



Psychosocial needs of Spanish schoolchildren with visual impairment: a mixed methods research

Identificación de necesidades psicosociales de un grupo de escolares españoles con problemas visuales: un estudio con metodología mixta


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Abstract

This study investigates the psychosocial needs of a group of schoolchildren with visual impairments. Based on a CUAN+CUAL mixed methods, it analyzed 26 children, with and without visual impairment, who attended a pediatric ophthalmology consultation with their parents. Several descriptive, mean and variance tests of independence between variables were performed using Pearson's Chi-square (χ^2) and Mann-Whitney U tests. The interviews conducted with the children and/or parents on the impact of their visual impairment on education, leisure activities and peer interaction, as well as the feelings derived from the impairment, underwent discourse analysis. Results show that schoolchildren with severe visual impairments experience greater difficulties regarding physical and emotional well-being, school performance, and peer interaction when compared with those without. These findings suggest the importance of developing comprehensive and joint health and socio-educational interventions to improve these areas.

Keywords: Vision; Academic Performance; Social work; Child well-being; Quality of life.

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Resumen

Este estudio presenta un análisis de las necesidades psicosociales de un grupo de escolares españoles que padecen problemas visuales. La investigación utiliza metodología mixta aplicada en una muestra de 26 menores que acuden con sus progenitores a una consulta de oftalmología pediátrica con y sin problemas visuales. Se realizan entrevistas a los niños, adolescentes y/o progenitores sobre las repercusiones de su problema visual en el ámbito educativo, en la realización de actividades de ocio y tiempo libre y en la interacción con sus iguales, además de los sentimientos que les produce su problema visual. A los datos obtenidos se aplican análisis descriptivos, de medias, de varianza y pruebas de independencia entre variables, mediante las pruebas de chi-cuadrado de Pearson (χ^2) y de U de Mann-Whitney. Los resultados encontrados indican que el grupo de escolares con problemas visuales graves tienen mayores dificultades que los que no los tienen en el bienestar físico y emocional, en el rendimiento escolar y en la interacción con los otros. Estos resultados sugieren la importancia de programar intervenciones integrales y conjuntas de carácter sanitario y socioeducativo que incidan en la mejora en cada una de las áreas de necesidad.

Palabras clave: Visión; Rendimiento escolar; Trabajo Social; Bienestar del Niño; Calidad de Vida.

Introduction

Different studies have shown how different ocular pathologies and refractive defects negatively affect the lives of children, from birth to adulthood, and how early detection and treatment are essential to achieve a good biological, psychological and social development (Guimaraes et al., 2021).

Among the most frequent eye health problems in childhood in clinical practice, refractive defects, amblyopia and strabismus vary according to geographical and socioeconomic context (Rodríguez-Moldes Vázquez B, 2010). Refractive defects in children predominate in underdeveloped countries where poverty is common, where there is an insufficient number of eye care professionals and where certain socioeconomic groups do not have access to eye examinations, negatively affecting children's educational development and not preventing avoidable blindness (Ferede et al., 2020).

Moncada et al. (2011) in a study carried out on schoolchildren between 5 and 10 years old, found that 25% of them had some type of visual impairment, the most common being astigmatism and hyperopia. The same authors denounce the lack of institutional attention to the problem, both in the diagnosis phase and in the necessary intervention.

A study conducted in a northern district of Ethiopia on the prevalence of refractive defects concludes that the number of children with refractive defects not corrected in primary schools is high, with myopia being the most frequent in both sexes. The potential risk factors were associated with regular computer use and the higher level of students. The authors emphasize the need to implement school health programs that provide health information and the provision of vision health care services (Sewunet; Aredo; Gedefew, 2014).

Márquez-Galvis and Cáceres-Díaz (2018) point out that amblyopia and strabismus are two health problems that most frequently affect children.

For years, amblyopia¹ has been the main cause of vision loss in children, causing long-term loss

¹ Amblyopia is a medical term used when vision in one eye is reduced because the eye and brain are not working together properly, the abnormal eye sends a blurred or wrong image to the brain. The eye seems normal, but it is not used normally because the brain is favoring the other eye. This condition is also sometimes called lazy eye.

or decrease in visual acuity, with a prevalence in the child population of 5% (Faghihi et al., 2017). In addition, it is associated with various visual impairments: binocularity breakdown, leading to strabismus; image degradation, with high refractive errors or anisometropia; or visual image deprivation. All of them affect children's learning and school performance.

The American Academy of Ophthalmology points out that amblyopia is the most common cause of visual impairment in children and young adults and is preventable and reversible with early detection and action on its causes.

Lázaro, García and Perales (2013) conducted a study of 1,165 schoolchildren from three primary schools in Granada and found significant differences in school performance between children with no visual anomalies and those with binocular ($p=0.002$), accommodative ($p=0.004$) and oculomotor anomalies ($p=0.001$). There were no significant differences between children with refractive anomalies (Myopia, Hyperopia, Astigmatism, etc.) and those without them, since these visual impairments were well corrected with the use of glasses.

The study highlights the lack of knowledge of teachers and families to detect some binocular anomalies, including strabismus, accommodative or oculomotor anomalies, which are relevant in reading and could explain the differences in school performance of this group of children. Thus, it is important to carry out health education at the community level in collaboration with educational centers. In the same study, the primordial role that parents and teachers of infant and primary schools, in collaboration with pediatric ophthalmology health centers, should play in the detection and intervention of these health problems is highlighted. This study concluded that those children with visual health problems who followed the recommendation of teachers to their parents and received vision training in health centers significantly improved school performance. Hence, the importance of coordinated work between the different agents (parents, teachers, health professionals) to achieve adherence to treatment and success.

Handa and Chia (2018) in a study aimed at assessing factors influencing treatment outcome in amblyopia and the perception of children ($n=180$ children aged 3 to 7 years) about it. Seven percent of the children initially reacted poorly to treatment, 5% were uncooperative at the first follow-up visit. Children had difficulties with school work (5%), mood changes (6%) and social problems (2%) associated with treatment. Despite this, these authors concluded that most children with amblyopia respond well to treatment and that children with more difficulties, less adherence to treatment, lower visual acuity, require more attention and closer monitoring by their parents and teachers.

Schramm et al. (2015), in a study conducted in Germany on the main problems of children with amblyopia and their parents to properly comply with occlusion instructions and/or guidelines, concluded that children aged 0 to 2 years attending public day-care centers did not have many problems to apply it correctly if the childcare workers were informed about occlusion therapy properly.

Strabismus is also common in childhood, its prevalence is estimated between 1% and 3% in different populations, it is related to an inadequate position of one of the eyes, so that the visual axes of the two eyes are not parallel to each other, preventing their foveas to be stimulated simultaneously. The early presentation of this alteration affects the development of binocularity and vision in general, causing amblyopia, among other alterations (Márquez-Galvis and Cáceres-Díaz, 2018). Strabismus poses different problems: loss of binocular function, reduced vision of the deviated eye and unfavorable esthetic appearance. There is also a disturbance in stereoscopic depth perception and precision vision.

Like refractive defects and amblyopia, strabismus, in addition to directly affecting biological factors of vision, affects social and emotional factors that on many occasions disturb the good development of the future personality of children who suffer from them.

From the emotional point of view, Ribeiro et al. (2014) point out that strabismus and the appearance of misaligned eyes can induce "loss of face" and feelings of inferiority".

Chang et al. (2015) concluded that young adults with a history of childhood strabismus have a higher rate of mental health problems, a high rate of social phobia, all associated with increased depressive symptoms. The abnormal facial appearance of strabismus has an impact on the emotional state of the person, negatively affecting self-image. Also in their social functioning, this condition hinders job prospects, establishing positive relationships with others, achieving success in education and/or playing sports. The same authors concluded that strabismus is associated with a worse quality of life.

Sarosh et al. (2018) observed that children with visual impairments spent most of their play time alone and that peer perceptions of these children are that themselves are less capable, less desirable as friends and peers, in greater need of help, and less popular than other students. Therefore, they are in a situation of greater social vulnerability.

These social circumstances influence the inter and intrapersonal relationships of children with ocular pathology at family, school and social levels, forcing them to face stressful social situations in their relationship with their peers, teachers and family (Sánchez-Caballero, 2015; Sarosh et al., 2018).

Alshehri (2016) points out that stressful situations can also appear in the mothers of children with strabismus and in some cases even lead to the appearance of depressive symptoms. The same author concludes that children with strabismus should be routinely screened for the negative psychosocial consequences of strabismus and referred to social and psychological services when necessary. And it even justifies surgical intervention for the development of social or psychological malfunctioning in children when other measures have failed.

The association "Visión y vida" (2016) highlights that, until now, there is a lack of concern in European countries and in Spain for children's visual health. It stresses the importance of preventing visual impairments derived from unhealthy lifestyles, characterized by sedentary lifestyles and the use of technological devices both at home and in schools at an increasingly younger age. Both circumstances put

children's visual system at risk without measuring the negative consequences that may result from the misuse of such devices in the future. And there is a need for studies to measure the magnitude of the problem and the consequences that could result from a functional, psychological and social point of view.

The aim of this study is to identify and analyze the psychosocial needs caused by ocular pathology in patients attending pediatric ophthalmology consultations at the Institute of Applied Ophthalmology (IOBA) to serve as a starting point for the design of a social intervention proposal of a socio-educational nature.

Method

It is a cross-sectional, descriptive study of a mixed character combining quantitative and qualitative research techniques.

The design is of the QUAN+QUAL type, which means that they were used simultaneously in the same data collection period (Creswell, 2003; Tashakkori; Teddlie, 1998).

The quantitative part was carried out by means of a case group composed of patients with ocular pathology and/or anomaly and a control group composed of patients without ocular pathology and/or anomaly. All of them attended the IOBA ophthalmology office accompanied by their parents during the months of April and May 2019. The sampling was non-probabilistic and intentional.

A questionnaire was developed for data collection consisting of 20 items with five response options. Higher scores indicate greater difficulty or worse emotional situation.

In addition, a systematic literature review was conducted to determine the areas under study.

In the pediatric ophthalmology office and after a clinical diagnosis by the ophthalmologist, the health social worker (HSW), using the interview technique, carried out the data collection. All persons who participated in the study were volunteers, received information about the objectives and gave their consent for the use of anonymized data.

Quantitative data were analyzed using SPSS *software*. First, a descriptive analysis was performed for the quantitative variables. Subsequently, in order to test the differences between the case group of patients with ocular pathology and the control group of patients without ocular pathology, the nonparametric Mann-Whitney U test was used if normal distribution was not confirmed with the Shapiro-Wilk test. Contingency tables and chi-square contrast were used for qualitative variables (χ^2). The internal consistency of the instrument for the sample was studied by Cronwach's alpha reliability analysis.

Qualitative data processing was carried out by means of content analysis of the notes and the social health diagnosis conducted by the HSW after the interviews. The interviewer's notes and social reports contain the transcription of interviews, verbatim, as the interviewees expressed themselves.

An identification of thematic codes and categories was carried out with the participation of two members of the research team, allowing the

informants' perception of how ocular anomalies or pathologies affect the lives of the children who suffer from them, specifically their emotions, their self-image and their interaction with others.

Subsequently, the data were triangulated in order to find convergence and correspondence of results analyzed with different research methods (Bryman, 2006; Greene; Caracelli; Graham, 1989).

Results

The sample consisted of 26 children of compulsory school age (65,38%). The mean age is 8.69 years in the case group with a standard deviation of 3.68. The control group has a mean age of 8.62 years and a standard deviation of 3.79. In both groups the following variables were controlled for: gender, age and residence, so that they were equalized (see Tables 1 and 2). Eighty percent of the family members attending the consultation had private insurance that covered the medical check-up.

Table 1 – Sociodemographic aspects of the participating groups

Variables	With ocular pathology (n=13)		No ocular pathology (n=13)		Total (n=26)	
	F	%	F	%	F	%
Age	3-5	4	30.8	5	38.5	34.6
	6-10	4	30.8	4	30.8	30.8
	11-16	5	38.5	4	30.8	34.6
Gender	Male	7	53.8	7	53.8	50
	Female	6	46.2	6	46.2	50
Origin	Rural	8	61.5	8	61.5	50
	Urban	5	38.5	5	38.5	50

Table 2 – Differences between suffering from ocular pathology or not according to age

	With ocular pathology (n=13) Average range	No ocular pathology (n=13) Average range	Z	U	p
Age	13.38	13.62	-0.77	83	.938

Note: *p<0.05

Table 3 shows the characteristics of the children with ocular pathology interviewed or their parents and Table 4 shows the internal consistency of the questionnaire.

Table 5 shows the descriptive data and the comparison of the groups of schoolchildren.

Table 3 – Characteristics of children

Subjects	Age	Origin	Diagnosis
Boy 1	6	Urban	Hyperopia and astigmatism
Boy 2	8	Rural	Strabismus
Boy 3	5	Urban	Amblyopia
Boy 4	6	Urban	Amblyopia
Boy 5	15	Urban	Amblyopia
Boy 6	12	Rural	Strabismus
Boy 7	13	Rural	Amblyopia
Girl 1	9	Urban	Strabismus
Girl 2	4	Rural	Amblyopia
Girl 3	8	Rural	Myopia
Girl 4	3	Urban	Strabismus
Girl 5	13	Rural	Strabismus
Girl 6	10	Urban	Myopia

Table 4 – Cronbach's alpha value if item is excluded

	Cronbach's alpha if the element is removed
Do you notice that you have ocular pathology (vision loss, tired eyes)?	.965
Does this visual impairment bother you?	.964
When you interact with other people, do you feel that they notice your visual impairment?	.964
Do you feel different (inferior) because of the visual impairment?	.964
Do you feel that your ocular pathology hinders your performance at school?	.967
Do you feel that your ocular pathology affects your relationships with other people?	.969
Do you feel that your opportunities for social interaction are reduced due to the visual impairment?	.969
Do you imagine what other people are thinking about your eyes?	.966
Do you have more difficulty making friends because of your visual impairment?	.967

continue...

Table 4 – Continuation

	Cronbach's alpha if the element is removed
Do you feel uncomfortable if someone asks you something about your eyes?	.965
Do you feel that people avoid looking at you because of your ocular impairment?	.969
Does this ocular pathology hinder your vision?	.965
Do you have difficulty reading due to your pathology?	.964
Do you feel more stressed (anxious) because of your pathology?	.965
Do you have difficulty with depth perception (calculating the distance of objects)?	.964
Do you notice that you have ocular pathology (vision loss, tired eyes)?	.964
Do you have to close one of your eyes to read?	.965
Do you have diplopia (double vision)?	.964
Are you experiencing eye fatigue due to ocular pathology or abnormality?	.965
Do you think about your ocular pathology so often that it impairs your ability to concentrate?	.965
TOTAL	.967

Table 5 – Descriptive studies and comparison of groups of schoolchildren with and without visual impairment.

Variables	With ocular pathology				No ocular pathology				TOTAL	X ²	gl	P	
	No	A little	Quite a lot	Very Much	Totally	No	A little	Quite a lot					Very much
Do you notice that you have ocular pathology (vision loss, tired eyes)?	7	1	3	1	1	13	0	0	0	26	7.800	4	.099
Does this visual impairment bother you?	3	5	3	1	1	12	1	0	0	26	13.067 ^a	4	*,011
When you interact with other people, do you feel that they notice your visual impairment?	5	3	3	1	1	13	0	0	0	26	11.556 ^a	4	*,021
Do you feel different (inferior) because of the visual impairment?	7	2	1	2	1	13	0	0	0	26	7.800 ^a	4	.099
Do you feel that your ocular pathology hinders your performance at school?	0	2	5	6	0	12	1	0	0	26	23.333 ^a	3	*,000
Do you feel that your ocular pathology affects your relationships with other people?	0	3	5	1	4	12	0	0	1	26	22.800	4	*,000
Do you feel that your opportunities for social interaction are reduced due to the visual impairment?	1	0	3	9	0	12	0	0	1	26	18.708	2	*,000
Do you imagine what other people are thinking about your eyes?	9	2	0	2	0	11	2	0	0	26	2.200	2	.333
Do you have more difficulty making friends because of your visual impairment?	0	2	5	6	0	12	1	0	0	26	23.333	3	*,000
Do you feel uncomfortable if someone asks you something about your eyes?	7	2	3	1	0	12	1	0	0	26	5.649 ^a	3	.130

continue...

Table 5 – Continuation

Variables	With ocular pathology				No ocular pathology				TOTAL	X ²	gl	P	
	No	A little	Quite a lot	Very Much	Totally	No	A little	Quite a lot					Very much
Do you feel that people avoid looking at you because of your ocular impairment?	10	3	0	0	0	0	12	1	0	26	1.182 ^a	1	.277
Does this ocular pathology hinder your vision?	4	4	4	1	0	13	0	0	0	26	13.765 ^a	3	*.003
Do you have difficulty reading due to your pathology?	1	7	3	1	1	12	1	0	0	26	18.808 ^a	4	*.001
Do you feel more stressed (anxious) because of your pathology?	7	3	3	0	0	0	13	0	0	26	7.800 ^a	2	*.020
Do you have difficulty with depth perception (calculating the distance of objects)?	7	2	1	1	1	2	13	0	0	26	7.800 ^a	4	.099
Do you notice that you have ocular pathology (vision loss, tired eyes)?	6	3	2	2	0	12	1	0	1	26	7.000 ^a	3	.072
Do you have to close one of your eyes to read?	5	4	2	1	1	13	2	0	0	26	6.917 ^a	4	.140
Do you have diplopia (double vision)?	5	4	1	1	2	13	0	0	0	26	11.556 ^a	4	*.021
Are you experiencing eye fatigue due to ocular pathology or abnormality?	5	4	3	0	1	13	0	0	0	26	11.556 ^a	3	*.009
Do you think about your ocular pathology so often that it impairs your ability to concentrate?	8	2	1	1	1	13	0	0	0	26	6.190 ^a	4	.185

The results show significant differences between the group of schoolchildren with ocular pathology and those without pathology in the difficulty in their vision ($\chi^2=13.76$; $gl=3$; $p=0.003$) or the appearance of double vision ($\chi^2=11.55$; $gl=4$; $p=0.021$) perception of greater difficulty in visual function is associated with having an ocular anomaly or pathology.

With respect to the children's functioning in their school activities, differences were also found between the groups in terms of reading difficulties ($\chi^2=18.80$; $gl=4$; $p=0.001$) and in the performance of school activities ($\chi^2=23.33$; $gl=3$; $p=0.001$) once again, the group suffering from ocular pathology or abnormality presented the greatest difficulties.

Regarding the emotions experienced by the schoolchildren, the quantitative analysis of the data shows the highest frequency of feelings of tiredness and fatigue ($\chi^2=11.55$; $gl=3$; $p=0.009$), anxiety or stress ($\chi^2=7.8$; $gl=2$; $p=0.020$) in the group with ocular pathology or abnormality than in the group that does not have it.

Interviews with parents and schoolchildren with ocular pathology delve into the causes of the appearance of feelings of discomfort, irritability or anger. The use of glasses or patches for the treatment of ocular pathology or abnormality is perceived as the origin of their suffering, as they consider them stigmatizing elements, becoming the reason for others to exclude and/or discriminate against the subject who is using them.

"When they put my glasses on I was very angry because I didn't want to wear them, but later when I saw that I could see better I was happier, although some children at school tease me for wearing them" (Girl 6)

"I didn't like when they told me I had to wear a patch" (Boy 5)

The qualitative analysis also reveals how ocular pathology and ocular anomalies can influence the configuration of a negative self-image in children, which can result in low self-esteem. The expressions *"she is very snooty and does not like to wear glasses..."* (Mother of Girl 2) or *"I have suffered moments of sadness because they called me*

cross-eyed when I was a child" (Girl 5) or *"...at school they call me "ugly" and sometimes my classmates do not let me play with them..."* (Boy 1) are a small sample of this.

Regarding the interaction of children with ocular pathology with other people, the quantitative analysis shows that having or not an ocular pathology and anomaly significantly influences the child's relationships with other people ($\chi^2=22.80$; $gl=4$; $p=0.001$), reducing the opportunities for interaction with others ($\chi^2=18.71$; $gl=2$; $p=0.001$) and significantly reducing the chances of making friends ($\chi^2=23.33$; $gl=3$; $p=0.001$)

The qualitative analysis delves into the difficulties children have in interacting with their peers. They show how the ocular anomaly or pathology and its treatment contribute to these individuals being teased and mocked and hindering them from establishing positive relationships with their peers.

"...at school they call me pirate girl..." (Girl 1, wearing glasses and patch)

"...at school they call me "ugly" and sometimes my classmates don't let me play with them ..." (Boy 1)

"...some kids at school tease me for wearing glasses" (Girl 3)

The qualitative interviews, in addition to providing data on the difficulties of children with ocular pathology to interact with their peers, provide information on how parents can help their children to avoid suffering, to build an adequate self-image and to establish positive relationships with their peers.

"...thanks to the fact that they bought him some patches with drawings on them before he went to school and to the work of the teacher in the classroom, the children accepted him very well... All the children wanted to wear patches too" (Mother of Boy 7)

The interview excerpt with the mother of Boy 7 describes effective strategies to achieve adherence to

treatment for children with amblyopia, highlighting the role that early childhood and elementary school teachers can play in achieving this goal, in addition to avoiding negative self-perceptions and the stigmatization, discrimination and suffering of these children.

Discussion

Our study shows that children with ocular anomalies had greater difficulties in visual function when they attended the IOBA than those who did not. Specifically, as in the studies of Kugathasan et al. (2019) and of Webber (2018), The ocular anomalies had a negative effect on their vision, making it difficult for them to read and negatively affecting their school performance, so they require support to overcome these difficulties.

Also, our study corroborates the claims of the “Asociación Visión y Vida” (2016) regarding children’s complaints of ocular fatigue, eye discomfort, or reading fatigue compared to those without ocular pathology.

Similar to the studies of Lázaro, García and Perales (2013) or of Vaughn, Maples and Hoenes (2006), we can affirm that children with visual impairments have greater difficulties in successfully performing tasks in the school environment, and making the early detection of such problems at school is important.

Authors as Sharma et al. (2017) recommend the implementation of visual health programs aimed at educating children and their families, enabling them to identify signs and symptoms of refractive errors, risk factors involved in the development of refractive errors, and other ocular pathological problems, in addition to adopting ocular hygiene measures. The implementation of such programs at the community level could prevent long-term visual impairment.

In addition, our study has allowed us to identify psychosocial needs in childhood derived from suffering from ocular anomalies, which, in addition to producing physical discomfort, also produce psychological discomfort such as “*feeling nervous*”, “*feeling anxious*”, depressed or having

shame, low self-esteem associated with their body self-image. “*They don’t like to wear glasses...*” or “*being called cross-eyed or being called ugly because of strabismus, wearing glasses, or wearing patches*”, they feel guilty and it could affect their social life, *taking away opportunities to make friends, to have positive social interaction* and hindering their school performance.

The fact that children with ocular pathology have verbalized a greater difficulty in relating to other children, because “*they tease them for wearing glasses*” or “*they don’t let them play with them*” or most frequently “*feel inferior to their peers*” without ocular pathology, requires special attention, as there is evidence of the predisposition of preadolescent children suffering from strabismus, wearing glasses or patches to be victims of teasing and even bullying by their peers at school (Horwood et al., 2005).

This situation of vulnerability can be explained by the fact that some anomalies, such as the presence of strabismus, create a negative social bias against children (Lawrenson et al., 2018; Okere et al., 2014; Peterseim et al., 2020; Uretmen; Egrilmez, 2003). Children with amblyopia may have difficulties in reading and eye-hand coordination that hinder them from demonstrating their knowledge and skills, competing in sports and physical activity, and interacting with their peers, influencing their self-esteem and self-perception in a negative way (Birch et al., 2019). The existence of evidence of negative social images of children with ocular anomalies or the existence of difficulties in interacting with their peers makes HSW in primary health care centers and specialized care centers to work on the strengths of children and family members by training them in appropriate coping strategies to deal with these situations of vulnerability. And also to intervene in coordination with educational centers to prevent negative images and/or attitudes to avoid situations of social exclusion.

In recent years, the introduction and disproportionate prominence of technology in the home, and the increase in patients complaining of eye fatigue and dry eyes, leads us to conclude

that prolonged exposure to these devices in children's eyes could be detrimental to vision, as well as reducing opportunities to interact with family members, peers and friends. Both of these circumstances should be targeted for community health promotion.

Silverstein et al., 2021 emphasize the importance of early detection of ocular pathology and anomalies and good adherence to treatment during the school years to improve the visual health of the population.

Working on this issue with children and their families in the health and educational settings is considered fundamental as an intervention strategy.

Conclusion

In conclusion, we affirm that improving children's visual health represents a commitment and a challenge, because of the impact it has on the child, the family and their relational environment, and because of the many years they are supposed to live with it, considering the needs and psychosocial circumstances of each child in each stage of their lives. Hence the importance of knowing the children's psychosocial needs in order to direct the programs that, from the health and educational fields, favor their integral development and personal autonomy, as well as their self-esteem and insertion in their family and school environment, and in the rest of society, as they grow up.

As limitations of our study we should point out that the sample size has prevented us from making significant relationships and generalizations from the data obtained, since statistical tests usually require a larger sample size to be considered representative of the groups of people studied.

We should also point out that our study could be qualified as biased in its selection since most of the participants in the study came from a high socio-educational and economic level. In spite of this, the authors have preferred to assume this risk in order to demonstrate the existence of future lines of research that highlight the socioeconomic and cultural differences of the participants.

Although the study we presented here has some limitations related to the size of the sample,

we believe it is of great interest because it was carried out in an entity where families are very sensitive to their children's eye health. First, it includes evidence on the difficulties and psychosocial needs of children with visual impairment in terms of their functioning and performance at school, their emotions, their self-image and their interactions with others. Secondly, it shows some lines of action that could be effective in responding to these needs. And finally, because it reveals the advantages of using mixed research methods for detecting the needs of children and their families and finding solutions.

We conclude that more research of this type is needed in the field of public health in collaboration with schools, where the influence of socioeconomic and socio-educational variables on the visual health of the infant-juvenile population and the difficulties presented by this population when they belong to socially vulnerable groups are also analyzed.

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del Álamo-Martín, Pérez Curiel and Vallelado-Álvarez participated in the design, data collection and writing of the draft and final document. del Álamo-Martín and Pérez Curiel participated in the analysis.

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