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Factors Associated With Non-compliance with Spectacle Wear in an Adult Nigerian Population

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ABSTRACT: This study aims to determine the degree of compliance of patients with spectacle wear and the factors associated with non-compliance. A total number of one hundred patients were selected and interviewed by the author for correspondence and two assistants. With the aid of semi-structured questionnaires, the information sought after collecting bio-data, included respondents' duration of spectacle correction and how often they wore their pair of spectacles. Those who wore their pair of spectacles at all times for the intended purpose for which the glass was prescribed such as distance vision, near (reading) vision, or both, were regarded as using it "always". Those who wore theirs to a lesser degree but for more than 50% of times were regarded as using it "often". The "occasional" wearers were those who used it for less than 50% of the times. Each respondent was also asked to identify the possible factors associated with non-compliance with spectacle wear. Majority (71%) used their spectacle occasionally while the remaining few (29%) used it often. The reasons cited for not complying with spectacle correction were lack of felt need (58%), spectacle intolerance (28%) and ignorance (14%). Majority of respondents wore their glasses only occasionally. The reasons for not complying fully with spectacle correction were lack of felt need which might have cultural underpinnings, spectacle intolerance, and ignorance of the attendant dangers of not seeing clearly while not wearing their pairs of glasses. Appropriate health education and improvement in optical infrastructures will assist in remedying the poor compliance culture with the wearing of glasses in Nigeria.
Keywords: - Spectacle wear, refractive error.
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INTRODUCTION

Refractive errors include myopia (short sightedness), hypermetropia (long sightedness), astigmatism and presbyopia and their ophthalmic correction could be by spectacles, contact lenses or refractive surgery (Dandona *et al*;2001). Recent data suggest that a large number of people are blind in different parts of the world due to high refractive error because they are not using appropriate correction (Dandona *et al*; 2001) . It is estimated that 2.3 billion people world wide have refractive errors(Holden *et al*;2000). The vast majority of these could have their sight restored by spectacles but only 1.8 billion people have access to eye examination and affordable correction. This leaves approximately 500 million people mostly in developing countries (close to 1/3 are in Africa) and many children with uncorrected error causing blindness and impaired vision. A crucial element of effective eye care delivery is the provision of affordable vision correction devices.

The need for effective correction of refractive error cannot be over emphasized most especially in children who stand the risk of developing amblyopia as a result of uncorrected refractive error. Blindness due to refractive error in any population suggest that eye care services in general in that population are inadequate since treatment of refractive error is perhaps the simplest and most effective form of eye care (Dandona *et al*;2001). Spectacles are the most commonly used form of refractive error correction since they are the most inexpensive and the simplest of the three options of correcting refractive error. As

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such, they are the most appropriate treatment for refractive errors in developing countries.

Provision of spectacles is currently a challenge in many developing countries because of the issues related to availability and affordability. Although there are no data available on the economic loss as a result of blindness due to refractive errors, it would not be unreasonable to assume that it is probably significant, since a large proportion of those affected are in the economically productive age group. Refractive error has severe social and economic effects on individuals and communities restructuring educational and employment opportunities of otherwise healthy individuals(Bourne *et al*;2004). Refractive error represents a common condition that can be cheaply remedied (by spectacles) with a resultant significant functional and lifestyle improvement (Maini *et al*;2001). It has also been demonstrated that uncorrected refractive error is associated with higher mortality(Klein *et al*;1995), and morbidity from hip fractures and falls (Klein *et al*;1998). Thus correction of refractive error is a priority of vision 2020 (W.H.O, 1997). Empiric research on the barriers to refractive error correction remains limited precluding the formulation of effective remedial actions (Mingguang *et al*;2005). The underlying motivation for this study is the fact that some patients who have been issued prescriptions for glasses were not often wearing their pair of spectacles even after the adverse effects of their action had been explained to them.

We aim in this study to determine the degree of compliance of patients with spectacle wear and the factors associated with non-compliance.

SUBJECTS AND METHODS

This study was conducted between November 2006 and February, 2007 at the Federal Medical Center, Owo, Nigeria. Ethical clearance for the study was obtained from the Ethical review committee of the hospital prior to carrying out this study.

Informed consent was obtained from each of the 125 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 and two assistants with the aid of a semi structured questionnaire. The information sought after collecting their bio-data, included their duration of spectacle correction and how often they wore their pair of spectacles. Those who wore their pair of spectacles at all times for the intended purpose for which the glass was prescribed such as distance vision, near (reading) vision, or both, were regarded as using it “always”. Those who wore theirs to a lesser degree but for more than 50% of times were regarded as using it “often”. The “occasional” wearers were those who used it for less than 50% of the times. Each respondent was also asked to identify the possible factors associated with non-compliance with spectacle wear. The awareness of respondents about other modes of correction of refractive error and their preferred mode of correction of refractive were also assessed.

Data obtained with the aid of the questionnaire were collated and analyzed using SPSS 12.1.0 statistics soft ware package.

RESULTS

Of the 125 respondents in the study, 25 (20%) had not obtained their prescription lenses due to financial constraints and they have been excluded from further analysis.

Socio-demographic characteristics: The remaining one hundred respondents comprised of forty-three males and fifty seven females. Their ages ranged from 21 years to 75years, with a mean of 37.3years. Thirty two of them were Muslims while sixty-eight were Christians. Most respondents (70%) were of the Yoruba ethnic stock while 28 were Ibos, and a respondent each was Ebira and Hausa. Only one of the respondents had no formal education, twenty had primary education; thirty three had secondary education while forty six had tertiary education. Table 1 gives a breakdown of the occupation of the respondents.

Spectacle wear characteristics: Majority of the respondents (73%) had been wearing glasses for less than 5 years. Figure 1 gives a breakdown of the duration of spectacle wear by respondents. All respondents aged 40 years and less (45 of the 100 respondents) wore glasses for distance correction only. Of the remaining 55 respondents who were 40 years or older, 25 were wearing reading glasses only, while the remaining 30 wore bifocal lenses for the simultaneous correction of their distance and reading needs. None of the respondents wore their pair of glasses always. Majority (71%) of the respondents used their spectacles only occasionally while the remaining few (29) % wore theirs often.

Factors associated with non-compliance with spectacle wear (table 2) included lack of felt need (58%), spectacle intolerance (28%), and ignorance (14%).

Table 1
Distribution of respondents by their occupation

Occupation	*Frequency*	*Percentage*
Farming	11	11
Trading	17	17
Civil service	31	31
Teaching	5	5
Schooling	16	16
Pensioner	2	2
Artisan	18	18
Total	100	100

Table 2.
Factors associated with non-compliance with spectacle wear

Barrier	**Frequency**	**Percentage**
Intolerance	28	28
Ignorance	14	14
Lack of felt need	58	58
Total	100	100

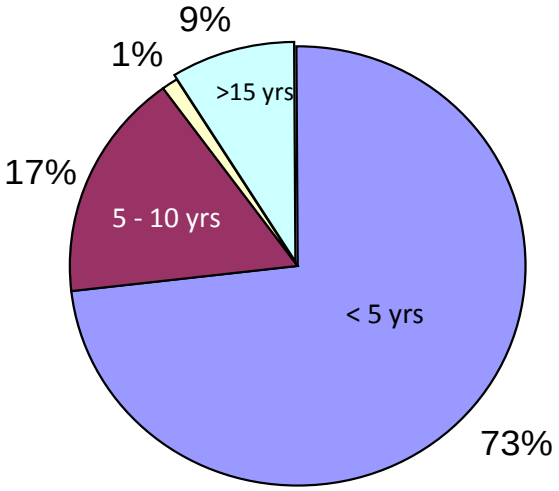

Fig. 1:
Duration of spectacle use. Note: 10-15yrs = 1%

Awareness about other modes of correction of refractive error & preferences: Majority (83%) of the respondents was not aware of the other modes of correcting refractive error. Of the remaining few (17%) that said they were aware, 14 of them would still opt for the spectacle mode rather than contact lens (3) and corneal refractive surgery (none).

DISCUSSION

Majority of the respondents (83 %) were in the economically active age group of 20 – 60 years, a fact that underscores the importance of improving optical services in Nigeria. Uncorrected refractive error is a global challenge that might keep us from meeting the vision 2020 goal unless changes are made between now and then(Mc Carty;2006).

The fact that none of the respondents wore their glasses always, while over 70% only wore them occasionally calls for a critical examination of the factors associated with their non-compliance. Similar findings of poor compliance in other developing world settings need to be interpreted in their situational contexts. The compliance rate with spectacle wear of 13% (Aaron *et al*;2006) and 28%(Villarrael *et al*;2003) in two different studies carried out in Mexico among children who, being minors, might not be expected to be in a position to make sound judgments on their eye health. Though another study in India (Gupta *et al*;2003) on spectacle compliance in adults also reported poor compliance, the study was conducted among aphakics, whose relatively thicker, heavier and unsightly lenses have universally tended to elicit poor compliance.

A majority [58%] of the respondents attributed their poor compliance to lack of felt need, which from our operational definition means that they actually got by their day to day activities without wearing their spectacles. Surprisingly this majority cuts across the different age groups, the functional group of lens correction, and the educational classes of the respondents; a cultural basis for their averseness to wearing glasses despite the obvious need could be the possible explanation. Nigerians have been known to fear eye ailments particularly those requiring prescription spectacles as they are deemed to indicate weak and/or diseased eyes with ominous implication for subsequent development of blindness (Mahmoud;2005). Hence wearing spectacles in public might be avoided to prevent advertisement of their bad eyes and impending blindness. Appropriate health education on this issue and on the respondents' ignorance of the attendant dangers of not wearing their glasses to see clearly should improve the compliance rate with spectacle wear.

Endemic poverty and very inadequate optical infrastructure too have some role to play. Twenty-five

of the 125 (20%) respondents who had been issued with optical prescriptions were yet to be able to raise money to procure their pairs of spectacles. This is in keeping with the findings of a study in Lagos in which the main constraint preventing children from wearing glasses was the poor economic status of parents(Faderin;2001). The poor optical infrastructures could also explain the significant rate (28%) of attribution of spectacle intolerance as the reason for non-complying. Most of the spectacles in this group had non-durable, cheap, and ill fitting frames that had been irreparably damaged. Similar findings were made in a study carried out in India in which 43.8% of patients had discontinued glasses use because they felt either the prescription was incorrect or the spectacles were uncomfortable(Dandona *et al*;2002).

The fact that majority of respondents were unaware about other modes of correction of refractive error is surprising in view of the fact that some (46%) of them had tertiary education.

Conclusions and Recommendations: Majority of respondents wore their glasses only occasionally. The reasons for not complying fully with spectacle correction were lack of felt need which might have cultural underpinnings, spectacle intolerance, and ignorance of the attendant dangers of not seeing clearly while not wearing their pairs of glasses. Our recommendations are as follows:

1. The relevant government agencies, the eye care professionals, and other interested bodies should conduct appropriate health education on the need to wear glasses by those affected with refractive errors without any misgiving. The health education package should also address the respondents' ignorance of the attendant dangers of not wearing their glasses to see clearly so as to improve the compliance rate with spectacle wear.
2. There is also the need to improve on the adequacy and quality of optical services so as to increase access to optical services and also reduce to the barest minimum the incidence of intolerable optical prescription.
3. Importation of bulk-purchased quality optical parts such as lenses, frames, and even finished spectacles in commonly needed powers would increase the affordability and accessibility of spectacles

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