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## **Psychosocial impacts of strabismus in children**

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### **Abstract**

**Background:** Strabismus has negative psychosocial impacts. However, assessment of the social and psychological implications of strabismus on the lives of children or their parents is neglected by many health practitioners.

**Objectives:** The aim of this review is to identify the social and psychological influences of strabismus in children younger than 18 years of age and to assess the psychosocial outcome after corrective strabismus surgery.

**Methods:** A literature search using Medline database for the years 1946 to 2015 was undertaken to explore the psychosocial implications of strabismus and the impact of surgical correction. The search was restricted to children younger than 18 years old. Articles published in other than English language were excluded. The first 50 articles were reviewed and 11 relevant studies were selected in the review.

**Results:** The psychosocial implications of strabismus in children were investigated in eight studies. Perceptions of parents of children with strabismus were evaluated by some studies. Three studies examined the psychosocial outcome of corrective strabismus surgery. Strabismus was associated with negative psychosocial impacts and affects family relationships. Improvement in social and psychological status was demonstrated after surgical correction of strabismus.

**Conclusion:** Children with strabismus should be routinely screened for negative psychosocial consequences of strabismus and offered medical referral to social and psychological services when warranted. Development of social or psychological malfunctioning in children justifies surgical intervention when other measures have failed.

**Keywords:** Strabismus, psychosocial impacts, relationships, quality of life, strabismus surgery.

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### **1. Introduction**

Strabismus is estimated to occur in about 2.1% to 3.3% of children [1]. Potential advantages of surgical correction of strabismus include restoration of ocular alignment, enhancement of binocular fusion, expansion of binocular visual fields, elimination of diplopia, and improvement of abnormal head position [2]. Various studies have examined the psychosocial impact of strabismus on the health status of children [5-12]. The negative psychosocial implications of strabismus encountered in childhood can intensify throughout adolescence and adulthood [3]. However, the social and psychological implication of strabismus is neglected by many health professional [4]. This may indicate a possible lack of awareness among some of the medical practitioners about the implications of strabismus in the lives of children and their families. The purpose of this review is to explore the psychosocial impacts of strabismus in

children younger than 18 years of age and to evaluate the psychosocial benefits of corrective strabismus surgery.

### **2. Methods**

The electronic database of OVID MEDLINE was searched to identify relevant articles published between 1946 and 2015. The following Keywords were used: strabismus, surgery, quality of life, social isolation/social marginalization, adaptation, stress, depression, anxiety, family relations, friends, peer group and school. The search was restricted to article published in English language, and for children younger than 18-years old. The initial 50 articles were reviewed and 11 relevant articles were selected and included in this analysis.

### 3. Results

Eight studies have investigated the psychosocial influences of strabismus. Three studies evaluated the social and psychological outcome of corrective strabismus surgery.

#### 3.1 Psychosocial impacts

In a prospective case control study, children with strabismus had lower scores in strabismus-specific quality of life questionnaire (AS-20) which has 20 questions based on a five-point Likert scoring scale and contain two subscales: one measuring the psychosocial effects of strabismus and one concerned with its functional impacts [5]. Low score was also observed in the Intermittent Exotropia Questionnaire (IXTQ) to evaluate the quality of life specific to children with intermittent exotropia [5]. The Pediatric Quality of Life Inventory (PedsQL), a measurement model of general health related quality of life (HRQOL) was used to assess the quality of life in preschool children aged 25 to 72 months [6]. Children with strabismus had significantly lower score in all 3 summary scores which include (Physical health summary, psychosocial summary, and total summary) when compared with children without strabismus [6]. Negative attitude towards strabismic children can start as early as the age of 6 years and children aged 6 years or older with strabismus seem to be less likely to be accepted by their peers [7]. In one study, social acceptance of children with strabismus by their peers was studied [8]. Digitally altered photographs of six children showing orthotropic, esotropic, and exotropic appearances were created [8]. Subsequently, children aged 3-12 years were asked to select children from these pictures to invite them to their birthday party [8]. Results revealed that children aged 6 years or older invited strabismic children to their birthday parties significantly less than orthotropic children [8]. However, another study investigated the effect of strabismus on a child's playmate selection showed that strabismus did not influence the playmate selection in children aged 3-8 years old when they asked to choose a playmate from photograph of children with and without strabismus [9]. Uretmen et al stated that the negative social discrimination against children with noticeable strabismus was observed in schools and children with strabismus were viewed negatively by their teachers [10]. Strabismus can adversely affect the family relationships. Mothers of children with strabismus had significant level of depression, were nervous, distressed, and angry, and demonstrated negative attitude to their children [11].

A cohort study interviewed guardians of 93 children with strabismus showed that parents had significant distress and were extremely worried [12]. Significant number of children were distressed, ostracized and have communication and coping difficulty [12]. Rural or urban location of the family, gender of the child or the type of the deviation did not eliminate the negative psychosocial impact of strabismus [12].

#### 3.2 Effects of strabismus Surgery:

Psychosocial outcome of surgical correction of strabismus in childhood have been examined in many studies [13-15]. One study assessed parents' perceptions of corrective strabismus surgery on their children [13]. Surgical correction of strabismus improved self-esteem, eye contact, appearance, and interactions with others [13]. Another prospective interventional study using telephone interviews with parents or guardians of children with strabismus evaluated the psychosocial effects of surgical treatment of strabismus in children [14]. Strabismus surgery was associated with significant improvements in social, emotional, and functional measures of the children's health status [14]. Assessment of vision-related quality of life (VRQOL), anxiety and depression in children with strabismus was examined in 60 children with strabismus before and after strabismus surgery [15]. The short-form 25-item National Eye Institute Visual Functioning Questionnaire (NEI-VFQ-25) and the Hospital Anxiety and Depression Scale (HADS) were used as psychological measurement tools [15]. Before surgery, impairment of eight out of 12 NEI-VFQ-25 subscales, including general health, general vision, near vision, distance vision, social function, mental problems, dependency and peripheral vision were seen in children with strabismus [15]. After surgery, the result demonstrated significant improvements in the NEI-VFQ-25 summary score, and the anxiety and depression scores [15].

### 4. Discussion

There is multitude of evidences indicating that strabismus has negative implications on the social and psychological health of children younger than 18 years old [5-12]. Family functioning, relationship with peers and performance at school are recognized negative impacts of childhood strabismus [7,8,10,11]. Furthermore, strabismus can adversely place the family member at risk of mental illness [11]. Adult with long lasting childhood strabismus are at high risk to develop psychiatric disorders [16].

This analysis confirms that psychosocial impacts of strabismus is long lasting and can interfere with psychosocial development of children. Therefore, assessment of strabismus in children should include evaluation of the psychosocial effects of strabismus and social and psychological support should be available to children with strabismus and their families when warranted. Although this review is not a comprehensive analysis of all the pertinent literature on psychosocial impacts of strabismus in children, there is enough evidence emphasizes the need for screening of the psychosocial disorders in children with strabismus and surgery should be available as a treatment option when other measures have failed to correct strabismus.

### 5. Conclusion

Clinical assessment of children with strabismus should include evaluation of the potential negative psychosocial consequences of strabismus. Psychosocial malfunctioning of children or their families should warrant medical referral to social and psychological services.

Development of social and psychological disorders necessitates surgical treatment when other measures failed to correct strabismus in children.

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