

# **Effect of Vision Problems on Health Status of Primary School Children**

***Thesis***

***Submitted in Partial Fulfillment of  
the Requirement of the Master Degree***

***in  
Nursing Science  
Community Health Nursing***

***By***

**Mervat Mohamed Hassan Ali**

***((B.Sc. Nursing)  
Demonstrator of Community Health Nursing***

**Ain Shams University  
Faculty of Nursing  
Community Health Nursing  
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*Supervised by*

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## **Protocol**

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## **Introduction**

The child from six to twelve years is often referred to as the school child, (Gloria, 1999). The total number of Egyptians is 74.033.000. School children constitute a large segment of population, they are about 21% of all populations, and they are estimated by 15.590.000, nearly 16 million. (WHO, 2008).

Pinyerd, (2002), defined growth as a quantitative change, it results when cells divide and synthesize new proteins. This increase in number and size of cells is reflected in an increase in the size and weight of the whole body or any of its parts.

A rapid sequence of anatomical and functional changes in the visual apparatus enables vision to develop from a very low level after birth to near adult level by 12-18 months. (Robinson , 2003).

Learning difficulties are common in school children and it is commonly assumed that there may be a visual abnormality that contributes to or even causes the learning difficulty and thus reflects on the child's scholastic achievement. (Robertson, 2003).

Vision problem is the consequence of functional loss of vision, rather than the eye disorder itself and it can range from an inability to see certain colors to blurred vision or complete loss of sight. The vision problem may be acute, meaning occurring suddenly, or chronic, which means that the visual changes last for a long period of time. (Ferrell, 2006).

Common types of vision problems (Accommodation, Ametropia, Astigmatism, Blurred vision, Color blindness, Diplopia, Emmetropia, Halos, Hemianopia, Hyperopia, Myopia, Photophobia, Partially sighted, Spots, Refractive error, Amblyopia, , and Squint) affect 5% to 10% of all school children. (USA preventive services task force, 2008).

Children with vision problems are most commonly nearsighted, meaning that they can see near objects, but have difficulty seeing objects that are far away. Nearsightedness is usually detected after the child is at least two years old. Children may also less commonly

farsighted, and are able to see far objects, but have difficulty with objects that are nearby.(WHO,2008).

Vision Problems may be caused by albinism, retinal degeneration, damage to the visual nerves, diabetes, injuries to the eyes, glaucoma, brain damage, corneal disorders, muscular degeneration, infection, or an inherited condition. Vision problems can also be caused by a number of genetic and prenatal or postnatal conditions. These include perinatal infections, e.g.,(herpes, Chlamydia infection, gonorrhea, rubella, syphilis, or toxoplasmosis), retinopathy or prematurity, trauma, postnatal infections (meningitis) and disorders such as sickle cell disease, juvenile rheumatoid arthritis and retinoblastoma, also, may be caused by environmental causes, e.g.,(unsanitary environment, bad lightening) or by bad life style(poor hygiene, eye abuse, poor nutrition,...etc.).(Wilson, 2007).

Vision problems are characterized by blurry vision, double vision, cloudy vision, difficulty focusing on either near or far objects, inability to see certain colors, inability to see peripheral objects, total loss of all vision...etc.(Marry,2007).

The effect of vision problems on a child's health and development depends on the severity, type of loss, age at which the condition appears, and overall functioning level of the child. (Huebner,2000).

Vision problems during childhood is a public health priority, so community health nursing care of vision problems is a specialized area required additional training in vision testing and habilitation.

However, general measures that focus on assessment, prevention and rehabilitation of the child with visual impairment are every nurse's responsibility. (Wilson, 2007).

Assessment of children for visual impairment or any other vision problem is a critical nursing responsibility. The school nurse should be responsible for discovery of vision problems as early as possible and it is essential to prevent social, physical and psychological damage to the child.(Douglas,2002).The assessment involves identifying those children who are at risk, observing for behaviors that indicate visual impairment, and screening all children for visual acuity. The community health nurse must take in consideration the family role in the early detection and prevention of vision problems

to prevent its effect on scholastic achievement of their school children. (Smith, Maurer, 2007).

The role of the nurse which is directed toward the school children is focused on: health services which involve comprehensive health assessment through screening, promotion of a healthy school environment, and prevention of health problems. So children with vision problems should be assessed early to benefit from early intervention programs, when applicable.

(National Association of nurses, 2004).

### **Magnitude of the problem:**

Vision problems are common during school age. In Egypt the prevalence of serious visual impairment and blindness in the pediatric population is estimated to be between 30 and 64 children per 100.000 populations. (Egyptian Academy of pediatric, International Association of certified Ophthalmology, 2004).

School children are a vulnerable group from the health point of view, and they are emerging as creative persons who are being for their future role in the society, many children who have vision problem resulting in motor, cognitive, and/or social development delays. and thus if their health status is affected by any reason, their scholastic achievement will be affected and it will reflect on their future role and it will have a great and a dangerous effect on the community. (Shonkoff, 2000)

### **Aim of this study:-**

**This study aims to assess the effect of vision problems on health status of primary school children**

#### **Through:-**

- 1-Assessing causes of vision problems.
- 2-Assessing effect of vision problems on health status and scholastic achievement of primary school children.
- 3-Assessing parent's knowledge related to the dangerous effect of vision problems on health status and scholastic achievement of their primary school children.
- 4-Assessing learning environment at school and its effect on health status of primary school children.

5-Assessing school nurse role in early detection, referral and follow up of vision problems.

### **Research questions:**

- 1- Are there causes for vision problems among primary school children?
- 2- Is there an effect for vision problems on health status of primary school children?
- 3- Are there a relation between lifestyle, school learning environmental condition and vision problems among primary school children?
- 4- Have the vision problems effect on scholastic achievement among primary school children?
- 5- Are there a relation between early detection of vision problems and scholastic achievement among primary school children?

### **Subject and methods:**

#### **Research Design:**

A descriptive study.

#### **Setting:**

The study will be conducted at primary schools and ophthalmic clinic affiliated to students ' health insurance in El-khosous district in El- Qaliubeya governorate, because this district has a high population density, it has 167.055 inhabitants and its demographic composition offers an excellent starting point for assessment.

#### **Sample:**

##### **Type:**

Stratified simple random sample.

##### **Size:**

All children attending to the previous mentioned settings and have the following inclusion criteria.

## **Criteria:**

- 1- Primary school children (9-12) years, in the 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> primary classes, either males or females.
- 2- Attending to primary schools and ophthalmic clinic affiliated to students' health insurance in El-Khosous zone.
- 3- Have vision problem.
- 4- Agreement of parents to participate in the study by written consent.

## **Data Collection:**

### **The following tools for data collection will be used:**

#### **The first tool:-**

Interviewing questionnaire sheet will be designed by the researcher and it will include:-

#### **(1)- For the mother:-**

A- Socio-demographic data (age, sex, number of sippings and place of residence).

B- Medical history:-

\*For the mother.

\*For the child.

C- Parent's awareness about health needs and problems of primary school children.

D- Parent's awareness regarding the dangerous effect of vision problems on health status and scholastic achievement of their children.

#### **(2)- For the child:-**

Assessment sheet for life style, e.g., (nutritional habits, hygiene, sleep).

#### **The second tool:-**

Physical assessment sheet for child.

It will include:-

A- Monitoring growth and development, e.g. weight, height.

B- Physical observation from head to toes.

#### **The third tool:-**

Medical record review.



### **The Fourth Tool:-**

An observational check list for learning environment at school e.g., (adequate light, ventilation, suitable distance between blackboard and students, etc...).

### **Operational Design:**

A pilot study will be done on 10% from the sample to test the validity and reliability of tools, techniques. The obtained results from pilot study will help in the necessary modification of the tools, according to the available resources. The sample included in the pilot study will be excluded from the whole study sample.

### **Administrative design:**

An official approval will be taken from the faculty of nursing toward the general manager of the previously mentioned settings.

### **Ethical consideration:-**

-Ethical letter from the authority of Ain Shams University will be taken to facilitate the performing of research.

-A consent from regarding agreement of children' parents as a responsible person and a reference of child to participate in the study will be obtained after explaining the research aim and methods to them.

### **Data analysis:**

#### **Statistical design:**

The results will be analyzed by appropriate statistical methods and tests of significance and then will be presented in tables, figures and graphics as required.

### **Discussion of the results:**

The obtained findings will be discussed in light of scientific local and international related literatures, researches, references and studies.

**Conclusion and Recommendations:**

The conclusion and recommendations will be made based on the results and findings of the study.

**Summery:**

A brief description for all the work will be provided.

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# تأثير مشكلات الرؤية على الحالة الصحية لأطفال المدارس الابتدائية

بروتوكول  
بحث مقدم توطئة للحصول على درجة الماجستير  
فى تمريض صحة المجتمع

من  
ميرفت محمد حسن على  
معيدة بقسم تمريض صحة مجتمع  
بكالوريوس التمريض (٢٠٠٣)  
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## المقدمة

الطفل من سن ٦ وحتى ١٢ سنة يشار اليه بأنه طفل فى سن المدرسة , وطبقاً لآخر وأحدث الإحصائيات فأن أجمالى عدد المصريين حوالى ٧٤ مليون نسمة, منهم ٢١% فى سن المدرسة ويقدرّون بحوالى ١٦ مليون طفل. والنمو يعرف بأنه تغيرات كمية ينتج عندما تنقسم الخلايا وتكون أو تصنع بروتينات جديدة, وهذا التزايد فى عدد وحجم الخلايا ينعكس فى زيادة حجم ووزن الجسم كله أو أجزائه.

وصعوبات التعلم شائعة فى أطفال المدارس وربما أيضاً تكون الرؤية غير طبيعية والتي تسهم فى أوتى تكون السبب لصعوبة التعلم, لذا سينعكس كل ذلك على تحصيل الطفل الدراسى. ومشكلات الرؤية تعنى فقدان تدريجى فى وظيفة الرؤية , حيث أنها تتراوح من عدم القدرة على رؤية ألوان معينة إلى زغلة فى الرؤية وحتى فقدان التام للرؤية. ومشكلات الرؤية لدى الأطفال قد تكون حادة أى أنها تحدث فجأة أو مزمنة أى أن: التغير فى وظيفة الرؤية يكون بشكل تدريجى وعلى فترة طويلة من الوقت. وأكثر مشكلات الرؤية شيوعاً تصيب حوالى (٥% - ١٠%) من أطفال المدارس،

والأطفال الذين يعانون من مشكلات الرؤية منهم من يكون لديه قصر نظر: أى يرى الأشياء القريبة ولكن لديه صعوبة فى رؤية الأشياء البعيدة، وعادة يتم تشخيص تلك الحالات بعد بلوغهم سنتين من العمر. أما من هم يعانون من طول النظر فهم أقل شيوعاً وهؤلاء لديهم القدرة على رؤية الأشياء البعيدة ويجدون صعوبة فى رؤية الأشياء القريبة. ومن أهم أسباب مشكلات الرؤية لدى الأطفال:- تلف عصب الأبصار، مرض السكر، أصابات العين، تلف المخ، العدوى، أو قد تكون حالة وراثية، وقد تحدث أيضاً بعض الحالات نتيجة عدوى فى مرحلتى: (قبل وبعد الولادة). وبعض الحالات تكون نتيجة لسوء أسلوب المعيشة والذى يشمل: عدم النظافة، سوء التغذية، وسوء استخدام العين وأجهادها. والأطفال الذين يعانون من مشكلات الرؤية يشعرون بزغلة فى العين ، وأزدواج فى الرؤية أو رؤية سحابة ، وصعوبة فى التركيز على الأشياء القريبة أو البعيدة ، وعدم القدرة على رؤية بعض الألوان أو حتى لديهم فقدان تام لوظيفة الرؤية.

وتأثير مشكلات الرؤية على صحة ونمو الطفل يعتمد على شدة ، ونوع الفقد فى الرؤية ، والعمر الذى عنده تظهر تلك الحالة ، وأيضاً مستوى وظيفة الرؤية لدى هذا الطفل. وتعتبر مشكلة الرؤية أو الأبصار فى مرحلة الطفولة مشكلة عامة وذو أولوية للتعامل معها، لذلك فإن الرعاية الصحية التمريرية للأطفال الذين لديهم مشكلات فى الرؤية مهمة جداً وتحتاج الى تدريب اضافى. ولأن أكثر مشكلات الرؤية تكون فى مرحلة الطفولة, لذلك فأن إختبار حدة الرؤية يكون ضرورى وهام. وممرضة المدرسة تلعب دور كبير فى فحص أطفال المدارس وتقييم الحالة الصحية وحالة الرؤية لديهم والاكتشاف المبكر للحالات وعلاجها ومتابعتها.

**والتقييم يتضمن:** تحديد الأطفال الذين لديهم عوامل الخطورة، وملاحظة سلوكيات الأطفال التي تشير الى ضعف أو مشكلة ما فى الأبصار، وفحص ومسح شامل لكل الأطفال مع عمل أختبارات لحدة النظر. وممرضة صحة المجتمع يجب أن تأخذ فى اعتبارها دور الأسرة فى الأكتشاف المبكر والوقاية من مشكلات الرؤية لمنع تأثير ذلك على التحصيل الدراسى لأطفالهم.

دور الممرضة الموجه الى أطفال المدارس يركز على الخدمات الصحية والتي تتضمن تقييم صحى شامل من خلال مسح شامل وتحسين البيئة المدرسية الصحية المحيطة متضمنة بيئة التعلم والفصول الدراسية من حيث الاشتراطات التي تضمن رؤية واضحة أثناء الحصص الدراسية وأيضاً منع حدوث أى مشكلات.

وممرضة المدرسة مسئولة أيضاً عن الحالة الصحية للأطفال ذوى الاحتياجات الخاصة، فهي أيضاً تحفز الطفل وتشجعه على أن يكون معتمداً على نفسه قدر المستطاع ومتعاون مع مدرسيه وأسرته من أجل منفعتهم. لذلك فأن لممرضة المدرسة دور حيوى وفعال فى التعامل مع كل من الوالدين وأطفالهم فى سن المدرسة.

### **خطورة المشكلة:-**

تعتبر مشكلات الرؤية شائعة فى مرحلة المدرسة فى مصر، فهي تنتشر بنسبة تقدر بحوالى ٣٠ - ٦٤ طفل فى كل ١٠٠.٠٠٠ شخص. وتؤثر مشكلات الرؤية على الحالة الصحية والتحصيل الدراسى لأطفال المدارس الابتدائية، ولأن الأطفال فى سن المدرسة يعدون أشخاص مبدعون ويستعدون لدورهم فى المستقبل، لذلك اذا تأثرت حالتهم الصحية وتحصيلهم الدراسى لأى سبب فأن ذلك سينعكس على دورهم فى المستقبل، وأيضاً سيكون له عظيم الأثر على المجتمع.

كل هذه العوامل السابق ذكرها لها تأثير سلبى وخطير على المجتمع وتقدمه، لذلك علينا أن نكون مدركين لأهمية الأكتشاف المبكر لأى مشكلة فى الرؤية لكى نتمكن من الوقاية من تأثيرها الخطير على أسلوب المعيشة والقدرات العقلية والحالة النفسية للأطفال فى سن المدرسة.

### **هدف هذه الدراسة:**

تهدف هذه الدراسة إلى تقييم تأثير مشكلات الرؤية وضعف الأبصار على الحالة الصحية والتحصيل الدراسى للأطفال فى سن المدرسة من خلال:-

- ١- تقييم أسباب مشكلات الرؤية.
- ٢- تقييم تأثير مشكلات الرؤية على الحالة الصحية والتحصيل الدراسى لأطفال المدارس الابتدائية.
- ٣- تقييم معلومات الوالدين المتعلقة بالتأثير الخطير لمشكلات الرؤية على الحالة الصحية للأطفال فى سن المدرسة.
- ٤- تقييم بيئة التعلم فى المدرسة وتأثيرها على الحالة الصحية للطفل فى سن المدرسة.
- ٥- تقييم دور الممرضة فى الأكتشاف المبكر ومتابعة حالات مشكلات الرؤية.