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## Research Article

# Spectacle Use in Children: An Adult Perspective

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### Abstract

**Aim:** To determine the dominant opinion of adult subjects attending eye clinics in southeast Nigeria on use of spectacle correction in children with refractive error.

**Methodology:** Descriptive cross sectional study using interviewer-administered questionnaires.

**Results:** Two hundred and six participants aged 18 to 94 years (mean 46.55±23.34) with 134(65%) being females and 84(40.1%) having tertiary education, took part in the survey. About one out of three persons believed that children should not use spectacles. Participants who had tertiary education were most favorably disposed to spectacle use in children while farmers were the greatest objectors. Occupation and educational standing were statistically significant ( $X^2=21.2$ ;  $p=0.002$  and  $X^2=13.0$ ;  $p=0.005$  respectively). The commonest reason for objecting was being too young to wear glasses.

**Conclusion:** Use of spectacles to improve vision in children is crucial. However, approval by an adult is needed. Appropriate health education targeted at adult care givers is a critical element in the effort to improve spectacle coverage in children.

**Keywords:** Spectacle Use, Children, Adult Perspective.

### Introduction

Refractive error is an eye disorder in which images are not focused on the retina leading to blurry vision. It is a public health problem with at least 157 million individuals with significant visual impairment from uncorrected refractive error. As at 2008, about 12.8million children were classified as living with URE, a figure that is likely to be significantly greater today [1,2]. Delay in recognizing and mitigating refractive errors in early childhood could result in permanent visual impairment in the form of amblyopia [3,4]. Long before the onset of amblyopia, these children could also suffer cognitive deficits that will follow them to adult life and impact negatively on their socio-economic well being [5-7]. Refractive errors in children are preferably corrected with spectacles as contact lenses or refractive

surgery may be inappropriate in this age group. Spectacle correction is a safe and a cost effective intervention that improves functionality in children but requires constant adult supervision to ensure compliance [8]. However, with a spectacle coverage among adult Nigerians at 3.4%, a negative domino effect is expected regarding children who require glasses to achieve an improvement in vision [9]. This study seeks to explore the perspective of adult respondents on the use of prescription spectacle by children with uncorrected refractive error.

### Method

**Study Location:** The centers used for the study were Enugu State University Teaching Hospital and Guinness Eye Centre Onitsha, Anambra State both in South-Eastern Nigeria.

**Study Population:** Consenting adults aged 18 years and above who presented at the ophthalmic out-patient of the two centres for a 4 months period from December 2021 to March 2022.

**Sample Size:** Non probability convenient sampling was used to recruit participants for the study.

**Study Technique:** An interviewer administered semi-structured questionnaire was used to obtain information on if children should wear glasses and for those who object, reasons why they should not wear glasses.

**Data Analysis:** The data collected was entered, coded, cleaned, and analyzed using the Statistical Package for Social Sciences

version 25.0.(SPSS Inc., Chicago, IL, USA). The association between discrete variables was tested using the Chi square test and a  $p < 0.05$  was considered statistically significant.

**Ethical Clearance:** This was obtained from Enugu State University Teaching Hospital Research Ethics Committee. All participants gave a written consent.

## Results

A total of two hundred and six consenting participants took part in this survey. The males were 72 in number and females 134, with an age range of 18 years to 94 years. The demographic attributes of the participants is shown in **Table 1**.

**Table 1. Demographic summary of the participants**

Variable	Frequency (n=206)	Percent (%=100)
<b>Age Range</b>		
18 – 28	19	9.2
29 – 39	21	10.2
40 – 50	25	12.1
51 – 61	45	21.8
62 – 72	40	19.4
73 – 83	39	18.9
84 – 94	17	8.3
<b>Sex</b>		
Male	72	35.0
Female	134	65.0
<b>Occupation</b>		
Student	32	15.5
Civil Servant	64	31.1
Artisan	16	7.8
Trader	54	26.2
Farmer	14	6.8
Not Employed	23	11.2
Retired	3	1.5
<b>Educational Status</b>		
Primary	46	22.3
Secondary	61	29.6
Tertiary	84	40.8
No formal education	15	7.3

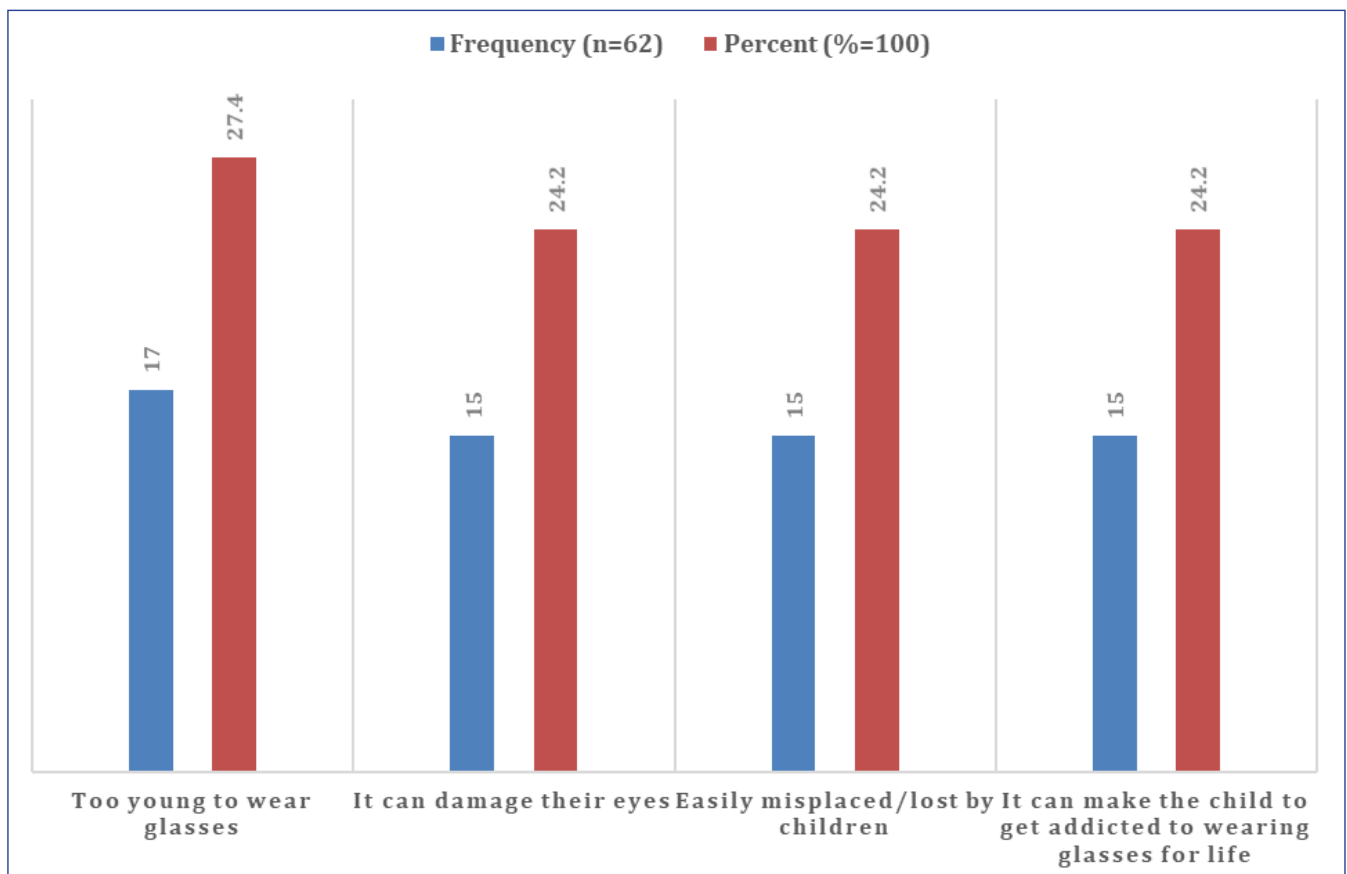
Sixty two (30.1%) subjects believed that children should not wear glasses while the remaining 69.9% supported that children can wear glasses if recommended by a doctor. Farmers who are also likely not to have formal education were the strongest objectors to use of spectacle by children. Participants who had tertiary education are the most favourably disposed to pediatric spectacle use (78.6%). Occupation and educational standing were statistically significant ( $X^2=21.2$ ;  $p=0.002$  and  $X^2=13.0$ ;  $p=0.005$  respectively) – **Table 2**.

**Table 2. Attitude of participants to use of glasses in children**

Do you think glasses are safe for children to wear?				
Variable	Yes	No	X <sup>2</sup>	P-value
<b>Age Range</b>				
18 – 28	14 (73.7%)	5 (26.3%)	7.400	0.285
29 – 39	15 (71.4%)	6 (28.6%)		
40 – 50	22 (88.0%)	3 (12.0%)		
51 – 61	31 (68.9%)	14 (31.1%)		
62 – 72	29 (72.5%)	11 (27.5%)		
73 – 83	23 (59.0%)	16 (41.0%)		
84 – 94	10 (58.8%)	7 (41.2%)		
<b>Sex</b>				
Male	48 (66.7%)	24 (33.3%)	0.551	0.458
Female	96 (71.6%)	38 (28.4%)		
<b>Occupation</b>				
Student	24 (75.0%)	8 (25.0%)	21.200	0.002*
Civil Servant	48 (75.0%)	16 (25.0%)		
Artisan	12 (75.0%)	4 (25.0%)		
Trader	41 (75.9%)	13 (24.1%)		
Farmer	3 (21.4%)	11 (78.6%)		
Not Employed	13 (56.5%)	10 (43.5%)		
Retired	3 (100.0%)	0 (0.0%)		
<b>Educational Status</b>				
Primary	30 (65.2%)	16 (34.8%)	13.025	0.005*
Secondary	43 (70.5%)	18 (29.5%)		
Tertiary	66 (78.6%)	18 (21.4%)		
No formal education	5 (33.3%)	10 (66.7%)		

\*= statistically significant associations. Farmers and absence of formal education were important indices

The bar chart below shows the reasons given by subjects for objecting to the use of spectacle in the pediatric age group.



**Figure 3:** Reasons given for objecting to use of glasses in children.

The commonest reason for objecting to spectacle use was children being too young to wear glasses.

### Discussion

The present study sought to interrogate the perception of adults regarding spectacle prescription in children. A total of 206 eligible subjects were interviewed out of which sixty-five percent (n=134) were females. Mean age was 46.55 ( $\pm 23.34$ SD). About 71.4% of the respondents had at least secondary education- Table 1. This percentage is about the same number of subjects that were favorably disposed to the necessity of children wearing a recommended prescription glasses (n=144, 69.9%). Studies done in Nigeria and elsewhere have also shown a positive correlation between having higher educational attainment and greater spectacle coverage [10-12]. However, Umar et al did not find any notable link between level of literacy and spectacle coverage in a survey conducted in Northwestern Nigeria [13]. The remaining 30.1% of our respondents stated that spectacles were not safe for children to wear. This correlated with a study done by Ezinne et al in the same South Eastern Nigeria (28.3%) but lower than the finding by Adeoti in Osun State, Western Nigeria (51.5%) [14,15]. Several studies have shown that parental concerns influences compliance with spectacle use amongst children [14-16]. The concerns border on fear of adverse effect of spectacles on children's eyes leading to sunken globe and even worsening the existing eye problem. The same social metrics constituted significant barriers to spectacle uptake in similar studies done in Tanzania and India [17,18]. These objections can be addressed through health education.

A segregation of our demographics showed that absence of formal education and farming were significantly linked to disagreeing with spectacle use in childhood ( $X^2=21.2$ ;  $p=0.002$  and  $X^2=13.0$ ;  $p=0.005$  respectively) – table 2, fig 1. It is a common belief in our study area that lenses are impregnated

with special medications that needed to be renewed from time to time to preserve their efficacy (study undergoing journal review). For individuals holding such opinion, it will be unsafe to expose children to those purported potency enhancers. Older subjects are also likely to reject the notion of childhood optical correction- Table 2. However this was not statistically significant ( $X^2=7.400$ ,  $p=0.285$ ). Adeoti also did not find any significant association between age and allowing children to use prescribed glasses ( $p=0.71$ ) [15]. Erroneous beliefs born out of superstition are likely rife in our study area especially among the uneducated and the elderly and can be potent force multipliers in entrenching perceived 'serious side effects' of lens prescription.

### Conclusion

Majority of our subjects would not object to spectacle prescription in children but a significant minority considers such a harmful practice considering that children are still in their formative years.

Unfortunately, discouraging children from spectacle use can lead to long term visual and socioeconomic handicap as adults. Ignorance is a going concern in our study area and concerted awareness campaign is warranted to dispel pervasive superstitious beliefs.

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**Conflict of interest:** None to report

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