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ORIGINAL RESEARCH

Prevalence and Regional Variations of Visual and Auditory Impairments Among Elderly Individuals in the Faroe Islands: A Cross-Sectional Study

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Introduction: Aging is associated with the potential onset of vision and hearing problems, affecting the quality of life and functional independence of older adults. This study sought to investigate the prevalence of various vision and hearing problems in 76-year-old Faroese individuals and examine possible regional variations in these health issues.

Materials and Methods: A cross-sectional study design was used, surveying 175 participants, all 76-year-olds, from different regions in the Faroe Islands. Data were collected on demographics, educational level, and marital status, as well as seven indicators of vision problems and eight indicators of hearing problems. Differences by gender and region were tested by Pearson chi squared test and Fisher's exact test, Bonferroni corrected for multiple comparisons.

Results: Problems with seeing and hearing were widespread, difficulty reading small print was reported by 58% of participants, and 51% reported less than "good" hearing. Despite the high prevalence of issues, no significant difference was found between genders in terms of problem frequency.

Conclusion: This study underscores the high prevalence of vision and hearing issues among 76-year-old Faroese individuals, with no gender differences observed. The detected regional variations necessitate further investigation to better understand and address these health issues in older adults. Policymakers and health professionals should consider these findings in designing interventions to improve older adults' sensory health.

Keywords: aging, vision problems, hearing problems, prevalence, regional variations, Faroe Islands

Introduction

Vision and hearing impairments are common health problems among the elderly and can affect their quality of life (QQL) and independence.[1–3] Both vision and hearing impairments have been identified as modifiable risk factors for dementia, as highlighted by the Lancet Commission on Dementia Prevention, Intervention, and Care.[4] Sensory impairments are however also normal age-related changes, and among adults over the age of 50, 65% experience hearing impairment, 33% experience visual impairment, and 5% experience a combined visual and hearing impairment.[5–7] Previous studies have identified vision and hearing impairments as common health problems among the elderly, both in the Faroe Islands[8] and elsewhere.[4,9–13] However, limited knowledge exists on how people living in small-scale societies perceive their vision and hearing. Addressing these impairments may contribute to reducing the risk of cognitive decline in older adults.

It is therefore important to investigate factors that may contribute to these health problems and identify effective measures to reduce the risk of vision and hearing loss. Such identifying factors contribute to the discussion of how geographical and gender differences in seeing and hearing problems among elderly Faroese citizens might be reduced by the local health authorities. By examining the relationship between perceived vision and hearing, while considering

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gender and residence, this study aims to enhance our understanding of these health problems in a small-scale society of the Faroe Islands.

The Faroe Islands is an archipelago in the North Atlantic Ocean with 17 inhabited islands and 29 municipalities. Almost half of the approximately 53,000 inhabitants live in the capital (Tórshavn), about 5,000 live in the second largest city, and the rest live in settlements of up to about 1,500 inhabitants.[14] The Faroe Islands have an ageing population and experience challenges in recruiting care professionals.[15–17] Furthermore, older people in the Faroe Islands want to be independent in their everyday lives.[18,19] The challenges with recruitment of enough health personnel and the older people's wishes have led to a growing focus among the Faroese authorities on providing rehabilitative services that enable the people to remain active in performing their everyday activities and reduce the need for care.[15,20] Providing care and rehabilitation services for people 67 years and older was a state task until 1 January 2015, when the municipalities took over and are now organized into eight cooperating districts.[20] After years of heavy investments in infrastructure development, bridges and tunnels, today approximately 85% of the population is connected with at most one hour travel time separating the main city of Tórshavn from surrounding areas.[18]

The primary hypothesis of this study was that vision and hearing impairments would be prevalent among 76-year-olds in the Faroe Islands and that these impairments might vary based on geographic location. Specifically, we expected to find differences in the prevalence of vision and hearing problems between participants living in the capital, Tórshavn, and those in more rural districts. This expectation was based on potential disparities in access to healthcare services, environmental factors, and lifestyle differences between urban and rural areas.

Ethics

The present study followed the ethical principles outlined in the Helsinki declaration (World Medical Association, 2014) and approved by the Faroese Data Protection Agency (dat.fo/loyvir 2017 5.5. Værkætlan: "Hoyrn, sjón og ljósviðurskiftí í heiminum", j.nr: 19/00213). Prior to the study start, all participants were provided with information about the study, and their informed consent was obtained. All data were anonymized, and confidentiality was maintained throughout the research process.

Materials and Methods

Our goal was to evaluate the regional prevalence of visual and hearing problems among 76-year-olds in the Faroe Islands using Pearson Chi squared Test and Fisher's exact test, Bonferroni corrected for multiple comparisons. This information will be crucial for local health authorities to better understand these issues and develop targeted interventions, contributing to maintaining the QoL and independence of the Faroese elderly population.

This study was designed as a cross-sectional survey. The choice of this design is due to its effectiveness in assessing the prevalence of specific conditions in a population at a certain point in time. This design allowed us to gather data on the selected indicators of vision and hearing problems among 76-year-old Faroese people.

Data Collection

Six of the eight cooperating districts in the country offered to invite their 76-year-old inhabitants to participate in the survey. Data was collected through face-to-face structured interviews, which took place in the municipality health office. The questionnaire, a revised version of the KAS screen (Kartlegging av Alvorlige kombinerte Sansetap blandt eldre), [Survey of severe, combined sensory loss among the elderly],[21] which included questions about the participant's demographic characteristics, such as gender, place of residence, and level of education, was used. Questions about marital status were also included to gain insights into the potential social support system of the respondents. All participants answered questions about vision and hearing difficulties based on their personal experiences, regardless of whether they used glasses or hearing aids. This means that the reported difficulties reflect their challenges either with or without the use of these corrective devices.

To assess vision and hearing problems, the questionnaire included a series of indicators, as well as the overall questions "How would you describe your vision?" and "How would you describe your hearing?" For seeing problems, these included difficulty in recognizing people, reading regular print, reading small print, finding reading strenuous,

difficulty seeing TV text or image, daily use of glasses, and being diagnosed with an eye disease. For hearing problems, the indicators included difficulty understanding indistinct speech, understanding when many people are speaking, understanding a telephone voice, understanding dialects, understanding new people, needing to see a speaker's face, difficulty understanding radio voices, and use of hearing aid. All questions provided the response alternatives "Good/Not so good/Bad/Don't know". As the data set was small, responses were dichotomized into "0: Good/no problem", "1: Problem: Not so good/Bad/Do not know".

The first part of the study was the data collection of the 76-year-olds in Tórshavn. This was performed in 2017/2018. The second part of the study was the data collection of five of the eight cooperative Districts in the Faroe Islands, here called the Rural Districts in 2019/2020. The intention of the Faroese health authorities was to conduct a total population survey. However, the actual execution of the study was contingent upon the willingness of individual districts to participate. As a result, only those districts that expressed interest and agreed to the survey terms were included in the study. We wanted to investigate if there were any differences between the capital city Tórshavn and the Rural Districts. Exclusion criteria were presence of obvious cognitive impairment or very serious illness.

Statistical Analysis

Data were analyzed using descriptive statistics to summarize demographic characteristics and the prevalence of specific seeing and hearing problems. The Pearson Chi-Square test was used to assess the significance of the difference in the frequency of reported problems between the Faroese regions, gender differences were tested by Fisher's exact test. Statistical significance was set at a p-value of less than 0.05. The Bonferroni correction was applied to adjust for multiple comparisons to reduce the likelihood of Type I error. The Statistical Package for Social Sciences for Windows (SPSS version 24.0; IMB, Armonk, NY, USA) was used.

Results

A total of 287 individuals aged 76 were invited to participate in the study, and 175 responded (61% response rate). Of the respondents, 58% (n=101) were women, and 42% (n=74) were men. In terms of regional distribution, 42% (n=74) of the participants lived in the capital, Tórshavn, while 58% (n=101) resided in rural districts.

Regarding education, 15% (n=24) of the participants had a university degree 13% (n=21) had completed college 17% (n=27) had completed high school, and 46% (n=75) had only completed mandatory education. There were significant regional differences, with 71% (n=69) of rural district participants reporting only mandatory education, compared to 16% (n=12) in Tórshavn.

Prevalence of Vision and Hearing Problems

The prevalence of vision and hearing problems among participants varied. For vision problems, the most commonly reported issue was difficulty reading small print, affecting 58% of participants. In terms of hearing, 51% of the participants reported hearing problems, with the most frequent difficulty being understanding speech in a group conversation (61%).

Seven indicators of seeing problems and eight indicators of hearing problems among 76-year-old Faroese people were registered.

As shown in Table 1, 39% of the 76-year-olds reported less than "good" vision, and 51% less than "good" hearing. Rates of reduced vision ranged from a low of 10% (Difficult to watch TV text/image) to a high of 89% (Using glasses daily) Using glasses may not be considered a "problem of seeing", as it is a normal way of correcting one's vision problem. In that case, the most frequent seeing problem among 76-year-old Faroese people was difficulty reading small print, which was reported by 58%. Rates of reduced hearing ranged from a low of 5% (Difficult to listen to the radio) to a high of 61% (Difficult to understand where many are speaking).

After a Bonferroni correction for multiple comparisons, which produced a critical p-value of 0.05/18 = 0.0028, no regional difference p-value was significant at the 0.05-level: no problem was more (or less) frequently reported by one of the genders.

Table 1 presents gender-specific prevalence rates for vision and hearing problems, along with p-values indicating the statistical significance of gender differences.

Table 1 Problems of Seeing and Hearing by Gender

Problem	Men (% (n))	Women (% (n))	All (% [CI_{95}])	p (* = Fisher's exact p)
Difficult to recognize people	12% (8)	28% (27)	21% [15% - 27%]	0.01
Difficult to read regular print	15% (11)	13% (13)	14% [9% - 19%]	0.65
Difficult to read small print	58% (42)	56% (57)	57% [50% - 64%]	0.89
Finds reading strenuous	30% (22)	30% (30)	30% [23% - 37%]	0.95
Difficult to see TV text/image	6% (4)	13% (13)	10% [5% - 14%]	0.11
Uses glasses daily	83% (57)	93% (90)	89% [84% - 93%]	0.04
Diagnosed w eye disease[b]	21% (15)	39% (39)	31% [24% - 38%]	0.01
Reports vision problem(s)	33% (24)	44% (44)	39% [32% - 46%]	0.15
Difficult to understand indistinct speech	48% (35)	53% (53)	51% [43% - 58%]	0.56
Difficult to understand when many speak	67% (49)	56% (57)	61% [54% - 68%]	0.15
Difficult to understand telephone voice	26% (19)	18% (18)	21% [15% - 27%]	0.19
Difficult to understand dialects	21% (15)	16% (16)	18% [12% - 24%]	0.42
Difficult to understand new people	19% (14)	21% (21)	20% [14% - 26%]	0.79
Needs to see speaker's face	22% (16)	21% (21)	21% [15% - 27%]	0.86
Difficult to understand radio voices	1% (1)	7% (7)	5% [2% - 8%]	0.14*
Uses hearing aid	33% (24)	20% (20)	25% [19% - 32%]	0.05
Reports hearing problem(s)	58% (42)	45% (45)	50% [42% - 57%]	0.09
Reports both vision and hearing problems	21% (15)	22% (22)	21% [15% - 27%]	0.84

Note: [a]Each line in Table 1 presents only the upper half (the "problem half") of the sub-tables. The lower half of the sub-tables (the "no problem half") can be inferred from the presented "problem half" percentages and the Ns.
[b]Glaucoma, cataract, retinopathy, AMD, other eye disease.

As shown in Table 2, the rate of most of the problem indicators did not differ significantly by region. After the Bonferroni correction for multiple comparisons, five p-values were significant at the 0.05-level. Participants from Norðoyggjar (NBH) and Vagar more often reported difficulties reading regular print and small print. Participants from

Table 2 Seeing and Hearing Problems by Region (% Yes (N))

Problem	Tórshavn (N = 74)	Nánd[d] (N = 15)	NBH[d] (N = 34)	VEKS[d] (N = 31)	Vagar (N = 13)	Sandoy (N = 8)	P[a]
Difficult to recognize people	16% (12)	33% (5)	24% (8)	23% (7)	23% (13)	No answs	0.63
Difficult to read regular print	8% (6)	0% (0)	35% (3)	3% (1)	39% (5)	0% (0)	0.000032[b]
Difficult to read small print	61% (45)	47% (7)	85% (29)	19% (6)	77% (10)	38% (3)	0.000003
Finds reading strenuous	20% (15)	27% (4)	44% (15)	36% (11)	31% (4)	38% (3)	0.20
Difficult to see TV text/image	8% (6)	33% (5)	6% (2)	10% (3)	0% (0)	13% (1)	0.04[b]
Uses glasses daily	93% (69)	80% (18)	88% (30)	97% (30)	54% (7)	No answs	0.000432[b]
Diagnosed w eye disease[c]	28% (21)	33% (5)	21% (7)	45% (14)	31% (4)	50% (4)	0.29

(*Continued*)

Table 2 (Continued).

Problem	Tórshavn (N = 74)	Nánd[d] (N = 15)	NBH[d] (N = 34)	VEKS[d] (N = 31)	Vagar (N = 13)	Sandoy (N = 8)	P[a]
Reports vision problem(s)	35% (26)	33% (5)	56% (19)	39% (12)	31% (4)	38% (3)	0.41
Difficult to understand indistinct speech	61% (45)	60% (9)	59% (20)	36% (11)	0% (0)	38% (3)	0.000734
Difficult to understand when many speak	60% (44)	47% (7)	68% (23)	71% (22)	46% (6)	63% (5)	0.48
Difficult to understand telephone voice	18% (13)	33% (15)	21% (7)	29% (9)	0% (0)	38% (3)	0.17[b]
Difficult to understand dialects	12% (9)	53% (8)	29% (10)	7% (2)	0% (0)	25% (2)	0.000259[b]
Difficult to understand new people	20% (15)	20% (3)	21% (7)	23% (7)	8% (1)	25% (2)	0.91[b]
Needs to see speaker's face	20% (15)	7% (1)	18% (6)	36% (11)	23% (3)	13% (1)	0.27[b]
Difficult to understand radio voices	7% (5)	0% (0)	3% (1)	7% (2)	0% (0)	0% (0)	0.70[b]
Uses hearing aid	22% (16)	20% (3)	29% (10)	32% (10)	23% (1)	25% (2)	0.86[b]
Reports hearing problem(s)	53% (39)	53% (8)	59% (20)	45% (14)	23% (3)	38% (3)	0.32
Reports *both* vision and hearing problem(s)	24% (18)	13% (2)	27% (9)	19% (6)	8% (1)	13% (1)	0.64[b]

Note: [a]Each line in Table 1 presents only the upper half ("the problem half") of the sub-tables. The lower half (the "no problem half") can be inferred from the presented "problem half" percentages and the Ns. [b]More than 20% of cells had expected counts of less than 5 [c]Glaucoma, cataract, retinopathy, AMD, other eye disease [d]NBH: Norðoyggjar. [d]VEKS: Vestmanna- Eiðis-, Kvívíkar- and Sunda Kommuna [d]Nánd: Eysturoyar-Fuglafjarðar Kommuna.

Vagar less often reported using glasses and finding it difficult to understand indistinct speech. Participants from Vagar and VEKS less often reported having problems understanding dialects.

The regional differences should be interpreted with caution. The regional sub-groups were so small that eleven of the 18 p-values in Table 2 were based on sub-tables in which more than 20% of cells had expected counts of less than 5. The reason we show the regional percentages of reported problems is that they – significant or not – may be of interest to the local health authorities.

Participants were asked to report their hearing problems based on their current experiences, regardless of whether they used hearing aids. This ensures that the data reflects hearing difficulties with or without corrective devices.

Discussion

Our study revealed two key findings on the prevalence of visual and auditory problems among 76-year-olds in the Faroe Islands. Firstly, individual vision and hearing problems were quite common among the elderly population, with no significant differences in prevalence observed between genders. Secondly, while the frequencies of these issues varied somewhat from region to region, there was no discernable pattern to these variations.

The first finding aligns with previous research that suggests aging often brings with it a host of vision and hearing problems.[22–25] The lack of a significant gender difference in the prevalence of these problems is interesting, as some previous studies had suggested that women might have a higher prevalence of vision problems, particularly in relation to cataracts,[26] while men might experience a higher incidence of hearing loss.[27] However, the absence of a significant gender difference in our study could be attributed to our relatively small sample size, which might not provide enough power to detect a small difference. It is also possible that the Faroese population, with its unique genetic and environmental characteristics, may present a different pattern compared to other populations.[28,29]

In addition, a significant portion of the male population on the Faroe Islands, especially those hailing from the generation born in 1941, partake in fishing activities, a dominant occupation. It is essential to consider the potential deleterious effects of blue light, often termed as "blue light hazard", on these fishermen. The risk intensifies when these individuals are at sea, where the sunlight's reflection on the water surface escalates exposure to this form of light.[30–32]

Our second finding – that the prevalence of these problems varied by region, yet without a discernable pattern – does not lend itself to clear conclusions. The regional variations which existed in the sample might reflect real differences in access to healthcare, lifestyle, or environmental factors. These findings are consistent with other studies that emphasize the importance of regional healthcare access in mitigating sensory impairments among the elderly[4] for example, the Gothenburg H70 study, a longitudinal and cross-sectional study of elderly individuals, which reported similar findings regarding the prevalence of hearing loss in older adults and emphasized the role of genetic and environmental factors in determining sensory health outcomes.[33]

However, without a clear pattern of regional variation, it is challenging to draw definitive conclusions. More extensive studies will be necessary to fully understand these regional differences, potentially considering other variables such as income, education, or lifestyle factors that might explain these variations. Still, as The Faroe Islands have a small population, the Faroese authorities have to decide whether the non-significance of the variations in Tables 1 and 2 means that there are no real differences in the frequency of sensory deprivation of men and women and no real differences across regions, or whether the non-significant regional variation are Type 2 errors.

Hearing problems were highly prevalent among 76-year-olds in the Faroe Islands. Even though 25% of our respondents reported using hearing aids, a substantial portion – 51% – still reported less than "good" hearing. This underscores the importance of continuous follow-up and adjustment of hearing aids to ensure they are optimally functioning for each individual user.

Another finding is that 89% of the participants reported using glasses daily, which should be viewed positively and something that indicates that many older adults are taking steps to correct their vision. Our study also reveals a difference between the 31% of participants diagnosed with an eye disease and the 39% who report vision problems. This discrepancy may be due to several factors. Some participants may experience vision difficulties that do not meet clinical criteria for disease but still affect daily life, such as eye strain or mild difficulty with small print. Additionally, underdiagnosis or delayed diagnosis, particularly in rural areas, could explain why some individuals report problems without a formal diagnosis.

We recognize that regional differences in hearing problems, despite similar hearing aid use, could be influenced by other factors such as lifestyle, general health, or occupation. Unfortunately, we did not collect sufficient data to conduct a multivariate analysis in this study. Future research could benefit from examining these additional factors to better understand the causes behind regional differences in sensory health.

A key finding is the discrepancy between the percentage of participants diagnosed with an eye disease (31%) or using a hearing aid (25%), and those who report vision (39%) or hearing (51%) problems. This difference highlights the importance of measuring sensory impairment by self-reports and by objective measures. Recent research suggests that subjective reports of vision and hearing problems are important indicators of functional health among older adults, especially in settings where objective assessments may not be feasible. These subjective measures provide critical insights into how individuals perceive their health, which can have direct implications for their quality of life. From a policy standpoint, emphasizing the value of subjective assessments in healthcare for older adults could enhance the development of tailored interventions and improve access to necessary services, especially in smaller communities like the Faroe Islands where objective assessments may be limited.

Strengths and Limitations

A strength of the study is that we used a robust cross-sectional design with a representative sample: we studied the entire population of Faroese men and women born in 1941 (Tórshavn) and in 1942 in five rural districts (excluding only persons with obvious cognitive impairment or very serious illness). Several limitations should be noted. First, as previously mentioned, the voluntary participation of districts may have introduced selection bias, not all regions chose to participate and regions that were more affected by the healthcare system reorganization might have been more likely not to participate. Consequently, the findings may not be representative of the entire Faroese population. Furthermore, the small sample size, particularly in rural regions, limits the statistical power of the study, and the results should be interpreted with caution. Larger studies, including a broader range of districts and age groups, would provide a more comprehensive understanding of sensory health in older adults.

Other limitations include the lack of a detailed examination of each individual's visual and auditory health, which could provide further insights into the types and severity of their problems. Our participation rate of 61% may have introduced unknown biases into the data and our sample size may not provide enough power to detect small differences or rare problems. The regional number of cases reporting problems with seeing and hearing was so low in some regions that a few cases more (or less) would have changed the percentages quite noticeably (as noted, many cells in the sub-tables summarized in Table 2 had expected counts of less than five). Still, collapsing the table into fewer geographical units was not an option: these regions are – small as they are – the units which the Faroese authorities cater for and must relate to.

While the data collection for this study began nearly six years ago, with Tórshavn participating first and other regions joining later, the findings remain relevant to the current context in the Faroe Islands. The major reorganization of healthcare services occurred before the study commenced, with the transfer of healthcare responsibilities from the state to the regions in 2015. At that time, there were concerns that this shift would lead to increased inequality in service provision between regions. However, there have been minimal changes in the organization of healthcare services since the study began, and the concerns about inequality remain relevant today.

This study focused exclusively on 76-year-olds as part of a public health initiative in the Faroe Islands, which mandates preventive health visits for individuals at this age. The decision to focus on this age group was based on practical reasons related to the national health system's preventive care strategy, which seeks to promote well-being in later life. However, this focus on a single age group may represent a limitation in the generalizability of the findings to other older adults.

The novelty of this study lies in its focus on the elderly population of the Faroe Islands, a previously underexplored group in the field of sensory health research. The findings provide a valuable basis for future studies aimed at addressing sensory impairments in small-scale, isolated societies.

In conclusion, our study provides a glimpse into the visual and auditory health of elderly individuals in the Faroe Islands. Our findings highlight the need for public health strategies aimed at reducing the burden of these problems among the elderly, with careful consideration given to the variations in prevalence between regions.

Data Sharing Statement

Individual deidentified participant data, along with the study protocol and statistical analysis codes, are available via Figshare at https://figshare.com/s/3dafa9505acc8544e530. Due to the sensitive nature of the data, access is restricted and will be granted only after review and approval of a methodologically sound proposal. Researchers must sign a confidentiality agreement to ensure the protection of the data. The data will be accessible immediately after publication and will remain available for a period of 5 years.

Ethical Approval and Study Design

This manuscript represents an Original Research article. The study employed a cross-sectional design to investigate the prevalence and regional variations of visual and auditory impairments among 76-year-olds in the Faroe Islands. The research was approved by the Faroese Data Protection Agency (j.nr: 19/00213), ensuring compliance with ethical standards. All participants provided informed consent before participation, and the data were fully anonymized to protect their privacy.

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Disclosure

The authors report no conflicts of interest in this work.

References

1. United Nations. *Decade of healthy ageing: baseline report: summary*. 2021: World Health Organization.
2. Pinto JM, Kern DW, Wroblewski KE, et al. Sensory function: insights from wave 2 of the national social life, health, and aging project. *J Gerontol B*. 2014;69(Suppl_2):144–153. doi:10.1093/geronb/gbu102
3. Ho IC, Chenoweth L, Williams A. Older People's Experiences of Living with, Responding to and Managing Sensory Loss. *Healthcare*. 2021;9 (3):329–345.
4. Livingston G. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. *Lancet*. 2020;396(10248):413–446.
5. Bourne R, Steinmetz JD, Flaxman S, et al. Trends in prevalence of blindness and distance and near vision impairment over 30 years: an analysis for the Global Burden of Disease Study. *Lancet Glob Health*. 2021;9(2):130–143. doi:10.1016/S2214-109X(20)30425-3
6. Maharani A, Dawes P, Nazroo J, et al. Associations between self-reported sensory impairment and risk of cognitive decline and impairment in the health and retirement study cohort. *J Gerontol B*. 2020;75(6):1230–1242. doi:10.1093/geronb/gbz043
7. Haile LM, Kamenov K, Briant PS, et al. Hearing loss prevalence and years lived with disability, 1990–2019: findings from the Global Burden of Disease Study 2019. *Lancet*. 2021;397(10278):996–1009. doi:10.1016/S0140-6736(21)00516-X
8. Haanes G, Roin Á, Petersen M. Preventive Home Visit (PHV) Screening of Hearing and Vision Among Older Adults in Tórshavn, Faroe Islands: a Feasibility Study in a Small-Scale Community. *J Multidiscip Healthc*. 2021;14:1691–1699. doi:10.2147/JMDH.S298374
9. Guthrie DM, Davidson JGS, Williams N, et al. Combined impairments in vision, hearing and cognition are associated with greater levels of functional and communication difficulties than cognitive impairment alone: analysis of interRAI data for home care and long-term care recipients in Ontario. *PLoS One*. 2018;13(2):e0192971. doi:10.1371/journal.pone.0192971
10. Scinicariello F, Przybyla J, Carroll Y, et al. Age and sex differences in hearing loss association with depressive symptoms: analyses of NHANES 2011–2012. *Psycho Medic*. 2019;49(6):962–968. doi:10.1017/S0033291718001617
11. Tseng Y-C, Liu SH-Y, Lou M-F, et al. Quality of life in older adults with sensory impairments: a systematic review. *Quality of Life Research*. 2018;27(8):1957–1971. doi:10.1007/s11136-018-1799-2
12. Yamada M, Nishiwaki Y, Michikawa T, et al. Impact of hearing difficulty on dependence in activities of daily living (ADL) and mortality: a 3-year cohort study of community-dwelling Japanese older adults. *Arch Gerontol Geriatrics*. 2011;52(3):245–249. doi:10.1016/j.archger.2010.04.023
13. Raina P, Wong M, Massfeller H. The relationship between sensory impairment and functional Independence among elderly. *BMC Geriatr*. 2004;4 (1):3–11. doi:10.1186/1471-2318-4-3
14. *Hagstova. Department of the Faroe Islands. Hagstova [Statistical department]: Faroe Islands*; 2020.
15. Durhuus G, Thorsteinsson A, Ellingsgaard E, Joensen, H et al, et al. Almannamálaráðið/Ministry of Social Affairs and Culture: Faroe Islands: Faroe Islands. *Tilmæli um eldrapolitikk*. 2013.
16. Løgmannsskrivstovan. *Í góðum hondum. Starvsfólkatørvur á vælferðarøkinum – avbjóðingar og uppskot til loysnir [In Good Hands: workforce Challenges in the Welfare Sector – challenges and Proposals for Solutions]*. 2022: Tórshavn.
17. Lakjuni S, Christiansen J. *Skipan Av Dygdargóðum Heilsutænastum Í Primera Geiranum Við Høvuðsdenti Á Eldraøkið Og Fakligar Førleikar [Organization of High-Quality Health Services in the Primary Sector with a Main Focus on the Elderly and Professional Competencies]*. Felagid Føroyskir Sjukrarøktarfrøðingar: Tórshavn; 2021.
18. Róin Á. *On the making of Age: A constructionist study on ageing and later life in the Faroe Islands [Thesis]*. 2015, Linköping University.
19. Jacobsen B. *Í Triðja Aldri Ráða Vit Yvir Degnum - Ein Kanning Av Livikorum Hjá Fólkapensionistum [In the Third Age We Rule - a Survey of the Living Conditions of the Pensionists]*. Faroe Islands; 2010.
20. Ludvígsdottir B, Jacobsen F, Bakhtawar D, Petersen H, Christiansen, E, Lamhauge, J. Tilmæli um samskipaða endurvenjing [Recommendations on coordinated rehabilitation]. *Minis Health Inter Mini Social Aff*. 2016.
21. Lyng K, Svingen EM. Kartlegging av alvorlig, kombinert sansetap hos eldre [Screening of serious, combined impairment in elderly]. In: *Nova Report*. Vol. 9. Oslo: NOVA; 2001.
22. Ciorba A, Bianchini C, Pelucchi S, et al. The impact of hearing loss on the quality of life of elderly adults. *Clin Interventions Aging*. 2012;7:159. doi:10.2147/CIA.S26059
23. Dalton DS. The impact of hearing loss on quality of life in older adults. *The Gerontologist*. 2003;43(5):661–668.
24. Vellas B, Scrase D, Rosenberg GA, et al. WHO Guidelines on Community-Level Interventions to Manage Declines in Intrinsic Capacity: the Road to Prevention Cognitive Decline in Older Age? *J Prevent Alzheimer's Dis*. 2018;5:165–167. doi:10.14283/jpad.2018.26
25. Jaiswal A, Aldersey H, Wittich W, et al. Participation experiences of people with deafblindness or dual sensory loss: a scoping review of global deafblind literature. *PLoS One*. 2018;13(9):e0203772. doi:10.1371/journal.pone.0203772
26. Wang W, Yan W, Fotis K, et al. Cataract surgical rate and socioeconomics: a global study. *Invest Ophthalmol Visual Sci*. 2016;57(14):5872–5881. doi:10.1167/iovs.16-19894
27. Goman AM, Lin FR. Prevalence of hearing loss by severity in the United States. *Am J Public Health*. 2016;106(10):1820–1822. doi:10.2105/AJPH.2016.303299
28. Róin Á. Embodied ageing and categorisation work amongst retirees in the Faroe Islands. *Journal of Aging Studies*. 2014;31:83–92. doi:10.1016/j.jaging.2014.09.001
29. Róin Á. The multifaceted notion of home: exploring the meaning of home among elderly people living in the Faroe Islands. *J Rural Stud*. 2015;39:22–31. doi:10.1016/j.jrurstud.2015.03.002
30. Tosini G, Ferguson I, Tsubota K. Effects of blue light on the circadian system and eye physiology. *Mol Vision*. 2016;22:61.
31. Myers ML, Durborow RM, Kane AS. Gulf of Mexico seafood harvesters, part 2: occupational health-related risk factors. *Safety*. 2018;4(3):27. doi:10.3390/safety4030027
32. Okuno T, Saito H, Ojima J. Evaluation of blue-light hazards from various light sources. In: *Progress in Lens and Cataract Research*. Karger Publishers; 2002:104–112.
33. Göthberg H, Rosenhall U, Tengstrand T, et al. Cross-sectional assessment of hearing acuity of an unscreened 85-year-old cohort-Including a 10-year longitudinal study of a sub-sample. *Hearing Research*. 2019;382:107797. doi:10.1016/j.heares.2019.107797