Vision and Functional Capacities of Older People in the Community

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Abstract

Population studies indicate that sight loss is a problem of increased incidence for the aged. Previous studies have shown that sight loss can reduce people's ability to live independently, and that some independence can be regained through effective rehabilitation strategies.

To provide effective rehabilitation an orthoptist must be aware of older persons' perceptions of their functional capabilities. The data presented in this paper represents selected findings from the Health Status of Older People Project, a socio–medical survey of 1000 older people living in the community. Variables selected for presentation include self rated eyesight, measured eyesight, perceived ability to perform certain daily tasks and ability to use public transport.

In addition, respondents who reported poor or worse vision were asked to comment on specific aspects of visual function. Analysis indicated good response between self rated and measured vision. This preliminary analysis of data suggests that a number of areas of daily activity are compromised at least in part due to sight loss.

Key Words:
sight loss, daily living activities, self rated vision, measured vision.

Introduction

Older people generally view health as a resource which enables them to remain independent and feel well [1]. Vision, however, is an aspect of health which is likely to decline from middle age onward. When vision has declined with age then rehabilitation strategies and optical aids can be effective in ameliorating the effects of sight loss and assisting people to maintain their usual activities. Orthoptists are becoming increasingly involved in the process of visual rehabilitation. To be effective in this role orthoptists must gain an awareness of older people's own views of their visual capacities and how vision influences their functional capabilites.

This article presents baseline information on reports on vision from respondents in the Health Status of Older People (HSOP) survey conducted in Melbourne 1994. The socio–medical HSOP study, unlike clinical studies, included representative groups of older people in the community. It extends beyond national health surveys, such as the Australian Bureau of Statistics (ABS)[2] by gathering the data on measured vision as well as self rated vision.

After reviewing related literature and the study methods, this article presents findings on perceived and objective measures of vision and functional capacities of older people with visual impairment. This article concludes by considering how representative population data on the daily living problems experienced by visually impaired older persons can be applied in providing effective and efficient rehabilitation programs.

The Australian Bureau of Statistics' figures indicate that 9% of Australians have a sightloss [2]. Sight loss is a sensory impairment which is known to increase in incidence with age,[3-5] a trend supported by the Australian Bureau of Statistics figures which show incidence increasing from 0.4% under 15 years to 14% over 75 years [2]. The impact of sight loss on an individual's ability to perform daily tasks as well as their well–being, has become an area of interest to researchers, particularly given financial stringencies limiting government support. As the aged have an increased incidence of sight loss the impact of limited services is of particular significance to this group.

Poor vision for many older people means a loss of independence. Aged people with visual impairments in the community report unmet needs with household tasks such as shopping, housekeeping [6] and with mobility both walking and using public transport [7,8]. In addition, visual impairment increases the risk of falls with consequent injury [9]. Loss of independence is compounded for aged people who are visually impaired and living in nursing homes. Marx and co workers found visually impaired nursing home residents were more dependent for daily needs such as bathing and toiletting, than non visually impaired residents [10].

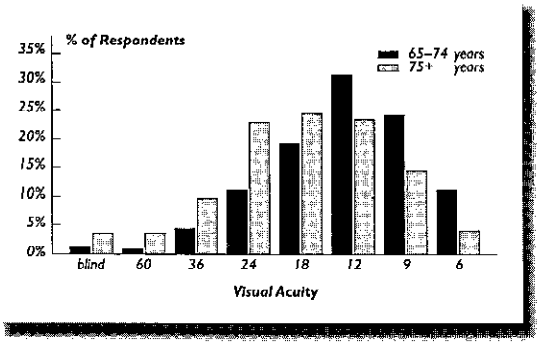

Figure 1

Snellen visual acuity by age group.

(Functionally or Totally Blind (n=7). None of these respondents were asked to attempt the Snellen acuity test.)

Visual impairment also impacts on the emotional well being of older people. Those with poor eyesight have lower morale than non visually impaired people and are more likely to have feelings of uselessness and to believe that life is unpleasant [7]. A number of authors have reported on the isolation associated with visual impairment [6,11,12]. Social isolation can be further compounded when dual sensory loss occurs [13,14]. This situation arises overwhelmingly among older people as the incidence of both hearing and vision loss increases greatly with age [8,13–15]. The emotional losses associated with sight loss in the aged can be misdiagnosed as a loss of mental faculty, with consequent inappropriate institutionalisation and compromised quality of life [15–17].

With increased awareness of sight loss, researchers also have begun to consider its impact in terms of cost to the community. These costs extend from welfare payments [18] to increased work loads and stress of nursing home staff [10].

The effects of sight loss in many cases can be ameliorated with appropriate assistance such as the use of optical aids [19,20] and the use of rehabilitation strategies such as eccentric viewing [21–25]. Providers of rehabilitation services for the visually impaired should be fully cognisant of the functional problems experianced with sight loss, both emotional and physical, to ensure that those in need of rehabilitation are identified and that the appropriate strategies are employed. Evaluation of rehabilitation must reflect the purpose of increasing functional capacities and hence requires accurate functional assessments to establish baseline and progress data [26].

Method

Data were gathered in a survey conducted by the Health Status of Older People project (HSOP) in Melbourne from May to November 1994. The sample, drawn from electoral rolls, consisted of 1000 people aged 65 years and over living in private households and capable of answering the questions in English. At the end of the interview averaging 90 minutes in length, respondents were asked to participate in brief physical examinations. Finally, they were asked to fill in and return a self completed questionnaire.

The HSOP survey achieved a 70 percent response rate for the personal interviews and, of those interviewed, 84 percent also returned the self completion questionnaire. Overall, the sample was broadly representative of older people in Melbourne, although it slightly over–represented men and those who were married and relatively healthy [27]. Information was collected on respondents' health conditions, health related behaviours, functional capacities, well–being, attitudes, recent life experiences, and basic demographic and social characteristics. This article reports data on

Table 1

Self reported sight and Snellen Acuity

(Functionally or totally blind (n=7). None of these respondents were asked to attempt the Snellen acuity test.)

There are some missing values representing respondents who attempted the Snellen test but where unable to read any line correctly.

Self reported eyesight by measured Snellen acuity N=986								
	6/60	6/36	6/24	6/18	6/12	6/9	6/6	Total (n)
Excellent	0%	2%	10%	21%	25%	29%	12%	165
Good	0%	0%	4%	14%	21%	30%	22%	567
Fair	3%	10%	20%	24%	27%	12%	3%	201
Poor	15%	22%	22%	9%	20%	7%	0%	46
Blind	•••	•••	•••	•••	•••	•••	•••	7

measured vision using Snellen charts, self rated eye sight following the Australian Bureau of Statistics format [2], and well–validated measures of functional capacities [28].

The findings presented below describe the distribution of visual impairment across a community sample of older people and show associations between self rated eyesight, measured eyesight and functional capacities. It should be appreciated that these associations are not necessarily causal, for example, older people with poor eyesight typically also have other difficulties which also limit their functional capacities. Further, the findings are subject to sampling error, particularly for small subsets of the population.

Results

Data from general population surveys such as the ABS surveys usually measure self reported vision and exclude objective measures of visual acuity. The HSOP study, however, collected both self reported and measured visual data, thus enabling comparison of perceived to measured acuity. Figure 1 provides a summary of measured visual acuity by age group for the survey population. As expected the figure shows that visual acuity is significantly better for the younger group of respondents.

Table 1 provides a comparison of measured visual acuity by self rated eyesight for rating from poor to excellent. Respondents who were registered legally or totally blind were not tested objectively and a small number of other respondents were unable to complete the object test and have been omitted from this table. Of respondents self rating their vision as fair to excellent, 79% had a measured acuity of 6/18 or better, which is consistent with the WHO classification of slight to moderate impairment. Of respondents who self rated their vision as poor, 67% had a measured acuity of 6/18 to 6/60 which is consistent with the WHO severe low vision category.

Of the respondents who self rated their eyesight as fair to worse, 47% agreed (when asked) that their problems with eyesight made it difficult to do the things they wanted to do. The proportions agreeing that vision limited their activities was 38% for those who rated their eyesight as fair, 78% for those with self rated poor eyesight and 86% for the few respondents who were classified as legally or totally blind.

Figure 2 shows kinds of difficulties experianced by people who self rated their eyesight as fair or worse. The most frequently experienced problems were reading small print, adjusting to dim light, and handling lights/glare.

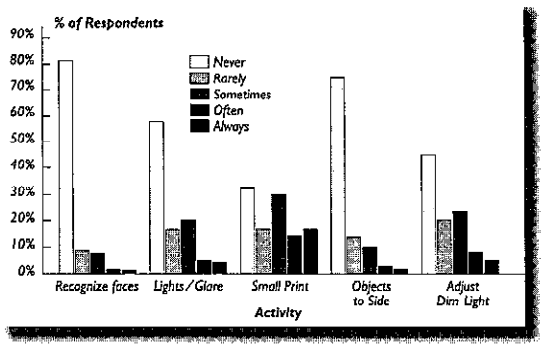

Figure 2

Responses of Subjects with self rated poor vision and task difficulties.

Self Rated Eyesight	fair–excellent	poor–blind
Males		
65–74:	91% (n=307)	57% (n= 9)
75+:	78% (n=138)	54% (n=13)
Females		
65–74:	54% (n=315)	46% (n= 9)
75+:	33% (n=181)	9% (n=13)

Table 2

Proportions of respondents who drove a car in the last month, by age, gender and eyesight (n=996).

For example, the upper left hand cell shows that 91% of men in the age group of 65–74 years with fair to excellent eyesight had driven a car in the last month.

A small number of respondents experienced problems with seeing objects to the side or recognising faces. It should be noted that these difficulties were only reported by those who completed the self completion questionnaire. A signficant number of respondents who rated their vision as poor or worse did not complete the self completion questionnaire. All respondents were asked if they could perform certain household tasks on their own, with assistance or not at all. Figure 3 shows that across all the activities, those with relativley poor eyesight are much less likely to be fully independent. The activity of taking care of one's appearance and eating were performed without assistance across all eyesight categories. Difficulties were most likely in the areas of gardening/minor house repair and doing housework across all sight categories, and more women than men needed help to shop and prepare meals in the fair/excellent and poor eyesight categories.

The ways in which eyesight relates to driving is shown in Table 2. For both men and women in both age groups the proportions who drive is substantially lower among those with poor or worse eyesight. While the numbers with poor sight are small, comparatively poor vision has a particulary strong association with not driving among men of the younger age group and women of the older age group.

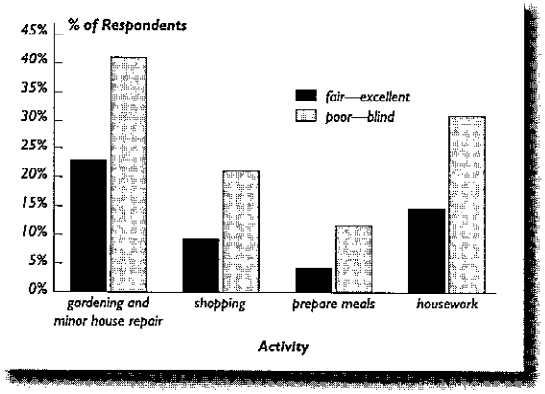

Figure 3

Need for assistance or inability to perform household tasks by self reported eyesight. (N=993)

People who had not driven in the last month (N=363) were asked if they had any difficulty using public transport. Within this group of non drivers, 36% of those with fair or better eyesight reported difficulty using public transport as compared to 48% of those with poor or worse eyesight. Relatively more women than men, and older than younger people reported difficulty using public transport across all eyesight groups. Those who reported difficulty using public transport were asked to state the reasons for this difficulty (N=137). The single greatest difficulty was getting on and off public transport reported by 74% of the fair to excellent sight group; 81% with poor eyesight and 100% of the few who were legally or totally blind.

A similar question was asked regarding difficulty using taxis. Of this same group of people who had not driven in the last month, only 11% of those with excellent to fair sight reported problems as compared to 24% for those with poor to worse sight. For those reporting difficulties, the most frequently reported reasons were expense, getting in and out, and safety concerns. The patterns of these reasons varied little between those with fair or better sight as compared to those with poor sight, with the exception that all of the few people in the blind group reported getting in and out as the greatest difficulty.

Discussion

Overall, the Health Status of Older People (HSOP) findings indicate good agreement between self rated and clinical measures of eyesight. A majority of respondents' self ratings equated with the WHO sight impairment category as determined by measured visual acuity. Yet some respondents appeared to underestimate vision capacities (26% of those self rated fair/excellent) while others appeared to over estimate capacities (21% of those self rated poor). Interestingly, 7 respondents (only 1%) rated their vision as fair to excellent but had a measured acuity of 6/60, an acuity level which borders on legal blindness.

These comparisons are important because most studies of functional disabilities and vision loss rely on self rated vision. Some researchers argue the need for caution when interpreting self rated vision data because of the tendency to understate the degree of visual impairment on self report [12]. Other studies indicate that the elderly visually impaired tend to under report the existence of visual impairment [6,29,30]. The disparity in the findings suggest the importance of taking both self rated vision and measured capacities into account when making functional assessments of individuals.

Consistent with other studies [6,7,8] nearly half of the respondents with fair or worse vision indicated that vision loss limited their activities. Areas of activity in which significant numbers of people were able to undertake or needed assistance included gardening, housework, shopping and meal preparation. Whilst respondents from all eyesight categories reported difficulties with these activities, a greater proportion of respondents who were blind or self rated their sight as poor reported such difficulty. The data also indicates that respondents with poor sight are more likely to require more assistance with minor house repair and grooming. Whilst the association between sight loss and unmet needs for shopping and housekeeping have been reported in other sudies [6] , the association of sight loss with difficulties with gardening and minor house repair have not been reported previously and are areas that warrant further study. Even when sight is not the sole cause of these limitations, it remains an important factor to take into account when assessing the benefits of improved sight when delivering community services.

A large proportion of respondents in the poor or funtionally/legally blind categories indicated a number of household tasks which they were unable to do alone (gardening, shopping, prepare meals and housework). These tasks indicate areas to be targeted by the visual rehabilitation practitioner. Eccentric viewing training has been shown to be effective in improving near vision performance [26, 31, 32]. This technique may assist with aspects of shopping and meal preparation. Eccentric viewing is also reported to assist people with sight loss due to macular degeneration to perform household tasks of cleaning, cooking, washing dishes and shopping [32].

Data from this study support previous findings that elderly persons with self reported sight loss have difficulty using public transport [7]. Among those with relatively poor sight, as well as the rest of the elderly population, generally the older groups of women rather than men were more likely to indicate difficulty. The main problem encountered in using public transport was entering and alighting. A smaller proportion of respondents reported difficulty using taxis and, of those who did, major reasons given were expense and entering and alighting. Age and gender do not appear to be major factors in difficulty of taxi use. Inability to use public transport or taxis will severely limit mobility options, a contributing factor to isolation and impacting on emotional well being [6,7,11].

In summary, these preliminary analyses of data from the Heath Status of Older Persons Study indicate that a number of areas of daily activity are compromised at least in part due to sight loss. Whilst some of these activities such as shopping and housekeeping have been reported in previous studies, additional areas of need identified by this study include activities such as gardening and minor home maintenance. Further analyses controlling for general health and physical disability, will reveal the full extent of the impact of sight loss alone on these activities. The activities of daily living which are compromised by sight loss must be further explored to increase efficiency of training and to develop appropriate functional measures to apply to the evaluation of visual rehabilitation programs. Baseline data on older people in the community will assist in developing and delivering rehabilitation programs which enhance individual independence and limit the need for costly services. Clinicians also have a wider responsibility to advocate for, and ensure the 'user friendliness' of, public transport and other aspects of local environments which enhance independence of older people living with vision impairments.

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