Factors Associated With spectacle-wear compliance among hypermetropic pre-school children in Al-diwaniya Governorate, Iraq

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(Received 7 / 4 /2015 , Accepted 27 / 4 / 2015)

الخلاصة:
الأخطاء الانكسارية غير المصححة هي مشكلة بين الأطفال قبل سن المدرسة. إهماله تعتبر أيضا من الأسباب الأكثر شيوعا لضعف البصر الذي يمكن تجنبه في الأطفال في جميع أنحاء العالم.
الهدف: تهدف هذه الدراسة إلى قياس مدى التزام الأطفال ما قبل سن المدرسة والذين يعانون من بعد النظر بارتداء النظارات الطبية والعوامل المرتبطة بعدم الامتثال.
الطريقة: أجريت هذه الدراسة في عيادتي الخاصة لطب العيون . التحق بهذه الدراسة مائة وأربعة عشر مريضا (114 مريضا) أقل من 6 سنوات. تمت مقابلة الكل من قبلي. وقد تم تحديد العوامل المحتملة المرتبطة بعدم الامتثال لارتداء النظارات الطبية.
النتائج: بلغ عدد المرضى المسجلين في هذه الدراسة 114 بينهم 36٪ من المرضى امتثلوا لارتداء النظارات بينما كانت 73٪ نسبه عدم الامتثال. وكشفت النتائج أيضا أن 12 من الأطفال أقل من 2 سنة كانوا ملتزمين و 35 لم يمتثلوا . لتوزيع الجنسين، كان هناك 15 من الذكور و 26 من الإناث امتثلوا في حين كان هناك 39 من الذكور و 34 لم يمتثلوا لارتداء النظارة . كما أظهر الأطفال في المناطق الحضرية درجه عالية من الالتزام بارتداء النظارة بالمقارنه مع الأطفال في المناطق ألريفيه.
الخاتمة: واحدة من عوامل الخطر لعدم الامتثال في هذه الدراسة كان توزيع المنطقة والجهل من قبل الأسرة. وينبغي إجراء المزيد من الدراسات السكانية القائمة على عينة أكبر لتقييم محددات استخدام النظارة الطبية والحواجز التي تحول دون استخدام النظارات من قبل الاطفال قبل سن السادسه ومعالجتها.

Abstract :

Background: Uncorrected refractive error are community health problem among pre-school children. It's also considered as the most common cause of avoidable visual impairment in children worldwide.

Objective: This study intended to measure the extent of compliance of hypermetropic preschool children with spectacle wear and the factors connected with non-compliance.

Method: The study was carried out in my ophthalmology private clinic. One hundred and fourteen patients (114 patients) below 6 years old were enrolled this study. Each was interviewed by the author of correspondence. the possible factors associated with non-compliance with spectacle wear were identified.

Results: The total number of patients enrolled in this study was 114 among them 36% were compliance with spectacle wear while 73% were non compliance. The results also revealed that children less than 2 years were 12 and 35 in compliant and non compliant respectively. For gender distribution, there were 15 male and 26 female in complaint children while there were 39 male and 34 female in those who non complaint. Urban children showed high compliant for spectacle wear than rural one.

Conclusion: One of the risk factor for noncompliance with in the present study were region distribution and ignorance by family. More population based studies with larger sample should be conducted to assess the determinants of the spectacle use and the barriers to spectacle use should be addressed

Keywords: uncorrected refractive errors. spectacle, preschool children , noncompliant

Introduction

Uncorrected refractive error has been recognized as the foremost source of visual disability amongst children that increase the worldwide prevalence of visual impairment by 61%. (1-4) Refractive error is the simply remediated reason of vision loss. Spectacles are low-cost and effective. Though, this straight easy key has not been efficiently applied

in numerous part of the world, with children bearing notable visual burden.(5) However, it has been notice that, yet when spectacles are offered free, they are worn by less than 1 in 6 children and are available for use at school in less than half of cases. (6)

The World Health Organization advises observing the result of children screening programs by using suitable indicators for it to accomplish the objective of reduce avoidable visual disability as results to refractive error. (7) One of the main concern of The World Health Organization's "Vision 2020, The Right to Sight" proposal is the correction of refractive error in urbanized and rising countries. Abundant programs have tried to conclude the problem of uncorrected refractive error through school-based vision testing and spectacle circulation programs. Unluckily, the majority programs have found that at follow up, the bulk of children afforded spectacles at no charge were not wearing them or non compliant on wearing refractive correction. (7-12)

The objective of vision 2020 cannot be attained merely by timely recognition of refractive errors if not efforts are taken to eliminate the barriers to spectacle accessibility and acceptance in age groups. Being measure uncorrected refractive error of the preschool children will greatly helped this objective. Hypermetropia (long-sight), is the condition in which The eye has less optical power than is needed. In young peoples the eye can use accommodation , but reading glasses are needed at a relatively early age. Later, distance glasses (plus) are needed as well, such that glasses for distance and near are required.(13) hypermetropia is one of the most common risk factors of amblyopic eye.

To the best of my knowledge there is no work had focus on prevalence and determinants of compliance of spectacle wear among hypermetropic pre-school children in Al-diwaniya Governorate, Iraq. So the objective of this study is to establish the degree of compliance of patients with spectacle wear and the factors associated with non-compliance.

PATIENTS AND METHOD

The study was carried out in the ophthalmology private clinic from March 2012 to February 2014 in Al Diwaniyah city, Iraq. Ethical clearance for the study was obtained from the Ethical review committee of the university prior to carrying out this study. One hundred and fourteen patients (114 patients) below 6 years old were enrolled this study. Informed consent was obtained from each of the 114 consecutive patients who had previously been refracted in the eye clinic and issued with a prescription for spectacle lenses. Each was interviewed by the author of correspondence. Sex, age region (urban and rural) as well as parental education were recorded. Each respondent was also asked to identify the possible factors associated with non-compliance with spectacle wear. Follow-up visits assess whether children were wearing their glasses and to determine reasons for noncompliance.

Statistical Methods: The data was entered in Microsoft Excel spreadsheet and analysis was carried out using the software Statistical Package for Social Scientists (SPSS 17.0). Logistic regression analysis was carried out to assess the factors influencing the compliance. Relevant odds ratio (OR) and respective 95% of confidence interval are presented. Chi-square and Fisher exact test was used when appropriate.

Results:

The total number of patients enrolled in this study was 114 among them 41(36%) were compliance with spectacle wear. However 73 (73%) were non compliance

as shown the table (1). The age was classified in the present study either equal or less than 2 years or above 2 years till 6. The results revealed that children less than 2 years were 12 and 35 in compliant and non compliant respectively. However it was 29 and 38 for those above 2 year in compliant and non complaint children respectively. The odd ratio was found 0.449 and there was no significant different when all groups compared together P value >0.05. The results are shown in details in table (2). For gender distribution, there were 15 male and 26 female in complaint children while there were 39 male and 34 female in those who non complaint. The odd ratio was found 0.503 and there was no significant difference among group P value >0.05. The result is shown in table 3. The parental education details are shown in table 4. One the other hand the regional distribution showed that 28, 13 compliant children in urban and rural areas respectively as shown in table 5. While in for non compliant was 30 and 43 for urban and rural areas respectively. There was a significant effect of area on the children compliance P value <0.05. The factors that associated with non compliance children are shown in table (6)

Table 1: the compliance and non compliance distribution among patient enrolled in present study.

Variable	frequency	Percent
Compliance	41	36%
Noncompliance	73	64%
Total	114	100%

Table 2: complaint and non complaint distribuaton according to age group

Data analyzed	less or equal 2 years	more than 2 years
Compliant	12 (29.3%)	29 (70.74%)
Non compliant	35 (47.9%)	38 (52.1%)
Total	100 (100%)	100 (100%)
P value	0.074	
Odds ratio	0.449	
95% confidence interval	0.119 to 1.014	

Table 3 Gender distribution among children enrolled in the current study.

			Gender		
			male	female	Total
groups	compliance	Count	15	26	41
		% within groups	36.6%	63.4%	100.0%
	noncompliance	Count	39	34	73
		% within groups	53.4%	46.6%	100.0%
Total		Count	54	60	114

	% within groups	47.4%	52.6%	100.0%
Odd ratio = 0.503, 95% CI 0.230-1.102				

Table 4: parental education for children enrolled in the current study

			parental education		
			high school or less	college or more	Total
groups	compliance	Count	26	15	41
		% within groups	63.4%	36.6%	100.0%
	noncompliance	Count	58	14	72
		% within groups	80.6%	19.4%	100.0%
Total		Count	84	29	113
		% within groups	74.3%	25.7%	100.0%
Odd ratio 0.418, 95% CI 0.177-0992					

Table 5: Region distribution fro children enrolled the current study.

			Region		
			Urban	Rural	Total
groups	compliance	Count	28	13	41
		% within groups	68.3%	31.7%	100.0%
	noncompliance	Count	30	43	73
		% within groups	41.1%	58.9%	100.0%
Total		Count	58	56	114
		% within groups	50.9%	49.1%	100.0%
Odd ratio =3.087 Pvalue <0.05					

Table 6: The factors that associated with non compliance children

Factor	Frequency	Percentage
Intolerance	11	15.06%
Ignorance by family	19	26.02%
Parents feel glasses don't needed	6	8.21%
Glasses socially unacceptable	15	20.54%
Broken or lost	12	16.43%
Forget at home	2	2.73%
Used occasionally	8	10.95%

Discussion:

The current study has been dealt with preschool age children. There were not much studies have done considering this age. However the present study has tried to shed some light on the factors associated with compliance for spectacle wearing among that group of population. The results showed that comparatively small proportion of children (36%) recognized as compliant with spectacle wear among children, which is expected as many other reports (14, 15). Although the present study did not show any significant regarding gender distribution in compliant or non compliant children. This finding is in agreement with others reports which have not found gender to be significantly associated with spectacle-wear. (3, 4, 9, 10), however there was a minor difference that showed girls are more compliant in current study. However it seemed gender factor for complaint still controversy match (8, 14, 16), that revealed when it comes to gender the girls were more compliant than boy. It has been shown that children of a wider age group likely to wear their spectacles than younger children.[17,18]. Age was not found to be associated with spectacle-wear in most other studies. (18,19) same finding in the current study. Castanon Holguin *et al*.(6) Children from urban schools were more likely to show compliance in our study. This was akin to results observed by others where urban children were more likely to be wearing their spectacles during the follow-up (8, 12). Out of the 73 children not wearing spectacles majority of them (26.02%) was ignored by family. (16.43%) of the students had lost their spectacles and very few (20.54%) showed concern about friends teasing them in this study. This is in concord with many other studies (12).

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