



Original Research Article

The attitude towards strabismus and barriers for its treatment in parents from rural and urban areas

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ABSTRACT

It has been observed that children having strabismus who are being left untreated face a lot of psychosocial and functional difficulties in adulthood. In this study, an attitude and a barrier scale was structured and validated on the basis of the adult strabismus 20 questionnaire and a Barrier Scale. The attitude scale had two subscales- psychosocial subscale and functional subscale. A total of 1747 children; 828 from urban and 919 from rural areas, between the age group of 5 to 12 years were screened from urban and rural schools for strabismus. 36 children with strabismus were identified and studied on the basis of various parameters. None of these children had taken previous treatment for strabismus. The ratio of urban to rural school children was 5:7 and the ratio between male and female was 7:5. 25 (69.4%) had exotropia, 11(30.6%) had esotropia among which 18(50%) had moderate degree of squint, 12(33.3%) had mild degree of squint. Mean Scores in the psychosocial subscale in Urban and rural areas were as 65.89±31.19 and 59.56±26.74 with p value 0.51. Mean Scores in Functional Subscale were as 77.63±32.58 and 66.67±31.66 with p value of 0.31. The most important barrier for treatment was the unawareness of the treatment of strabismus at the appropriate time. The attitude of parents towards strabismus was based on an amalgamation of multiple variables like age of the child, amount of squint, type of squint and also the gender of the child.

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1. Introduction

Strabismus is the misalignment of the two eyes in the primary position and in a child is usually associated with decrease of vision, diplopia, eyestrain and poor cosmetic appearance. Strabismus being a common ocular disease, occurs in 0.13% to 4.7% in the pediatrics population.¹ Most of the parents of strabismus children do not consult an ophthalmologist till they have severe diminution of vision; hence, this problem remains unsolved till late childhood. The disability percentage for jobs in strabismic individuals was found to be 35.4%. Visual maturity/binocular single vision occurs generally at around 6 years of age and the sensitive period for visual function modification ends and after this age it becomes difficult to correct it thereafter due to amblyopia.² Early detection and timely

management of strabismus is very crucial in order to avoid problems like defective binocular depth perception, amblyopia, psychosocial problems that put the individual at a disadvantage later into life. Past researchers have studied that, physical appearance including ocular alignment is an important aspect of the normal socialization process³ and not only does the misalignment of the eyes can result in double vision, diminished visual fields,⁴ it may also lead to stigmatisation of the individual.^{5,6} Due to this stigmatisation, the individual may develop certain mannerism^{5,6} to cope up such as lack of eye contact and this can contribute to psychosocial difficulties.⁶ Also, strabismus being an easily recognisable facial abnormality has not only an adverse effect on the one affected but also has consequences on their parents and families.

The crux of the current problem is that the child as well as the parent is ignorant about treating this problem on

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time. Factors which contribute to failure of service delivery among patients are lack of awareness, financial constraints, wrong information passed on by primary care physicians. There is dearth of literature on understanding the attitude of parents for treatment of strabismus children, lack of routine eye check ups for younger children at school; and late referrals in spite of check ups, the present study aims to evaluate the extent of parental understanding of strabismus.

2. Materials and Methods

The screening of this study, was done at local schools in urban and rural areas and then a validated scale was served to the parent of these children in order to assess attitude of parents with strabismic children, research about the barriers causing delay in treatment of strabismus at an Outpatient department at a tertiary care centre. Ethical clearance for the study was obtained from the Institutional Ethical Review Board. Written informed consent from all individuals participating in the study was taken.

Total Sample size of screened children: 1747

Sample size of screened children in urban area: 826

Sample size of screened children in rural area: 919

Total Sample size of children with strabismus: 36

Sample size of children with strabismus in urban areas: 15

Sample size of children with strabismus in rural areas: 21

2.1. Inclusion criteria

1. Ages between 5-12 years
2. Both the genders were included in this study- Male and female
3. All types of concomitant strabismus

2.2. Exclusion criteria

1. Ages <5 years and >12 years.
2. Children with any other ophthalmic anomaly (anterior or posterior segment) causing marked severe depression of binocular single vision.
3. Children with abnormal mental status.
4. Children with paralytic strabismus.
5. Children with cosmetic blemish other than strabismus.

2.3. Methodology

Human resource and ethical committee approval was obtained before the start of the study.

A scale comprising of 20 close ended statements, based on the adult strabismus questionnaire (AS-20) and a barrier questionnaire was validated. In the scale, statements were asked to the parents instead of the strabismic individual by changing the language. This scale had two subscales- psychosocial and functional scale. This scale also included a smaller questionnaire for barriers in delay of treatment of

strabismus.

An expert validation was done wherein medical educationists from the departments of Psychiatry, Community Medicine and Ophthalmology rated each question on the basis of Clarity and Relevance and gave their suggestions.

A construct validation was performed using factor analysis. Statements were modified according to the changes suggested by the expert validators and the final scale was prepared.

A barrier scale was formulated and was sent to a group of Pediatric Ophthalmologists for validation. Their inputs were incorporated while formulating the final scale.

Appropriate permissions for screening in urban and rural schools were taken. Oral and written consents were obtained from parents and child assent was taken as well.

Children aged 5-12 years were screened from rural and urban schools. Children screened had no other ophthalmic anomaly (anterior or posterior segment) causing marked severe depression of binocular single vision, abnormal mental status, paralytic strabismus or any other cosmetic blemish other than strabismus.

1. Tools and tests used for screening were as:

2. Visual Acuity for distance:

- a) Urban schools: Children in urban schools were assessed using Snellens Charts in English, Gujarati, and Hindi and LOGMAR chart
- b) Rural schools: Children in rural schools were assessed using Landolts Dot chart, Snellens Chart in Gujarati and the LOGMAR chart.

3. Cover tests were performed.

4. Hirschbergs corneal reflection test was performed.

5. Children with strabismus were called to the tertiary health centre for further evaluation and after detailed examination diagnosis of squint by an expert. Consents and child assent was taken from the parents for further evaluation. The strabismic children from urban and rural areas were classified on the basis of the following variables: gender of the child- Male and female, Age of the child -, Education level of the parents-was divided into low education level (upto 12th std) and high education level (graduation), type of strabismus divided into convergent and divergent strabismus, degree of squint- The squint was classified into mild(0-30PD), moderate(30-40PD) and severe(>40PD) on the basis of prism dioptres.

6. Parents of these children were served a validated questionnaire in a language they understand gathering answers. Parents in the rural group mostly included daily wage workers with lower literacy status, the researcher ensured that every question was well understood..

7. Scoring was based on the scoring of the AS 20 questionnaire, with "Never" scored as 100, "Rarely"

scored 75, "Sometimes" scored as 50, "Often" scored as 25 and "Always" scored as 0. The questions that were not answered were not included in the mean..

8. Parental proxies were used to assess the Psychosocial impact and Functional Impact of strabismus on the quality of life of the child.
9. The Psychosocial Scale assessed the social outlook towards strabismic children and how it affects their social life and interpersonal relationships.
10. . The functional scale assessed the difficulty faced by the child in doing day to day activities due to strabismic eyes.
11. Independent T tests were applied to compare attitudes of rural and urban parents between various parameters like residence of the child and gender of the child, degree of strabismus, age of child.
12. Mean scores were used to assess the quality of life, with higher mean scores pointing towards a better quality of life in the child and lower score depicting to worse quality of life in the child..
13. Barrier questionnaire and reasons for delay in treatment of squint was evaluated by frequency of responses given.

3. Results

Data was entered in MS Excel and analyzed using SPSS (Statistical Package for Social Sciences v.25 software) SPSS Inc, Chicago, IL, USA. Descriptive test was used to analyze the demographic data. $P < 0.05$ was kept significant as Confidence Interval of 95% was taken.

The age of the children was between 5-12 years. A total of 1747 children were screened from urban and rural schools and 43 students were found to have strabismus, the incidence being 2.46%. Out of these only 36 children followed up and their parents were handed a Scale and asked to grade it. 15 children among these were from urban schools (41.6%) and 21 were from rural schools (58.6%). 28 children were below age of 10 years (78%) and 8 were above the age of 10 years (22%). 21 were males (58.3%) and 15 were females (41.7%). 11 children had esotropia (30.5%) and 25 children has exotropia (69.4%). 12 children had mild squint (33.3%), 18 children had moderate squint (50%) and 6 children had severe squint (16.7%).

A 20 item scale was used that was based on the Adult Strabismus 25 Questionnaire along with a barrier questionnaire (Table 1), the language being changed. It was validated and it showed good internal consistency, reliability with all items correlating well with the subscale to which they belong (all $p < 0.01$) and all Cronbach's values as 0.8 except on items such as " I worry about what people think about my child's eyes", " People don't give my child opportunities because of my eyes", " My child finds it hard to initiate contact with people because of his/her eyes" and " my child complaints that his/her eyes feel strained." (Table 1)

This may be due to the subjectivity of the questions and the objectivity of the researcher in interpreting the replies of the questions and scaling them.

We evaluated response to each items of the scale and categorized them as per the AS-20 questionnaire. Since the scores were normally distributed, the mean scores in each question were compared between different categories (Gender, area, age of the child, degree of squint, type of deviation) using unpaired t-test. Continuous variables like questionnaire scores are expressed as mean with standard deviation. Total number of responses towards each item in the scale was noted. Mean score in psychosocial scale in urban areas was and in rural areas was 65.98 ± 31.19 and 59.56 ± 26.74 with p value 0.51. Mean score in functional scale in urban areas was and in rural areas was 77.63 ± 32.58 and 66.67 ± 31.66 with p value 0.31.

Frequencies of individual items in the scale in urban and rural areas with different parameters taken into consideration were compared (Table 4)

Psychosocial scale answers were as : Majority 53.3% (8) of the Parents in the urban areas were not concerned about what people would think about their child's eyes while 47.6%⁷ of the parents in the rural areas responded with " Sometimes". 46.6%⁸ of parents in the urban areas responded that they did not think that people noticed their child's eyes even when they were not saying anything whereas 33.3%⁸ responded "Rarely".

53.3%⁹ in urban areas did not feel uncomfortable when people were looking at their child's eye or did not wonder what people may think when their looking at their child's eyes while 38.09% (8) in rural areas, did not answer if they felt uncomfortable when people were looking at their child's eyes and "Sometimes" wondered what other people were thinking when they were looking at their child's eyes. 40% (6) of the parents in the urban areas while 42.8%¹⁰ in rural areas did not answer when asked whether people give their child less opportunities because of his/her eyes. 46.6%⁸ parents in urban areas while 42.8%¹⁰ parents in rural areas did not respond when asked if they feel conscious about their child's eyes. 38%⁹ of parents in rural areas responded with "Sometimes" and 60%¹⁰ parents in urban areas responded with "Never" when asked if they feel people avoid looking at their child because of his/her eyes. 60%¹⁰ of parents in urban areas responded with " Never" when asked if their child feels inferior to others because of his/her eyes while 33.3%⁸ parents did not respond to this question. 66.6%⁷ of urban parents responded with " Never" when asked if they feel that people react differently to their child because of his/her eyes while 38.09%⁹ of rural parents responded with "Rarely".

73.3%¹¹ of parents in urban areas felt that their child does not find it hard to interact with people while 52.3%¹¹ of parents in rural areas responded " Sometimes".

Table 1: Validated attitude and barrier scale

| Pediatric strabismus scale | | Never | Rarely | Sometimes | Often | Always |
|-----------------------------------|---|--------------|---------------|------------------|--------------|---------------|
| Psychosocial scale: | | | | | | |
| 1) | I worry about what people will think about my child's eyes | | | | | |
| 2) | I feel that people are thinking about my child's eyes even when they don't say anything | | | | | |
| 3) | I feel uncomfortable when people are looking at my child because of his/her eyes | | | | | |
| 4) | I wonder what people are thinking when they are looking at my child because of his/her eyes | | | | | |
| 5) | I feel people don't give my child opportunities because of his/her eyes | | | | | |
| 6) | I feel conscious about my child's eyes | | | | | |
| 7) | I feel people avoid looking at my child because of his/her eyes | | | | | |
| 8) | I feel my child feels inferior to others because of his/her eyes | | | | | |
| 9) | I feel that people react differently to my child because of his/her eyes | | | | | |
| 10) | My child finds it hard to interact with people | | | | | |
| Functional scale: | | | | | | |
| 1) | My child covers/closes one eye to see things better | | | | | |
| 2) | My child avoids reading because of his/her eyes | | | | | |
| 3) | My child stops doing things because his/her eyes make it difficult to concentrate | | | | | |
| 4) | My child has difficulty in climbing down stairs | | | | | |
| 5) | My child feels his eyes are strained | | | | | |
| 6) | My child has problems reading because of his/her eye condition | | | | | |
| 7) | My child feels stressed because of his/her eyes | | | | | |
| 8) | I worry about my child's eyes | | | | | |
| 9) | My child cannot enjoy hobbies because of his/her eyes | | | | | |
| 10) | My child needs to take frequent breaks while reading because of his/her eyes | | | | | |
| a) | was not aware of it being a treatable medical condition | | | | | |
| b) | I was told that it would resolve on its own | | | | | |
| c) | I was not able to afford the cost of the treatment | | | | | |
| d) | There was no facility available in my village/ town/ city | | | | | |
| e) | I was afraid of social judgement | | | | | |
| f) | feared that surgery would worsen my child's condition | | | | | |
| g) | My child was not fit for surgery due to other health conditions | | | | | |
| h) | Ignorance of the treating doctor regarding the treatment | | | | | |
| i) | Any Other | | | | | |
| | If yes, mention the reason(s): | | | | | |

Table 2: Cronbach’s alpha for the two subscales

| S No. | Item | Correlation | Cronbach’s Alpha | Intra-class coefficient |
|-------|-----------------------------|-------------|------------------|-------------------------|
| 1 | Psychosocial Subscale Score | 0.949 | 0.977 | 0.962 |
| 2 | Functional sub-scale | 0.966 | 0.991 | 0.953 |
| 3 | Overall AS-20 score | 0.971 | 0.971 | 0.957 |

Table 3: Frequency and the most common response invarious parameters in rural area and urban area

| | Gender (M/F) | Education of parent(<12 th std/ >12 th std) | Age of child (5-8yrs/9-12 yrs) | Type of squint (eso/exo) | Degree of squint (mild/mod-sev) |
|------------------------------|---------------|---|--------------------------------|--------------------------|---------------------------------|
| Psychosocial Subscale | | | | | |
| 1 | 5(100)/3(100) | 3(100)/5(100) | 6(100)/4(100) | 1(50)/7(100) | 7(100)/3(50) |
| 2 | 4(100)/3(100) | 2(100)/4(100) | 4(100)/4(100) | 1(50)/6(100) | 6(50)/3(50) |
| 3 | 5(100)/3(100) | 2(100)/5(100) | 5(100)/4(100) | 2(NA)/6(100) | 6(50)/3(50) |
| 4 | 4(100)/4(100) | 2(100)/5(100) | 5(100)/3(100) | 1(100)/5(100) | 7(0)/3(75) |
| 5 | 4(NA)/2(100) | 2(NA)/5(100) | 6(NA)/4(100) | 2(NA)/5(100) | 7(0)/4(NA) |
| 6 | 5(NA)/2(100) | 2(NA)/4(100) | 6(NA)/3(100) | 2(NA)/5(100) | 5(100)/5(NA) |
| 7 | 4(100)/4(100) | 3(100)/4(100) | 5(100)/4(100) | 1(100)/6(100) | 6(50)/3(100) |
| 8 | 5(NA)/2(100) | 2(NA)/4(100) | 8(NA)/3(100) | 2(NA)/7(100) | 6(50)/3(100) |
| 9 | 5(100)/4(100) | 3(100)/5(100) | 4(100)/3(100) | 1(100)/7(100) | 6(50)/4(100) |
| 10 | 6(100)/4(100) | 2(100)/4(100) | 5(100)/4(100) | 1(100)/8(100) | 6(50)/5(NA) |
| Functional Subscale | | | | | |
| 1 | 7/3 | 2/4 | 4/4 | 2-0/8 | /5-100 |
| 2 | 7/4 | 2-NA/6 | 5-NA/4 | 3-NA/8 | /3-100 |
| 3 | 7/4 | 2-100/5 | 4-100/4 | 1-100/7 | /4-NA |
| 4 | 7/4 | 3/4 | 4/4 | 2-25/8 | /5-100 |
| 5 | 7/3 | 3/5 | 5/4 | 2-NA/7 | /5 |
| 6 | 5/3 | 2-NA/4 | 5-NA/4 | 3/8 | /5 |
| 7 | 7/3 | 2-100/5 | 4/4 | 3/7 | /5 |
| 8 | 6/3 | 2-/4 | 4/5 | 2-0/8 | /4-NA |
| 9 | 6/3-100 | 3/4 | 5/4 | 3-NA/6 | /4 |
| 10 | 5/3-NA | 2-NA/5 | 7-NA/3 | 3NA/7 | /4 |

Functional scale: 66.6%⁷ of parents in urban areas and 47.6%⁷ of parents in rural areas responded with “ Never” when asked if their child closes one eye to see better. 66.6%¹² parents from rural areas did not respond when asked if their child avoids reading because of his/her eyes while 53.3%⁹ parents from urban areas responded with “Never”. 73.3%¹¹ urban parents and 38%⁹ rural parents responded with “ Never” when asked if their child stops doing things because his/her eyes make it difficult to concentrate and if their child has difficulty in climbing down stairs. 60%¹⁰ parents from urban areas and 38%⁹ from rural areas responded with “Never “when asked if their child’s eyes are strained. 57.1%¹³ of parents from rural areas did not respond to when asked if their child has any reading problems because of his/her eyes while 53.3%⁹ parents from urban areas answered “ Never” when asked the same. 66.6%⁷ urban parents and 38%(8) rural parents responded with “ Never” when asked if their child feels stressed because of his/her eyes. 42.8%¹⁰ rural parents responded that they “ Sometimes” worry about their child’s eyes while 60%¹⁰ urban parents responded that the “ Never” worry about their child’s eyes. 61.9%¹⁴ rural parents did

not respond when asked if their child is unable to enjoy hobbies because of his/her eyes while 60%¹⁰ parents from urban areas responded with “ Never”. 46.6%⁸ parents from urban areas responded with “ Never” when asked if their child need to take frequent breaks while reading because of his/her eyes while 40%⁶ parents from urban areas and 61.9%¹⁴ from rural areas did not respond to this question.

For the barrier questionnaire, the following were most common answers: Almost all the participants (100%) replied that they were unaware that the condition was treatable. 52.8% replied that their treating general practitioner doctor told them that it does not need any treatment. 50% said that they feared surgery could worsen the condition. 47.2% replied that there was no facility available in their town/city/village. 41.7% replied that they feared social judgement, and they could not afford the treatment. 38.9% parents replied that they were told it would resolve on its own. 16.6% people replied that they were not allowed to take treatment because elders in the family refused to do so as it was culturally unacceptable. 13.8% replied that they were unsure that treatment would have any benefit. Very few parents, around 2.8% said that their child

Table 4: Frequency and the most common response in various parameters in rural area

| | Gender (M/F) | Education of parent | Age of child | Type of squint | Degree of squint |
|------------------------------|--------------|---------------------|---------------|----------------|------------------|
| Psychosocial Subscale | | | | | |
| 1 | 4(50)/5(50) | 11(50) | 5(50)/3(50) | 3(50)/7(50) | 2(50)/6(50) |
| 2 | 4(50)/3(25) | 8(50) | 3(50)/3(50) | 5(75)/5(50) | 2(50)/4(50) |
| 3 | 5(50)/3(50) | 8(NA) | 5(NA)/3(50) | 3(75)/6(NA) | 2(NA)/5(NA) |
| 4 | 3(75)/4(50) | 10(50) | 5(50)/2(75) | 3(75)/4(75) | 2(75)/5(50) |
| 5 | 3(NA)/3(NA) | 9(NA) | 5(NA)/3(75) | 3(75)/6(NA) | 2(NA)/5(50) |
| 6 | 3(75)/3(NA) | 9(NA) | 5(NA)/2(75) | 4(50)/6(NA) | 2(NA)/5(NA) |
| 7 | 4(75)/4(50) | 9(50) | 4(50)/3(50) | 4(50)/5(75) | 2(75)/5(50) |
| 8 | 3(75)/3(25) | 5(75) | 4(NA)/3(75) | 4(50)/5(50) | 2(NA)/4(25) |
| 9 | 4(50)/3(50) | 9(75) | 5(50)/3(75) | 5(50)/4(25) | 2(75)/5(75) |
| 10 | 3(50)/4(50) | 10(50) | 5(50)/3(75) | 5(50)/6(50) | 2(100)/6(50) |
| Functional Subscale | | | | | |
| 1 | 5(50)/4(100) | 10(100) | 4(100)/2(100) | 4(100)/6(100) | 2(100)/5(100) |
| 2 | 5(50)/5(50) | 14(NA) | 8(NA)/4(50) | 5(NA)/9(NA) | 2(NA)/7(NA) |
| 3 | 3(100)/3(50) | 8(100) | 4(100)/3(50) | 4(100)/5(100) | 1(100)/4(50) |
| 4 | 3(50)/4(50) | 9(50) | 4(100)/3(50) | 4(100)/6(100) | 2(100)/5(75) |
| 5 | 3(100)/4(50) | 8(100) | 3(100)/3(50) | 5(100)/4(100) | 1(100)/4(100) |
| 6 | 4(NA)/4(50) | 11(NA) | 7(NA)/4(50) | 4(NA)/8(NA) | 2(NA)/6(NA) |
| 7 | 3(100)/3(50) | 9(100) | 3(100)/3(50) | 4(100)/4(100) | 1(100)/4(50) |
| 8 | 4(100)/5(50) | 9(50) | 5(50)/3(50) | 4(100)/5(50) | 2(75)/5(50) |
| 9 | 5(NA)/4(NA) | 13(NA) | 8(NA)/3(25) | 4(NA)/9(NA) | 2(NA)/7(NA) |
| 10 | 5(NA)/4(NA) | 13(NA) | 8(NA)/3(50) | 4(NA)/9(NA) | 2(NA)/7(NA) |

was not fit for surgery.

4. Discussion

In the 10 items on psychosocial scale were being evaluated, the researcher did not get any responses for items 3, 5, 6 and 8. These items evaluated questions which were difficult to answer, inadequately answered or not answered at all and so were marked as 'no response'. This may be due to the inability of the parents in both, urban and rural areas to notice these subtle signs exhibited by their children. As a result they couldn't provide appropriate responses for the said items. Significance was seen between mild and moderate to severe squint in rural population in comparison to urban population in Items 1, 2 and 4 as more people from the rural area were bothered about the amount of deviation in rural areas. Higher the degree of squint, lower was the quality of life. Significance was seen between age groups (5-8) years and (9-12) years in rural population in comparison to urban population in Item 3 indicating higher quality of life in the age group (5-8) years in rural population.

In the 10 items on functional scale were being evaluated, the researcher did not get any responses for items 12, 16, 19 and 20 respectively. These items evaluated questions which were difficult to answer, inadequately answered or not answered at all and were marked as 'no response'. This may be due to the fact that some of the items (16, 18) were not answered by parents of certain children owing to their low age group (5 to 8 years). Also, some questions (19, 20)

could not be fully deciphered by the parents from rural areas owing to their limited understanding and literacy. Also, external beauty in rural areas is not considered a disability to warrant immediate correction. As a result they couldn't provide appropriate responses for the said items. Statistical significance was seen between exotropia and esotropia in the Item 11,13 and 14 in the urban population as compared to rural and in Item 16,19 and 20 in rural area as compared to the urban population indicating that exotropic children had more functional difficulties irrespective of urban and rural population depending on the type of activity done. As from the above results, we can observe that the variables like gender, type of squint, degree of squint, age of the child are not significant in determining the negative attitude towards squint. In a study by Kothari et al.,¹¹ it was reported that there was a significant negative psychosocial and emotional impact of childhood strabismus that was not affected by rural or urban location of the family. Kothari et al.,¹¹ also reported that there was no significant difference between genders. In another study conducted by Sah et al.,¹³ there was no significant difference between the mean scores of male or female in the psychosocial scale of the AS 20. In Sah et al.,¹³ it was reported that people with convergent squint faced more psychosocial difficulties^{6,8} than those with divergent squint. Although there are few studies^{7,9,10} reporting that there is no difference in how the society perceives divergent or convergent squint, there are a few studies¹¹ that report that divergent squint is perceived more negatively than convergent squint and that convergent squint

in some cultures have also been perceived positively and have been associated with beauty.¹³ Thus there is an overall variation in the results of various studies and a consensus for the same has not been arrived as of yet. Durnian et al., reported in their study that people with large angle strabismus had difficulty in gaining employment. Glassman et al.,¹² reported that there was a close relationship between deviation size and the AS-20 score with higher score relating to smaller angle of deviation.

Analysing the responses to the barrier questionnaire, Sathyan et al.,¹⁵ in their study in 2017 reported that majority 32% of the people did not get treatment because of ignorance among them that it is a treatable condition. In another study by Coats et al.¹⁶ in 2005 stated that 11% patients did not know that it was a treatable condition and had never sought care. 4% people in a study conducted by Sathyan et al.,¹⁵ claimed that the primary care doctors did not advice treatment. Around 6% in a study conducted by Coats et al.¹⁶ said that they were told that surgery could worsen their condition. Sathyan et al.,¹⁵ in their study in 2017 observed that about 6% opined that they were not sure if surgery would help them and 12% did not take treatment due to fear of surgery. 12% of the people in the study conducted by Sathyan et al.,¹⁵ stated that they did not take treatment due to economic reasons. This despite the fact that most of these treatments are free of cost in a government setup.

5. Conclusion

This study conducted in urban and rural schools to assess attitude of parents towards squint in their children taking into consideration variables like gender of the child, age of the child, type of deviation, degree of deviation and education of the parent reveals that social stigma associated with squint is not dependent on one variable alone but on an amalgamation of multiple variables.

Parents were made aware in schools regarding squint and the consequences on the child's life in terms of functional difficulty that would cause difficulty in job prospects, marital prospects; and in terms of cosmetic difficulty that would cause anxiety, social avoidance and depression.

Burden of ocular morbidity was decreased in children who have more years to live so that in their adulthood, these social and functional problems that can be avoided do not hamper their success.

Barriers highlighted were as, majority of the people were not aware of it being a treatable medical condition, others reasons included the ignorance of their general practitioner doctor, fear of surgery worsening the condition, no facility available in their town/village/city, fear of social judgement, resolution on its own, culturally unacceptable. We could study barriers to the delay in treatment of squint so that strategy could be made by govt/ institution in order to tackle it and reduce ocular morbidity.

According to the available literature, there is only one study in India that measures Quality of life in children and it only involves comparison of urban and rural populations. In our present study we have included other factors such as type of deviation, degree of squint, gender and education level of the parent that we have included here.

It has been conducted in the age group of 5-12 years, as this is the age for the "sensitive period" during which binocular single vision develops and early detection and treatment can help improve the Quality of life further on in adulthood.

A few limitations of the study were as: as the study was restricted to two urban and two rural schools who permitted for screening, the sample size was small. Being a Likert, all the responses could not be categorized into the 5 responses. Bias may have been introduced in responses of the parents who were illiterate and the interviewer had to assume a response. Also, in a country like India where there are vast differences among rural and urban populations, this scale may not be useful. The development of a strabismus specific item scale is very important primarily to assess success and failure of service delivery in a clinical setting and also to identify those patients that may require treatment and counselling. This study helps us to fill out the lacunae in our health care delivery system.

6. Source of Funding

None.

7. Conflict of Interest

The authors declare that there is no conflict of interest.

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