

Original Research Article

Knowledge and attitude towards strabismus among parents of Saudi children with strabismus

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ABSTRACT

Background: For early detection and timely management of strabismus in children, parent's cooperation is essential. It depends upon their level of awareness. The objective was to describe the determinants and the level of knowledge and attitude towards strabismus among parents of children with strabismus in Saudi Arabia.

Methods: This cross-sectional study was conducted in 2018 at a hospital in Qaseem, Saudi Arabia. Consented parents of children with strabismus presenting to Qaseem University eye clinic were interviewed. Data were anonymously collected on participant demographics and the child's strabismus. The survey interview consisted of 8 questions related to signs, symptoms, and management of strabismus. Three questions related to the attitude towards strabismus among parents/caregivers. Two separate questions queried the source of knowledge and possible barriers, respectively.

Results: Each parent of 81 children was interviewed. An excellent level of knowledge of strabismus was noted for 41 participants (50.6% at 95%CI 39.7-61.5). A positive attitude towards strabismus was noted in 57 participants (70.4% at 95% CI 60.4-80.3). No history of surgery was statistically associated to an excellent level of knowledge ($P < 0.001$). Gender ($P = 0.7$), age ($P = 0.7$), father's education ($P = 0.3$), mother's education ($P = 0.5$), type of strabismus ($P = 0.8$) were not associated with the level of knowledge. High cost (43.2%) and false beliefs (53.1%) were the main barriers to medical consultations.

Conclusions: Parents of children with strabismus presenting to a tertiary care eye hospital had good knowledge about the signs, symptoms and management of strabismus. Addressing barriers perceived by parents may improve early presentation rates of children with strabismus allowing timely management.

Keywords: Attitude, Barriers, Childhood blindness, Knowledge, Strabismus

INTRODUCTION

Strabismus is a known risk factor for amblyopia in children.^{1,2} Therefore, intervention at an early age is imperative to ensure optimal visual function.³ The cooperation of parent of children with strabismus is vital for timely intervention.⁴ Parental knowledge and attitude of eye diseases in their ward has been associated to increased uptake of treatment of the disease as advised by eye professionals.⁵ Therefore, educating parents about

strabismus can be a strategy to address barriers to timely management of this condition.⁶

The prevalence of strabismus in preschool children in Riyadh is as low as 0.5%.⁷ In the Qassim region of Saudi Arabia, the prevalence of amblyopia in primary school children was 3.9% and nearly 5% of these children had strabismus as the underlying cause.⁸ Thus, in a population of 17 million children aged less than 5 years in Saudi Arabia, there could be 8,600 children with strabismus.⁹

Thus among 85,000 children less than 5 years old in the Qassim region, there could be 450 children with strabismus that need management before they begin school. For early detection and timely management, their parents should play an active role.

A previous study from India reported the level of knowledge and attitude towards strabismus of parents with children who have strabismus.⁶ To the best of our knowledge, no such study has been published of an Arab population. Author presented the level and determinants of knowledge about and attitude towards strabismus for parents with children with strabismus being treated at a Qassim University Hospital, Qassim, Saudi Arabia. Author also studied their perception about possible barriers and their source of information about strabismus.

METHODS

This cross-sectional study was performed between March 2018 to August 2018 after approval of the 'Ethical and Research Committee' of Qassim University. The study was undertaken in eye clinic of Qaseem University Hospital, Qaseem, Saudi Arabia. Informed written consent was obtained from the parents for participation in the study. Author assumed that the level of knowledge regarding signs and symptoms was 97%, to achieve 95% confidence interval (CI) and 5% acceptable error margin and a design effect of 1.5, 80 parents had to be interviewed for this study. Author used open epi software to calculate sample size.^{6,10}

Two doctors were the field investigators who were trained on the standard method of taking consent, recruiting one of the parents of each child with strabismus visiting the institution, collecting data and documenting the information. Data were collected on patient demographics including age, gender, marital status, location of residence of the participants, number of children and those with similar eye problem. The details of child's strabismus included type, degree of deviation, number of strabismus surgeries in past, treatment by Botulin injection and siblings with similar types of strabismus.

The interview survey consisted of 7 questions to determine the level of knowledge of the participant regarding their child's strabismus. The questions assessed the impact of strabismus, mode of management, causes for parent to seek a medical consultation, cause for surgical treatment, cause of strabismus, signs and symptoms of strabismus and ideal age for treating strabismus. There were three questions related to attitude of parents towards their child's strabismus. They covered changes in their attitude towards their child, seeking medical advice and advising other parents with a child with strabismus. One question was related to parent perceived barriers for seeking eye care for a child with strabismus in the kingdom. Participants were also queried about adequacy of the knowledge they had about

strabismus and source of information. The questionnaire was translated in Arabic language and then reverse translated in English language. It was piloted on five Saudi educated care takers. A part of our questionnaire was used in a study in India.⁶

The data were collected on a pretested data collection form. An investigator noted the responses of the participants. The data were transferred to an Excel spreadsheet (Microsoft Corp., Redmond, WA, USA). The spreadsheet was checked for data entry errors and then the information was transferred to statistical package for social studies spreadsheet (IBM Corp., Armonk, NY, USA) for statistical analysis. Grading for the survey was as follows, a correct answer yielded 5 points to each of 7 knowledge related questions, 2.5 points for a partially correct answer and 0 points for an incorrect answer. The overall grade was grouped as: 'excellent' level of knowledge if it was >22 points, 'good' if it was 11-22, 'less than desired' if it was <11. The attitude was graded as positive and negative based on the sum of three attitude related questions. The level of excellent knowledge, positive attitude of parents was presented as a number, percentage and 95% CI. Excellent grade of knowledge was evaluated for an association to the demographic determinants and subgroups of strabismus. To validate the association, a 2x2 table and estimated a two-sided P value for the odds ratio were calculated. For variables greater than 2, the Chi-square value, degree of freedom and two-sided P value were calculated. $P < 0.05$ was considered statistically significant.

RESULTS

Author interviewed one parent of 81 children with strabismus including 24 (29.6%) fathers and 57 (70.4%) mothers. The mean±SD age of the participants was 33.5±8.6 years. The majority (73, 90.1%) were residents of Qaseem, Saudi Arabia while the rest were from northern region of Saudi Arabia. Seventy-four (91.4%) of participating parents were married and the rest were divorced/widowed. Only 8 (10%) had an occupation related to medicine. Sixty-three (77.8%) fathers and 47 (58%) mothers had college or higher education. Median number of children in a family was 2 (Interquartile range 2, 4). Fourteen (17.3%) participants had one more child in the family with a similar type of strabismus. The profile of strabismus among the children is presented in Table 1. Nearly 75% of children had esotropia. The majority of children had no previous history of surgery for strabismus.

An excellent level of knowledge regarding strabismus was noted in 41 parents (50.6% (95% CI from 39.7 - 61.5)). A positive attitude was noted in 57 participating parents (74.0% (95% CI from 60.4-80.3)). Table 2 presents the level of knowledge as associated to determinants. No previous surgery to manage strabismus was associated to an excellent level of knowledge among parents ($P < 0.001$).

Table 1: Strabismus-related characteristics of the investigated children.

Strabismus-related items	Details	n	%
Type of strabismus	Esotropia	59	72.8
	Exotropia	16	19.8
	Vertical strabismus	6	7.4
Other sibling with similar type of strabismus	Yes	14	17.3
	No	67	82.7
Severity of strabismus	<10 degree	1	1.2
	10 to 45 degree	9	11.1
	>45 degree	1	1.2
	Don't know	70	86.4
Number of surgeries performed in the past	1	10	12.3
	2	4	4.9
	≥3	0	0.0
	None	67	82.7
Treatment by Botulin injection in the past	Yes	11	13.6
	No	66	81.5
	I don't know	4	4.9

Data shown are frequencies: n and %

Table 2: Knowledge regarding strabismus and its determinants among interviewed parent of children with strabismus.

Demographic and ocular variables		Excellent grade of knowledge (n = 41)	Less than desired knowledge (n = 40)	Validation
Age, years		33.1±7.6	33.8±9.6	P=0.7
		n (%)	n (%)	
Gender	Male/Female	13 (54.2)/28 (49.1)	11 (45.8)/29 (50.9)	P=0.68
Fathers education	≥College/≤School	30 (73.2)/11 (26.8)	33 (82.5)/7 (17.5)	P=0.32
Mothers education	≥College/≤School	25 (61.0)/16 (39.0)	22 (55)/18 (45)	P=0.5
Marital status	Married/Divorced	39 (95.1)/2 (4.9)	35 (87.5)/5 (12.5)	P=0.26
Number of siblings	1-2	22 (53.7)	20 (50)	P=0.6
	3-4	15 (36.6)	11 (27.5)	
	≥5	4 (9.8)	6 (15)	
Kids with strabismus	No/Yes	36 (87.8)/5 (12.2)	30 (75)/10 (25)	P=0.15
Type of strabismus	Eso	29 (70.7)	30 (75)	P=0.8
	Exo	10 (24.4)	6 (15)	
	Vertical	2 (4.9)	4 (10)	
Past surgeries	None/≥1	40 (97.6)/1 (2.4)	27 (67.5)/13 (32.5)	P<0.001

P<0.05 is statistically significant

Data shown are mean±SD, frequencies; n (%) and p values

The level of knowledge regarding different aspect of strabismus was analyzed. An excellent grade of knowledge regarding epidemiology and presentation was noted for 44 participants (54.3% (95% CI from 43.5-65.2)). The excellent grade of knowledge regarding strabismus management was noted in 54 participants (66.7% (95% CI from 56.4-76.9)). Participants perceived the main barrier as the high cost of treatment (n = 35, 43.2%) and the second most common was false beliefs (n=43, 53.1%) and fear for surgery (n=3, 3.7%). Fifty-five participants (67.9%) felt that their level of knowledge regarding strabismus was insufficient. Among

26 participants who perceived they did not have enough knowledge, 24 (92.3%) gained information from doctors and health staff. Seventeen (65.4%) participants used the internet to gain information, whereas, 6 (23%) gained knowledge while interacting with health staff as another child had strabismus.

DISCUSSION

This is perhaps the first study in the middle-east countries to evaluate the level of knowledge and attitude of parents of children with strabismus. The study area was semi-

urban and reflects the situation of rural as well as urban populations of the kingdom in relation to resources available. The data from this study present an assessment of the health status, culture and traditions among an Arab population affecting the attitude of caregivers towards a child with strabismus. The areas of strength and weakness documented in the current study regarding knowledge, barriers to seeking care could be used to improve the health promotion activities and improve the care of children with strabismus.

In the current study, only half of targeted Saudi parents of children with strabismus had an excellent level of knowledge regarding the different aspects of strabismus. Seventy-five percent of the parents had a positive attitude towards timely consultation and management of strabismus for their child. Past surgery for strabismus in a child was negatively associated to knowledge regarding strabismus among parents.

In the current study, half the participants had an excellent level of knowledge about different aspects of strabismus. This was lower than that reported in a study carried out in Delhi, India and focused on parents among army officers.⁶ The differences in the level of knowledge between studies could be due to different study populations, differing levels of education and access to knowledge in a suitable language through internet and media. A study on university students reported that there is a lack of adequate technical and published materials in Arabic. This highlights the challenge of Arabic native speaker sourcing health related information.¹¹ Previous studies have documented a less than desired level of knowledge among parents regarding more serious issues like obesity and eye cancer in their ward.^{12,13} In addition to one-on-one counseling of parents with strabismus, provision of relevant sources to seek knowledge on strabismus is recommended to improve the level of knowledge among caregivers of children with strabismus.¹⁴

Among the participants, the level of knowledge was uniformly low, whether it was related to epidemiology, presentation or mode of management. This was a bit unusual. When a child suffers from health ailment that needs management including surgery, parents are concerned and collect information on treatment and are often given information during surgical consultation. The level of knowledge among parents of children that were surgically managed in the past was poorer than novice cases of strabismus seeking treatment. Perhaps the ophthalmic surgeons might be interacting differently with parents than those treating a child with strabismus medically and optically.¹⁵

The present study also showed that a large proportion of parents had a positive attitude regarding management of strabismus of their children. Culture and religion are pillars for developing attitude for seeking healthcare.¹⁶ Old age and female gender have been noted to influence

health-seeking behavior.¹⁷ More mothers in this study could have resulted in a higher proportion of positive attitude for management of strabismus. The level of knowledge and positive attitude towards strabismus in the interviewed parents is encouraging. However, author recommend initiatives aimed at promoting health education and discussion with parents regarding more avenues for knowledge about strabismus. These initiatives may result in parents seeking earlier (and more timely) intervention for their children. The attitude of the Muslim community has changed considerably compared to that reported by Bihakim HM et al.¹⁸ This could be the impact of the internet and changing therapeutics trends in Gulf countries.¹⁹

Client perceived barriers are important to note for improving care for the underprivileged and needy patients. Three main barriers were reported in the present study including high cost, myths and fear from surgery need to be addressed to improve timely and standard management of strabismus. As such, eye care services in the kingdom are free of cost at government hospitals. Changing healthcare in Saudi Arabia to incorporated private clinics and expanding scope of health insurance coverage could address this issue.²⁰ Myths regarding strabismus need to be addressed for improving the uptake of standard management and thus prevent amblyopia.²¹

CONCLUSION

Although in half of parents had excellent grade of knowledge about strabismus, there is scope and need to improve the level of awareness about strabismus among parents of children with strabismus. The parents of children with strabismus undergoing surgery need to be educated more about causes, management and lifetime monitoring of their children's status. The health education package needs to be formulated to address weakness about newer modalities of strabismus treatment. More details were required on how parents dealt with a child with strabismus and how they got impacted by his case. The causal link, knowledge, attitude and barriers found in the present study should be interpreted with caution.

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