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ORIGINAL ARTICLE

Prevalence and risk factors of vision impairment among children of employees of Telecom, Italy

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ABSTRACT

Purpose: To define the prevalence, causes, and risk factors of vision impairment (VI) in children.
Methods: In this study, relatives of Association for Supplemental Health Insurance to the Employees of Telecom members aged 5-16 years were examined in all Italian regions. A standardized record card was used to collect data on medical history; keratometry; objective refraction; uncorrected, presenting, and best-corrected visual acuity (VA); examination of the pupils, adnexa, and anterior segment; direct ophthalmoscopy; posterior segment and fundus examination; and assessment for ocular pathology. Binocular and monocular VI were defined by a VA <5/10 (or <20/40).
Results: The campaign included 17,508 children, 12,798 of whom (73.1%) were examined (and 12,740 on whom all VA data were gathered). The prevalence of uncorrected, presenting, and best-corrected VI in the better eye was 9.0%, 2.51%, and 0.10%, respectively. The following variables were associated with presenting VI: age 10-16 years, family history of myopia, female sex, family history of keratoconus, and hypertension. Myopia is the main cause of VI (82.6%). A total of 96% of children with presenting VI had correctable VI.
Conclusions: Correctable VI because of myopia is an important public health problem in school-age children in Italy.

Keywords: Children, Prevalence, Severe impairment, Vision impairment

Introduction

Vision impairment (VI) was initially defined based on best-corrected visual acuity (BCVA); later, according to the International Classification of Diseases (ICD) Update and Revision 2006 (1), low vision and blindness have been defined by presenting visual acuity (VA). The WHO recently estimated a prevalence of 17.5 million children aged 0-14 years with presenting low vision and 1.4 million with blindness worldwide (2).

The Refractive Error Study in Children (RESC) (3) also measured the prevalence of VI in children aged 5-15 years (4-6). The RESC protocol was adopted later in India (7, 8), South Africa (9), Southern China (10, 12), Malaysia (11), Brazil (13), and Iran (14). Other studies carried out in Australia, Brazil, Chile, China, Ghana, India, Lao PDR, Mexico, Sweden, United Kingdom, and United States followed a different protocol (15-36), indicating that in these countries, even if with a different prevalence, the correction of refractive defect is a health problem.

It has been stated that there are no recent data on VI in the high-income European countries (2), and that children from a European Caucasian background remain distinctly underrepresented in existing surveys (19). In fact, only one study has been performed recently in the United Kingdom (25).

Due to this absence of recent data on the prevalence of VI in Italian children, we studied refractive errors in children 5 to 16 years of age.

Methods

It was deemed important to analyze ophthalmic data recently collected by Associazione per l'Assistenza Sanitaria Integrativa ai Lavoratori delle Aziende del Gruppo Telecom Italia (the Association for Supplementary Health Insurance to the Employees of Telecom Companies) (ASSILT). A campaign of preventive medicine in ophthalmology was implemented by ASSILT between November 2011 and January 2012, in relatives of members aged 5 to 16 years old, residing in all the

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