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The Prevalence and Major Causes of Low Vision among Children in Gaza strip, Palestine

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Abstract

Low vision is a serious public health problem and is significantly increasing globally in the past couple of decades. However, there is no available data in the literature about the prevalence of low vision among children in Palestine.

This study aimed to determine the prevalence and etiology of low vision at Al-Noor center of the visually impaired, Gaza Strip, Palestine.

This retrospective analysis was based on the observation of 423 files, using a convenience sampling method. The information extracted from the files includes: date of first consultation, gender, age, systemic diseases, parental congruity, causes of visual impairment as diagnosed by an ophthalmologist and types of optical aids prescribed.

The majority of patients 202 (47.7%) were from the age group between 6-12 years old. Two hundred and twelve (50.1%) of the subjects were males and 211 (49.8%) females. The main causes of low vision were amblyopia among patients in the zero to five years age group, retinitis pigmentosa among the 6-12 years age group and cataract, macular dystrophies and ocular albinism among the 13-18 years of age.

The prevalence and etiology of low vision in children in Gaza Strip is high compared to other countries. It is recommended that regular checks of visual acuity be conducted for all children of age 0-18 years, who attend the visually impaired center.

Keywords:

Low vision,
Amblyopia,
Retinitis pigmentosa,
Cataract,
Ocular albinism,
Parental congruity.

1. Introduction:

According to the World Health Organization (2011), low vision is defined as "visual acuity which is less 6/18 to light perception or a visual field of less than 10° in the better eye". Low vision is recognized as one of the serious public health concern in recent times (Pizzarello et al., 2004). Low vision also impair functional visual acuity, contrast sensitivity, and vision-related quality of life, which reduces the

ability to read, drive, use a computer, and watch television for prolonged periods. The prevalence of low vision is 1.1 to 3% worldwide (Sommer, 2004). For instance, the prevalence of low vision in Japan is 0.39%, Australia 0.4%, America 0.9%, china 1.1% and Baltimore 0.7% (Abou-Gareeb et al., 2001). In Palestine, however, the prevalence data and studies on the etiology of low vision are not available. Only

very few recent published articles showed the prevalence of errors of refraction (Amer, 2014). The current study is the first to look at the prevalence of low vision and its etiology in the Gaza Strip, Palestine. Additionally, the study is also justified by the fact that only a few studies have evaluated the prevalence and causes of low vision among Arab population (Khandekar et al., 2002). The results of this investigation may serve to inform the eye-care community and may assist clinicians in advising and managing their patients more suitably. This study aimed to determine the prevalence of low vision and etiology at Al-Noor Center of the visually impaired, Gaza Strip, Palestine.

2. Material and Methods:

A retrospective study was performed using a convenience sampling method based on the observation on data files of patients attending the Al-Noor center of the visually impaired in Gaza strip, Palestine. Gaza covers an area of 365 km² with an estimated population 2 millions of people in 2016. The study protocol has been approved by local committees from Al-Noor center of the visually impaired.

All data were collected from the optometry patient files manually and subsequently converted into Microsoft Excel (Microsoft Corp, Redmond, Washington, USA) spreadsheets. The information extracted from the files includes: date of the first examination, age at first visit, gender, past ocular history, systemic disease, details of the refraction/cyclorefraction, assessment of ocular motility, intraocular pressure (IOP), slit lamp examination and dilated ophthalmoscopy. The clinical diagnostic was done by the ophthalmologists and optometrists who were responsible for the examination and the diagnosis plan. Resident practitioners attended to the patients with strict adherence to the guidelines. Statistical analysis was conducted with IBM SPSS (Version 20.0, SPSS Inc, Chicago, Illinois, USA).

3. Results:

We assessed 423 medical files of patients who were seen at Al-Noor center of the visually impaired (January 2014– October 2015), constituting 100 % of all new patients seen less than 18 years old. There were 211 females (49.9 %) and 212 males (50.1 %). The proportion of subjects were higher among the (13–18) years (39.4%) compared to (0-5) years age group (12.8%). The highest prevalence of consultation was

recorded among the (6–12) age group and constituted 47.7% of patients. Amblyopia was the most common among 0–5 years disorder seen representing 18.5 % of cases. Retinitis pigmentosa and macular dystrophies were the second most common disorder seen and represented 13% of cases. Congenital glaucoma and optic atrophy were the third most common presentation in this study and represented 11.1% of cases (Figure 1).

Retinitis Pigmentosa was more common among 6–12 years old children compared to other age groups. Cataract was the second most common presentation in our study representing 14.9 % of cases. Amblyopia and macular dystrophies were the third most common disorder seen and represented 10.9% of cases (Figure 2).

Macular dystrophies and ocular albinism were more common among the (13–18) age group compared to other age groups. Cataract was second most common presentation in this study and represented 13.8 % of cases (Figure 3).

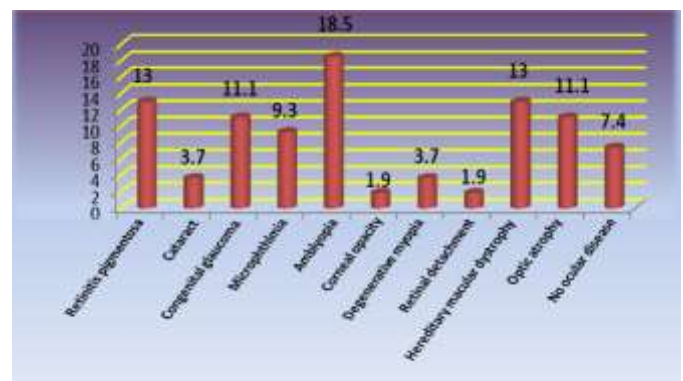


Figure 1 Prevalence of ocular diseases among less than six years old age group of low vision patients

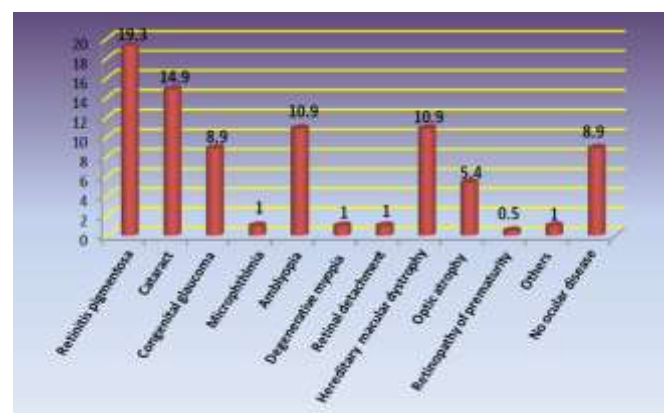


Figure 2 Prevalence of ocular diseases among (6-12) years old age group of low vision patients

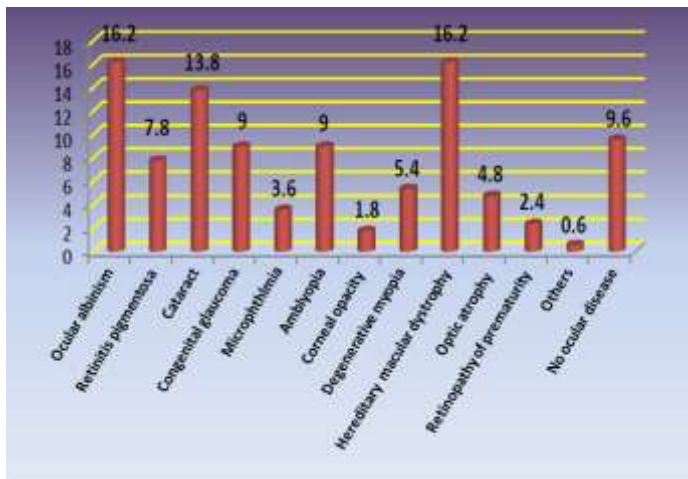


Figure 3 Prevalence of ocular diseases among (13-18) years old age group of low vision patients

4. Discussion:

To our knowledge, there is no reported data available in the literature about the prevalence and etiology of low vision in children patients in Palestine. Convenience sampling (proximity and availability) prevents this study from assuming to be a representative of the population. Amblyopia was the most common disorder seen in this study among the 0-5 years compared to other age groups. This study is agreement with previous studies (Isawunmi, 2003; Pi et al., 2012; Nepal et al., 2003; Gupta et al., 2009). Amblyopia impact childhood development, and without preschool or school eye screening for visual acuity tests, many children with amblyopia goes unnoticed. Retinitis pigmentosa and cataract were the second most common disorders seen in this study representing 13% of cases. The present findings are comparable to previous studies who evaluated cataract and retinitis pigmentosa were the second main causes of visual impairment (Gupta et al., 2009; Fotouhi et al., 2004; McCarty et al., 2003). The study showed that the third recorded cause of visual impairment was congenital glaucoma and optic atrophy (11.1%). This finding was consistent with what was found in the Saudi Arabia study where they found that only 5.8% of the visually impaired patients had glaucoma as the main cause of impairment (Taylor et al., 1997). The study showed that macular dystrophies and ocular albinism (16.2%) were the main common cause of visual impairment among patients of age 13 to 18 years. This study was in agreement with Cahill et al., (2004); the prevalence of

hereditary macular dystrophies may range from 22% to 49%.

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معدل الانتشار والأسباب الرئيسية للرؤية الضعيفة بين أطفال قطاع غزة

كلمات مفتاحية:
الرؤية الضعيفة،
زواج الأقارب،
المعينات البصرية،
كسل العين،
المياه البيضاء،
حدة الإبصار.

الرؤية الضعيفة هي مشكلة صحية عامة خطيرة وتزايد بشكل ملحوظ على الصعيد العالمي في العقدين الماضيين. ومع ذلك، لا توجد دراسات سابقة حول نسبة انتشار الرؤية الضعيفة بين أطفال فلسطين. تهدف هذه الدراسة إلى تحديد نسبة انتشار وأسباب تدني الرؤية في قطاع غزة. جميع المعلومات تم جمعها من ملفات مركز النور للمعاقين بصريا والتي يقدر عددها ٤٢٣ ملف. البيانات التي تم استخراجها من الملفات هي تاريخ الزيارة الأولى، الجنس، العمر، الأمراض المزمنة، زواج الأقارب وأسباب تدني النظر التي تم تشخيصها من قبل الطبيب وأنواع المعينات البصرية التي تم وصفها. الجزء الأكبر من المرضى ما بين عمر ست سنوات واثنا عشرة سنة. مائتان واثنا عشر مريض من الذكور ومائتان وأحد عشر من الإناث. الأسباب الرئيسية لانتشار الرؤية الضعيفة تتمثل في كسل العين ما بين عمر سنة إلى خمس سنوات والعشى الليلي ما بين عمر ست وأثنا عشر سنة والمياه البيضاء ما بين عمر ثلاثة عشر إلى ثمانية عشر سنة. يعتبر معدل انتشار وأسباب الرؤية الضعيفة في قطاع غزة عالي نسبيا. من توصيات الدراسة يجب فحص العين وحدة الإبصار بشكل متكرر لجميع الأطفال المتواجدين في المركز.