

Niigata prefectural low vision consultation events for popularizing low vision care – Review of the Past nine years –

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Keywords: low-vision care, low-vision consultation events, elderly people with low vision, population aging, assistance project implemented by the Japan Ophthalmologists Association on social adaptation training.

Received: 28 August 2019 / Accepted: 3 February 2020

Abstract

The number of elderly people with low vision has increased. This paper reports on the low-vision consultation events that we have been implementing regularly since 2009 in regions that have a shortage of social resources for low-vision care.

The consultation events were first held in Sado city, followed by Nagaoka city and Murakami city, for three years each. Low-vision care included visual function evaluation; medical interviews; advice on how to use visual functions; selection of and training in the use of visual aids; trial, usage, and practice of magnifying reading devices; and experience of walking with a guide dog for blind subjects. From the fifth year of the project, we conducted mini-lectures regarding low-vision care for the medical staff.

The event was visited by 94 subjects in Sado city, 269 in Nagaoka city, and 129 in Murakami city. Among the visually impaired individuals who attended the event, the proportion of those aged ≥ 70 years was 64.7 % in Sado city, 36.5 % in Nagaoka city, and 51.2 % in Murakami city.

In areas where information on low vision care is

still lacking, it is essential that consultation events continue.

Introduction

According to a survey conducted by the Japan Ophthalmologists Association, the number of visually impaired people in Japan was 1.64 million in 2007, and owing to population aging, this number is estimated to reach 2 million in 2030 [1]. Moreover, it was also reported that most visually impaired individuals had low vision, and although they were not blind, their visual function could not be entirely restored with treatment. They also experienced difficulties while performing vision-related activities in daily life. This survey estimated that the annual cost burden attributable to visual impairment borne by the Japanese society is about 8.8 trillion yen; furthermore, the amount of money spent for a visually impaired individual with poor quality of life (QOL) is estimated to be six times more than that spent for a healthy individual [1].

Thus, in recent years, there has been an urgent need to decrease the disease burden resulting from visual impairment and improve the QOL of pa-

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tients with visual disorders as an important objective of ophthalmic care. However, few medical facilities provide low-vision (LV) care, and such facilities are unevenly distributed in large cities [2]. Therefore, a limited number of visually impaired people can receive LV care.

The Niigata Ophthalmologists Association has applied for the Japan Ophthalmologists Association Adaptive Training Support Program [3] since Fiscal Year (FY) 2009 to popularize LV care in Niigata Prefecture and hold low-vision consultation events in areas where social resources for LV care are limited.

This report describes the implementation of this project over the previous nine years.

Materials and Methods

This report describes the contents of the LV consultation events conducted during the previous nine years from financial year (FY) 2009 to FY 2017 and the 492 reception questionnaires who attended the consultation meeting. The consultation events were held from FY 2009 to FY 2011 in Sado city, from FY 2012 to FY 2014 in Nagaoka city, and from FY 2015 to FY 2017 in Murakami city (Figure 1, Table 1).

In this report, I used the project details and questionnaires to analyze the characteristics of the visiting patients from each region where the event was held and examined the prospects.

This article has been carefully considered for personally identifiable information in accordance with the Declaration of Helsinki.



Figure 1. Venue for low vision consultation events.
FY 2009 to FY 2011 Sado city.
FY 2012 to FY 2014 Nagaoka city.
FY 2015 to FY 2017 Murakami city.

Table 1. Outline of the venue.

	Sado city			Nagaoka city			Murakami city		
	2009	2010	2011	2012	2013	2014	2015	2016	2017
Population	64,268	63,231	62,184	280,740	281,100	279,507	63,195	62,225	61,023
Senior citizens (Over 65 years old) ratio	36.3%	36.2%	36.8%	25.7%	26.4%	27.2%	35.6%	36.3%	37.1%
Person with a physical disability certificate (visual)	218	209	206	597	594	572	172	161	150

※ Data at the end of the fiscal year (end of March)

Results

1. Sado city (Figure 2, Table 2)

During the first year in Sado city, LV care was conducted via outpatient visits to the isolated island (Sado city). From the second year, LV consultation events were held at the Koseiren Sado General Hospital.

The consultation events were held on September 12 (Saturday) and 13 (Sunday), 2009 in the first year, on September 11, 2010 (Saturday) in the second year, and on September 10 (Saturday), 2011 in the third year.

An ophthalmic medical institution in the Sado Island was informed about the LV event, and the patients and staff were offered LV care. LV care was provided to 8 patients during the first year and to 6 patients each in the second and the third year.

First, we conducted a telephonic survey for patients who had registered to attend the event to understand their needs, and LV care was provided according to these needs. The details of LV care

included events for visual function evaluation; medical interview; advice on how to use visual functions; selection of and training in the use of visual aids; as well as trial, usage, and practice of magnifying reading devices.

During the LV consultation events held during the second and the third years, in addition to medical consultation, we exhibited handy goods for the visually impaired, visual aids, and daily living



Figure 2. Sado city, 2011.
Display of visual aids.

Table 2. Outline of Sado city.

2009			2010		2011	
Venue	Koseiren Sado General Hospital		Koseiren Sado General Hospital		Koseiren Sado General Hospital	
Event date	September 12 (Sat)-13 (Sun), 2009 2 days	number	September 11, 2010 (Sat)	number	September 10, 2011 (Sat)	number
The number of visitors	14		34		46	
Content	Visual function evaluation	8	Visual function evaluation	6	Visual function evaluation	6
	Medical interview	8	Medical interview	6	Medical interview	6
	Advice on how to use visual functions	—	Advice on how to use visual functions	—	Advice on how to use visual functions	—
	Selection and use training for optical aids	—	Selection and use training for optical aids	—	Selection and use training for optical aids	—
	Demonstration and practice of closed circuit television	—	Introduction/selection/use training for non-optical aids	—	Introduction/selection/use training for non-optical aids	—
	Introduction and explanation of useful goods	—	Demonstration and practice of closed circuit television	—	Demonstration and practice of closed circuit television	—
	Consultation and guidance on walking and white cane	—	Introduction and explanation of useful goods	—	Introduction and explanation of useful goods	—
	Provision of information on welfare services	—	Consultation and guidance on walking and white cane	—	Consultation and guidance on walking and white cane	—
Staff	Creation of various documents and medical certificates	—	Provision of information on welfare services	—	Provision of information on welfare services	—
	Ophthalmologist	1	Ophthalmologist	1	Ophthalmologist	1
	Orthoptist	2	Orthoptist	2	Orthoptist	5
	Visually impaired daily life counselor	1	Visually impaired daily life counselor	1	Visually impaired daily life counselor	3
			Niigata welfare society for the visually impaired staff	2	Volunteer (2 teachers of the visually impaired special support school, 3 persons with visual impairments)	5
			Volunteer (teachers of the visually impaired special support school)	3		
		Total 4		Total 9		Total 14
Equipment exhibition	None		1 social welfare corporation and 2 companies		4 companies	

— : Without counting

aids.

Total 8 visual function evaluations and medical interviews were conducted during the first year and 6 each were conducted during the second and third years.

In the second year, we received cooperation for the equipment exhibition from 1 social welfare corporation and 2 companies; during the third year, 4 companies cooperated.

Total number of staff members in the first year was 4, including 1 ophthalmologist, 2 orthoptists, and 1 visually impaired daily life counselor; in the second year, the number was 9 and included 1 ophthalmologist, 2 orthoptists, and 6 others. During the third year, there were 14 staff members, including 1 ophthalmologist, 5 orthoptists, and 8 others.

The number of visitors was 14 in the first year, 34 in the second year, and 46 in the third year; thus, there were total 94 visitors during the three years. The total number of visitors included 51 (54.3%) visually impaired individuals, 32 (34.0%) family members or acquaintances of the visually impaired individuals, 2 (2.1%) ophthalmic medical staff members, 2 (2.1%) medical staff members from fields other than ophthalmology, 5 (5.3%) welfare staff members, and 2 (2.1%) persons of unknown status. With respect to the age of the visually impaired individuals, 2 (3.9%) were < 15 years old, 4 (7.8%) were in their 50s, 12 (23.5%) each were in their 60s and 70s, and 21 (41.2%) were in their 80s.

2. Nagaoka city (Figure 3, Table 3)

In Nagaoka city, the venue was Hive Nagaoka, an event and conference facility. Information about the consultation events was publicized at the ophthalmic institutions and health centers in the neighborhood areas as well as Nagaoka city hall. The consultation events were held on September 8, 2012 (Saturday) in the first year, September 15, 2013 (Sunday) in the second year, and October 12, 2014 (Sunday) in the third year.

The LV conference events included medical consultation, welfare consultation, exhibition of handy goods and visual aids, and experience of walking with a guide dog. In the second and third years, a LV mini-lecture was held for the staff members working in ophthalmology (ophthalmologists, orthoptists, nurses).

One medical interview was conducted in the first year, 4 in the second year, and 11 in the third year. LV-care mini-lectures were attended by 8 people in the second year and 20 people in the third year.

The equipment exhibition was held in cooperation with 7 companies in the first year and eight each in the second and third years.

The total number of staff members in the first year was 13, including 1 ophthalmologist, 4 orthoptists and 8 others; in the second year, it was 12, including 1 ophthalmologist, 2 orthoptists and 9 others; and in the third year, it was 19, including 3 ophthalmologists, 4 orthoptists and 12 others.

The number of visitors was 50 in the first year, 99 in the second year, and 120 in the third; there were total 269 visitors in the three years. The total number of visitors included 74 (27.5%) visually impaired individuals, 67 (24.9%) family members or acquaintances of the visually impaired individuals, 51 (19.0%) ophthalmic medical staff mem-



Figure 3. Nagaoka city, 2013.
Mini-lecture on for ophthalmology staff on low vision care.

Table 3. Outline of Nagaoka city.

2012			2013		2014	
Venue	Hive Nagaoka		Hive Nagaoka		Hive Nagaoka	
Event date	September 8, 2012 (Sat)	number	September 15, 2013 (Sun)	number	October 12, 2014 (Sun)	number
The number of visitors	50		99		120	
Content	Medical interview	1	Medical interview	4	Medical interview	11
	Welfare consultation	—	Welfare consultation	—	Welfare consultation	—
	Display of useful goods	—	Display of useful goods	—	Display of useful goods	—
	Display of visual aids	—	Display of visual aids	—	Display of visual aids	—
	Guide dog experience walking party	—	Guide dog experience walking party	—	Guide dog experience walking party	—
			Low-vision care mini-lecture	8	Low-vision care mini-lecture	20
Staff	Ophthalmologist	1	Ophthalmologist	1	Ophthalmologist	3
	Orthoptist	4	Orthoptist	2	Orthoptist	4
	Visually impaired daily life counselor	2	Visually impaired daily life counselor	2	Visually impaired daily life counselor	2
	Niigata City Disabilities IT Support Center staff	1	Guide helper	1	Guide helper	1
	Japan Guide Dog Association Sendai Training Center staff	2	Niigata City Disabilities IT Support Center staff	2	Niigata City Disabilities IT Support Center staff	1
	Volunteer	3	Japan Guide Dog Association Sendai Training Center staff	2	Japan Guide Dog Association Sendai Training Center staff	2
			Volunteer (persons with visual impairments)	2	Niigata Braille Library staff	2
					Volunteer (1 teacher of the visually impaired special support school, 3 persons with visual impairments)	4
		Total 13		Total 12		Total 19
Equipment exhibition	7 companies		8 companies		8 companies	

— : Without counting

bers, 8 (3.0%) medical staff members from departments other than ophthalmology and welfare, 2 (0.7%) educators, and 59 (21.9%) persons of unknown status. One visually impaired individual (1.4%) was in their 20s, 3 (4.1%) were in their 30s, 4 (5.4%) were in their 40s, 12 (16.2%) were in their 50s, 27 (36.5%) were in their 60s, 16 (21.6%) were in their 70s, and 11 (14.9%) were in their 80s.

3. Murakami city (Figure 4, Table 4)

In Murakami city, the consultation event was held at the medical center of the Iwafune District in the first year, at the Koseiren Murakami General Hospital in the second year, and at the Murakami Town Hotel in the third year. Information about the consultation events was publicized at the ophthalmic care institutions and health centers in the neighborhood areas as well as Murakami city hall. The consultation events were held on September 27, 2015 (Sunday) in the first year, November 20, 2016 (Sunday) in the second year, and September

10, 2017 (Sunday) in the third year.

The LV conference events included medical consultation, welfare consultation, exhibition of handy goods and visual aids, and experience of walking with a guide dog, as well as an information corner with leaflets for visually impaired people. In the second year, blind makeup was introduced.

Two medical interviews were conducted in the first year, 3 were conducted in the second year, and 4 were conducted in the third year. Total 8 LV care mini-lectures were organized in the first year, 9 were organized in the second year, and 10 were organized in the third year.

The total number of staff members in the first year was 16, including 2 ophthalmologists, 2 orthoptists, and 12 others; in the second year, it was 15, including 2 ophthalmologists, 2 orthoptists, and 11 others; and in the third year, it was 20, including 2 ophthalmologists, 5 orthoptists, and 13 others. The number of visitors was 31 in the first year, 43 in the second year, and 55 in the third;

there were total 129 visitors during the three years. The total number of visitors included 41 (31.8%) visually impaired individuals, 33 (25.6%) family members or acquaintances of the visually impaired individuals, 30 (23.3%) ophthalmic medical staff members, 6 (4.7%) medical staff members belonging to departments other than ophthalmology, 4 (3.1%) welfare staff members, 3 (2.3%) educators, and 12 (9.3%) persons of unknown status. Three of the visually impaired individuals (7.3%) were < 15 years old; 1 (2.4%) was in their 30s; 3 (7.3%) were in their 40s; 4 (9.8%) were in their 50s; 9 (22.0%) each were in their 60s, 70s, and 80s; and 3 (7.3%) were in their 90s.

Through the nine years of the program, the reception desk data showed that the elderly with LV who had visited the event had already given up hope about improvement in their visual function.

Most of them did not participate actively in the consultation event and were brought by their families for consultation on how to lead an independent life without being bedridden.



Figure 4. Murakami city, 2017.
Venue - Murakami Town Hotel.

Table 4. Outline of Murakami city.

2015			2016		2017	
Venue	Medical center of Iwafune District		Koseiren Murakami General Hospital		Murakami Town Hotel	
Event date	September 27, 2015 (Sun)	number	November 20, 2016 (Sunday)	number	September 10, 2017 (Sun)	number
The number of visitors	31		43		55	
Content	Medical interview	2	Medical interview	3	Medical interview	4
	Welfare consultation	—	Welfare consultation	—	Welfare consultation	—
	Display of useful goods	—	Display of useful goods	—	Display of useful goods	—
	Display of visual aids	—	Display of visual aids	—	Display of visual aids	—
	Low vision care mini lecture for ophthalmology staff	8	Low vision care mini lecture for ophthalmology staff	9	Low vision care mini lecture for ophthalmology staff	10
	Guide dog experience walking party	—	Guide dog experience walking party	—	Guide dog experience walking party	—
	Information corner for people who are low vision	—	Information corner for people who are low vision	—	Information corner for people who are low vision	—
Staff			Introduction of blind makeup	—		
	Ophthalmologist	2	Ophthalmologist	2	Ophthalmologist	2
	Orthoptist	2	Orthoptist	2	Orthoptist	5
	Niigata welfare society for the visually impaired staff	2	Niigata welfare society for the visually impaired staff	1	nurse	2
	Guide helper	1	Guide helper	1	Niigata welfare society for the visually impaired staff	1
	Niigata City Disabilities IT Support Center staff	1	Niigata City Disabilities IT Support Center staff	1	Guide helper	1
	Niigata Braille Library staff	1	Niigata Braille Library staff	1	Teacher of Niigata Prefectural Niigata School for the Blind	1
	Japan Guide Dog Association Sendai Training Center staff	1	Japan Guide Dog Association Sendai Training Center staff	1	Niigata City Disabilities IT Support Center staff	1
	Volunteer (1 teacher of the visually impaired special support school, 5 persons with visual impairments)	6	Volunteer (1 teacher of the visually impaired special support school, 5 persons with visual impairments)	6	Niigata Braille Library staff	1
					Japan Guide Dog Association Sendai Training Center staff	1
					Volunteer (1 teacher of the visually impaired special support school, 4 persons with visual impairments)	5
		Total 16		Total 15		Total 20
Equipment exhibition	7 companies		8 companies		10 companies	

— : Without counting

Discussion

The objective of the assistance project implemented by the Japan Ophthalmologists Association on social adaptation training was to contribute toward the social rehabilitation of individuals with acquired visual impairment, prevent them from becoming bedridden, reduce the caregiving burden on the family, and disseminate knowledge on nursing care to the medical staff [3].

In recent years, although surgical and medicine therapies for ophthalmic care have progressed considerably, complete cure of many chronic diseases, such as glaucoma, is difficult. With the increase in life expectancy, the number of elderly people with impaired visual function is increasing [4]. Although a certain level of vision is maintained without becoming completely blind, patients with LV who experience difficulty in performing daily activities is increasing. Even though visual acuity and visual field do not correspond to the criteria of the Physically Disabled Person's Handbook (Vision impairment), many individuals with LV experience difficulty in performing routine functions in their daily life. The importance of care for individuals with LV is increasing.

Events related to LV care are held throughout Japan. Such as Kanagawa low vision network Yamanashi-ken visual disorder, Shizuoka low vision workshop, Kyushu low vision forum and Kagoshima low vision forum. However, there are no reports on these events. It is important to hold a low vision exhibition experience event as an educational activity in the medical field [5,6]. These events will enable necessary information to be transmitted to the visually impaired.

In Niigata Prefecture, the rate of population aging 65 and over increased from 26.3% in FY 2009 to 30.6% in FY 2017, indicating steady progress. This percentage exceeds the national rate of population aging in Japan by > 3 percentage points [7]. The population aging rate is particularly high in the cities of Sado and Murakami. Many visually impaired individuals who visited the consultation

events were elderly people. The percentage of visually impaired visitors aged ≥ 70 years was 64.7% in Sado city, 36.5% in Nagaoka city, and 51.2% in Murakami city; of these, 7.3% individuals were in their 90s, the result was in agreement with the aging of the population.

The visually impaired and their families begin to understand that LV care can prevent a decline in QOL by visiting LV care consultation events. As a result, it is ideal that a healthy life can be extended.

Niigata Prefecture has isolated islands and extensive terrain ranging from north to south; this impacts the medical and nursing care services, causing significant regional disparities. Most of the resources required for the rehabilitation of visually impaired individuals are present in the city of Niigata. Thus, it is crucial to conduct LV consultation. At the beginning of the consultation that started from the city of Sado, since it is generally not yet known what LV care is, first of all, I visited health centers and city hall to explained the purpose of this LV consultation event and the necessity of LV care for visually impaired people. By holding consultation events in the same region for three years, the number of repeaters increased, and the staff of a local medical institution suggested that LV care was beneficial. Low vision can be used to cover inconspicuousness using visual aids and useful goods, or information and communications technology (ICT) support technology, and also quality of life provided by LV care. It is possible to make up for it with visual aids, useful goods, or ICT, and further improve the quality of daily life with LV care. Promotion of low vision care among citizens can be considered attributable to the extensive publicity.

Throughout the nine years, most visually impaired individuals who attended the consultation events were unaware of LV care although they were visiting an ophthalmologist. None of the patients had the necessary information about LV care. I believe that the first step is to encourage

ophthalmic medical personnel to attend the consultation events and increase their awareness about the importance of LV care.

LV-care mini-lectures were held for the medical staff from the fifth year of consultation (second year of consultation in Nagaoka city). Owing to these lectures, the number of orthoptists and nurses who visited the events increased. Takahashi [8] recommends that LV care should be implemented along with the treatment. Early initiation of care in individuals while they are visiting an ophthalmologist is believed to encourage a good relationship with the medical personnel and the prevention of severe adverse mental effects, ranging from depression to mental instability. Ideally, patients should be able to receive primary LV care at the same place where ophthalmic medical care is provided. LV care mini-lectures also emphasized the importance of primary LV care.

Consultation events involve time-consuming interviews and courteous individual guidance on visual aids; thus, people from different occupations had to be involved each time an event was held, and the number of staff members increased. As per Nakadomari, [9] the LV Care team should consist of ophthalmologists, orthoptists, nurses, clinical psychologists, social workers, and specialists for providing training for independent daily living to visually impaired individuals. It is desirable that the personnel working in these occupations be involved in LV care by forming a team. Even at these consultation events, the staff members from many professions formed teams to provide LV care. This enabled them to offer proper one-to-one support to the visitors. Primary LV care information was inadequate, and many visually impaired individuals were required to apply for the Physically Disabled Person's Handbook and change of grade. However, since this LV care consultation events were not medical practice, all participants were not asked for the grade of eye disease or visual impairment. The evaluation of visual functions was conducted in response to

reading and writing needs.

There were many elderly people with LV; therefore, regular consultation events and follow-ups were deemed necessary. Moreover, it was challenging to prescribe aids that require complex operations, such as magnifying reading devices, with only one-time instructions. Therefore, it was considered essential to establish a system for continuous guidance.

In order to address these issues, it is necessary to hold a consultation meeting regularly, and I plan to examine this issue in the future with professionals from several fields related to visual impairment.

Conflicts of Interest

The author have not any conflicts of interest or any financial ties to disclose.

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