

ORIGINAL ARTICLE

Knowledge and Awareness of Children Eye Care Among Parents In Malaysia

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ABSTRACT

Introduction: Children rarely complain about their vision, therefore rely on parents' knowledge and awareness for early detection and management of their ocular problems. Parents' knowledge and awareness may influence their eye-care seeking behaviour, which in turn helps to reduce the prevalence of childhood eye problems. Therefore, this study aimed to investigate knowledge and awareness about childhood eye problems and eye care seeking behaviour among parents in Malaysia. **Methods:** A cross-sectional study was conducted on parents with either typically developing (TD group) or special needs children (SN group) in Malaysia. Data were collected using a self-administered, validated bilingual questionnaire using Google Form distributed through social medias and associations via purposive sampling. **Results:** A total of 173 respondents (74 in SN group; 99 in TD group) aged between 20 to 50 years old participated in the study. Participants had the highest and the least knowledge about refractive error and strabismus respectively with social medias been the main source of information. Overall knowledge and attitude scores were significantly higher in SN group compared to TD group ($p < 0.05$). Level of awareness was high for common symptoms and eye problems with no group differences observed. **Conclusion:** Misconception and low awareness are still an issue for less common eye conditions. The use of social medias in educating the public about these is recommended as this is the most preferred source of information. This study provides useful insight about parents in Malaysia with regards to children eye care including recommendations for future preventive measures.

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INTRODUCTION

World Health Organization (WHO) defines childhood blindness as a severe visual impairment or blindness that occurs during childhood or early adolescence (1). It was estimated that the prevalence of childhood blindness is 1.14 million worldwide with majority of these were reported from low-middle income countries (2). Although the causes of childhood blindness vary worldwide, more than 75% of the causes are reported to be avoidable in low-income countries such as corneal scarring caused by vitamin A deficiency, measles infection, and the use of harmful traditional remedies (3). In Malaysia as a middle-income country, it has been reported that the avoidable causes constitute 50.5% of

the overall causes of childhood blindness, with cataract and uncorrected refractive errors are the main causes of childhood blindness and visual impairment respectively (4-7). In contrast, the percentage of avoidable causes of childhood blindness is almost negligible in high income countries due to effective preventive measures and a higher level of knowledge and awareness among the public (6).

Early detection of eye problems is particularly important in children because untreated eye problems can interfere with the development of part of the brain that is responsible for vision, called occipital cortex (8). Without adequate stimulation, the development of occipital cortex fails to complete causing a condition called amblyopia, whereby the child's vision is unable to reach a minimum level required to see clearly. In addition, impaired visual skills that result from untreated eye problems have been shown to have a negative impact on children academic achievement as well

as their daily routines, since 80% of their learning in school is occurring through vision (9-11). However, early detection can greatly improve the prognosis of eye problems in children due to the plasticity of the brain during childhood age (8).

Children are less likely to express if they cannot see things, therefore rely on their parents' ability to recognise the risks, signs and unreported symptoms for early detection of eye problems (6, 12). According to WHO, the first aim in primary health care strategy is to do health promotion to provide knowledge to relevant stakeholders, which in this case are the parents or caregivers (13). Therefore, educating the parents about childhood eye problems is important to encourage early detection of the conditions, which in turn helps reducing the rate of avoidable blindness in children (14). Research have shown a strong link between good parental knowledge and positive health seeking behaviour as well as compliance towards the treatment given to their children (6, 8, 15). This suggests that parental knowledge does not only aid with early detection of the diseases, but also contributes to the success of the treatment.

Parental knowledge on childhood eye problems has been reported in several countries with different economic status and cultures; these two are among the factors that may influence level of health-related knowledge and health seeking behaviour (16). Aseefa et al (17) reported that the overall level of knowledge among parents in Ethiopia on the causes, prevention and treatment options of childhood blindness was considered low; with only one-third of the respondents had good level of knowledge. On the other hand, a study in an urban area in Nigeria reported that parents had a high level of knowledge and awareness about cataract and red eye, which was however lower for amblyopia (18). Moreover, they also reported that most of the respondents had a misconception that strabismus is a self-limiting condition and a stigma that children should not be wearing glasses at the young age. This can be explained by a trend where most of the respondents tend to seek advice from the elders in the community rather than health professionals, hence receiving false information. Another study in different city in Nigeria also reported that less than one-third of their respondents claimed to have knowledge about eye care with television was the main source of information among the community (19). Additionally, the respondents were also unaware about the importance of regular eye examination in children therefore reported to only bring their child for an eye check-up if the child complained or in the case of accident or trauma.

A study in rural areas in south India also reported similar findings with regards to strabismus, where the parents had a misconception that this condition will not affect vision and that it is a sign of good luck (20). Similar

findings were also reported in other studies among low educated respondents (21) and urban areas in India (14). Studies in both rural (20) and urban areas of India (14) also found that the community have a stigma on spectacle wear in children similar to that reported in Nigeria (18) and would prefer traditional healers to health professionals when seeking for advice. In contrast to Ebeigbe and Emedike (18), hordeolum and red eye were among the most common conditions that the respondents were aware of in rural areas of India (20), while refractive errors, squint, cataract and conjunctivitis were the top four conditions that respondents in urban areas of the country were aware of (14).

In Saudi Arabia, strabismus has been reported to be less known (reflected by lowest knowledge score) as compared to red eye and cataract although the overall score of knowledge for all conditions was considered sufficient (slightly more than median score) (12). In addition, parents in Saudi were also reported to have a positive attitude towards spectacle wear in children (12, 22). However, majority of the respondents were not aware on the importance of regular eye check-up in children, therefore did not take their child for an eye examination unless there was a complaint (12, 22, 23).

Various factors might have influenced parental knowledge and awareness on childhood eye problems in different regions and countries. However, this is currently understudied among parents in Malaysia. Considering the crucial role of parents in early detection of childhood eye problems, this study aimed to investigate the level of knowledge and awareness as well as eye care seeking behaviour among parents in Malaysia. This study included both parents of typically developing (TD) children, as well as special needs (SN) children; early detection is particularly important in the latter due to a higher prevalence of eye problems and a possible lower verbal ability in this group. The findings from this study would provide useful insight to help practitioners and relevant authorities in planning for health education initiatives, as a step towards reducing the prevalence of childhood eye problems and avoidable blindness in Malaysia.

MATERIALS AND METHODS

Study design and sample

This study was a cross-sectional study conducted online between January to November 2021. Participants were recruited via purposive sampling with specific inclusion criteria; all were parents or carers to children aged from six months to 12 years who have been living with the children for at least six months. The parents were grouped into two, one group for parents with SN child and another for parents with TD child. For group of parents with SN child, they must have at least one child with a formal diagnosis of either dyslexia, autism or Down syndrome. Only these three groups of SN children

were included in the study, as they were easier to reach by the research team and have an active association in Malaysia. On the other hand, for group of parents with TD children, none of their children had been diagnosed with any of these conditions or requiring special needs. The sample was gathered by distributing the link to online questionnaire through social medias and active associations of parents with specific SN conditions. The study was conducted according to the Declaration of Helsinki and was approved by ethical committee of the university where the research team worked at (ethical approval reference number: REC/04/2021 (UG/MR/373)).

Instrument

Data collection was conducted using an online self-administered questionnaires adapted from semi-structured interviews conducted in previous studies by Baashar et al. (2020) and Nirmalan et al. (2004). The questionnaire was translated into Malay language and undergoing forward and backward translation. Translation was verified by two bilingual translators followed by experts in the field for content validity and content conformity. Validation of the questionnaire was conducted in a pilot study prior to the data collection in which the questions were subsequently modified according to respondents feedback and responses. In addition, the reliability of each subsection was also tested using Cronbach's alpha with an internal consistency of >0.70 obtained for all subsections of the adapted version of the questionnaire.

The questionnaire consists of 39 questions divided into four sections. The first section was demographic information including age, gender, race, education level, marital status, socioeconomic status and information about their children (number of children, age, ocular history, and whether or not the children require special needs). The second and third sections were questions to evaluate knowledge and awareness about children eye problems, respectively. Finally, the last section was for questions regarding eye care-seeking behaviours and barriers affecting them.

For section two until section four, coding method was used to convert the responses to numerical values for data analysis. In these sections, all correct answers were scored as one while incorrect answers were scored as zero. Total score in section two was calculated to indicate the level of awareness about childhood eye problems, with scores of less than 11, 11 to 16, and more than 16 indicate low, medium and high level of awareness respectively. Total scores in section three were also calculated to indicate the level of knowledge; those who obtained below median score were considered 'insufficient knowledge', and vice versa for the 'sufficient knowledge' group. For perception and eye care seeking behaviour, seven questions in the fourth section were scored to indicate the level of positive perception and

Table I: Statements on perception and eye care seeking behavior

There was no need for an eye examination in children
Only elderly people have eye problems
Children's vision only needs to be examined if they complain
Eye doctors need to be seen only for major eye problems
Children's vision only needs to be examined if there is a problem
Children are taken to a doctor only if traditional or alternative systems of treatment are not beneficial
Always approach local traditional healers for any eye problems

Answer options for all questions were 'Yes' and 'No'

attitude towards eye care services (Table I).

Statistical Analysis

The results obtained from Google Form were exported to Statistical Package for the Social Science (SPSS) software version 27 by IBM for statistical analysis. Demographic characteristics of the participants in each group were summarized using descriptive statistics. Descriptive statistics were also used to demonstrate the level of knowledge and awareness of childhood eye problems and eye care seeking behaviours in both parents of TD and SN groups. Additionally, independent t-test was used to compare the total score of knowledge and perception towards eye care between the groups. Moreover, Pearson Chi-Square and Fisher's Exact Test were conducted to compare the level of awareness between groups, and investigate the association between demographic data and knowledge as well as barriers in seeking for eye care services. All analyses conducted were two-tailed, with an alpha level set at 0.05 significance level.

RESULTS

Demographics

There were 99 parents with TD children, and 74 parents with SN children participated in this study. All participants were between 20 to 50 years old with the majority of them (68.2%) have between two to four children at home. The detailed demographical profile of the participants is displayed in Table II. Low education level shown in the table indicates that the highest education achieved by the parents was secondary school, while high education level refers to a minimum of diploma qualification or higher.

Knowledge on childhood eye diseases

Participants were classified into two groups according to their scores on knowledge. A knowledge score of less than nine (median score) was considered to have 'insufficient knowledge', while a score of nine and above was considered to have 'sufficient knowledge'. Overall, the majority of participants were classified as having 'sufficient knowledge' whereby only 3% and 1% of the parents of TD and SN groups respectively showed 'insufficient knowledge'. However, total knowledge

Table II: Demographic data of the participants in each group

	Parents of TD children (n = 99)	Parents of SN children (n = 74)
Age*	M= 33.80 (SD=2.93)	M=35.70 (SD=1.41)
Type of children	TD children	Down Syndrome: 24 Autism: 27 Dyslexia: 23
Gender		
Female	75	51
Male	24	23
Race		
Chinese	3	-
Indian	1	-
Malay	95	74
Education levels		
Low education	16	7
High education	83	67
Socioeconomic status		
B40	56	34
M40	38	33
T40	5	7

TD = Typically developing children; SN= Special needs children. Values represent percentage (%) of participants giving the answer. M and SD represent mean and standard deviation respectively.

score between groups was significantly higher in parents of SN group (M = 13.86; SD = 2.30) compared to TD group (M = 12.81; SD = 2.17) ($t(171) = 3.095$, $p = 0.002$). Among the four ocular conditions asked in knowledge section, both groups had the highest score on refractive errors, while the least score was obtained on strabismus (Fig. 1). The reasons for a lower score in strabismus are that parents in both groups did not know that untreated strabismus may lead to vision loss, and that surgery is one of the treatment options for strabismus. In addition, most of the parents of TD (90.9%) and SN (95.9%) children knew that eye problems can affect children’s learning abilities. Chi-square test revealed that none of the demographic factors (gender, education levels, socio-economic status and type of children) have been significantly associated with level of knowledge ($p > 0.05$).

Awareness on childhood eye diseases

Among the eye problems listed, crossed eye (83.8%) and long/short-sightedness (82.8%) were conditions that

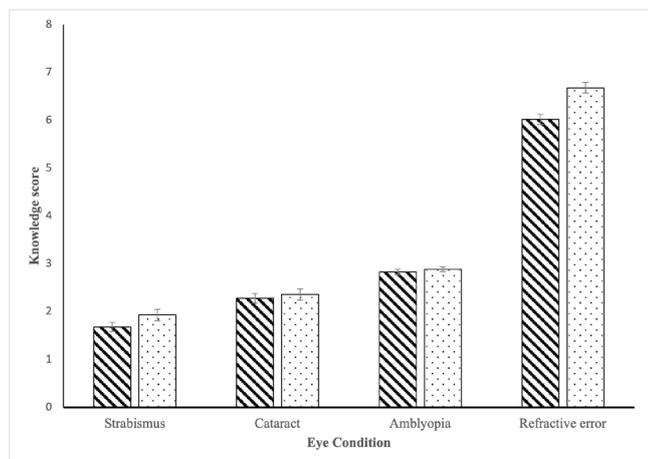


Figure 1: Knowledge score for different ocular conditions by group. Stripy pattern and dots pattern refer to the average knowledge score for parents of typically developing children and parents of special needs children respectively. Error bars indicate standard error.

parents of TD children were most aware of. As for parents of SN children, long/short-sightedness (90.5%) and eye redness / itchiness (83.8%) were the two conditions which they were most aware of. The condition with least awareness in both groups was cataract which was selected by 41.4% and 40.5% of parents of TD and SN children, respectively (Table III).

Table III: Awareness levels on eye conditions by group

EYE PROBLEMS	TD (%)		SN (%)	
	YES	NO	YES	NO
Cataract	41.4	58.6	40.5	59.5
Conjunctivitis	47.5	52.5	45.9	54.1
Eye infection	75.8	24.2	74.3	25.7
Crossed eye	83.8	16.2	81.1	18.9
Lazy eye	61.6	38.4	79.7	20.3
Long/short sightedness	82.8	17.2	90.5	9.5
Itchy and red eye	74.7	25.3	83.8	16.2
Stye	72.7	27.3	77	23

TD = Typically developing children; SN= Special needs children. Values represent percentage (%) of participants giving the answer

The symptom of eye problems that the parents were most aware of was blurry vision while the least known symptom among parents was double vision. Both parent groups were aware that a prolonged use of gadget such as television was the cause of vision and eye problems in children. While the majority of parents with SN children were aware that glasses, eye drops and eye surgeries are the possible treatment for ocular conditions in children, parents with TD children were only mostly aware of management with glasses. Based on the total scores of awareness level, the majority of parents of TD (66.7%) and parents of SN children (81.1%) were considered to have high level of awareness about childhood eye conditions. There were a small percentage of parents of TD (5.1%) and parents of SN children (2.7%) who were considered to have low level of awareness. In addition, the awareness level was not significantly associated by type of children ($\chi^2(2) = 4.452$; $p = 0.108$). The percentage of awareness on symptoms, causes and treatment are summarised in Table IV, with values indicated by percentage of participants giving that responses.

Eye care seeking behavior

The majority (81.1%) of parents with SN children had taken their child for eye examination as compared to only half (54.5%) of parents with TD children. Among those who brought their children for eye examination, 37.8% and 21.2% of parents of SN and TD children respectively, had the latest eye check-up within one year prior. Additionally, 6.1% of parents of TD children had a negative perception if their children need to wear glasses.

With regards to eye care seeking behavior, 4% of parents of TD children expected that there was no need for an eye examination in children since they thought

Table IV: Percentage of awareness on symptoms, causes and treatment by groups

QUESTIONS	TD (%)		SN (%)	
	YES	NO	YES	NO
CAUSES				
Hot weather	33.3	66.7	13.5	86.5
Exposure to sunlight	52.5	47.5	35.1	64.9
Nutritional deficiency	77.8	22.2	82.4	17.6
Unhealthy eating habit	70.7	29.3	54.1	45.9
Poor hygiene	66.7	33.3	63.5	36.5
Injuries	58.6	41.4	79.7	20.3
Watching TV/gadget	79.8	20.2	89.2	10.8
SYMPTOMS				
Redness	81.8	18.2	89.2	10.8
Itchiness	81.8	18.2	75.7	24.3
Discharge	70.7	29.3	81.1	18.9
Eye deviation	75.8	24.2	82.4	17.6
Abnormal eye movement	71.7	28.3	81.1	18.9
Double vision	59.6	40.4	66.2	33.8
Blurry vision	90.9	9.1	91.9	8.1
TREATMENT				
Glasses	93.9	6.1	97.3	2.7
Eyedrops	77.8	22.2	91.9	8.1
Eye ointment	36.4	63.6	41.9	58.1
Eye training	63.6	36.4	67.6	32.4
Eye surgery	64.6	35.4	95.9	4.1

TD = Parents of typically developing children; SN= Parents of special needs children. Values represent percentage (%) of participants giving the answer.

only adults can have eye problems, while none of parents with SN children agreed with this. Moreover, half (52.5%) of parents with TD children assumed that children should have their eyes checked only when they complain or if there is an eye problem, while only 35.1% of parents with SN children agreed with this. In addition, 32.3% of parents with TD children reported to only take their children to eye specialist if alternative treatment does not work, while only 9.5% of parents with SN children reported this. The overall score of perception and eye care seeking behaviour was significantly higher in parents of SN ($M = 5.91$; $SD = 1.23$) compared to parents of TD children ($M = 5.04$; $SD = 1.57$) ($t(170.75) = 4.078$, $p < 0.001$). Additionally, a multiple regression was performed to predict score of perception and eye care seeking behaviour from number of children that they have, having children with history of eye diseases and types of children (TD or SN). Results indicated that having children with history of eye diseases and types of children significantly predict score of perception and eye care seeking behaviour, $F(3, 169) = 6.606$, $p < 0.001$, $R^2 = 0.105$. However, these factors only explained 10.5% of the variance in the score. As for the sources of information, social media was the main source for health-related information in both groups among others listed (Fig. 2).

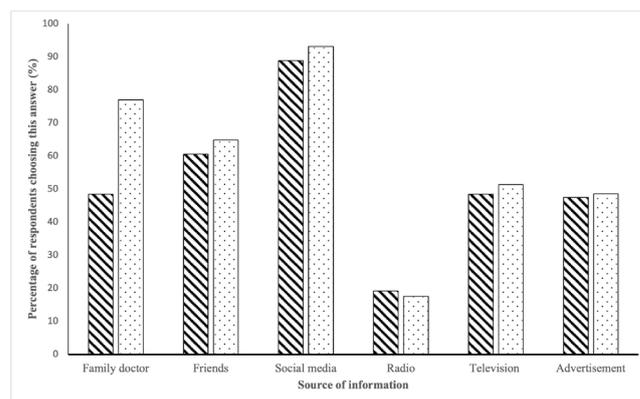


Figure 2: Sources of health-related information by groups. Graph shows the percentage of respondents choosing a particular answer in each group. Stripy pattern and dots pattern refer to parents of typically developing children and parents of special needs children respectively.

Barriers influencing eye care seeking behavior

Among the barriers influencing the parents’ behaviour in seeking for eye care services, cost was the major barrier reported by parents of TD children (84.8%). On the other hand, the major barriers among parents with SN children include taking leave from work (66.2%), cost of the eye care services (64.9%), followed by difficulty in getting an appointment (63.5%). In both groups, family issue was the least reported barrier in seeking for eye care services. Other reported barriers are displayed in Table V.

Table V: Barriers influencing eye care seeking behaviour

BARRIERS	TD (%)		SN (%)	
	YES	NO	YES	NO
Cost	84.8	15.2	64.9	35.1
Difficulty in getting appointment	43.4	56.6	63.5	36.5
Taking leave from work	43.4	56.6	66.2	33.8
Transportation	20.2	79.8	16.2	83.8
Travelling long distance	21.2	78.8	14.9	85.1
Family issue	17.2	82.8	14.9	85.1
Concern about the treatment options	52.5	47.5	50.0	50.0
Religious and cultural beliefs	21.2	78.8	14.9	85.1

TD = Parents of typically developing children; SN= Parents of special needs children. Values represent percentage (%) of participants giving the answer

Regarding the factors associated with eye care barriers, Chi-square test showed that parents’ concern about the cost of eye care services was associated with socio-economic status, whereby parents with lower socio-economic status were more concerned about the cost ($\chi^2(2) = 5.961$; $p = 0.05$). In addition, type of children was also found to be associated with parents’ concern on the cost of eye care services, with more parents of TD children were concerned about the cost compared to parents with SN children ($\chi^2(1) = 9.352$; $p = 0.002$). Furthermore, another two barriers related to difficulties in getting appointment and taking leave from work were also associated with type of children whereby parents with SN child were more concerned on these compared

to parents of TD children ($\chi^2(1) = 6.840$; $p = 0.009$).

DISCUSSION

The current study aimed to investigate parental knowledge and awareness about childhood eye problems and eye care seeking behaviour among parents in Malaysia. While results indicated that majority of the participants have sufficient knowledge about common eye problems, they seem to have misconceptions about the less common ones. In addition, despite comparable awareness level between groups, parents of SN children have a significantly higher knowledge score and better attitude and perception towards paediatric eye care compared to parents of TD children. With regards to the barrier in seeking for eye care services, parents of TD were more concerned about the cost while parents of SN children were having an issue to take leave from work.

The current study found that most of the participants have sufficient knowledge about childhood eye problems with the highest awareness and knowledge score obtained for blurry vision and refractive errors respectively. This finding of sufficient knowledge is contrary to previous findings reported among parents in low-income countries such as Ethiopia (17) and Nigeria who had low level of knowledge (18), but similar to those reported among parents in Saudi Arabia, the emerging high-income country (12) suggesting the influence of economic development of a country on the level of health-related knowledge.

In addition, variation in the level of knowledge of different eye problems seems to match with the prevalence of the condition in a particular country, where the community are more knowledgeable about the most prevalent condition. The prevalence of refractive errors among Malaysian pre-school children was the highest among the four conditions asked which was 95.4% (24) compared to amblyopia which accounted for 7.53% of visual problems (24). Moreover, strabismus was also less prevalent in Southeast Asia compared to African-American, Caucasian and Hispanic which constitutes only 0.8% of childhood eye problems (25). Variation in prevalence that reflects variation in knowledge scores among ocular conditions asked may imply the effectiveness of existing health educational program on common eye conditions in the community. Unlike refractive errors, knowledge score on strabismus was the least despite high level of awareness about crossed eye, indicating that there were misconceptions among the parents about this condition; and that awareness does not necessarily guarantee high level of knowledge. Results showed that parents were unaware of double vision symptom and misunderstood that this condition does not lead to blindness if left untreated, similar to that reported among parents in Nigeria (18) and India (20). Although the prevalence of strabismus is very low

in Southeast Asia, it is still important to address this misconception as it may lead to delay in treatment, therefore potentially increase amblyopia prevalence.

In Southeast Asia, cataract has been reported to account for 13.6% of visual impairment in children (26) which contribute to 17.2% of blindness and severe visual impairment cases among children aged 15 years old and below in Malaysia (27). According to Koay et al (6), cataract or lens-related disorder was among the top two conditions contributing to avoidable blindness among children in Malaysia which have been suggested to partly be due to lack of awareness and fear of surgery among the parents. Our findings further support this claim with childhood cataract been the least aware condition with the lowest knowledge score compared to other conditions, and that the parents thought cataract only exists in adults. Considering its significant contribution to the prevalence of avoidable blindness in Malaysia, educating the public on the implication of childhood cataract and its treatment option is warranted to promote early intervention of the condition.

In addition to level of awareness and knowledge (16, 18-19), we found that having children with history of eye problems or children with special needs also contribute towards positive perception and eye care seeking behaviour among parents. Despite high level of awareness among the majority of participants in this study which did not differ between groups, parents of SN had a better perception and a more positive eye care seeking behavior compared to parents of TD children. All parents of SN children do aware of the need for an eye examination in children, with the majority of them have taken their children for an eye examination. However, although most of parents in both groups knew that eye problems can affect children's learning abilities, only half of parents of TD have taken their children for an eye examination as they thought that eye examination in children is only necessary when they complain or there is any obvious eye problems; a similar pattern to that reported among parents in Saudi Arabia (12, 22, 23). It is also interesting to note that among parents who have brought their children for eye examination, the percentage of the examination done within one year prior was still low in both groups, suggesting that the majority of parents are not aware of the recommendation of annual eye check-up in children. In addition, it is good that parents were mostly aware that prolonged use of gadget may cause eye problems, which hopefully encourage them to monitor their children's screentime.

While only a small percentage of parents of SN would opt for an alternative treatment prior to seeing eye specialist, trend among parents of TD children who preferred alternative treatment over eye specialist is somewhat worrying considering the number of uncertified and unproven alternative treatments available in Malaysia. With social medias been chosen as the main source

of information about eye health by the majority of participants, it is highly needed for health professionals to maximise the use of social medias in educating the public. This will ensure that trustworthy and reliable information can reach a larger group of people and at the same time helps to tackle misconceptions from dominating the media.

Although social media was the main source of information for parents in both groups, family doctor was the second preferred source among parents of SN, which was reflected by a higher total knowledge score indicating that they were more knowledgeable about childhood eye problems compared to parents of TD. Parents of SN might already have frequent visits with health professionals for multiple reasons which somehow shape the way they seek for health information. Concerning the barriers in seeking for eye care services, parents of different types of children seem to have a different issue. The main concern of parents of TD was the cost, while parents of SN were more concern about difficulty getting an appointment and taking leave from work. Parents of SN might already be having frequent visits to health professional for multiple reasons, therefore taking leave from work might be an issue. Additionally, it is not surprising to note that barrier of cost is also associated with socio-economic status, where by cost might hinder parents with lower socio-economic status from seeking for eye care services.

Taken together, parents of SN children were generally better in terms of knowledge, perception and eye care seeking behaviour compared to parents of TD, despite comparable awareness level between the groups. Findings suggest that high level of awareness does not necessarily guarantee high level of knowledge. Although both awareness and knowledge can influence eye care seeking behaviour (16, 19), ensuring good level of knowledge in the community will help to reduce misconception hence further improve eye care seeking behaviour. Therefore, health education initiatives focusing on knowledge and misconception in childhood eye problems would be useful to change parents' health seeking behaviour; a vital component in preventive strategy.

Based on the above findings, several recommendations for future health education initiatives can be made. Although the results indicated that parents were generally having sufficient knowledge about childhood eye problems, health education focusing on less prevalent eye conditions such as strabismus and cataract is needed to mitigate misconceptions about these conditions. In addition, parents should be enlightened about the importance of eye examination in children, and misconception that children should only be examined if they complain. This is important as some eye problems in children may go unnoticed or remain hidden and possibly translated into a negative behaviour,

unless examined by qualified eye care professionals. Delay in treatment can potentially cause the condition to progress into a more debilitating condition with poorer prognosis; which in turn can negatively impact their motor, cognitive and psychosocial function (28-29). In addition, it is recommended to maximise the use of social media in health education programmes to possibly reach a larger target group.

In addition to health education, conducting vision screening at schools would be a useful approach to address barriers faced by parents in seeking for eye care services in terms of cost and time constraint. Such approach can also serve as health campaign tools while increasing the likelihood of children receiving annual eye check-up. Amblyopia and Visual Impairment Screening (AVIS) by the Malaysian Ministry of Health is a good initiative which should be continued and expanded to special schools. Furthermore, government initiatives such as child health policy and financial support for annual eye examination and glasses prescription in children as implemented in developed countries can also be adopted to further overcome barriers to eye care services in the community.

To our knowledge, this study is the first to discover parental knowledge, awareness and attitude towards childhood eye problem among parents in Malaysia. However, the findings are limited by its small sample size due to lower response rate from the community. Nonetheless, we believed that the findings may give insight about parents in Malaysia with regards to childhood eye problems, which is useful for practitioners and relevant authorities in planning for future preventive measure.

CONCLUSION

In conclusion, this study reported good level of knowledge and awareness among participants particularly on common eye conditions. However, level of awareness are low with some misconceptions exist about less common eye conditions such as cataract and strabismus which necessitates health education initiatives on these issues. It is recommended for health professionals to maximise the use of social medias in educating the public to help tackle misconceptions and avoid unreliable sources from dominating health issues in the media. While parents of TD children were more concern about the cost of eye care services, parents of SN children were having time constraint issue which might hinder them from seeking for eye care services. These findings provide insight about parents in Malaysia with regards to eye care in children, which is useful for future preventive measures planning.

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