MAK HILL Publications Research Journal of Medical Sciences

Research Article
doi: 10.36478/makrjms.2024.7.364.369

The Impact of Low Vision on Daily Living Psychological Well-Being and Social Support among Older Adults

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Abstract

Low vision significantly impacts older adults, impairing daily activities, psychological well-being social support interactions. As the prevalence of low vision rises with age globally, understanding its multifaceted effects on older adults is crucial for developing effective interventions and support systems. This study aims to evaluate the impact of low vision on daily activities, psychological well-being social support interactions among older adults. Specific objectives include assessing differences in daily activities, evaluating psychological impacts through anxiety and depression measures analyzing the quality and extent of social support compared to a reference population. A cross-sectional study involving 100 older adults aged 57 years and above with clinically diagnosed low vision was conducted. Participants were assessed using standardized tools for Activities of Daily Living (Groningen Activity Restriction Scale), psychological impact (Hospital Anxiety and Depression Scale), social support (Social Support List-Interactions) and level of independence. Statistical analysis included descriptive statistics, independent t-tests significance testing ($p<0.05$). Participants with low vision exhibited significantly higher impairment in daily activities compared to the reference population ($p<0.001$). They also reported elevated levels of anxiety and depression across age groups ($p<0.001$) and received higher social support in everyday and problem situations ($p<0.001$). A majority (55%) required assistance in daily activities despite available support systems. Low vision profoundly affects daily activities, psychological well-being and social interactions among older adults. Enhanced understanding of these impacts underscores the need for targeted interventions and policies to improve independence, mental health and social support for this vulnerable population. Professional rehabilitation emerges as crucial in mitigating these effects and enhancing overall quality of life.

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Key Words

low vision, older adults, daily activities, psychological well-being, social support

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Received: 20 April 2024
Accepted: 20 June 2024
Published: 21 June 2024

Citation: R. Jeyanthi, Biju gopal, Rajeevan, R. Hannah shiny and Mathew Tony, 2024. The Impact of Low Vision on Daily Living, Psychological Well-being Social Support among Older Adults. Res. J. Med. Sci., 18: 364-369, doi: 10.36478/makrjms.2024.7.364.369

INTRODUCTION

Low vision, characterized by significant visual impairment that cannot be fully corrected by conventional glasses, contact lenses, medication, or surgery, poses substantial challenges for affected individuals, particularly older adults[1]. The prevalence of low vision increases with age, making it a prevalent health concern among older adults worldwide. According to the World Health Organization (WHO), approximately 2.2 billion people globally have a vision impairment or blindness, with the majority being over the age of 50 (World Health Organization, 2021)[2]. This demographic trend underscores the importance of studying the impact of low vision on older adults, as it is a growing public health issue that affects individuals' independence and quality of life[3].

Older adults with low vision often encounter difficulties in performing activities of daily living (ADL), such as cooking, reading personal care tasks, which are crucial for maintaining independence and quality of life[4]. Furthermore, the psychological impact of low vision, including heightened levels of anxiety and depression, has been well-documented. Social support plays a pivotal role in mitigating these psychological challenges and enhancing overall well-being[5].

The ability to perform daily activities independently is crucial for maintaining quality of life among older adults. Low vision significantly impedes these activities, such as reading, cooking, mobility personal care tasks[6]. Studies have shown that older adults with low vision often face challenges in navigating their environments, which can lead to frustration and a loss of autonomy. Understanding these challenges is essential for developing strategies to enhance independence and improve the daily functioning of older adults with low vision[7].

The psychological impact of low vision extends beyond the physical limitations, affecting emotional well-being and mental health. Older adults with low vision are at increased risk of anxiety and depression compared to their peers without visual impairments[8]. The loss of visual function can lead to feelings of isolation, sadness a reduced sense of self-worth. Addressing these psychological consequences is crucial for promoting mental health and overall well-being among older adults living with low vision[9].

Social support plays a vital role in coping with vision loss and maintaining social connectedness. However, individuals with low vision may experience changes in their social networks and interactions due to difficulties in communication and participation in social activities. Assessing the quality and extent of social support received by older adults with low vision can provide insights into their social needs and identify potential areas for intervention[9].

Despite advancements in assistive technologies and rehabilitation services, older adults with low vision continue to face barriers that affect their independence and quality of life[10]. Understanding these challenges and identifying effective support mechanisms are crucial for developing targeted interventions and policies aimed at improving outcomes for this vulnerable population[11].

Justification: This study aims to fill gaps in existing literature by comprehensively evaluating the impact of low vision on daily activities, psychological well-being social support interactions among older adults. By examining these dimensions across different age groups, from 57 years and older, this research seeks to provide nuanced insights into the specific needs and challenges faced by individuals with low vision.

The findings from this study are expected to contribute significantly to both academic knowledge and practical applications in healthcare and social services. Specifically, understanding the differential impacts of low vision across age groups can inform tailored interventions that address the unique needs of younger, middle-aged older adults. Moreover, insights into the role of social support and rehabilitation services can guide policy initiatives aimed at enhancing accessibility and effectiveness of support systems for individuals with low vision.

Aims and Objectives: The primary aim of this study is to evaluate the impact of low vision on the daily activities, psychological well-being, social support interactions level of independence among older adults. The specific objectives include:

- Assessing the differences in daily activities between individuals with low vision and the reference population.
- Evaluating the psychological impact of low vision through anxiety and depression measures.
- Analyzing the quality and extent of social support received by individuals with low vision compared to a reference population.

MATERIALS AND METHODS

Study Design and Participants: This cross-sectional study was conducted to assess the impact of low vision on daily activities, psychological well-being, social support interactions, level of independence the availability and impact of support systems among older adults. The study included 100 participants aged 57 years and older. Participants were recruited from local eye clinics and community centers specializing in services for individuals with visual impairments.

Inclusion and Exclusion Criteria: Participants were included if they had been clinically diagnosed with low vision, defined as best-corrected visual acuity less than 6/18 but better than light perception in the better eye. Exclusion criteria included individuals with cognitive impairments that could interfere with the understanding of questionnaires or those with other severe health conditions that could confound the study results.

Data Collection: Data were collected using a structured questionnaire administered through face-to-face interviews. The questionnaire comprised several standardized assessment tools to evaluate different aspects of the participants' lives:

- **Activities of Daily Living (ADL):** The Groningen Activity Restriction Scale (GARS) was used to measure the impact of low vision on ADL. Scores were compared to reference population means.
- **Psychological Impact:** The Hospital Anxiety and Depression Scale (HADS) was employed to assess anxiety (HADS-A) and depression (HADS-D) levels, along with total scores. These were compared to reference population means.
- **Social Support:** The Social Support List-Interactions (SSL12-I) questionnaire measured everyday support, support in problem situations esteem support. Scores were compared to reference population means.
- **Level of Independence:** Participants' level of independence was categorized as either 'Independent' or 'Requires Assistance'.
- **Support Systems:** The availability and impact of different types of support systems (family, friends and community, professional rehabilitation) were assessed using a mean impact score ranging from 1-10.

Statistical Analysis: Descriptive statistics were calculated for all variables, including means and standard deviations (SD). Comparisons between groups were made using independent t-tests. P-values were calculated to determine the statistical significance of differences observed between the study participants and the reference populations. A $p<0.05$ was considered statistically significant, with specific thresholds for significance indicated (e.g., $p<0.001$, $p<0.01$). Statistical analysis was performed using SPSS software version 26.0.

Ethical Considerations: The study was conducted in accordance with the Declaration of Helsinki. Informed consent was obtained from all participants before the commencement of the study. The research protocol was approved by the institutional review board of the respective eye clinics and community centers involved in participant recruitment. Confidentiality and anonymity of the participants were strictly maintained throughout the study.

RESULTS AND DISCUSSIONS

This table presents the mean scores and standard deviations (SD) for the Groningen Activity Restriction Scale (GARS) assessing daily activities (ADL) across different age groups of individuals with low vision, compared to a reference population. For the 57-74 age group, the mean ADL score is significantly higher at 15.07 (SD = 3.35) compared to the reference population's 12.25 (SD = 3.08) ($p<0.001$). Similarly, the 75-84 age group also shows a significant difference with a mean ADL score of 15.49 (SD = 2.90) versus 14.49 (SD = 4.62) in the reference population ($p = 0.001$). However, for individuals aged 85 and above, the mean ADL score of 16.11 (SD = 3.78) is not significantly different from the reference population's 18.01 (SD = 6.47) ($p = 0.08$). Overall, the total mean ADL score for all age groups combined is 15.45 (SD = 3.24), significantly higher than the reference population's 13.03 (SD = 4.96) ($p<0.001$).

This table evaluates the psychological impact of low vision using the Hospital Anxiety and Depression Scale (HADS), reporting mean scores for depression (HADS-D), anxiety (HADS-A) total scores (HADS Total). For the 57-74 age group, individuals with low vision have significantly higher mean scores for HADS-D (6.35, SD = 4.84), HADS-A (6.11, SD = 5.08) HADS Total (12.46, SD = 9.39) compared to the reference population ($p<0.001$ for all). In the 75-84 age group, the HADS Total score is significantly higher ($p = 0.01$), while individual scores for HADS-D and HADS-A do not show significant differences ($p = 0.25$ and $p = 0.10$, respectively). For the 85+age group, a significant difference is observed only for HADS-A ($p = 0.05$). Overall, the total mean scores for the entire sample are significantly higher for individuals with low vision ($p<0.001$ for all measures).

This table assesses the mean scores for different dimensions of social support using the Social Support List (SSL12-I). For the 57-74 age group, individuals with low vision report significantly higher mean scores in everyday support (10.26, SD = 2.59), support in problem situations (8.67, SD = 2.53) esteem support (10.02, SD = 2.55) compared to the reference population ($p = 0.01$, $p<0.001$ $p<0.001$, respectively). Similar significant differences are noted for the 75-84 age group in all dimensions of social support ($p = 0.01$ for all). In the 85+age group, the differences are not

Table 1: Impact of Low Vision on Daily Activities

Age Group	N	Gars ADL Mean (SD)	Reference Population ADL Mean (SD)	p-value
57-74 years	30	15.07 (3.35)	12.25 (3.08)	<0.001**
75-84 years	45	15.49 (2.90)	14.49 (4.62)	0.001**
85+ years	25	16.11 (3.78)	18.01 (6.47)	0.08
Total	100	15.45 (3.24)	13.03 (4.96)	<0.001

Table 2: Psychological Impact of Low Vision

Age Group	N	HADS-D Mean (SD)	HADS-A Mean (SD)	HADS Total Mean (SD)	Reference Population HADS-D Mean (SD)	Reference Population HADS-A Mean (SD)	Reference Population HADS Total Mean (SD)	P-Value (D)	P-Value (A)	P-Value (Total)
57-74 years	30	6.35 (4.84)	6.11 (5.08)	12.46 (9.39)	4.05 (3.41)	3.92 (3.59)	7.97 (6.16)	<0.001**	<0.001**	<0.001**
75-84 years	45	5.66 (3.51)	5.25 (3.94)	10.91 (6.78)	5.01 (3.76)	4.07 (3.72)	9.09 (6.55)	0.25	0.10	0.01*
85+ years	25	5.04 (3.48)	5.15 (3.64)	10.19 (5.85)	5.39 (3.91)	3.36 (3.33)	8.80 (6.41)	0.34	0.05*	0.10
Total	100	5.80 (4.04)	5.55 (4.34)	11.34 (7.70)	4.34 (3.55)	3.94 (3.61)	8.28 (6.29)	<0.001	<0.001	<0.001

Table 3: Social Support Interactions

Age Group	N	SSL12-I Everyday Support Mean (SD)	SSL12-I Support in Problem Situations Mean (SD)	SSL12-I Esteem Support Mean (SD)	SSL12-I Total Mean (SD) Everyday Support Mean (SD)		Reference Population SSL12-I in Problem Situations Mean (SD)	Reference Population SSL12-I Support Mean (SD)	Reference Population SSL12-I Support P-Value (Problem)	Reference Population SSL12-I Esteem SSL12-I Total Mean (SD) P-Value (Esteem)	P-Value (Everyday)	P-Value (Total)
57-74 years	30	10.26 (2.59)	8.67 (2.53)	10.02 (2.55)	28.94 (5.82)	9.55 (1.90)	7.35 (2.05)	8.65 (2.07)	25.55 (4.84)	0.01*	<0.001**	<0.001**	<0.001**
75-84 years	45	9.99 (2.24)	8.82 (2.66)	8.91 (2.47)	27.65 (6.11)	9.31 (2.00)	7.84 (2.36)	8.19 (2.09)	25.34 (5.27)	0.01*	0.01*	0.01*	0.01*
85+ years	25	9.59 (2.53)	8.04 (2.55)	8.07 (2.04)	25.70 (6.07)	9.31 (2.26)	7.78 (2.44)	7.77 (2.41)	24.88 (5.77)	0.05	0.10	0.10	0.10
Total	100	10.01 (2.42)	8.62 (2.59)	9.16 (2.51)	27.75 (6.06)	9.48 (1.94)	7.48 (2.16)	8.50 (2.11)	25.47 (4.99)	<0.001	<0.001	<0.001	<0.001

Table 4: Level of Independence and Need for Assistance

Level of Independence	N	Percentage (%)
Independent	45	45%
Requires Assistance	55	55%
Total	100	100%

Table 5: Availability and Impact of Support Systems

Support System Type	N	Mean Impact Score (1-10)	Standard Deviation
Family Support	100	8.5	1.2
Friends and Community Support	100	7.8	1.5
Professional Rehabilitation Support	100	9.2	0.8
Overall	100	8.5	1.2

statistically significant. Overall, the total mean scores indicate significantly higher social support for individuals with low vision across all dimensions ($p<0.001$ for all).

This table summarizes the level of independence among the study participants. Out of 100 individuals, 45% are independent while 55% require assistance in their daily activities. This indicates a majority of the sample with low vision needs some form of assistance.

This table shows the mean impact scores and standard deviations for different types of support systems. Family support has a mean impact score of 8.5 (SD = 1.2), friends and community support score 7.8 (SD = 1.5) professional rehabilitation support scores the highest with a mean of 9.2 (SD = 0.8). Overall, the combined mean impact score for all support systems is 8.5 (SD = 1.2), highlighting the crucial role of professional rehabilitation support in the lives of individuals with low vision.

The current study provides significant insights into the impact of low vision on daily activities, psychological well-being, social support interactions, independence the availability and impact of support systems. Comparing these findings with previous studies can help understand trends and changes over time identify persistent challenges and emerging needs among individuals with low vision.

Daily Activities (ADL): The current study's findings reveal that individuals with low vision experience greater difficulty in performing daily activities compared to the reference population. Specifically, the Groningen Activity Restriction Scale (GARS) scores are significantly higher for the 57-74 and 75-84 age groups, while the 85+age group does not show a significant difference.

Previous research, such as a study by Lamoureux[12]. (2004), also highlighted increased ADL difficulties among those with low vision, supporting our findings for the younger age cohorts. However, Lamoureux's study observed significant differences across all age groups, including those above 85 years, which contrasts with our non-significant results for this group.

Another study by Gao[13]. (2008) indicated that the degree of ADL impairment often increases with age, but the current study shows that the oldest age group (85+) might adapt better or benefit from unknown mitigating factors, leading to a non-significant difference compared to the reference population.

Psychological Impact: The Hospital Anxiety and Depression Scale (HADS) scores suggest that individuals with low vision experience higher levels of anxiety and depression, particularly pronounced in the 57-74 age group.

Consistent with our findings, van der Aa[14]. reported elevated levels of anxiety and depression among visually impaired individuals, with significant differences across all age groups. The significant psychological impact observed in the 57-74 age group aligns with their findings.

In contrast, a study by Travis[15]. found that older adults with low vision (particularly those 75 and above)

experienced higher levels of depression, which is only partially supported by our data where the 75-84 age group shows a significant total HADS score but non-significant individual HADS-D and HADS-A scores.
Social Support

Our study demonstrates that individuals with low vision receive significantly higher social support across all dimensions, especially in the 57-74 and 75-84 age groups.

Li *et al.* (2014) observed that social support plays a critical role in the well-being of visually impaired individuals, with higher support linked to better outcomes[16]. Our findings corroborate this, particularly the significant differences in social support dimensions for younger age groups.

However, the study by Dai[17] (2001) noted that the oldest age group often reported lower social support levels, which contrasts with our finding of non-significant differences in the 85+age group, suggesting that our population might have better access to or utilization of support systems.

Level of Independence and Need for Assistance: The study indicates that a majority (55%) of individuals with low vision require assistance, reflecting a substantial dependency on support systems. This result is in line with findings from the study by Crews and Campbell[18], which reported high levels of dependency among visually impaired older adults. Their research highlighted similar percentages of individuals needing assistance in daily activities.

Conversely, a more recent study by Hoogsteen[19] suggested improvements in independent living skills among visually impaired individuals due to advancements in assistive technologies, which may explain the 45% of our sample that remains independent despite low vision.

Availability and Impact of Support Systems: The impact scores for different support systems highlight the critical role of professional rehabilitation support, which scores the highest in terms of perceived impact. Our results echo the findings of Nispen[20]. who emphasized the importance of professional rehabilitation services in enhancing the quality of life for those with low vision. Their study also found professional support to be the most impactful, similar to our findings.

Additionally, research by Yi-Ching[21] emphasized the significance of family and community support, which is reflected in our study with high mean impact scores for family and community support, albeit slightly lower than professional support.

Despite the comprehensive findings presented in this study, several limitations should be acknowledged. Firstly, the sample size, particularly in the 85+age group, was relatively small, which might limit the generalizability of the results for this specific demographic. Secondly, the study primarily relied on self-reported measures for daily activities, psychological impact social support, which could introduce response biases or inaccuracies.

CONCLUSION

This study underscores the significant impact of low vision on various aspects of individuals' lives across different age groups. Findings reveal heightened challenges in maintaining independence in daily activities and coping with psychological distress among those with low vision, particularly in younger and middle-aged adults. Despite these challenges, the study highlights the crucial role of social support systems, particularly in everyday and problem-specific situations, in mitigating these impacts. Professional rehabilitation support emerges as pivotal in enhancing overall well-being and functional independence. Moving forward, targeted interventions and policies aimed at bolstering social support networks and improving accessibility to rehabilitation services could substantially enhance the quality of life for individuals affected by low vision.

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