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Original Article

Proportion of people with visual hallucinations visiting Low Vision Clinic Mayo Hospital, Lahore.

Author's Affiliation

Najwa Masood

Muhammad Anwar Awan

Correspondence Author:

Correspondence to:
Najwa Masood
College of Ophthalmology & Allied Vision Sciences (COAVS)/K.E.M.U Lahore.

Purpose: To find out the proportion of people with visual hallucinations (sensory perception that is perceived by a person without any external stimulation factor and is unrestrained by the person who experience it) among low vision patients and to give the description of clinical characteristics of complex visual hallucinations.

Method: Forty consecutive patients visiting Low Vision Clinic Mayo Hospital, Lahore with age ranged from 40 to 70 years were asked whether they had gone through any experience of complex visual hallucinations. If their response was positive then some questions from a standard questionnaire were asked to find out the details of the symptoms associated with Charles Bonnet Syndrome. It was cross sectional study. Prior approval was sought from ethical review board of College of Ophthalmology and Allied Vision Sciences to conduct this study.

Results: Out of total 40 patients 21 (52.5%) were male and 19 (47.5%) were female. Average age of the participating population was 65 years. Most of the patients with age above 60 years experienced visual hallucinations with best corrected visual acuity of less than 0.5 log MAR. 18% of the population was diagnosed with glaucoma, 10% with retinitis pigmentosa, 8% with age related macular degeneration and 4% of the population had dense cataract. Out of the total population, 92.5% participants were living with their families and had hallucinations. 57% of the population showed unpleasant reaction towards these hallucinations and only 14% of the population has discussed their symptoms with their doctor.

Conclusion: Charles Bonnet syndrome is more common among the elder population who suffer with visual impairment because of any ocular cause. Incidence rate of this syndrome is higher in males as compare to females. Living status does not have any impact on the incidence of this syndrome. Clinical characteristics of hallucinations experienced by patients were similar to those explained in previous literature data.

Keywords: Visual hallucinations, Charles Bonnet Syndrome, Low vision.

Introduction

According to international classification of disease, visual status is divided into 4 levels 1: normal vision 2: moderate visual impairment 3: severe visual impairment 4: blindness. Moderate visual impairment along with severe visual impairment is grouped as low vision. Low visions along with blindness are grouped as visual impairment.[1]

Most important and leading causes of low vision are cataract, glaucoma, uncorrected refractive errors and diabetic retinopathy.[2] As low vision is irreversible visual loss and nothing could be done with any medical or surgical procedures.[3] After providing low vision treatment in terms of low vision devices, patients require a proper counseling because patients with low vision because of any ocular cause but without any mental disorder experience some formed type of vivid recurrent and complex images of different objects that are not actually there known as visual hallucinations because of a condition known as Charles Bonnet syndrome.[4] In 1760 this syndrome was named after a Swiss philosopher Charles Bonnet who describe this syndrome on the basis of symptoms of complex visual hallucinations experienced by his 87 years old grandfather.[5]

There are no well-defined criteria for the diagnosis of Charles bonnet syndrome but on the basis of different studies it is said that in the patient of Charles Bonnet syndrome there is no evidence of dementia, any type of neurological disorder or any kind of psychiatric problem.[6] The etiology of Charles Bonnet syndrome is decrease vision, perceptual isolation, social isolation or any emotional disturbance there is phenomenon of phantom vision this may be pleasant to some patients but most of the time causes stress and this condition mostly goes unrecognized because of lack of knowledge about syndrome so clinicians awareness plays important role in the early diagnosis and its management.[5]

Prevalence of this syndrome among the patients visiting Canadian national institute for blind is 18.8%.[7] Prevalence rate in Australian population is 17.5%.[8] The prevalence rate in Asian population in tertiary ophthalmic center is 0.4%. Such a lower prevalence of Charles Bonnet syndrome among Asians as compared to white population may be possible because of genetic or structural variations in the eye or because of some personal insecurities or social issues. Patients do not want to share their symptoms of visual hallucinations with the healthcare professionals. This is the reason it was thought that the actual prevalence rate of Charles bonnet syndrome might be much higher than expectation.[9]

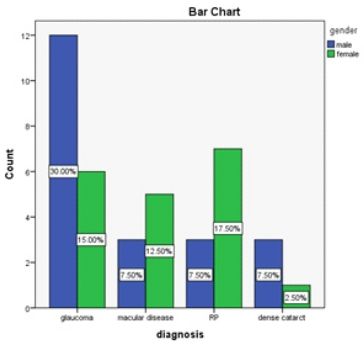
Materials and Methods

Crosses sectional study was conducted on forty consecutive patients visiting low vision clinic Mayo Hospital, Lahore with age ranged from 40 to 70 years were asked whether they had gone through any experience of complex visual hallucinations. If their response was positive then some questions from a standard questionnaire were asked to find out the details of the symptoms associated with Charles Bonnet syndrome. Data were collected by clinical examination and recording the responses by questionnaire. Visual acuity was recorded on LVRC Log MAR Charts and LVRC Flip Cards. Patients were asked about visual halluciantions through the questionnaire. All the data was entered and analyzed using Statistical Package for Social Science (SPSS Version 22.0). Prior approval was sought from ethical review board of College of Ophthalmology and Allied Vision Sciences to conduct this study.

Results

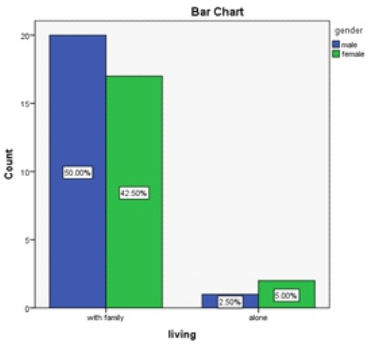
The study was conducted in the Low Vision Clinic/Institute of Ophthalmology, College of Ophthalmology and Allied Vision Sciences, Mayo Hospital, Lahore. 40 patients participated in this study out of which 21 were male (52.5%) and 19 were female (47.5%). Mean age of study population was 58.20 years (range = 40 -70 years). Most of the population lies between the ages of 60 to 70 years. And best corrected visual acuity was measured less than 0.5 log MAR.

Figure. 1



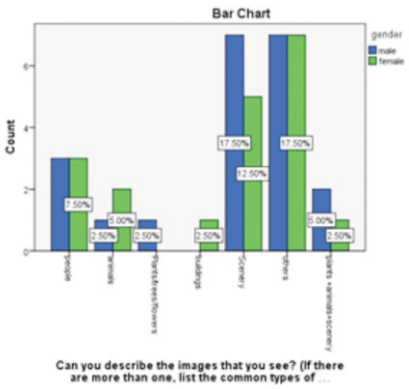
In total participated population 30% of males and 15% females were diagnosed with glaucoma, 7.5% of males and 12.5% of females had different macular diseases, 7.5% of males and 17.5% of females were diagnosed with retinitis pigmentosa while 7.5% of males and only 2.5% females had reduced visual acuity because of dense cataract.

Figure. 2



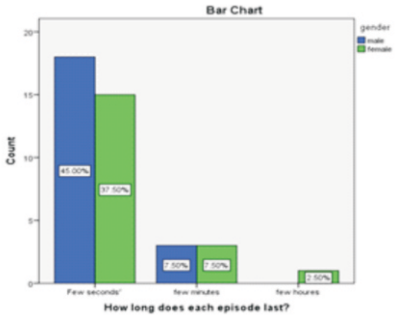
When participant were inquired about their living status 50% of males and 42.5% females gave positive response that they live with their families while 2.5% of males and 5% of females respond negatively.

Figure. 3



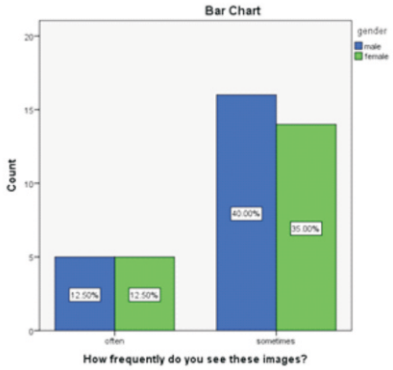
While describing the characteristics of hallucinations 7.5% individuals reported that they saw images of people. 2.5% male and 5% females saw images of different animals. 2.5% males reported that they saw images of plants, trees or flowers. 2.5% females experienced images of different buildings. 17.5% of males and 12.5% of females experienced hallucinations of different sceneries. 5% of males and 2.5% of females had complex hallucinations of plants, animals and scenery.

Figure. 4



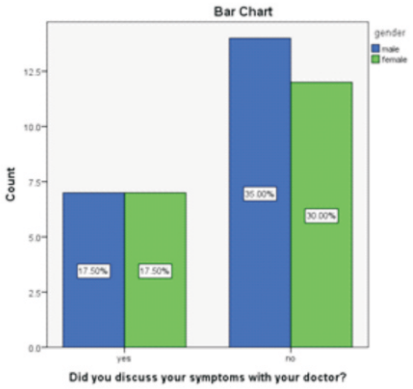
Episode of hallucinations last for few seconds in 45% of males and 37.5% of females 15% of participated population reported that these hallucinations last for few minutes and in only 2.5% of female patients, these hallucinations continue for one hour.

Figure 5.



Out of total participants 12.5% males and 12.5% females reported that they experience these images very often while 75% of patients (out of which 40% were males and 35% were females) stated that they experience these images sometimes

Figure .6



35% of the participated population of men and women responded positively to the question that they discuss their symptoms regarding hallucinations with their doctors while 35% of males and 30% of females gave negative response to the question and that they did not share their problem with doctor.

Discussion

This study was done to determine the proportion of visual hallucination in patients with visual impairment and the clinical characteristics of these hallucinations.. Very few studies have been conducted in Asian population on the prevalence of Charles Bonnet syndrome. As a result of this, the knowledge of this syndrome is not common among health care professionals. Prevalence rate of Charles Bonnet syndrome according to different cross sectional studies ranges from 1% to 13% in white population but the prevalence rate in Asian countries is 0.4%[9] which is much lesser as compared to white population.

Many studies depict that the prevalence rate of Charles Bonnet syndrome increases with increasing age. However, a study conducted on Chinese population found no significance of age on the incidence of this syndrome[10,11] According to yet another study younger population and even the pediatric group was thought to be at the risk of having Charles Bonnet syndrome.[12] Surprisingly, in our study the average age of patients with Charles Bonnet syndrome was 65 years. This is much higher than the mean age (58.2 years) of the screened population. The mean age in this study is comparable with the results of studies who reported that increasing age is a risk factor for complex hallucinations as most of the participants age >60 years' experience visual hallucinations.

A lot of work has been done on different theories to explain the factors that provoke these hallucinations reduced

visual acuity is listed as one of the important initiating factor[5] many studies shows that reduce visual acuity is a predisposing factor for Charles Bonnet syndrome because the mean visual acuity of the screened population was 1.1 with best correction, whereas studies conducted in 1987 and 1996 the best corrected visual acuity was less than 0.3, and 0.23 respectively.[13] Present study also stated that reduced vision is provoking factor for hallucinations because the 40 patients screened with Charles bonnet syndrome and with all the best possible correction having visual acuity less than 0.5 logMAR in the good eye.

Females are considered being a risk factor for Charles Bonnet Syndrome[14] but our study did not agree with it. According to our study, population of male patients who experience visual hallucinations were 52.5% whereas 47.5% females complain about the symptoms of hallucinations. Study conducted in Canada stated that there was no incidence difference of Charles Bonnet Syndrome among different genders as there is no genetic or physiological difference between them.[7] Our study shows higher incidence of Charles Bonnet Syndrome in 92.5% of participated population who were living with their families as compared to those who lived alone. Review of different studies also depicted a higher prevalence rate among those who lived with their families[15,7] as compared to those who lived alone.

Many ocular pathologies cause visual impairment, but in the present study main associated pathology was glaucoma found in 18% of population. A study shows similar results as 18.7% of glaucoma patients diagnose with Charles Bonnet syndrome[7] while in another study 21% patients reported with glaucoma and having visual hallucinations.[16] Whereas a study conducted in Spain shows age related macular degeneration (58.3%) is the highest risk factor for visual impairment whereas glaucoma (25%) is ranked second.[17, 18] Another study found that incidence rate does not relate with any ocular disease. It only depends on reduced visual acuity.[7]

Clinical characteristics of Charles Bonnet Syndrome were found similar with previous research literature. [8,9,13,14] In our study 25% patients reported that they see these hallucinations very often. A study in Australian population shows similar results as 24% of population often see these hallucinations.[18]

Reluctance shown by patients to discuss their symptoms with others as they thought it put questions on their mental health, in this study 65% of population did not discuss their symptoms in the fear of being label as insane. This report states that 36% population did not share their symptoms[8] and in another study 21% patients did the same.[14] Present study and many other studies depicted that patients did not talk about their symptoms unless they are questioned by their physician and this questioning should be conducted in a composed manner.

Conclusion

This study concluded that Charles Bonnet Syndrome is not rare among the elder population with visual impairment. Incidence rate is higher in males as compare to females. Living status does not have any impact on the incidence of clinical characteristics of hallucinations. Hallucinations experienced by patients were similar to those explained in previous literature data. People with severe visual loss experience these hallucinations and because of many fears cannot share it with others even with their physicians and thus these hallucinations causes anxiety and depression. An ophthalmologist or low vision specialist must have knowledge about these hallucinations so that they can understand patient's situation and properly manage them with counseling.

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