ECRONICON OPEN ACCESS

OPHTHALMOLOGY
Research Article

Frequency of low Vision in the Elderly Population of the District of San Isidro from El General, Costa Rica, in the Second Half of 2012

Allan Mora Vargas[1]*, Fernando Mata Castro[2], Leandra Madrigal Rodríguez[2] and Gabriela Guevara Rivera[3]

[1]Licenciado en Optometría, Universidad Latina de Costa Rica. Máster en Administración de Servicios de Salud Sostenibles. Universidad Estatal a Distancia, Costa Rica. Máster en Epidemiología Aplicada a los Sistemas de Salud, Universidad Nacional,Costa Rica

[2]Médico(a) general, Universidad Latina de Costa Rica. Máster en Epidemiología Aplicada a los Sistemas de Salud, Universidad Nacional, Costa Rica

[3]Médica general, Universidad Hispanoamericana, Costa Rica. Máster en Administración de Servicios de Salud, Universidad Santa Lucía, Costa Rica. Máster en Epidemiología Aplicada a los Sistemas de Salud, Universidad Nacional, Costa Rica

***Corresponding Author:** Allan Mora Vargas, Licenciado en Optometría, Universidad Latina de Costa Rica. Máster en Administración de Servicios de Salud Sostenibles. Universidad Estatal a Distancia, Costa Rica. Máster en Epidemiología Aplicada a los Sistemas de Salud, Universidad Nacional,Costa Rica.

Received: December 04, 2015; **Published:** February 17, 2016

Abstract

Low vision is currently a public health problem. It is worrying that the adult population has the highest levels of low vision impairment in the world. It is unknown how this reality affects Costa Rica, socially and productively, as there are no references in this regard; therefore, it is essential to conduct a specific analysis for our region.

Objective: To determine the prevalence of low vision in older adults in the District of San Isidro from El General, Pérez Zeledón, Costa Rica.

Materials and methods: Cross-sectional study 186 seniors were weighed up through random sampling. A visit was made to each of their homes, and their visual acuity was assessed. Those who showed abnormal results were referred to an optometric practice in order to evaluate their low vision with specialized equipment.

Results: A total of eight patients (4.3%) with low vision were diagnosed. The cause in four of them was cataract.

Conclusion: Although the prevalence of low vision found in older adults was lower than expected, there is a possibility that medical care is not the best, as their health care needs are not covered and chronic diseases are predominant among them. The lack of information about low vision contextualized for Costa Rica was also confirmed, as well as the importance of developing more epidemiological and clinical research on this topic.

Keywords: *Prevalence; Low vision; Visual impairment; Elderly; Cataract*

Introduction

Low vision is a concept that has long it was known by the end of sub normal vision; however, this criterion was amended by the World Health Organization (WHO) 1992. Today the following notion is used.

A person with low vision is one that has a commitment to its visual function even after having received medical, surgical or conventional refractive correction (glasses, contact lenses...) and having (best eye) visual acuity less than 20/60 (6/18, 0.3) to light perception

and/or field visual less than 10 degrees from its point of fixation, but who uses or is potentially able to use their vision to plan or execute some task. (Espinoza, 2012)

According to WHO figures, it is known that in the world. There are approximately 285 million people visually impaired, of which 39 million. They have legally blind and 246 million have low vision.

Another study notes that the world population 1996 there were 45 million blind people and 135 million suffering from low vision; later estimated that the projected population in 2020 there will be about 76 million blind. These estimates indicate that the global magnitude of the visually impaired will double during the period 1990-2020, and this issue was that in 1999 he led to the launch of Vision 2020 (WHO, 2008).

Globally, uncorrected refractive errors corrected are the most important cause of visually impaired, but income countries medium and low, cataracts remain the leading cause of blindness. The number of people with visual impairments attributable to diseases, It has declined significantly in infectious the last twenty years. 80% of the world total of cases of visual impairment can be avoided or cure (WHO, 2012).

Among the epidemiological history of the low vision, Scheiman., *et al*. (2007) mention that in the United States the leading cause of blindness and visual impairment in the Hispanic population is the glaucoma, followed by cataract and macular degeneration related to age (AMD). According to a study in Latin America [12]. (Furtado., *et al*. 2012), cataract is the leading cause of blindness and visual impairment. The researchers conclude that the true economic cost of blindness and visual impairment in Latin America is not known.

In this regard they refer to the use of a simple model based on lost wages and estimate the annual economic damage for the Latin American region are between eight and twenty-nine million dollars; but these figures do not include the cost of care, disability payments, losses economic family, etc.

To Costa Rica according to the National Council Rehabilitation and Special Education (CNREE) There are approximately 270,091 people disability. At the 2000 census of the National Institute Statistics and Census (INEC) was blindness the most common, with an estimated 82 932, which representing a value higher than 30% of total disability. This result is calculated considering that Costa Rica has had a population growth Exponential 1960 to 2000, which suggests there is still that behaviour (Agency Japan International Cooperation [JICA]and CNREE, 2007). The calculation is general and not to each of the 81 counties that make up the Republic of Costa Rica.

As it highlighted above legal Law 7600, Law equal opportunities for people with disability, which clearly defines word the 2nd in his article as "Any deficiency physical, mental or sensory impairment that substantially limits one or more major activities an individual". This definition also covers visual and hearing impairments, and not only the person with technical assistance wheelchair.

The law in question is expressed in its Article 4, referring to the responsibilities of the State, through the formulation of plans and projects and ensuring access to establishments the basic conditions.

It is therefore substantial infrastructure that has the requirements for this population, in order to equal conditions of access and opportunity.

Thus, responsible for certifying quality and strict compliance with specifications the technical aid given in state institutions or distributed in the market is the Ministry of Health, which, it must also control and monitor the provisions relevant contained in the law are met, for the benefit of key stakeholders.

Equal opportunities, achieve a disabled person is independent in their daily lives, is an example of awareness and governmental and community awareness. This is not only non-discrimination, but also the inclusion of the individual, able to participate in cultural

activities and social (Chapter VII) and also have the opportunity to understand what is expressed by means of communication systems or systems language or hearing aids for proper interpretation.

In the case of visual impairment and low vision, and these issues of health interest, in particular because the eye is a sensory organ that relates directly to the individual environment, technical support is vital. Act 7600, Articles 128, 136 and 412 et seq ago reference travel facilities and contextual interpretation: traffic lights with sound, sidewalks with suitable dimensions, using colours contrasting braille and guide dogs, which it should not be ignored or denied.

Regarding the city of Perez Zeledonlacks studies showing the number of affected and the reality experienced by people low vision. Furthermore, there is not at the level public or private level, with a model of care multidisciplinary approach to these patients. This justifies the need for a study that shows the prevalence of low vision. The objective of this research was to determine the prevalence of low vision in the elderly population of San Isidro.

Materials and Methods

Type of study

A descriptive cross-sectional study

Population we studied seniors (people 65or more years old) living in San Isidro the General, Perez Zeledon, in the second half of 2012, who were selected in the database of technical assistants Primary health care (ATAPS) of he Costa Rican Social Security Fund (CCSS). A total of 1915 people registered. These study blind seniors were excluded, those who do not voluntarily agreed to part of the investigation, adults who secure givers were not allowed to participate in this analysis, those with altered initial results they decided not to continue in the study and those who had disabilities mind that allowed not to give credence to they are giving answers.

Sample

He proceeded to perform the calculation of the sample using the formula to detect prevalence. For this purpose the program was used Win Episcope free access, software used for quantitative epidemiology, which is suitable both the design and analysis of studies Epidemiological and to help education quantitative epidemiology. He started as parameters an expected prevalence of 15%, an error of 5% and a confidence level of 95%. The sample was defined by 186 seniors.

A random stratified system was used taking as basic equipment strata integrand health care (Ebais) area of health Pérez Zeledon. The list of people for the study was collected by means of a sampling random stratified by family record of the ATAPS records possessing the health area Perez Zeledon CCSS. The size of each layer was proportional to the distribution of seniors as their Ebais.

Each person is assigned a number and the unit sampling defined by a sampling Simple random for each stratum. Randomness I never was altered since the names obtained each Ebais was provided by the visiting cards household used by ATAPS. He assigned a consecutive number that corresponded to the percentage that accounted for the sample Ebais total; the consecutive number which was followed in the search for names on the different tabs family visits until the total number of persons for each district.

When it was not possible to locate a senior he replaced it with another located in the same sector. When for some reason he was not found an elder in his house, she replaced by the elderly who lived closer thence. No non-response was given, because they always sought to find the size of it is shown to provide greater statistical power to investigation.

Materials

To carry out this research was designed a structured interview, with spaces in its end portion, to record the results of screening of visual acuity. This interview was applied the 186 adults selected for the greatest sample. In addition, information was obtained important related factors associated with low vision, such as: conditions chronic metabolic and eye health history and visual. They were mostly

dichotomous questions with closed answer. It was also designed informed consent where he explained the elderly, among other things, the objective of this research.

The primer was used to measure vision the test was far EDTRS and Read and Feim bloom system for illiterate (Medina., *et al*. 2008). For executing tests was chosen with in an area home to tell an infrastructure adequate physical health (good lighting and a distance of six meters) and there is practiced a power of visual acuity in far vision, of as usual, without correction or her if that any.

Another instrument used was the story low vision clinic Optics Valley a collection instrument that was designed following international recommendations (American Optometric Association, 2007). With it was an eye assessment in those adults older whose results were altered in the screening of visual acuity.

For the application of both instruments will be decided receive the cooperation of graduates Optometry, because they are considered professionals suitable for that activity (Law 3838 of 1966).One member of the research team and the other a hired and trained professional by the research team for this sole purpose.

Method

Step I

The homes of selected adults were visited for the sample. Once these accepted collaborate with the study, they proceeded to search space within their homes that have good lighting and where you could locate the charts distant to a point equal to six meters vision.

Step II

Each adult evaluated was asked to sit down. Then, with the occlude provided by one of the researchers, it was asked previously gourd his left eye and began saying the lines with letters or numbers larger observed with his right eye open. After this proceeded to do the same, this time occluding the right eye. Last he scored in the instrument line seen by the patient. Having assessed the so monocular visual acuity, was asked to adult to repeat the process, now without occlusion, or what is the same, with both eyes open. If the result was less than 20/60 proceeded to run pinhole test (Carlson., *et al*. 1994), and if the result was superior to 20/60, screening would have ended at that time, considering him undisturbed. Subsequently, the adult witnesses before signing the consent reported, in which he explained the objective of this investigation and therefore the importance of altruism shown by him or her at the time. In cases where the elderly could not sign were their relatives or carers who served as witnesses of the visit.

Step III

When the result was lower stenopeicat 20/60, you will be referred to Optics Valley, located in San Isidro Perez Zeledon, where they proceeded to the evaluation of low vision condition Patient screening altered product General developed.

Step IV

With altered screened patients were performed basic tests to determine whether they were patients' low vision or simply required a new optical prescription. Among the tests with a systematic order that is madestand (Macnaughton, 2006):

1. A wide-ranging interview where sought to measure possible visual commitments on vision distant and near vision. The answers of the elderly evaluated clinically they were collected on clinical history low vision. Most answers structured interview are dichotomous and seek to understand the implications of the low vision in far vision, mobility and displacement, near vision activities daily and academic life, lighting, sensitivity, Contrast and work activities and sports.
2. Assessment of contrast sensitivity with Hamilton and the system where possible the VCTS/SWCT/ FACT.
3. Assessment of colour vision with the instrument Farnswort D 15.
4. Rating tangent screen perimetry.

5. Assessment of central vision fields the gribs Amsler.
6. Ophthalmoscopic evaluation, keratometry, refraction and visual acuity with instruments and basic automatic available to the optical in which patients were evaluated.

Refraction was an important assessment because was crucial to determine if visual acuity improved optical prescription. If so is, He incorporated in or out of the patient ranges WHO has established the new nomenclature For concepts and definitions such as: moderate visual impairment (VA <20/60-20/200), deficits ever visual (AV < 20/200-20/400) and blindness(VA<20/400) in the better eye (WHO, 2009).

Additionally, it is noteworthy that nobe objective of this research rehabilitation, in those with whom it was possible to use optical and non-optical aids, these were used in order to present more comprehensive results help patients in the guide that should continue as visually impaired.

Definition of variables

The research variables are those differences given the reality of patients screened, which could make the difference between either when a differential diagnosis between low vision absent or present. Variables they were classified as follows:

A. Sociodemographic variables: age, place of residence, sex and occupation.
B. Medical Variables: these include various pathologies chronic closely related with the elderly, such as diabetes mellitus, hypertension, Dyslipidemia syndrome, smoking and other diseases.
C. Optometric Variables: This category He found out about the use of glasses, the sharpness visual, visual and if received eye care specialized.

Results

It was sieved to 186 seniors, of which58.6% were women whose average age was74.3 years (SD = 7.3; Min = 65. Max = 72.). The distribution by age group for all individuals studied is shown in Table 1. Moreover, 36% of older adults' said be diagnosed with diabetes; diagnosed with Dyslipidemia 44.9%. Similarly, 60.8% are48.38% had hypertension and other diseases.9.7% of all adults have a history smoking.

5.4% of adults report having received attention eye. Of these, 35.9% had previous diagnosis of cataract, glaucoma 7.8%and 1.94% with diabetic retinopathy. Of which they have received eye care, 48.5%see generally ophthalmological control, and is the Dr. Escalante Pradilla Hospital Perez Zeledon which it provides eye care to 63.1%of those who have been consulted.

In addition, 90.3% of seniors use lenses or glasses and they employ 49.4%daily. Of those with glasses, 82.1%claim to see very closely with these, 75.6% reported see well from afar. Finally, 9.1% of seniors they gave an altered test result (Less than 20/60 in the better eye visual acuity); Of these, 47.15% are confirmed with low vision.

There were a total of eight seniors with diagnosis low vision. It's important to mention the low number of cases found limited the study beyond inferential statistics; it is in this case the prevalence ratio and confidence intervals statistical data more relevant. Confidence intervals CI, the value of significance and validity 95% is obtained accepted in this epidemiological study. Of the eight positive all age 73, but most cases occur in people with over 80 years of age (Table 1).

According to statistical tests were performed concludes that the absence of a Chi square near zero, documented the existence of agreement between observed and expected frequencies. Thus, the null hypothesis of the research is accepted.

Variable(age)	n	Frequency (%)	Low Vision Confirmed	Frequency (%)	IC 95 %
From 65 to 72years	80	43.0	0	0	
From 73 to 80years	60	32.3	1	1.7a	-0.17-3.51
Of over80 years	46	24.7	7	15.2b	10.06-20.38
Total	186	100.0	8	4.3	

Table 1: *Age of seniors studied by low vision district of San Isidro, Perez Zeledon, second half of 2012.*
Note: *Different literal indicate significant difference at a significance value a = 0.05. (Chi2). It is customary to say that the result is "statistically significant" when p ≤ 0.05 (PrietoValiente, 2010).*
Source: Made by myself.

Chi square difference between different percentage values obtained in intervals IC trusted makes the significance that expressed in Table 1. The average age among older adults diagnosed low vision is 86 years (SD = 5.2). Of the eight positive with low vision are 75% men and 25% of these cases are in the area. Attraction of Ebais San Isidro Centro, place in which had the highest frequency cases. Within medical variables presenting eight adults who tested positive, was found the 37.5% reported having diabetes, 50%one said they were hypertensive and 25.0% expressed be dyslipidemic. They reported suffering of others problems 37%, and 87.5% of them never they have smoked.

Regarding the optometric variables, it stands that 87.5% of patients say they received eye care; of these, 42.9% had cataract diagnosis and have already received attention for it at the local hospital for more than two years. 28.6% in the diagnosis of adult, it is glaucoma. Additionally, a percentage as you has not defined your problem. Of which receiving care, 71.4% do Hospital Escalante Pradilla de Perez Zeledon. 75% of screened have lenses but only 33.3% of these uses them daily. Of the sieved users who wear glasses, 100% state not having a satisfactory visual acuity near vision, and 87.5% say they look good from afar with them. Describing clinical categories eight positive patients are presented in Table 2.

Clinical Category	Frequency	(%)	Men	Women	IC 95 (%)
Weakness Visual Moderate	2	25.0	2	0	18.78-31.22
Weakness Visual Severe	2	25.0	1	1	18.78-31.22
Blindness	4	50.0	3	1	42.81-57.19
Total	8	100.0	6	2	

Table 2: *Clinical classification of seniors diagnosed with low vision. San Isidro district El General , Perez Zeledon, second half of 2012.*
Source: *Made by myself.*

In the clinical category of moderate visual weakness they were identified as positive two men. In one epidemiological probable cause it is glaucoma and other diabetic retinopathy. On the other hand, regarding severe visual impairments, in both cases because the epidemiological detected Chances are different in that one is the glaucoma and another AMD. In the clinical category of blindness in 100% of older adults epidemiological probable cause is cataract, which as will be discussed below causes most common low vision.

Discussion

The prevalence of low vision (Velázquez, 2009) found in adults over San Isidro, The General during the second half of 2012. It was 4.3%, and although was lower than expected it was taken into account when calculating the sample. To determine the prevalence was used reference nearby geographical areas, for example, rural areas of Guatemala with percentages of 12.5% (Limburg., *et al*. 2008), and

although there are references to explain these contrasts, the truth is that what happened in Costa Rica it is not so distant from what it happens in other countries where efforts have been made to strengthen and expand coverage specialties through social security. A example is what happens in Spain where a little less than one million inhabitants are diagnosed with low vision (Report Blindness in Spain, 2012).

Notable in this study that cataract is the cause most common low vision (4/8). This accords with the results found in other analyzes concluding that between 43 and 88% of cases of blindness in Latin America they are curable and are caused, in general, falls or errors of refraction (Jimenez., *et al.* 2006). This origin it deserves a special mention as well as four patients diagnosed with low vision, presenting three they screened excluded cataracts and who had not received treatment surgical. Therefore, we could be facing a higher prevalence. Lay as definitive prevalence found 4.3%, regardless idiosyncratic and cultural adaptations, could cause bias. Coverage in Costa Rica social security is very broad, but has serious problems in how quickly he provides the service, long waiting lists still common for surgery. Ophthalmology is no exception and it is unknown whether this could be influencing the prevalence found. The particular situation deserves a holistic analysis. Considering the three cataract patients they have not received surgical treatment, but under current definitions require service low vision care, we could be faced with a prevalence of low vision in adults higher close to 6.0%.

Followers of the definitions given by the WHO probably does not share the results that prevalence, but must analyze the individual in its sociocultural context. It is possible that in first world countries, with an adult Cataract surgery is rapidly once it is diagnosed and this will exclude from a patient low vision. In Costa Rica the population it has older adult health coverage 100% by Social Security, but can be the case that patients are assessed in ophthalmology department of the local hospital, but no they all have real and effective access to east for timely service, according to consultations made by researchers waiting lists are nearly three years as specialists performed two to three surgeries a week and face drawbacks due to the unavailability operating room, making it very slow attention the user.

Another important finding of this study was sighted older adults. Attached to the concepts issued by WHO were not assessed in consultation optometric those whose best visual acuity was 20/50 or 20/40 in the better eye. Since aging is constant, these patients in a very short time could be a helpdesk requiring low view.

Regarding the age variable it can be said that Costa Rica is not prepared to meet older adult population with visual disabilities. The Costa Rican population pyramid is taking the trend reversed, and this puts changing demographic study of the population Costa Rica through population pyramids (1963-2030), where it is stated that in this country in thirty years the population structure it will be very different from that of 2000. The progress of aging population will experience Costa Rica involve a marked increase in the. Presence of the adult population, with values above 10%, due to lower population fifteen years with values below 20%. Very probably, in the short or medium term there will be a low incidence greater than that found vision.

The state report study status of the person older adults in Costa Rica (State of Health 2008). It has some similarities with the results of this investigation, as mentioned in Costa Rica 74% of older adults use glasses,2% do it for distance, 32% for close to 37% for both problems. Furthermore, describes eyeglass prescription is less men (67%) than women (77%), and women make daily use of them more percentage (44%) than men (30%), data very similar to those found here.

The age of patients with low vision is another variable in which similarities are presented with other studies (Alemany and Tejeiro, 1998; Hernandez1998; Perez., *et al*. 1996), as the average of our study is 86 years. Furthermore, studies They mention that with the passage of time tends to reduce the use of glasses; which does not say, necessarily, that older adults more than eighty years they are in visual conditions better than the young, and the vision improves with age, but it may relate to the inadequate preventive behavior under increasing age, as they become less frequent the eye exams.

In Costa Rica it is likely that problems associated with low vision are due to involutional changes own age and the average of life in our environment has increased over development of our health system and program care of the elderly. There is another coincidence with the Study Health Status (2008), where it is stated that the presence of cataract increases with age, rising 25% in less than seventy years 52% in those over eighty. In that same study, three out of ten seniors state that a specialist has found them waterfalls, of which only 50% has been operated. In the variable gender differences are with respect to other studies, because in this particular of the eight patients with low vision six are male. It has been noted elsewhere the predominance of females in 12.2% than males (Alemany and Tejeiro, 1998; Hernandez, 1998; Perez., *et al*. 1996). Concreting, a study on statistics Low Vision Department in Madrid found 60% of cases were sex female (Edwin, 1997).

It is thought that this relates to an average longer life in women and the fact that these diseases increases with age. Is Unlike findings it could be based on that Women are those who support more programs prevention and health promotion. Are the Costa Rican women who attend consultations more Medical, which has perhaps influenced positively on their health. In men, in our experience, it costs more to have collaboration programs of prevention, care and monitoring. As an example, two men were excluded from this study for not wanting to continue the second part (optometric clinical assessment) despite having presented results altered during screening. Chronic diseases are present in this specific population, but not in a frequency very high. However, the presence of one or more chronic events in these patients may accelerate decreased visual acuity, bringing thus more reserved prognosis. Moreover, it was found that the needs care of the eight adults diagnosed low vision are not covered. Thus in 100% of the cases have not received, neither they nor their caregivers, any induction on his condition. This hinders attention comprehensive adult, as some kind of possible violence, such as neglect or omission in the personalized care for the elderly patient; eg sit in a corner waiting adult that advance the hours, or put in front of a TV that you cannot see.

The information given in this research regarding assisting seniors with disabilities visual is related to another national study which concludes: The gradual decline in family size, produced by decreasing fertility Costa Rica, involves changes regarding the assistance from the formal systems support. This is essential, especially when viewed the importance of the children in helping seniors with disabilities both Costa Rica, as in other areas of America. Hence the importance of programs promote collaboration between the family and the health services in the care of the population dependent elderly, especially in areas such as rural areas, where the pressure Family economic difficulty such transfers. (Gómez,2004)

Clinically, regarding contrast sensitivity, in four of eight patients who was possible to evaluate the result was altered. This considered normal in patients with cataract, which It was the most frequent cause epidemiological found. In four of the eight patients with low vision was able to perform this test and results in 100% failed the frequencies spatial low 1.5 cycles per degree. TO In this respect, the study of Sekuler and Hutman (1980) concludes that the reduced sensitivity elderly patients at low frequencies not. It can be explained in terms of optical factors or as a result of eye disease, but that this probably reflects a loss of subsystem responsible for detecting this type of frequencies.

In the assessment of the central field of vision the gribs Amsler, in cases where it was possible perform (4/8), the results were 75% altered. It should be mentioned that this test You can diagnose whether a particular form patient has any pathology or macular level para macular (Edwards and Llewellyn, 1993), which hope fully in the older population, where AM Do ccurs.

In perimetry in the four cases in which could be performed (4/8) values were on average on the upper angle 30° and the lower angle 20°, and are obvious fields reduced viewing them. This affects the patient mobility, even when more He corroborated in both history and visit to their homes, they are not put up for easy movement of a limited patient visually. This could be generating in security in displacement. Further, in the colour vision test, of patients that could be evaluated (4/8) was It concludes that 75% are tritanómalos (deficient to colour vision) and 25% deuteranomalous (deficient in green-red and purple).

In a comprehensive analysis of the results it can be stating that the involvement is clinically significant, it is affecting the quality of life adults and found as observed and documented by the interview could be affecting the quality of life of caregivers the health of these seniors. In a study transversal (Haegerstrom, 1999) with a sample nine hundred older adults concluded that changes in spatial vision, loss color vision and stereops is (depth vision) and a constriction of the fields Peripheral vision under conditions of care inadequate uniquely combine a individual with a significant impact on the functions daily life.

Clinical tests carried out are specific (Bellmunt, 2007) for low vision and the definition of case is very clear. In summary, a senior with areas of reduced vision, trouble recognize colors, shapes and contrasts as well as reduced visual acuity, is a patient low vision. This becomes more representative when the epidemiological link was observed linked very common eye diseases in the elderly and cataract, glaucoma and AMD. 50% of altered can be seen in clinical category of blindness, which is related with other studies that suggest that the number of people with low vision or blindness in the world is surprisingly high and it increases as extending life years (Barria, 1999).

The great advances in the field experienced medical and ophthalmic surgery have not I have avoided many people end up by have visual impairments (Thylefors, 1997). TO this respect should analyze what happened with the three excluded positive patients, who have waterfall and have not received surgical treatment. You cannot say that the wait for surgery this Crystal pathology at the local hospital, Dr. Fernando Escalante Pradilla, the CSSS, contributes prevalence have now demonstrated in this study, but remains for further research. It helps determine how this situation the prevalence found. It may be the case that many of these seniors wait for his eye surgery a long time, perhaps more due, which directly affects not only the quality of life of the elderly, but also that of their family environment should be maintained, individual in that day will decrease the visual capacity. This study had limitations as bias memory, as some older adults medical history remembered general health, eye health and vision care. Additionally, he had face shortages of baseline studies in Costa Rica and Latin America; probably It is pioneering research in the country.

For practical purposes, the sample size used and the sampling method give us a study with high internal validity and very representative epidemiological and clinically low vision in older adults, in the geographic area where the study was conducted, in this case San Isidro Perez Zeledon. For a developing country like Costa Rica and is seeking the common good and under the disabled, joining plans improvement as the National PolicyDisability2011-2021 (Ponadis) is serious see the lack of coverage for seniors visually impaired.

Only with a multidisciplinary care model You will have the desired success. Participation of clinical psychologists, therapists are required visual, specialized low vision optometrists, nurses, general practitioners, geriatricians, psychiatrists, ophthalmologists and other medical specialties. Heteamoflow vision rehabilitation is a group various caregivers who must be committed with individual empowerment affected, optimizing their safety, autonomy and quality of life (Pizzimente and Roberts, 2005).

Recommendations

It is essential to implement a model multidisciplinary care for the elderly visually impaired. You do not have institutions governmental or private in San Isidro. The General to provide specialized care this population. This research demonstrated there is a need and that this must be covered by the State. Lack spreading the message nationally and awareness of the prevention in visual and ocular health, since it comes only when the conditions have already caused irreparable effects. It must implement a suitable program and sustainable care for the elderly, with ratings where interdisciplinary staff avoque is to give greater attention to that It provides today. For years the system Health has worked only in part biologista disease and multiple obviates factors affecting this population, for which you should do a comprehensive job networks specialized support.

It was part of the research objective, but evidently found results serve to that government agencies make decisions regarding actions for quality life of visually impaired older adults.

In addition, you must build a cantonal action plan to establish infrastructure and ensure long-term financing and make adults seniors with visual disabilities to have the same level of opportunities as their counter parts not disabled; this often requires an increase funding. Social participation, including community needs, awareness campaigns, receptiveness encourage, promote perceptions and recognition capabilities, limitations and people skills, with the goal of building a more inclusive society. When needs are understood and desired independence of people with disabilities, we will live in a better country, with quity and equality among all members of society. As discussed in this research should be strengthened the first levels of health care, to develop high-impact programs low social economic cost. It also requires induce demand for care services visual entities responsible for health, activity guidance and channelling the population to eye care services, and train technicians in primary care visual health programs making acuity visual, in order to identify community in general, adults over 65 years vision problems. Should negotiate with the relevant authorities a screening program detection of cataract or other alterations Visual and promote consultation services optometry, ophthalmology and surgery. It is essential manage the implementation of a plan epidemiological surveillance for eye health as the Centres for Disease Control Atlanta, and obtain relevant information for timely action (Jimenez, 2010).

The response capacity of ophthalmology Local must be improved and the amount of specialized attention to human resources, especially in rural areas. In a country that moving towards a more long-lived population reality, the ophthalmology and all other services should seek to offer a consistent and timely respuest a másfuture needs. In addition, the visual result of cataract surgery it can improve. The results of this Research can help you plan and estimate the prevalence and causes of blindness and low vision in the medium term.

To create health strategies, it is essential have truthful information systems. This achieved through new legislation in that notifiable declare relevant events level of visual health. For example, as that is reported to the diabetic debut VE01 and other pathologies, for optometrists and ophthalmologists notification should be required before the Rector Public Health and Disability capturing each low vision patient I attended. You could be thereby better idea of what the actual population with disabilities visual, whether older adults, adults in general or children in Costa Rica. The same would apply to infants and young children myopic, which also they should be notifiable. To help patients with low vision is CCSS necessary besides dispense lenses as it stipulated in Article 48 the Health Insurance Regulations also provides the option to dispense optical aids. There was studied rehabilitation, but in one case it was shown that a bar magnifying, tiposcopio and continuous reading lectern He improved on white background. In the case of no optical aid, they could be given by the Canton technical colleges as part of the tasks that students perform their part industrial arts, or made by students National Learning Institute. The need to create a system observed information fed by data which are not limited the number of visits per year. It is important visual epidemiology know Costa Rica in order to implement strategies for areas and groups age with sustainable and targeted distribution economic, technical, professional resources, and welfare.

A study in Colombia concluded that "Without proper systematization of information about epidemiological aspects of patients revealing the incidence and prevalence, its causes and socio-demographic characteristics Clinics and patients who have it. Knowing these aspects is vital for improve coverage, care of patients, social adaptation, and to perform management guidelines according to their needs, restructure policies Public considering disability visual and stimulate research in the field of low vision" (Cannon, 2011).

Conclusions

Low vision prevalence was found in the seniors lower than expected, which is positive; however, the care given these patients by the pertaining institutions, especially the CCSS, it is untimely and inefficient. In addition, important lack of information was detected contextualized view concerning to low Costa Rica, which leads to lack of cooperation Some older adults and their care givers, who require a multidisciplinary care service so far not received. Casuistics applied is based on the detection of the prevalence of the disease, but not in their pathologies predecessors. Finally, it is necessary develop epidemiological research and low vision clinic.

Thanks

First to God for allowing us to do this research, we hope will be very useful for our older population with disabilities visual. To our family, provided by compression long this process of formation. The team of the Department of Health ATAPSPerez Zeledon, for all the assistance. Behind a ODE s quivel, for his help infield work. All seniors who selflessly decided collaborate with us in this investigation, God bless you now and forever and give them a real golden age, dignified and surrounded by love, respect, understanding and love. Dr. Juan Jose Romero, for all his teachings. Without their support this would not have been possible.

Bibliography

1. Agencia de Cooperación Internacional del Japón-JICA, Consejo Nacional de Rehabilitación y Educación Especial-CNREE (2007). Situación de la discapacidaden la región Brunca. San José, Costa Rica:
2. American Optometric Association-AOA (2007). Care of the patient with visual impartment (low vision rehabilitation). Optometric clinical guideline.
3. Barría F. "Mirando con visión 1. El futuro de la oftalmología". *Revista Franco- Hispano-Chilena de Oftalmología* 1 (1999): 28-42.
4. Bellmunt S. "Validación de pruebas diagnósticas". *Angiología* 59.6 (2007): 433-438.
5. Cambio demográfico de la población costarricense a través de las pirámides de población (1963- 2030), Proyecto Museo Virtual. Saber de Población. Costa Rica: Universidad Nacional.
6. Cañón Y. "La baja visión en Colombia y el mundo". *Revista y Ciencia Tecnología para la Salud Visualy Ocular* 9.1 (2011): 117-123.
7. Carlson N., *et al*. "Procedimientos clínicos en elexamen visual". Madrid: Artes Gráficas Rogar.
8. Edwards and Ky Llewellyn R. Optometría. Masson-Salvat (1993).
9. Edwin M. "El cuidado de la baja visión (2ª ed.).Madrid: Organización Nacional de Ciegos Españoles (ONCE)". (1997).
10. Espinoza R (Ed.). "Guía práctica clínica de baja visión (irreversible) para Latinoamérica. Subcomité Baja Visión, Visión 2020". (2012).
11. Estado de Salud. "I Informe estado de situación dela persona adulta mayor en Costa Rica (capítulo6). San José, Costa Rica: Consejo Nacional de la Persona Adulta Mayor (Conapam)". (2008).
12. Furtado J., *et al*. "Causes of blindness and visual impairment in Latin America public health and the eye". *Survey of Ophthalmology*.
13. Goméz de Irazazabal F. "La mácula senile". Barcelona: Ciba Visión (1993).
14. Gómez V. "Vejez y discapacidad: visión comparativa de la población adulta mayor rural. Valle Central de Costa Rica. Universidad de Costa Rica" (2004).
15. Haegerstrom G. "Seeing into old age: Vision function beyond acuity". *Optometry and Vision Science* 76.3 (1999): 141-158.
16. Hernández M. "Oftalmología y rehabilitación visual". *Archivos de la Sociedad Española de Oftalmología* 10 (1998): 1-13.
17. Informe sobre la ceguera en España. España. Ernst &Young (2012).
18. Jiménez I. "La salud ocupacional en Optometría. Bogotá: Universidad de La Salle(2010).
19. Jiménez J., *et al*. "Epidemiología mundial de laceguera y de la baja visión, causas y estrategias parasu erradicación. Ponencia presentada en el 82 Congreso de la Sociedad Española de Oftalmología", La Coruña, España (2006).
20. Limburg H., *et al*. "Review of recent surveys on blindness and visual impairment in Latin America". *British Journal of Ophthalmology* (2008).
21. Macnaughton J. "Evaluación en baja vision". *Barcelona* (2006).
22. Medina L., *et al*. "Guía de atención básica en baja visión para oftalmólogos generals". *Madrid: Fondo ONCE-América Latina* (FOAL) (2008).
23. Ministerio de Salud Pública de Uruguay La visión en el adulto mayor. Cómo sobrellevar los cambios normales y patológicos. Montevideo: Ministerio de Salud Pública de Uruguay, Programa de Salud Ocular (2008).
24. Organización Mundial de la Salud (OMS). Iniciativa mundial para la eliminación de la ceguera prevenible. Plan de Acción 2006-2011. Ginebra: OMS (2008).

25. Organización Mundial de la Salud (OMS). "Change the definition of blindness. Recuperado de. (2009) http
26. Organización Mundial de la Salud (OMS). Nota descriptiva, numero 282. Recuperado de (2012).
27. Pérez G and y Hornia P. "Pesquizaje oftalmológicoen el área de salud. Su interrelación con el médico de familia". *Revista Cubana de Oftalmología* 2.3 (1988): 103-109.
28. Pizzimente J and y Roberts E. "The low vision rehabilitation service. Part two: Putting the program into practice". *The Internet Journal of Allied Health Science and Practice* 3.3 (2005).
29. Prieto Valiente L. "Análisis estadístico de datos en investigación médica y sociológica. Madrid". Edición Díaz de Santos (2010).
30. República de Costa Rica. "Ley 3838, Ley Orgánica del Colegio de Optometristas de Costa Rica" (1966).
31. República de Costa Rica. Ley 7600. Ley de Igualdad de Oportunidades para personas con discapacidad. Publicada en el Diario Oficial La Gaceta no 102, 29 de mayo de (1996).
32. República de Costa Rica. Política Nacional en Discapacidad 2011-2021 (Ponadis). Publicada enel Diario Oficial La Gaceta, no112 (2011): 6-8.
33. Scheiman M., *et al*. "Low vision rehabilitation. New Jersey, Estados Unidos: Snack (2007).
34. Sekuler R and y Hutman L. "Spatial vision and aging: Contrast sensitivity". *Journal of Gerontology* 35(1980): 692-699.
35. Thylefors B. "El cuidado de la baja visión como estrategia para prevenir la ceguera. En A. Martínez Henageros, Conferencia Internacional de Baja Visión". (1997): 77-83.
36. Velázquez R. "Principales medidas en epidemiología aplicables en optometría y contactología". *Revista Panamericana de Lentes de Contacto* 1.1 (2009): 21-25.

Volume 3 Issue 2 February 2016