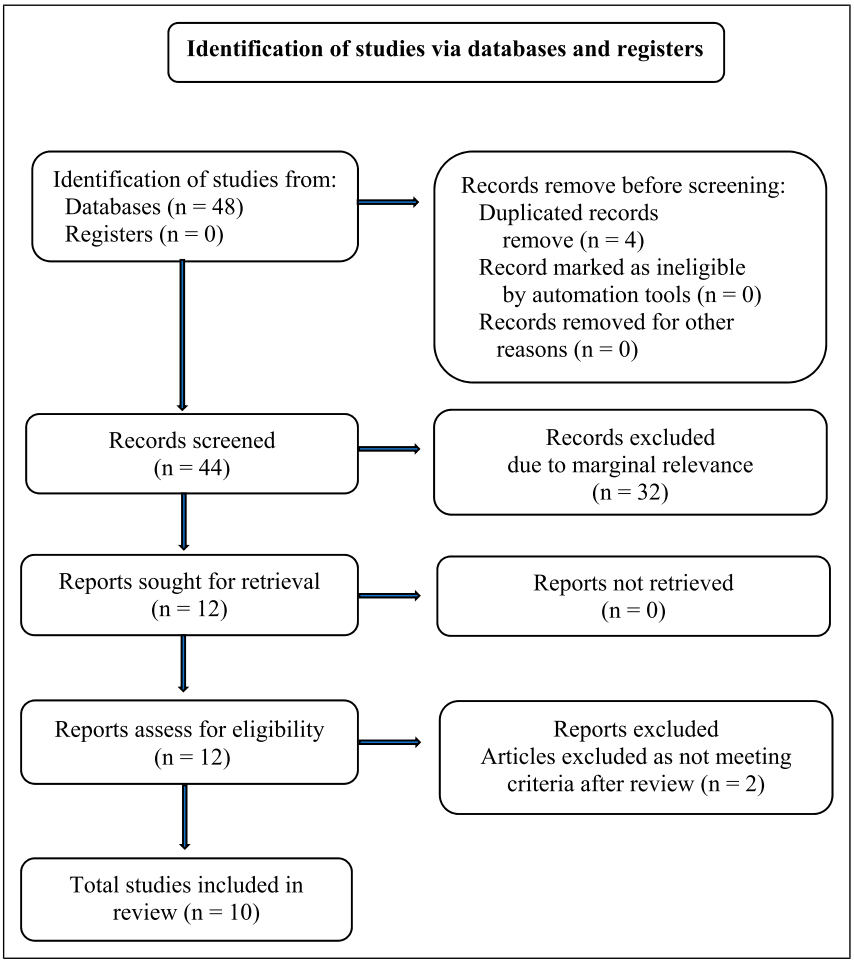

Figure 1. 2020 PRISMA flow of information diagram of search results.

virus and attracting behavioral health interest only in the past 12 months (or since its global spread from March 2020).

Data Organization. We organized the data from the articles for review about authors/year, study design, country, target population, leisure activity, and health sustenance outcomes (see Table 3). For each study, we considered whether it identifies a gap in the literature to be addressed.

Data Synthesis and Analysis. We used Gough's procedure for the reliability of the weight of the evidence (WoE) (Gough, 2004, 2007). The WoE assessment is a process in which evidence is merged to determine the relative support to possible answers to a research question, and the findings (presented in the result section) are explained in narrative form (EFSA Scientific Committee et al., 2017; Gough, 2021; Suter et al., 2017). Scoping reviews by design are commonly focused on the collection of content ascertained and qualitative synthesis of the evidence for meanings pertinent to the research question.

Results and Discussion

Table 3 presents our findings on the 10 empirical studies included in the present scoping review. By jurisdiction, distributing studies were USA 2/10 = 20% (Heid et al., 2020; Whitehead & Torossian, 2020); USA and Canada 1/10 = 10% (Callow et al., 2020); Spain 2/10 = 20% (Carriedo et al., 2020; Goodman-Casanova et al., 2020); Israel 1/10 = 10% (Nimrod, 2020); Japan 1/10 = 10% (Takashima et al., 2020); United Kingdom 1/10 = 10% (Richardson et al., 2020); Australia 1/10 = 10% (Strutt et al., 2021); and Italy, Mexico, Portugal, and Spain 1/10 = 10% (von Humboldt et al., 2020). Four out of ten (40%) of the studies reported on mental health benefits of information and communications technology home-based leisure and recreation activities by older adults (smartphones, tablets, computers, smart televisions, virtual assistants, and ambient assistive devices) for older adults during the COVID-19 pandemic (Goodman-Casanova et al., 2020; Nimrod, 2020; Strutt et al., 2021; von Humboldt et al., 2020). The remaining six studies (6/10 = 60%) reported on mental health supports of leisure and recreation activities of mental, social, physical, and emotional domains encompassing interpersonal

Table 3. Data Synthesis Organization.

Authors and Year	Study design	Country	Population	Leisure activity	Mental health outcome	[a]WoE (%)
Callow et al. (2020)	Cross-sectional	USA and Canada	*N* = 1,046 Age range = 50–90 years	Physical activities and exercise performed at home	Enhanced mental health	100
Carriedo et al. (2020)	Cross-sectional	Spain	*N* = 483 Age = 65.5 ± 5.1 Age range = 60–92 years	Leisure time physical activity	Psychological wellbeing and lower depressive symptoms	100
Goodman-Casanova et al. (2020)	Case-control	Spain	*N* = 93, with mild dementia or mild cognitive impairment Age = 73.34 ± 6.07 years	Social, physical, cognitive/mental, and emotional leisure and recreation activities	Improved cognitive functioning and mental health	90
Heid et al. (2020)	Cross-sectional mixed methods	USA	*N* = 1,272 Age = 70.3 ± 6.65 years Age range = 64 and older	Social, physical, cognitive/mental, and emotional leisure and recreation activities	Superior mental wellbeing outcomes across age cohorts	100
Nimrod (2020)	Cross-sectional	Israel	*N* = 407, age = 69.1 ± 5.1 years Age range = 60–84 years	Use of the Internet, playing digital games, downloading content, and writing blogs	Wellbeing and mental stress reduction across age cohorts	90
Richardson et al. (2020)	Cross-sectional mixed methods	United Kingdom	*N* = 117 Age = 75 ± 4 years	Physical activity	Mental health gains and reduction in levels of depression, especially along with the older-old adults	85
Strutt et al. (2021)	Cross-sectional	Australia	*N* = 201 Age = 70.55 ± 6.50 years Age range = 60–87 years	Low-to-vigorous physical activities and use of technology (computer or smartphone)	Higher mental health wellbeing across age cohorts maintaining social connections	90
Takashima et al. (2020)	Cross-sectional	Japan	*N* = 24 Age = 78.2 ± 5.5 years Age range = 65–80 years	Social wellbeing, mental health, walking, home gardening, personal and family social-related activities, and smart-technology	Social connectedness activities enhance the mental health wellbeing of older-old adults, overall, and less from smart technology use among the older-old adults compared to the younger-old	95
von Humboldt et al. (2020)	Cross-sectional	Italy, Mexico, Portugal, and Spain	*N* = 351 Age = 73.4 ± 3.4 years Italy *n* = 78, age = 67.4 ± 3.1 years Mexico *n* = 94, age = 69.7 ± 2.6 years Portugal *n* = 98, age = 76.2 ± 4.1 years Spain *n* = 81, age = 75.2 ± 6.4 years	Smart technology–supported activities such as video conferencing and WhatsApp chats software	Higher mental health and spiritual wellbeing across age cohorts	100
Whitehead and Torossian (2020)	Cross-sectional, mixed methods	USA	*N* = 825 Age = 60 and older	Joy and comfort activities with family, friends, and others	Higher social connectedness mental health wellbeing across age cohorts	100

[a]WoE = weight of evidence.

communications, information, task performance, leisure options (hobbies, general and specific interests), social networking services, among many other endeavors as coping strategies to mitigate the COVID-19 pandemic (Callow et al., 2020; Carriedo et al., 2020; Heid et al., 2020; Richardson et al., 2020; Takashima et al., 2020; Whitehead & Torossian, 2020).

Information and Communication Technology Activity Effects

Older adults used information and communication technology for their social contacts and wellbeing with COVID-19 mitigation (Goodman-Casanova et al., 2020; Nimrod, 2020; Strutt et al., 2021; von Humboldt et al., 2020).

Television-Assisted Technology and the Internet. Across age cohorts, leisure and recreation during the COVID-19 pandemic included the use of modern technology (smartphones, tablets, computers, smart televisions, virtual assistants, and ambient assistive devices) (Goodman-Casanova et al., 2020) and use of the internet (Nimrod, 2020). In a case–control study, Goodman-Casanova et al. (2020), examined modern technology use by older adults in Spain for the mental wellbeing of older adults encompassing the young-old (60–69 years) and middle-old (70–79 years) cohorts (mean age = 73.34 ± 6.07 years) living with mild dementia or mild cognitive impairment. The intervention group (cases) participated in a modern technology program consisting of television-based assistive integrated service support versus the controls. Pre-assessment evaluations revealed that the participants' physical and mental health and wellbeing were overall optimal. Modern technology (smartphones, tablets, computers, smart televisions, virtual assistants, and ambient assistive devices) during the COVID-19 pandemic provided for adequate leisure and recreation experiences, therefore allowing for optimal mental and physical health and wellbeing for most older adults with mild dementia or mild cognitive impairment (see also Son et al., 2020; Whitehead & Torossian, 2020).

Nimrod (2020) examined older Israeli adults' use of the Internet as a coping mechanism from stress caused by the COVID-19 pandemic. The subjects (n = 407) were of ages 69.1 ± 5.1 years which ranged in three age cohorts: young-old (60–69), middle-old (70–79), and older-old (80–84). Seventy-three percent of the older adults described their health as "pretty good" or "very good." Results demonstrated an increase in the use of the Internet for leisure as a strategy for coping with stress and across age cohorts. Activities ranged from the use of chat software such as Zoom, Skype, or WhatsApp (64%); online errands such as shopping, financial management or medical appointments (42%); online newspapers (41%); social networking services (40%); and websites related to hobbies and interests (37%). However, older-old adults (80–89) used the Internet and modern technologies less for coping with stress.

Digital Games and Video Conferencing. In an Australian study by Strutt et al. (2021) on mental health wellbeing in a sample of 201 older adults (mean age = 70.56 ± 6.5 years; age range = 60–87 years), 63% of the older adults identified as users of innovative technologies (i.e., video conference, mobile phone, and computer) during the lockdown for social engagement for mental health wellbeing. From that user group, 53% used video conference technologies (i.e., FaceTime, Microsoft Teams, Skype, and Zoom) for social wellbeing, 54% for community volunteer work and education, 23% for entertainment/news, 17% for online exercise classes, and 10% for telehealth/counseling. Age cohorts' effects were not apparent from the study findings.

Smart Technology Use. In a cross-nation study which included samples from Italy, Mexico, Portugal, and Spain, von Humboldt et al. (2020) reported that seventy-one percent (71%) of the Mexican sample (age = 69.7 ± 2.6 years) used smart technology, such as video conferencing and WhatsApp chat software, which provided social interrelationships, allowing them to connect with family, colleagues, and new friends. Fifty-seven percent (57%) of the Portuguese sample (age = 76.2 ± 4.1 years) reported using smart technology to be essential for their mental and intellectual wellbeing. Their attitudes and use of smart technology changed during the COVID-19 pandemic. The Portuguese sample was said to use smart technologies to learn new languages, knit, listen to music, learn gardening techniques, write down their thoughts, meditate, think about oneself, get tips for a better life, and cook recipes. Of the Spanish sample (age = 75.2 ± 6.4 years), 72% used smart technologies for their spiritual wellbeing, engaging in activities such as meditation and attending religious ceremonies. Lastly, of the Italian sample (age = 67.4 ± 3.1 years), 29% utilized innovative technology to initiate and maintain their physical activity and exercise habitual patterns. This study did not report findings by age cohorts or provide data to enable scoping review reporting by age cohorts.

Physical and Emotional-Focused Leisure and Recreation Activities

The emerging evidence suggests that older adults seek to sustain their mental health through physical activity (Callow et al., 2020). In their North American study, Callow et al. (2020) reported a significant inverse association between physical activity levels and indicators of depression under the COVID-19 in older adults (age range = 60 to >90 yrs.). The leisure-time physical activities for their mental health wellbeing ranged from walking outside and aerobics (light, moderate, and vigorous) to strength exercises. Age cohort differences were that the middle-old (70–79) and older-old

(80–89) cohorts derived mental health benefits from engaging in leisure time physical activity than the young-old (60–69) and old–old (90+) cohorts.

In a study by Carriedo et al. (2020), older adults (Age = 65.5 ± 5.1; range = 60–92 years) reported mental health benefits from consistent engagement in moderately vigorous to vigorous leisure-time physical activity with COVID-19 restrictions. Regular engagement in leisure-time physical activity led to high scores in mental resilience.

Heid et al. (2020) reported restrictions in leisure activities from COVID-19 such as going out to eat, traveling, going to the gym, volunteering, engaging in self-care, or other daily activities to harm older adults' sense of mental health wellbeing. Similarly, in a UK study, Richardson et al. (2020), reported older adults' (n = 117; mean age = 75 ± 4 years) depression levels during the COVID-19 from low engagement in physical LRA.

Social Wellbeing Leisure and Recreation-Oriented Activities

Takashima et al. (2020) and Whitehead and Torossian (2020) reported on social wellbeing mental health in older adults with COVID-19 mitigation. The study by Takashima et al. (2020) examined how COVID-19 restricted the lives of 24 community-dwelling older Japanese people (mean age, 78.2 ± 5.5 years; age range = 65–85 years). Rural older adults were reported to engage in more individual rather than social group–focused social activities for their mental health wellbeing.

The study by Whitehead & Torossian (2020) examined stressors, joys, and psychological wellbeing indicators in US older adults (n = 825; young-old (60–69 years = 63.8%, middle-old 70–79 years = 30.7%, and older-old = 80 years). The older adults reported enhanced social and mental health wellbeing from activities that involved joy or comfort with family or friends, including engagement in hobbies/leisure (19.3%), pets (18.7%), and spirituality (11.5%). The young-old cohort (60–69) reported family/friends as their top category, followed by pets, hobbies/entertainment (leisure), and digital communication. The middle-old cohort (70–79) identified family and friends, digital communication, hobbies/entertainment, and spouses/partners as their main sources of joy/comfort.

Implications for Gerontological LRA-Based Mental Health Practices

Understanding the experiences older adults undergo in their surrounding environments can guide implementing interventions and coping strategies to support their mental health and wellbeing. From these findings, the evidence suggests access to information and modern technology devices benefited older adults in four leisure domains (physical, mental/cognitive, social, and emotional) (Goodman-Casanova et al., 2020; Nimrod, 2020; Strutt et al., 2021; von Humboldt et al., 2020), by reducing their risk for social isolation. Watching television and engaging in memory activities were classified as leisure intellectual activities. Information and modern technology devices likely improve older adults' social wellbeing by creating a virtual reality during confinement due to the COVID-19 menace. Nimrod (2020) showed that in Israel, residents of "big cities" and high-income status had a more significant increase in Internet use in response to the COVID-19 pandemic. That finding supports recent observations stating that most older adults in wealthier countries are more likely to be modern digital technology users (Schumacher & Kent, 2020).

Several studies on older adults report that physical activities enhance mental health wellbeing (Azevedo Da Silva et al., 2012; De Mello et al., 2013; Heo et al., 2013; Paggi et al., 2016; Teixeira et al., 2013). Similarly, Mumba et al. (2020) indicate that greater physical activity levels were associated with lower depression indicators in older adults. An active lifestyle helps reduce the risk of illness and enhances recovery from chronic health conditions such as heart disease, mental illness, diabetes, asthma, back pain, arthritis, cancer, and dementia, among many others (US Department of Health and Human Services, 2018). Mechanisms include tissue oxygenation and metabolism, muscle strength and endurance, reduced blood sugar and blood pressure levels, reduced risk of disease progression and early mortality, reduced frequency and severity of pain, and improved physical function and quality of life.

In addition, older adults' compliance with the World Health Organization's global recommendations on leisure-time physical activity for health was associated with higher mental health resilience, lower depressive symptoms (Gerino et al., 2017), and higher optimism (Tugade & Fredrickson, 2004). Other studies have shown an association between increased sedentary behavior with decreased physical and mental health due to the COVID-19 reclusion (Cheval et al., 2021). It is known that older adult users of modern technology for communication and leisure, and recreation activities demonstrate lower levels of social loneliness (Sum et al., 2008). The latter is associated with depression (Lippi et al., 2020).

Limitations of the Review

The observed results reported in the present scoping review should be considered in light of some limitations. The first is that the scope of the study was limited to peer-reviewed studies published during the initial 12 months (March 2020 to February 2021) of the COVID-19 pandemic. The second limitation is that the 10 studies we surveyed were mostly exploratory, and it is unclear if the findings would be

replicated in follow-up studies. We recognize the limitation that only a small number of studies were completed during the one-year period (March 2020–February 2021) for this scoping review. With a longer timeframe, findings would be more complete and definitive.

Conclusion

Findings from the present scoping review suggest mental health benefits for older adults from a variety of LRA during the COVID-19 pandemic. The internet and digital technology–based LRA that benefited older adults' mental health wellbeing was apparent across age cohorts from young-old (60–69) through older-old (80–89). However, physical LRA such as walking outside, aerobics, strength exercises, and gardening benefited the mental health of older-old adults compared to the younger-old adults. Social connectedness related LRA by older adults under COVID-19 benefitted their mental health wellbeing overall, although more so for the older-old (80–89) adults who are at higher risk for social isolation and loneliness.

Author Contributions

The lead author conceptualized the study, carried out the literature searches, and wrote the initial draft of the manuscript. The second listed author provided scoping review guidance as well as writing and editing support. The third listed author provided LRA subject matter expertise and assisted with the manuscript editing. The fourth listed author provided gerontology expertise and proof editing of the manuscript.

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

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