

Physical, Social and Psychological Challenges Facing Children Having Blindness

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Abstract

Background: Blindness may create formidable social and psychological problems for the children having blindness. These problems cause implications for the integration of the children having blindness into a sighted society, for the coping and adjustment of the blind, and for the attitudes of the sighted. **Aim:** The aim of the study was to physical, social and psychological challenges facing children having blindness. **Design:** Descriptive research design was used. **Setting:** Data was collected from El-Nor and El-Amal school for children having blindness Heliopolis, Cairo. **Sample:** Purposive sample included 60 blind child. **Tools** for collecting data of the present study included the following: 1. An interview questionnaire to assess children knowledge about blindness and challenges among children with blindness (physical, social). 2.A- Scale to assess social challenges that facing blind children (loneliness scale, scholastic achievement scale). B- Scale to assess psychological challenges among children with blindness (anxiety scale, self-esteem scale, self-image scale). **Results:** the study findings showed that, regarding level of the studied children's physical challenges 45% of them had mild challenges, 31.7% of them had moderate challenges and 23.3% of them had severe challenges. Regarding level of social challenges, 28.3% the studied children's had mild challenges, 40% of them had moderate challenges and 19% of them had severe challenges. Regarding level of psychological challenges facing the children having blindness, 38.3% of the studied children's had mild challenges, 33.3% of them had moderate challenges and 28.3% of them had severe challenges. **Conclusion:** The majority of the children having blindness had mild physical challenges, moderate social challenges and mild psychological challenges and there are positive relation between children having blindness and their physical, social and psychological challenges. **Recommendation:** The study recommended to encouraging children having blindness to participate in sports and recreational programs.

Key words: Children, blind, visual impairment physical, social, psychological, challenges.

Introduction

Blindness refers to a condition where a person suffers from any of the following conditions namely; total absence of sight, Visual acuity not exceeding 6/60 or 20/200 (**Snellen**) in the better eye even with correction lenses and limitation of the field of vision subtending an angle of 20 degrees or worse (**Omvig, 2014**).

World Health Organization (WHO) has proposed a definition of blindness. It is "A

physical, psychiatric, intellectual or sensory impairment, whether temporary or permanent, provided that it lasts for a significant period of time, that limits the capacity to perform one or more essential activities of daily life and which can be caused or aggravated by economic and social environment (**Cervantes & Porretta, 2013**).

Visual impairment is a significant health problem worldwide. The World Health Organization estimates that globally about 314

million people are visually impaired, of whom 45 million are blind in which 1.4 million are children. 15.9% of children from total number of children in Egypt are blind so the Egyptian eye academy recommended to increase the numbers of eye care centers especially in Cairo (WHO, 2019).

The pattern of underlying disorders ('causes') blindness vary considerably between and within (rural/urban settings) countries, reflecting the regional balance of the determinants of specific diseases, and the available resources to execute preventive strategies. Globally, the most frequent causes of childhood blindness are retinal disorders, glaucoma, corneal scarring (primarily due to Vitamin A deficiency), cataract and cerebral causes (Davidon and Quinn, 2011)

Symptoms of children with complete blind, the child can see nothing. If partially children having blindness might partially blind, might experience the following symptoms: cloudy vision, an inability to see shapes, seeing only shadows, poor night vision, tunnel vision (Peterseim et al., 2015).

Medical rehabilitation includes early identification of the visually impaired child and timely management which can through either medical or surgical management, participating in physical activities is an important element to promote and rehabilitate health, fitness, and well-being for youths. Regular physical activity at a young age can decrease the chances of developing health-related issues (Haegele and Liberman, 2016).

Children having blindness often have no opportunity to mature through play with their peers. Social play may give rise to feelings of frustration, rather than self-efficacy and independence, which characterize the social experience of typical children (Al Gamra et al., 2010).

Social processes are shaped in the first year of a child's life and eye contact is the basic function in their development. Lack of direct stimulation of children having blindness may result in establishing improper behaviors, such

as a typical movement of arms, wobbling, putting their fingers into their eyes, etc. Negative experience connected with social contacts or their lack may lead to low self-esteem, social immaturity, egocentrism, shyness, isolation, passivity, withdrawal and dependence (Courtright and West, 2016).

The blind child in making his own decision may feel more insecure because he lacks self confidence that comes from experience. These observations lead to the problem of conforming to generally accepted behavior patterns which is a major one in education and life of the blind. The inability of blind child to control their environment by sight has still another effect. They are frequently disturbed by fear of being observed by others (Windle et al., 2011).

The family role is important to provide appropriate environments for their child with visual disturbance. Ensuring well-lit surroundings and contrast will facilitate safe mobilization, especially in the home environment and support their child physical, social and emotional to adapt (Royal College of Nursing, 2016).

Nurses perform their duties in an effective manner, They are likely to require special training. They need to understand the basic functions of the eye and learn rudimentary information and knowledge about ocular diseases and complications. Nurses could support the process of categorizing eye pathologies in terms used in emergency or ordinary medical situations and perform triage. Nurses should receive training on the psychological impacts of vision loss or impairment in order to be better able to assist children and communicate effectively with them (National Institute for Clinical Excellence, 2016).

Significance of study

Globally, about 2.2 billion people have a vision impairment or blindness, At least 1 billion of them have a vision impairment that could have been prevented or has yet to be addressed. In low-income countries with high under-5 years mortality rates, the prevalence may be as high as 1.5 per 1000 children,

while in high-income countries with low under-5 mortality rates, the prevalence is around 0.3 per 1000 children. A blind child in the world is approximately 1.4 million. Three quarters of the world's children having blindness live in Africa and Asia (WHO, 2020).

The World Health Organization estimates that 15.9% of children from total number of children in Egypt goes blind (WHO, 2019).

Aim of the work

This study aims to: Assess physical, social and psychological challenges among children with blindness.

Research questions:

1-What are the physical, social and psychological challenges among children with blindness?

2-To what extent the blindness affected children physical, social and psychological condition?

Subjects and methods

Technical design:

The technical design includes research design, settings, subjects and tools for data collection.

Research design

Descriptive research design was utilized in the current study.

Research Setting:

The current study was conducted in El-Nour and El-Amal school for children having blindness, at Heliopolis, Cairo

Research Subjects:

Purposive sample of 60 children having blindness aged from 8 up to 11 years in El-Nour and El-Amal association for blindness children (school), Heliopolis, Cairo, according to sampling formula have been selected and included in the study under inclusive criteria as children have total blindness and other children have Vision problems with one eye, lack of vision in the eyes, Vision with one eye and lack of vision in both eyes.

Tools of data collection:

Data were collected and reviewed based on reviewing related literature. The data were collected using the following tools:

First tool: A pre designed interviewing questionnaire (appendix1) included the following 6parts:

Part (I): Socio Demographic data of children having blindness: it included 13 end closed questions included age, family members, care giver of children having blindness and parents history.

Part (II): Children and family medical history: it included 3 end closed questions such as select between 14 disease (weakness of sight, blind colors, earlier history of eye accidents, blue or white water in the eye, strabismus, ophthalmic operations, bone diseases, diabetes mellitus, hypertension, diseases of the gland, heart, kidney and liver and disease).

Part (III): characteristic of school environment: it included 14 end closed questions such as sanitation, sun light, play area, sleep area, eating area, visitor area, children personal equipment in school and care giver in school.

Part (IV): Children knowledge about blindness: it included 10 open end and end closed questions such as select true answer, complete, true or false about definition, causes, type, signs and symptoms and prevention of blindness.

Parts (V): Physical challenges facing children having blindness: it included 21 open end and end questions such as physical development, personal hygiene, physical exercise and school sport equipment.

Parts (VI): Social challenges facing children having blindness: it included 18 open end and end questions such as children feeling toward self, social relationship, children dream in the future and include (5) open and end closed question related to children school achievement.

Scoring System of characteristic of school environment around the children having blindness

The scoring system was adopted with ranging rate from 0 (I do not know) to 1 (know) points for each item. Each question response was either know (1 grade), I don't know (0 grades).

Score % = (the observed score / the maximum score) × 100.

The total score was from 0-15 grades:

- Satisfactory >60% (>9) grade.
- Unsatisfactory <60% (<9) grade

Scoring System of children knowledge about blindness:

The scoring system was adopted with rating ranging from 0 (I do not know) to 1 (know) points for each item. Each question response was either know (1 grades), I don't know (0 grades).

Score % = (the observed score / the maximum score) × 100

The total score was from 0-10 grades:

- Satisfactory >60% (< 6) grade.
- Unsatisfactory <60% (<6) grade.

Scoring System of Physical challenges facing children having blindness:

The scoring system was adopted with ranging rate from 1 (mild challenges) to 3 (severe challenges) points for each item. Each question response was either strongly severe challenges (3 grades), moderate challenges (2 grades), mild challenges (1 grade).

Score % = (the observed score / the maximum score) × 100

The total score was from 23-69 grades:

- Mild challenges <50% (<35) grades.
- Moderate challenges 50-75% (35:52) grades.
- Severe challenges >75% (>52) grades.

Second tool

1. Loneliness scale and scholastic achievement scale were used to assess Social challenges facing children having blindness

2. Anxiety scale, self-esteem scale, body image scale were used to assess psychological challenges facing children having blindness

Scoring system of social challenges

This scoring system was adopted with ranging rate from 1 (never and there is no) to 4 (frequently and intense) points for each item, school achievement scale 18 items and loneliness scale 20 items "total Item 38". Each question response was either never and there is no (1 grade), rarely and small (2 grades), sometimes and average (3 grades), frequently and intense (4 grades),

Score % = (the observed score / the maximum score) × 100.

The total score was from 38-152 grades:

- Mild challenges <50% (<76) grades.

• Moderate challenges 50-75% (76:114) grades.

Severe challenges >75% (>114) grades

Operational design

Operational design includes

- 1- Preparatory phase
- 2- Pilot study
- 3- Tool validity and reliability
- 4- Field work.

• The preparatory Phase:

It includes reviewing of related literature and theoretical knowledge of various aspects of the study using books, articles, papers, periodicals and magazines. This was necessary for the investigators to know about aspects of research problem as well as to assist development of data collection tool.

Pilot study:

Pilot study was carried out on 10% (6) blind child of the total. The total study sample was conducted to ensure clarity, feasibility and applicability of tools and estimate the time consume for each tool. The revised final form was used. The result of pilot study was not included in the sample of the study.

Tool validity and reliability

Tools were revised by three expertise in Pediatric Nursing Field to test clarity, feasibility and applicability of tool. Regarding the reliability of tool, Alpha Cronbach's test is used to measure internal consistency of used tool. The reliability of score of tool as above is 0.737, 0.860 and 0.799 for knowledge about blindness and physical, social and psychological challenges scale, respectively, where the minimum reliability coefficient needed is 60%, so, the reliability of tool is coefficient.

Field work:

The tool was filled by the researcher and was consumed during six months period started

from 19 March 2019 till the end of August from 9 am to 2 pm two days per week (Monday and Wednesday) at the Elnour and El-Amal school. The researcher completed the tool by interviewing questionnaire which lasted for 15 minutes, and working scales sparred which lasted for 15 minutes during children's break time. The researcher explained the aim and nature of the study subject to obtain their approval.

Administrative design:

An official letter requesting permission to conduct the study was submitted from the Dean of Faculty of Nursing, Ain Shams University to the Elnour and El-Amal school director, full explanation about the aim of the study was explored, and subjects will be obtained to carry out this study.

Ethical consideration:

The approval of the ethical committee of faculty of Nursing, Ain Shams University will be obtained. Voluntary participation of children and maintenance of confidentiality for every selected subject involved in the study sample through explaining the objectives of the study. It did have any harmful effect on them and they can withdraw from the study at any time.

Statistical design:

Data were categorized, scored, tabulated and analyzed using the appropriate statistical methods. Descriptive statistics were utilized including; frequencies, means, standard deviation and test of significances.

Recorded data were analyzed using the statistical package for social sciences, version 20.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed also as frequency and percentage

The following tests were done:

- Chi-square (χ^2) test of significance was used in order to compare proportions between qualitative parameters.

- Pearson's correlation coefficient (r) test was used to assess the degree of association between two sets of variables.

- The confidence interval was set to 95% and the margin of error accepted was set to 5%. So, the p-value was considered significant as the following:

- Probability (P-value)

- P-value <0.05 was considered significant.

- P-value <0.001 was considered highly significant.

- P-value >0.05 was considered insignificant.

Results

Table (1) shows that 91.7% of the studied children were females and the mean age of the studied children was 9.86. Regarding father existence of them were present. Regarding mother existence 93.3% of them were present. As for ranking the child among sibling 33.3% of children ranks as a second. However, concerning care giver at home,

73.3% of father and mother were both consider as care givers together.

Table (2) shows that 56.7% of parents have no history of blindness and 76.7% of the studied children joined to school from years.

Table (3) shows that, 100 % of the studied children don't have challenges in walking, Most of them 98.3% don't have challenges in speech. Meanwhile 16.7, 21.7, 16.6% of them have mild, moderate, severe challenges according to child's development generally, respectively.

Table (4) displays that, 98.3% of the children need assistance while change their clothes, meanwhile 58.3% of them had a mild physical challenges in doing their hygienic care.

Table (5) shows that, 73.3% of the studied children stated that they feel happy in daily practice, while 68.3% of them stated that they feel lonely and anxious.

Table (7) shows that, there were statistical significant relations between the studied children having blindness level of physical challenges and their level of psychological challenges, with $\chi^2(14.969)$ and p-value ($p<0.05$).

As observed from table (6), 50%of the children had a lot of respect and self-direction, while 25%of them never feel the worst and not equal to other children.

Table (1): Distribution of the studied children regarding to their demographic characteristic (N=60).

Items	No.	%
Age in years:		
8- <10	34	56.7
>10-12	26	43.3
Sex		
Male	15	25
Female	45	75
Mean±SD	9.86±1.35	
Father existance:		
Yes	55	91.7
No	5	8.3
Mother existance:		
Yes	56	93.3
No	4	6.7
Number of Siblings:		
None	5	8.3
One	1	1.7
Two	15	25.0
Three	16	26.7
More than three	23	38.3
Ranking of the child between siblings ranking:		
First	16	26.7
Second	20	33.3
Third	10	16.7
Fours	11	18.3
Fifth or more	3	5.0
Care Giver at home:		
Father	2	3.3
Grand Mother or grandfather	3	5.0
Mother	11	18.3
Other Remember	0	0.0
Father and mother together	44	73.3

Table (2): Distribution of parents regarding their family history of blindness (n=60).

	No.	%
Family or relatives suffering blind		
Yes	26	43.3
No	34	56.7
If yes, relationship with child		
relative of the first degree (father, mother, brother or sister)	19	73.1
Others remember	7	26.9
joined to school from		
Days	9	15.0
Months	5	8.3
Years	46	76.7

Table (3): Distribution of the studied children's regarding their physical challenges according to child's development (n=60).

	No.	%
The child can walk alone		
Yes	60	100.0
No	0	0.0
The child can run		
Yes	53	88.3
No	7	11.7
The child Can jump		
Yes	55	91.7
No	5	8.3
The child Can speak clearly		
Yes	59	98.3
No	1	1.7
The child Can play with his friends		
Yes	58	96.7
No	2	3.3
Total		
- Mild challenges <50%	37	61.7
- Moderate challenges 50-75%	13	21.7
- Severe challenges >75%	10	16.6

Table (4): Distribution of the studied children regarding their physical challenges according to hygienic care (n=60).

	No.	%
Need help in doing your personal hygiene bathing:		
Yes	2	3.3
No	58	96.7
Hand wash, face and legs		
Yes	2	3.3
No	58	96.7
Washing teeth:		
Yes	2	3.3
No	58	96.7
Enter the bathroom:		
Yes	2	3.3
No	58	96.7
Need assistance when you change your clothes		
Yes	1	1.7
No	59	98.3
Need assistance while eating		
Yes	0	0.0
No	60	100.0
Need assistance in arranging your room		
Yes	1	1.7
No	59	98.3
Total		
- Mild challenges <50%	35	58.3
- Moderate challenges 50-75%	16	26.7
- Severe challenges >75%	9	15.0

Table (5): Distribution of the studied children regarding their social challenges. (n=60).

Items	No.	%
Feel lonely and anxious		
Yes	41	68.3
No	19	31.7
Feel embarrassment		
Yes	35	58.3
No	25	41.7
Feel biases between your family		
Yes	25	41.7
No	35	58.3
Feel nervous about talking to others because you do not see them		
Yes	35	58.3
No	25	41.7
Feel unhappy or interested in daily practices		
Yes	16	26.7
No	44	73.3
Feel upset		
Yes	20	33.3
No	40	66.7
Total		
Mild challenges <50%	21	35.0
Moderate challenges 50-75%	19	31.7
Severe challenges >75%	20	33.3

Table (6): Distribution of the studied children regarding their self-confidence scale for children with blindness concerning their psychological challenges. (n=60).

Items	Frequently		Sometimes		Rarely		Never	
	No.	%	No.	%	No.	%	No.	%
Feel I am the worst child / child and not equal to other children	12	20.0	24	40.0	9	15.0	15	25.0
Feel I have many advantages	24	40.0	23	38.3	9	15.0	4	6.7
Feel I am all in all and I feel that I can never fail	12	20.0	29	48.3	12	20.0	7	11.7
Capable of doing things that other children will not be able to do	20	33.3	24	40.0	12	20.0	4	6.7
Feel that I have a lot of things that make me proud of them (such as academic achievement - love teachers - encouraging parents)	19	31.7	32	53.3	6	10.0	3	5.0
Feel positive towards myself	21	35.0	29	48.3	7	11.7	3	5.0
Feel good about myself	20	33.3	32	53.3	6	10.0	2	3.3
Had a lot of respect and self-direction	30	50.0	26	43.3	3	5.0	1	1.7
Always feel useless	6	10.0	24	40.0	20	33.3	10	16.7
Think I am a helpless child	6	10.0	34	56.7	13	21.7	7	11.7
Total	17	28.3	27	45.0	10	16.7	6	10.0

Table (7): Relation between the studied children level of physical challenges and their level of psychological challenges (n=60).

Level of psychological challenges	Physical challenges						Chi-square test		
	Mild challenges		Moderate challenges		Severe challenges		Total	x ²	p-value
	N=27	N=19	N=14	N=60					
No.	%	No.	%	No.	%	No.	%		
Mild challenges	16	59.3%	5	26.3%	2	14.3%	23	38.3%	14.969 0.005*
Moderate challenges	11	40.7%	5	26.3%	4	28.6%	20	33.3%	
Severe challenges	0	0.0%	9	47.4%	8	57.1%	17	28.3%	
Total	27	100.0%	19	100.0%	14	100.0%	60	100.0%	

*p-value <0.05 S

Discussion

The causes of vision impairment and blindness vary considerably cross countries for example in low income countries congenital cataract is the most common disease and effective intervention, prevention, treatment and rehabilitation to address the entire range of needs associated with eye condition to across the life course (WHO, 2020).

The present study aimed to assess physical, social and psychological Challenges facing children having blindness.

Concerning characteristics of the studied children's, that the mean age of the studied children's was 9.86 ± 1.35 . This was in accordance with **Ishtiaq et al, (2016)** and **Ruhagaze et al, (2013)**, who investigated that, the psychosocial implications of blindness and low vision in students of a school for children having blindness and mentioned that, the mean age of them in their study was (17 ± 3) . In the researchers point of view, the age differentiation may be because of cultural knowledge about blindness and late of engagement of school for children having blindness.

Additionally, regarding characteristics of the studied children's, the finding of this study revealed that, three-quarters of the studied children were females. This finding was in agreement with **Mousa et al. (2014)**, who investigated, prevalence of visual impairment and blindness in Upper Egypt: A Gender-based perspective reported that, more than three quarters of the studied sample were females. Also, it was in accordance with the report published

by the International Agency for the prevention of blindness, about two-thirds of the world's blind are females who are disproportionately affected by vision problems due to a lack of access to corrective services. (**Hiedary et al., 2012**)

In relation to care giver at home and existence of mother and father, found the majority of mother existence of with their children's. Moreover regarding ranking of the blind child among siblings the majority of them were ranked as a second child. As well as less than three quarters of father and mother were consider as care giver together.

Furthermore, in the same line with this finding, **Fathizadeh et al, (2012)**, who investigated, experiences of children having blindness caregivers mentioned that mothers are were selected as care givers because they were responsible to accompany the children in commuting to school and had more comprehensive experiences about taking care of their children. The researcher's point of view that, mother and father should both share in care for children this may be very important for the children and make the children happy.

According to children having blindness parents' family history of blindness, the result of current study showed that, more than half of parent had no history of blindness. However this findings in disagreement with the study of **Elmadina et al, (2019)**, who investigated role of inheritance and causes of childhood blindness: A multicenter study in Sudan and found that majority of participants had a positive family history of blindness whereas one quarter of them

had a negative history. Also, a study conducted in Saudi Arabia revealed that the incidence of consanguinity among parents of children with acquired causes was only three percentage and less than half of them genetically determined causes. Moreover the researcher's point of view is that, these differences in this finding is because of these varies from location to another and lack of using medical health services.

Furthermore, this is in the same line with **Leer Este Artículo, (2020)**, who reported that, physical disabilities had many different causes. Some that occur frequently with visual impairment were cerebral palsy, spina bifida, and muscular dystrophy. Some children would be affected in all parts of their bodies, while others might have full use of their arms or legs or full use of one side of their body. Some children with physical disabilities were able to walk unaided, while others may use crutches, walkers, or wheelchairs. Additionally, in the researchers point of view, these variations due to poverty and low communication and support of the child family.

According to physical challenges facing the blind child such as child hygienic care, the result of the current study displayed that, more than half of the children had a mild physical challenges in doing their hygienic care. This is in agreement with, **Willings, (2019)**, who reported that, learning personal hygiene and independence in grooming are important skills for all students to learn. These are equally important for students who are blind or visually impaired. It may take students longer to master these skills but it is essential to encourage independence and avoid the urge to do the task for them in a rush to complete the activity. Therefore, in the researcher's point of view, that hygienic care is very important for prevention of infection for eyes and all body. So, children having blindness need support for hygienic care first time and make more independence in dealing with hygienic self care.

Regarding children having blindness their social challenges facing them, the result of the current study showed that, most of children stated that feel happy in daily practice, and in other side feel lonely and anxious. In the other hand **Kong et al.**

(2012) and Sharifian-Sani et al. (2016), reported that, in the field of challenges and problems relating to leisure, financial problems for the entertainment and sports and lack of suitable places to spend leisure ranked first and second, respectively. However, in the researcher point of view, the child's reducing social challenge help the family of blind child prevent stress and the family make sure that child have all rights and should change all family life style for coping with child disability.

Regarding to children having blindness self-confidence scale, the result of the current study revealed that, half of the children had a lot of respect and self-direction, while one quarter of them never felt the worst and not equal to other children. In the same line, **(Goel and Aggarwal, 2012)**, the children with sibling had more self-confident than single children. There was significant negative relationship between sense of alienation and lack of self-confidence. If the sense of alienation is high, the level of self-confidence is low. Development of self-confidence from growth year makes a children mature, confident and responsible citizen. In the researchers point of view that, self-confidence should be through effort from parents and family to support blind child in self-achievement goal making to reach to it. Moreover, they should be helped them to prevent any type of isolation and appriavation.

Regarding relation between children having blindness physical challenges and their level of psychological challenges, the result of the current study showed that, there were statistical significant relations between the studied children having blindness level of physical challenges and their level of psychological challenges. These findings are in agreement with **Killeen, (2019)**, who stated that, less than one quarter of children had glaucoma children in South India self-reported poor medication adherence and less than half of them identified in this study is in line with glaucoma medication adherence rates globally. Complex factors caused high rates of non-adherence. The children having blindness and their family need social and psychological supports from society.

In the researcher point of view, dealing with relationship between student's physical challenges and social challenges need more efforts to contact and communicate with children and their family and counseling them about health services and prevent all shapes of anxiety and stress. To give information and answer any questions about child blindness and physical development with help them a lot. To encourage sports and reading and communication with others will develop their state.

Conclusion

The study conducted that the majority of the children having blindness had mild physical challenges, moderate social challenges and mild psychological challenges and there are positive relation between children with blindness physical, social and psychological challenges.

Recommendation:

1. Provide psychological and social support for children having blindness.

2. Encouraging children having blindness to participate in sports and recreational programs.

3. Provide health education and counseling programs for children having blindness about personal hygiene and healthy food.

References

- Al Gamra, H., Al Mansouri, F., Khandekar, R., et al. (2010):** Prevalence and causes of blindness, low vision and status of cataract in 50 years and older citizen of Qatar – a community based survey. *Ophthalmic Epidemiol*; 17(5):292–300
- Cervantes, C. M., & Porretta, D. L. (2013):** Impact of school programming on physical activity among adolescents with visual impairments. *Adapted Physical Activity Quarterly*, 30(2): 127–146.
- Davidon, S. & Quinn, G.E. (2011):** The Impact of Pediatric Vision Disorders in Adulthood. *Pediatrics*; 127(2):334-339.
- Elmadina, A. M., Elrahman, N. M. F., Ahmad, M. I., Qureshi, M. A., Elawad, M. E. H., & Bhatti, A. A. (2019):** Role of inheritance and causes of childhood blindness: A multicenter study in Sudan. *Sudanese Journal of Ophthalmology*, 11(1): 8.
- Fathizadeh, N., Takfallah, L., Badrali, N., Shiran, E., Esfahani, M. S., & Akhavan, H. (2012):** Experiences of blind children caregivers. *Iranian journal of nursing and midwifery research*, 17(2 Suppl1): 143.
- Goel, M., & Aggarwal, P. (2012):** A comparative study of self confidence of single child and child with sibling. *International journal of research in social sciences*, 2(3): 89-98.
- Haegle, J. A., & Lieberman, L. J. (2016):** The current experiences of physical education teachers at schools for blind students in the United States. *Journal of Visual Impairment & Blindness*, 110(5): 323-334.
- Ishtiaq R, Chaudhary MH, and et al. (2016):** Psychosocial implications of blindness and low vision in students of a school for children with blindness. *Pak J Med Sci*;32(2):431-434.
- Killeen, O. (2019):** Understanding Barriers to Glaucoma Treatment Adherence among Participants in South India <https://www.tandfonline.com/doi/full/10.1080/09286586.2019.1708121>
- Kong, L., Fry, M., Al-Samarraie, M., Gilbert, C., & Steinkuller, P. G. (2012):** An update on progress and the changing epidemiology of causes of childhood blindness worldwide. *Journal of American Association for Pediatric Ophthalmology and Strabismus*, 16(6): 501-507.

- Leer este artículo, L. (2020):** American Printing House for the Blind Family Connect For parents of children with visual impairments. Physical Disabilities in Children Who Are Blind or Visually Impaired. [https:// www.familyconnect.org/info/multiple-disabilities/common-types-of-disabilities/physical-disabilities/135](https://www.familyconnect.org/info/multiple-disabilities/common-types-of-disabilities/physical-disabilities/135)
- Mousa, F.D., Mousa, A., & Courtright, P. (2014):** Sociodemographic characteristics associated with blindness in a Nile Delta governorate of Egypt. *British Journal of Ophthalmology*, 88(5): 614-618.
- National Institute for Clinical Excellence (2016):** NICE quality standard (QS 123) Home Care for blind children and older people. 7th ed, NICE, London. p44.
- Omvig. (2014):** History of blindness: Summary of the history of the education and rehabilitation of the blind. Retrieved from [https:// www.actionfund.org/history-blindness](https://www.actionfund.org/history-blindness).
- Peterseim, M. M., Papa, C. E., Parades, C., Davidson, J., Sturges, A., Oslin, C., Merritt, I., & Morrison, M. (2015):** Combining automated vision screening with on-site examinations in 23 schools: ReFocus on Children Program 2012 to 2013. *Journal of Pediatric Ophthalmology & Strabismus*, 52(1): 20-24.
- Royal College of Nursing (2016):** Connect for Change: RCN report on learning disability services in England.. 7th ed. London, RCN. P32-15.
- Ruhagaze, P., Njuguna, K.K., Kandeke, L., et al. (2013):** Blindness and severe visual impairment in pupils at schools for the blind in Burundi. *Middle East Afr J Ophthalmol*; 20(1):61-5.
- Sharifian-Sani, M., Sajjadi, H., Tolouei, F., and Kazem-Nezhad, A. (2016):** Girls and Women with Physical Disabilities: Needs and Problems. *Journal of Rehabilitation*, 7(2):41-8.
- WHO (2019):** Blindness and visual impairment [Internet]. WHO web report. Available from: [http:// www.who.int/news-room/factsheets/detail/blindness-and-visual-impairment](http://www.who.int/news-room/factsheets/detail/blindness-and-visual-impairment)
- WHO (2020):** Blindness and vision impairment prevention. <https://www.who.int/blindness/causes/priority/en/index3.html>
- WHO (2020):** Childhood blindness and vision impairment, [https://www.who.int / Blindness-and -vision impairment](https://www.who.int/Blindness-and-vision-impairment).
- Willings, S. (2019):** Teaching Students with Visual Impairments. [https:// www.Teachingvisuallyimpaired.com/hygiene-grooming.html](https://www.Teachingvisuallyimpaired.com/hygiene-grooming.html).
- Windle, K., Francis, J. & Coomber, C. (2011):** Preventing loneliness and social isolation: interventions and outcomes. Research Briefing. London, Social Care Institute for Excellence, 56(1): 22-23.