

Changes in perceived loneliness of people with visual impairment between, before, and amid the COVID-19 pandemic

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Abstract

The present research aims to gain a deep understanding of the degree to which individuals with vision loss perceive loneliness, especially before and amid the COVID-19 pandemic. There is evidence that individuals with vision loss tend to suffer from loneliness; however, there is a lack of understanding about the degree which they develop loneliness amid the pandemic as compared to the pre-pandemic time. A convenience sampling method included 81 people with vision loss. The UCLA loneliness questionnaire was administered in measuring loneliness levels in fall 2019, summer 2020, and fall 2020. Participants experienced a range of loneliness (i.e., low, moderate, and high). After the pandemic was declared, significant changes in loneliness levels were observed among those who had a moderate level of loneliness. The level of loneliness increased in summer 2020 but decreased in fall 2020, i.e., returning back to the level in the pre-pandemic time. It was also observed that participants showed individual differences in loneliness, depending on sociodemographic backgrounds. The present research contributes to advancing knowledge about how people with vision loss develop loneliness since the pandemic was declared. As women with vision loss were found to be vulnerable to loneliness, adequate social supports should be offered to accommodate their needs and concerns amid the pandemic. The research findings could be helpful for many other researchers and professionals in developing interventions to reduce loneliness in people with vision loss and to promote their emotional well-being.

Keywords: UCLA loneliness scale, trajectory, emotional wellbeing, low vision, blindness

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Introduction

Loneliness is not synonymous with social isolation and is more likely associated with one's subjective experience (1). For example, if there is a perceived difference between interpersonal relationships that a person *currently* has and those that the person *wishes* to have, the person is likely to feel lonely (2). Thus, loneliness is affected by the level of subjective satisfaction with an individual's interpersonal relationships such that he/she could feel lonely even when surrounded by others including their family members (3). Hawkley et al. (4) reported that lonely and non-lonely people tended to show no significant difference in the activities on a daily basis and the amount of time they spent without interacting with others. Buchholz and Catton (5) also claimed that loneliness is likely to be related with negative feelings (e.g., hopeless and sadness). People who intend to spend time alone may be induced by other feelings (e.g., sadness) instead of loneliness. Thus, such quantitative measures are less likely to be considered as ideal predictors and indicators of loneliness.

It is well documented that loneliness is likely to result in early mortality and wellness issues (6). Patients with loneliness went to the emergency room 60% more often than other patients without loneliness (7). According to a loneliness study in Sweden (8), female respondents were more likely to be vulnerable to loneliness compared to male counterparts as loneliness was prevalent in 24% of the female respondents and only 12% of the male respondents. A wide range of people experience loneliness as there is evidence that 80% of younger people (aged under 18 years) and 40% of older adults (≥ 65 years of age) feel lonely occasionally (9, 10). With regard to persistence of loneliness, some people maintain the feeling of loneliness for a longer period of time than do other people, and the two types of loneliness can be explained via "state" and "trait" loneliness (11). For example, state one represents either current or immediate loneliness; on the other hand, trait one is related with an enduring experience of loneliness. Loneliness could be more harmful to health than obesity; as

detrimental to health as smoking 15 cigarettes daily (12); strongly related to suicidal ideation (13) and Alzheimer's disease (13); and likely to affect the immune and cardiovascular system (14).

Loneliness affects everyone including people with vision loss. Several studies argue that a strong relationship exists between a sense of loneliness and poor visual acuity (15, 16). Eans (17) conducted a survey with 84 American veterans who became blind. The survey study reported that 20% of the respondents experienced loneliness after determination of blindness. Verstraten et al. (16) administered a survey with 304 individuals with vision loss, recruited from rehabilitation centers in the Netherlands. They found that 54% of the respondents experienced loneliness. Brunes et al. (18) found the prevalence of moderate loneliness (28.7%) and severe loneliness (19.7%) in 736 adults with vision loss who speak English or Scandinavian languages living in Europe. Two other studies – one conducted in Netherlands (19) and the other in New Zealand (20) – revealed that individuals with vision loss were more likely to feel lonely than their sighted peers. La Grow (20) suggested that increased loneliness among individuals with vision loss is closely related with a range of factors including decreased economic security, emotional wellness issues, and dissatisfaction with daily living activities.

However, there is still a lack of understanding about the degree to which individuals with vision loss suffer from loneliness while dealing with the COVID-19 pandemic. Despite evidence that individuals with vision loss are vulnerable to a feeling of loneliness (21), little is known about how their loneliness changes between before and during the pandemic. Various safety measures (e.g., social distancing and stay-at-home) have been placed to mitigate the spread of virus in the community. People are encouraged to have virtual meetings instead of in-person contact. People may emotionally be affected during the pandemic. There have been numerous reports that during the COVID-19 pandemic, many general populations encounter various challenges that

can be stressful and overwhelming and develop loneliness (22, 23). This study aims to offer an in-depth understanding about the trajectory of

loneliness changes among individuals living with vision loss since the COVID-19 pandemic was declared.

Table 1. Participants' sociodemographic information

	Fall 2019	Summer 2020	Fall 2020
Participants	n = 20	n = 31	n = 30
Vision			
20/70 to 20/200	2	2	0
20/200 to 20/400	11	6	9
20/400 to 20/1200	1	2	4
Poor than 20/1200 (with light perception)	1	19	15
No light perception	5	2	2
Duration of vision loss (yrs.)	28.35 ± 23.04	29.30 ± 22.55	27.63 ± 23.11
Onset time of vision loss (yrs.) ^a			
Early onset	4.00 ± 3.61	1.50 ± 1.41	26.25 ± 29.69
Late onset	51.65 ± 18.01	45.04 ± 24.04	34.18 ± 24.35
Age (yrs.)	72.85 ± 7.96	62.84 ± 15.47	59.70 ± 17.84
Sex			
Male	4	15	11
Female	16	16	19
Race and Ethnicity			
African American	8	10	11
European American	12	19	17
Hispanic American	0	0	1
Native Americans	0	1	0
Others	0	1	1
Marital status			
Married	6	15	14
Unmarried	4	8	7
Widow(er)	4	5	4
Divorced	6	3	5
Education			
K-12 education (or equivalent)	7	8	7
Certificate or training program	0	0	1
Associate	0	7	6
Bachelor's degree	7	11	5
Master's degree	5	4	10
Doctoral degree	1	1	1
Occupation			
Full time	1	3	5
Part time	0	3	2
Unemployed, not seeking a job	6	3	4
Unemployed, seeking a job	0	0	1
Retired	13	22	16
Currently in school	0	0	2
Household income			
< \$25,999	8	7	6
\$26,000 – \$51,999	7	5	6
\$52,000 – \$74,999	2	2	6
≥ \$75,000	2	5	5
Don't know	1	12	7
Head of household			
Living alone	11	8	9
Living with others (family, relatives, or friends)	9	23	21
Have chronic disease	11	14	16
Exercise regularly	10	21	22

^a Early-onset refers to the case where an individual has lost vision before 11 years of age (34).

Methods

As shown in Table 1, a total of 81 individuals with vision loss participated in this study. Inclusion criteria included ≥ 18 years of age and poor vision, i.e., visual acuity is equal to or worse than 20/70 (24). Three separate groups of participants were recruited in fall 2019, summer 2020 and fall 2020

The data in fall 2020 were newly collected in order to investigate the trajectory of loneliness changes as the COVID-19 pandemic progressed.

Materials

This study used the University of California Los Angeles (UCLA) loneliness questionnaire (20 items, version 3) to measure one's perceived loneliness (25,26). Participants should complete the questionnaire using a 4-point Likert type scale ranging from *never* to *often*. By referring to works by Kusaslan (27) and Perry (28), a summed score lower than 35 should be considered as a low degree of loneliness, a summed score equal to or higher than 35 as a moderate degree, and a summed score equal to or higher than 50 as a high degree.

Procedures

Participants were recruited in collaboration with community organizations (e.g., local community centers) that provide services for people with vision loss. Participants were informed by those community organizations and then contacted the research team if they were interested in the study. This research has been approved by the Institutional Review Board. It was ensured that all participants provided informed consent. Each participant was invited to an interview (less than 60 minutes) and completed the UCLA loneliness questionnaire. An interviewer read out loud for participants due to their decreased ability to see. In-person interviews were conducted in fall 2019 while phone interviews were conducted in summer and fall 2020 due to the COVID-19 pandemic.

Results

Acceptable internal consistency was found with regard to the loneliness questionnaire (Cronbach's $\alpha = 0.93$ for fall 2019, 0.93 for summer 2020, and 0.92 for fall 2020). The mean score of loneliness was 1.92 ± 0.68 for fall 2019, 1.98 ± 0.72 for summer 2020, and 1.77 ± 0.60 for fall 2020. Mean scores of loneliness were compared by participants' sociodemographic factors across seasons. For summer 2020, a significant difference between male and female participants was found in loneliness, $U = 64.50$, $z = -2.20$, $p = .03$, $r = -.39$. Female participants felt lonelier (2.2 ± 0.63) than did male participants (1.74 ± 0.75). Yet, the gender-related individual difference was not found in fall 2020. Significant differences by other sociodemographic factors were not found in loneliness across seasons.

Participants in each season were broken down into three groups: low, moderate, and high levels of loneliness. Kruskal-Wallis tests found a significant difference in loneliness across seasons among the group with moderate loneliness (see Table 2). Mann-Whitney tests confirmed (see Table 3) that in the moderate group, the loneliness level significantly increased in summer 2020 compared to fall 2019, but significantly decreased in fall 2020 compared to summer 2020. Yet, the loneliness level in fall 2020 was not significantly different than that in fall 2019.

Discussion

The changes in loneliness within each group (i.e., low, moderate, and high loneliness groups) were compared between seasons, resulting in no significant difference found in the group with low loneliness but also the group with high loneliness. The low loneliness group maintained constantly a low level of loneliness, and the high loneliness group also maintained constantly a high level of loneliness over the three time periods of the pandemic. The group with moderate loneliness, however,

showed fluctuating levels of loneliness across the three seasons. The 1st COVID-19 case was found in the United States in January 2020. The pandemic was declared in March 2020. Among the participants with a moderate level of loneliness, the level of loneliness was considerably elevated in summer 2020 as compared to that in fall 2019. However, in fall 2020, the loneliness level significantly decreased to the level of the pre-pandemic season. It is assumed that they somehow managed their loneliness. They might have become accustomed to living with the COVID-19 pandemic. Other loneliness studies with sighted populations observed nonsignificant differences in loneliness between before and after the COVID-19 pandemic was declared (29, 30). Thus, further research is necessary to investigate to what extent and in what ways people with vision loss cope with emotional challenges amid the pandemic, but also investigate the relationship between the coping strategies and their loneliness levels. Thus, the findings will help to develop adequate coping strategies that are applicable to those with vision loss.

Gender-related individual differences were found across the three seasons. A significant gender difference was detected in summer 2020 as female participants felt lonelier than did male participants. Before the COVID-19 pandemic, male and female participants did not show a significant difference but showed a significant difference a few months after the pandemic was declared. Yet, no gender difference was found again in fall 2020. It suggests that women with vision loss are likely to be emotionally vulnerable, resulting in development of loneliness when such a national/international pandemic is declared. Therefore, social supports should be provided to help women with vision loss to better manage emotional challenges amid the pandemic. Wickens et al. (31) also observed a gender difference with regard to loneliness

among sighted individuals during the COVID-19 pandemic in that their female participants were more likely to feel lonely than male counterparts across younger (age between 18-29 years) and older adults (age 60 years or older). As a post-hoc analysis, this study also regrouped participants by younger adults (age between 18-29 years), middle aged adults (age 30-59 years) and older adults (age 60 years or older) to compare their loneliness scores. Before the pandemic, there was no gender difference across all the age groups. During the pandemic (i.e., in summer and fall 2020), the loneliness level of female older adults (2.01 ± 0.56) was significantly greater than that (1.70 ± 0.75) of male older adults, $U = 95.50$, $z = -2.15$, $p = .03$, $r = -.35$ while no gender difference was found among younger adults and middle-aged adults. It suggests that female older adults with vision loss are more vulnerable to loneliness than their male peers amid the pandemic. Adequate social supports should, thus, be allocated to address the needs and challenges of people with vision loss for emotional well-being during the pandemic, especially by considering age and gender.

A few limitations may have affected the present research. Data collections were conducted in person in fall 2019, however conducted by phone in summer and fall 2020 due to the COVID-19 pandemic. If data were collected in a consistent way, this study might have obtained different results. No clinical assessment was performed to screen participants who might have had other underlying emotional challenges (e.g., depressed). If such a clinical assessment was involved in this study, different results might have been observed. Loneliness was measured by participants' self-report, such that the accuracy of loneliness assessment may have been affected by participants' subjective responses. Participants might not want to label them as lonely people as they might have been concerned about social stigma (32), which is viewed as social desirability bias (33).

Table 2. Loneliness changes before and amid the COVID-19 pandemic

	Low Loneliness Group (n = 20)		Moderate Loneliness Group (n = 31)		High Loneliness Group (n = 30)	
	Mean \pm SD	Kruskal Wallis	Mean \pm SD	Kruskal Wallis	Mean \pm SD	Kruskal Wallis
Fall 2019	1.32 \pm 0.18	$H(2) = .50, p = .78$	2.01 \pm 0.17	$H(2) = 7.11, p = .03$	2.89 \pm 0.13	$H(2) = .67, p = .72$
Summer 2020	1.36 \pm 0.19		2.21 \pm 0.21		3.00 \pm 0.38	
Fall 2020	1.30 \pm 0.23		1.96 \pm 0.19		2.81 \pm 0.32	

Table 3. Mann-Whitney tests showed the changes in loneliness across the three time periods

	Low Loneliness Group	Moderate Loneliness Group	High Loneliness Group
Fall 2019 vs. Summer 2020	$U = 58.50, z = -.54, p = .59, r = -.11$	$U = 10.00, z = -2.01, p = .05, r = -.52$	$U = 15.50, z = -.33, p = .74, r = -.10$
Summer 2020 vs. Fall 2020	$U = 98.50, z = -.58, p = .56, r = -.11$	$U = 15.50, z = -2.42, p = .02, r = -.62$	$U = 12.50, z = -.82, p = .41, r = -.024$
Fall 2019 vs. Fall 2020	$U = 61.00, z = -.39, p = .70, r = -.08$	$U = 25.50, z = -.49, p = .64, r = -.12$	$U = 10.50, z = -.42, p = .67, r = -.13$

Conclusion

The present research was able to obtain a deep understanding about the degree to which people with vision loss feel lonely before and after the COVID-19 pandemic was declared. It was found that participants experienced a range of loneliness (i.e., low, moderate, and high), and those who had a moderate level of loneliness presented substantial changes in loneliness before and during the pandemic. The results of this study could serve as a foundational knowledge, helpful to many other researchers and healthcare professionals in developing interventions to help those with vision loss to better manage emotional challenges.

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References

- [1] Hopps SL, Pepin M, Arseneau I, Frechette M, Begin G. Disability related variables associated with loneliness among people with disabilities. *J Rehabil* 2001;67(3):42-8.
- [2] Perlman D, Peplau LA. Theoretical approaches to loneliness. In: Peplau LA, Perlman D, eds. *Loneliness: A sourcebook of current theory, research and therapy*. New York: Wiley, 1982:123-34.
- [3] Novotney A. Social isolation: It could kill you. *Monit Psychol* 2019;50(5):32.
- [4] Hawkey L, Burleson MH, Berntson GG, Cacioppo JT. Loneliness in everyday life: Cardiovascular activity, psychosocial context, and health behaviors. *J Pers Soc Psychol* 2003;85(1): 105.
- [5] Buchholz ES, Catton R. Adolescents' perceptions of aloneness and loneliness. *Adolescence* 1999; 34(133):203-4.
- [6] Cacioppo S, Grippo AJ, London S, Goossens L, Cacioppo JT. Loneliness clinical import and interventions. *Perspect Psychol Sci* 2015;10(2): 238-49.
- [7] Geller J, Janson P, McGovern E, Valdin A. Loneliness as a predictor of hospital emergency department use. *Fam Pract* 1999;48(10):801-4.
- [8] Berg S, Mellström D, Persson G, Svanborg A. Loneliness in the Swedish aged. *J Gerontol* 1981; 36(3):342-9.
- [9] Berguno G, Leroux P, McAinsh K, Shaikh S. Children's experience of loneliness at school and

- its relation to bullying and the quality of teacher interventions. *Qual* 2004;9(3):483-99.
- [10] Pinquart M, Sorensen S. Influences on loneliness in older adults: A meta-analysis. *Basic Appl Soc Psychol* 2001;23(4):245-66.
- [11] Young JE. Loneliness, depression and cognitive therapy: Theory and application. *Loneliness: A sourcebook of current theory, research and therapy*. New York: Wiley, 1982:379-406.
- [12] Health Resources & Services Administration. The loneliness epidemic 2019. URL: <https://www.hrsa.gov/enews/past-issues/2019/january-17/loneliness-epidemic>.
- [13] Stravynski A, Boyer R. Loneliness in relation to suicide ideation and parasuicide: A population-wide study. *Suicide Life Threat Behav* 2001;31(1):32-40.
- [14] Hawkley L, Cacioppo J. Loneliness and pathways to disease. *Brain Behav Immun* 2003;17 (Suppl 1):S98-105.
- [15] Barron CR, Foxall MJ, Von Dollen K, Jones PA, Shull KA. Marital status, social support, and loneliness in visually impaired elderly people. *J Adv Nurs* 1994;19(2):272-80.
- [16] Verstraten P, Brinkmann W, Stevens N, Schouten J. Loneliness, adaptation to vision impairment, social support and depression among visually impaired elderly. *Int Congr Ser* 2005;1282:317-21.
- [17] Evans RL. Loneliness, depression, and social activity after determination of legal blindness. *Psychol Rep* 1983;52(2):603-8.
- [18] Brunen A, Hansen MB, Heir T. Loneliness among adults with visual impairment: Prevalence, associated factors, and relationship to life satisfaction. *Health Qual Life Outcomes* 2019;17(1):24.
- [19] Alma M, Van der Mei SF, Feitsma WN, Groothoff JW, Van Tilburg TG, Suurmeijer TP. Loneliness and self-management abilities in the visually impaired elderly. *J Aging Health* 2011;23(5):843-61.
- [20] La Grow SJ, Towers A, Yeung P, Alpass F, Stephens C. The relationship between loneliness and perceived quality of life among older persons with visual impairments. *J Vis Impair Blind* 2015; 109(6):487-99.
- [21] Rokach A, Berman D, Rose A. Loneliness of the blind and the visually impaired. *Front Psychol* 2021;12:641711.
- [22] Centers for Disease Control and Prevention. Coping with stress 2021. URL: <https://www.cdc.gov/mentalhealth/stress-coping/cope-with-stress/index.html>.
- [23] Centers for Disease Control and Prevention. Employees: How to cope with job stress and build resilience during the covid-19 pandemic 2020. URL: <https://www.cdc.gov/coronavirus/2019-ncov/community/mental-health-non-healthcare.html>.
- [24] World Health Organization. Change the definition of blindness 2008. URL: <https://www.who.int/health-topics/blindness-and-vision-loss>.
- [25] Russell D, Peplau LA, Cutrona CE. The revised ucla loneliness scale: Concurrent and discriminant validity evidence. *J Pers Soc Psychol* 1980;39(3): 472-80.
- [26] Russell DW. UCLA loneliness scale (version 3): Reliability, validity, and factor structure. *J Pers Assess* 1996;66(1):20-40.
- [27] Kusaslan Avci D. Evaluation of the relationship between loneliness and medication adherence in patients with diabetes mellitus: A cross-sectional study. *J Int Med* 2018;46(8):3149-61.
- [28] Perry GR. Loneliness and coping among tertiary-level adult cancer patients in the home. *Cancer Nurs* 1990;13(5):293-302.
- [29] Kivi M, Hansson I, Bjälkebring P. Up and about: Older adults' well-being during the covid-19 pandemic in a swedish longitudinal study. *J Gerontol B Psychol Sci Soc Sci* 2021;76(2):e4-e9.
- [30] Luchetti M, Lee JH, Aschwanden D, Sesker A, Strickhouser JE, Terracciano A, et al. The trajectory of loneliness in response to covid-19. *Am Psychol* 2020;75(7):897-908.
- [31] Wickens CM, McDonald AJ, Elton-Marshall T, Wells S, Nigatu YT, Jankowicz D, et al. Loneliness in the covid-19 pandemic: Associations with age, gender and their interaction. *J Psychiatr Res* 2021; 136:103-8.
- [32] Kerr NA, Stanley TB. Revisiting the social stigma of loneliness. *Pers Individ Differ* 2021;171: 110482.
- [33] Caputo A. Social desirability bias in self-reported well-being measures: Evidence from an online survey. *Univ Psychol* 2017;16(2):245-55.
- [34] Voss P, Gougoux F, Guillemot J-P. Early-and late-onset blind individuals show supra-normal auditory abilities in far-space. *Curr Biol* 2004;14 (19):1734-8.

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