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PHILOSOPHY, SCOPE AND AIMS

Sahel Medical Journal (SMJ) is a quarterly international Journal published by UDUTH, Sokoto, Nigeria. The *SMJ* is devoted solely to (1) dissemination of information about medical sciences in the Sahel zone of Nigeria, Africa and the rest of the world, and (2) to provide a medium where national and international medical and health organizations may relay information to medical scientists and others interested in health care.

The *SMJ* further seeks to promote inter-regional cooperation amongst medical and social scientists engaged in health care delivery and ensures the highest ethical and scientific standards in all articles and materials it accepts to publish.

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ISLAMIC-ORIENTED LITERACY IN ARABIC AS AN AID FOR DETERMINING THE READING GLASS NEEDS OF NON-WESTERN EDUCATED MUSLIMS IN ILORIN, NIGERIA

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SUMMARY

Background: Muslim presbyopes in Nigeria who require reading glasses and who are only and minimally literate in Arabic; experience difficulty in getting properly assessed for this in the eye clinics because of their illiteracy in western education.

Aim: The aim is to design an appropriate Arabic near reading test chart (ANRTC) for such Muslim presbyopes in Ilorin, Nigeria.

Methods: Short continuous reading passages in Arabic were designed with their separate corresponding transliteration, and then formatted into varying print sizes (N5-N48). After validation with the standard English reading chart among dual-literate (Arabic and English) lecturers, the ANRTC was then used to determine the reading glass needs of presbyopes.

Results: ANRTC was found meaningful and readable, validated well with the standard English one among 12 dual-literate lecturers, and also found easy to use in accurately determining the reading glass need of 50 individuals.

Conclusions and Recommendations: ANRTC was found very useful in determining the reading glass needs of some Nigeria Muslims who has no western education. This chart or its adaptation would also be found useful in other non-Arabic speaking Muslim populations of Africa, Asia and Eastern Europe.

(Key-words: Reading chart, Presbyopia, Presbyopic correction, Arabic, Nigeria).

INTRODUCTION

All human beings experience difficulty and discomfort for near vision required for properly seeing close objects situated within a third of a meter range, due to reduced amplitude of accommodation in the eye optical system as a result of ageing process in those aged around 40 years and over¹. In ophthalmic terms, this inadequacy of accommodation is called presbyopia and the sufferer is referred to as a presbyope. A supplementary convex lens fitted into a pair of spectacles is used to enable a presbyope to achieve comfortable near vision and this lens is called a presbyopic- or a near- or an add-correction. The need for reading glasses to see clearly during close work is an entirely separate affair from the need by some individuals for glasses to enable them see clearly objects located at farther distances up to infinity (ametropia). An individual might be needing both forms of near and distance corrections simultaneously and the two lens corrections would either be issued as separate glasses or more commonly incorporated into a single composite lens in a pair of spectacles called a bi-focal lens.

Presbyopia is not influenced by the race, creed, and level or language of literacy of the individuals affected. Those who are stack illiterates in the true sense of it (i.e. they can not the read and write in

any language); and those others who could read and write but not in the western writing system in which script in English and local languages are usually written, experience lots of difficulties in Nigeria in getting their eyes tested for presbyopia. The reason for this lies in the fact that the reading-test charts available for use in Nigerian eye health facilities are all written in western writing system in English and some of the local languages. These two groups of individuals, who are derisively and collectively tagged "illiterates", could not be appropriately tested for the correction of their presbyopia out-rightly, or are inadequately tested with some form of arbitrary approximations. Such "illiterate" presbyopic sufferers may therefore be denied the comfort of clearly seeing their near works such as domestic chores like checking the time on their wristwatches, threading of needles, and pairing of nails; vocational pursuits such as fine craft and technical works; and to read and write (for those literate in other writing systems). While the solution for designing suitable reading test scripts for those that are stark illiterates might not be an easy one, the solution for those who are literate in non-western writing format is to design reading test charts in the writing system in which they are literate. The immediate challenge to the latter solution will be the incompatibility between the writing systems in which the mainstream eye care practitioners in Nigeria are literate (Western), and that in which some presbyopes are literate say (Arabic). A transliteration of whatever a presbyopic individual being tested is reading in Arabic would have to be produced in English and made available

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for the eye care practitioner to be able to simultaneously monitor the accuracy or otherwise of what the presbyope is reading². This incompatibility scenario obtains in a large swathe of northern Nigerian and some parts of South-western Nigeria, where over three-fifths of the 140 million Nigerians live. In these parts, the inhabitants are predominantly Muslims, and a large proportion of them have minimal literacy skill in Arabic, the "official" language of Islam, which is written in a different system from the western writing one. The literary skill in Arabic is acquired through basic Quranic study that most children of Muslim background are subject to in childhood. In contrast, majority of eye care practitioners in these parts of Nigeria are neither Muslims³, nor are they literate in Arabic.

The aim of this paper was to design an appropriate reading test chart in Arabic with its corresponding transliteration in English, and test its use after validation, by eye care practitioners, in determining the reading glass needs of some Nigerian Muslim presbyopes who only have minimal literacy in Arabic that had been acquired through Quranic education.

METHODS

The study was carried out between January and June 2006 in Ilorin, the capital city of Kwara state Nigeria. The town has a projected population of about 700,000 and the inhabitants largely engage in petty selling and trading businesses, and traditional crafts such as weaving and pottery making. The ethnic extractions of the people are a mix of northern Nigeria tribes (Fulani, Hausa and Nupe) and Yoruba of South-western Nigeria but they all speak Yoruba- the lingua franca. Islam is the predominant religion and while less than 20% among the over 40-year old have had any form of western education, over 90% have completed a decade-long Quranic training during early childhood that involved the reading and writing of the Quran in Arabic.

This study was conducted in 3 stages as follows:

1. Design of a near reading-test chart in appropriate Arabic

The general guidelines used in this study are as detailed for the design and production of reading scripts by Rabbetts⁴ Since the population of study is neither an Arabic speaking one, nor that the degree of literacy in Arabic is total, especially care was taken to produce reading texts that tapped only on the familiar Arabic words and phrases employed in routine reading and writing of the Quran. The selected short passages of continuous reading

matter were then examined for their meaningfulness and readability by harnessing the different backgrounds of the three authors, who themselves are all products of the Quranic school system viz.; a linguistic expert (IOS), a fluent speaker of Arabic (SBB), and an ophthalmic researcher (AOM). The Arabic-reading scripts were then formatted into a range of print sizes ranging from N5 (the tiniest) to N48 (the largest), with each point (N) being 1/72 of an inch of the body on which the letter is raised or mounted on the printing platform. The corresponding transliterations of the Arabic reading scripts into the western writing system which were designed for the use of the attending eye care practitioners for ease of monitoring, were printed on a separate platform from the Arabic one since the two would be held by separately. Both the Arabic words and phrases in each grouping not only had the same phonetic realizations in their corresponding transliteration, but also the same print size so as to allow for ease of monitoring of whatever the individual undergoing the near reading test would be reading in Arabic, by the eye care practitioner who would be holding the transliterated copy, word for word, and print size for print size.

2. Validation of designed reading chart among dual-literate presbyopes.

Twelve consenting presbyopic university lecturers in the departments of Arabic and Islamic religion, who were both literate in Arabic and English, were recruited for this stage of study. Each of them was separately tested, either using his existing reading glasses if found adequate, or alternatively an adequate one that we have prescribed. The near reading test chart in Arabic was first used and later the conventional one in English. A successful validation is defined as being achieved when the same satisfactory end-point are recorded in the reading test for both the designed Arabic reading chart and later the conventional one in English. The end-points taken for a satisfactory measurement of the presbyopic correction in the absence of any co-morbid eye disease, is to for the individual to comfortably read the tiniest prints (N5) in daylight room illumination while holding the reading material at 33cm away from the eyes, and wearing an adequate presbyopic correction.

3. Testing of the near reading chart in appropriate Arabic among presbyopes literate only in Arabic.

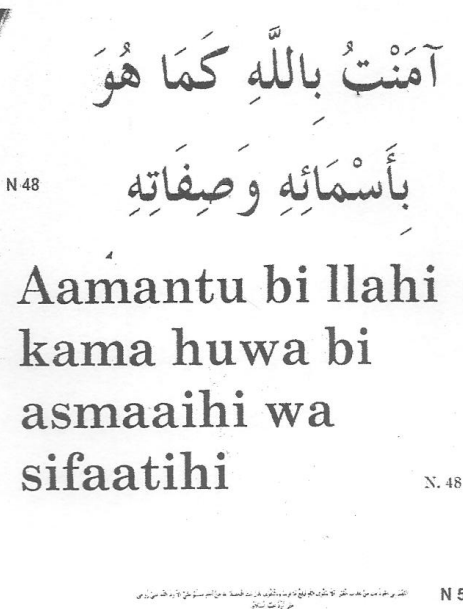
A total of fifty presbyopes who had only some minimal literacy in Arabic were recruited for this last stage of the study. They were sourced for from among the consecutive patients that presented at

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the eye departments of the university of Ilorin Teaching Hospital, Ilorin; the Civil service Hospital, Ilorin; and Top sight Eye Center, Ilorin. They were tested to determine their reading glass needs (presbyopic correction) using the designed Arabic reading-test chart. Only those with good (6/6 or better) distance visual acuity and without any ocular disorder that could compromise near vision were selected for the purpose of this study. The end-points taken for a satisfactory measurement of the presbyopic correction is to for the individual to comfortably read the tiny prints N5 in daylight room illumination while holding the reading material at 33cm away from the eyes, and wearing the measured test lens equivalents of the required reading glasses.

RESULTS

Figure 1 is a reproduction of the designed reading test chart, showing the largest (N48) and the tiniest (N5) reading scripts in Arabic and below each its corresponding transliterations in western writing system.



All the dual-literate university lecturers who participated in the validation stage of our study achieved the same satisfactory end points for the reading charts in the designed Arabic chart and the conventional English one.

All the 50 individuals who had only minimal literacy in Arabic had their presbyopic corrections satisfactorily determined and prescriptions for reading glasses made using our designed Arabic-reading chart only. Their attending eye care practitioners were also able to follow whatever was being read in Arabic with ease, while using the separate copy of the reading chart that contain the transliterations. Of the 4 eye care practitioners who conducted the tests on the 50 individuals, 2 were ophthalmologists and the other two were ophthalmic nurses.

DISCUSSION

The global initiative for the elimination of avoidable blindness, the base document for VISION 2020 – THE RIGHT TO SIGHT, emphasizes the need for appropriate technology and affordable technology for global delivery of eye care⁵. It is hoped that the reading chart that would be affordable as its cost will be limited to that required to print and distribute a few pages of a black and white text on paper. In Kwara state where the study took place, it had earlier been recommended that an optical unit for the production of glasses be planned for by the state eye care programme as part of the needed ophthalmic infrastructures⁶. This recommendation was predicated on the anticipated significant need for glasses by people who have refractive errors including presbyopia. The near reading test chart in Arabic, if made available soon enough would be found useful in reaching out to those presbyopes who otherwise might have been missed. Dearth of ophthalmologists that practice in Nigeria particularly in the northern part,⁷ should not be a barrier to the widespread practice of prescribing reading glasses using our designed reading chart. As demonstrated in this study, it is evident that ophthalmic nurses can be easily trained for this purpose. In theory, the amount of presbyopic correction needed by an individual can be calculated from a computation related to his/her desired distance to read, however in practice the eye care practitioner learns by experience to anticipate the approximate presbyopic correction from the individual's age and the approximation is then confirmed by subjective test with test lenses (refraction).

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A number of factors contributed to the excellent validation, and the subsequent ease of use of our designed Arabic reading chart in this study. Firstly, the different backgrounds of the authors were harnessed to produce meaningful and readable continuous reading passages in Arabic. Also in grading the Arabic reading materials that were used in designing the Arabic reading chart, we took into cognizance the minimal literacy level of the target audience in Arabic. Secondly, by entrusting the validation of the designed script with the conventional English one to our colleague lecturers in the departments of Arabic and Islamic religion, who were in no way previously involved in its design, an un-biased and competent validation exercise was ensured.

A limitation in this study centers on the technical difficulty of producing exact size replicas of reading scripts not only between the 2 different writing systems (English and Arabic). This is because lower case letters used in most reading scripts vary in height due to the fact that some have ascenders (b,d), some have descenders (p, q), while others have none (m, x). This factor made the replication of the print sizes from the western writing format into the designed Arabic ones not a hundred percent achievable in all instances. The other limitation relates to the fact that the individuals tested were only those that were largely free of other eye disorders. This inclusion criterion was made solely to make the interpretation of the results of our study straightforward without having to take into account avoidable confounding factors. Otherwise those presbyopes with additional ocular disorders desiring to read could be equally tested with the reading chart if their disorders permit this.

While commenting on the need for an integrated health care system in Nigeria, Ajala⁸ had noted that elitist and bureaucratic behaviour of both the western medical practitioners and their institutions are strains to patients. For integration, he recommended a process of stimulus diffusion that would identify and promote specific aspects of western medicine that will stimulate local equivalents in the like manner that we have carried out in this study. The earlier works on reading charts in Nigeria^{9,10} had produced reading test types in some Nigerian languages, but ours though veering on one side of the religious divide, cuts across local languages divide and is likely to impact on a larger and a wider segments of the Nigeria population because of the existing low adult literacy levels and existing demographic realities. Indeed by using the same concept and methodology in producing appropriate Arabic-reading charts, eye care practitioners in other non-Arabic speaking Muslim populations of other parts

of Africa, Asia and eastern Europe may be able to extend this aspect of eye care to their teeming populace that are not literate in their countries' official languages and writing systems. Years of unsatisfactory efforts by this "illiterate" populace to access western-style eye care to obtain reading glasses might have bred a feeling of alienation. Our work should therefore serve "as a method of building the bridges of understanding and respect among adherents of different faiths through cross-fertilization of ideas" as advocated by Abubakre¹¹.

In conclusion, we have designed an appropriate Arabic has been found useful in determining the reading glass needs of some Nigerian Muslim presbyopes who are only and minimally literate in Arabic that had been acquired through Quranic education. Both the concept and the methodology used in producing this reading chart can be adapted in producing similar appropriate ones for use by eye care practitioners in similar settings in other non-Arabic speaking Muslim populations of Africa, Asia and Eastern Europe.

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