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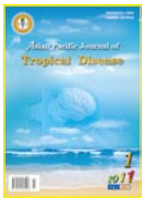

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Ophthalmic practice health hazards among ophthalmologists in a resource-limited setting

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ABSTRACT

Objective: To determine ophthalmic practice health hazards among ophthalmologists in a resource-limited setting. **Methods:** The study was conducted through a cross-sectional survey of 53 ophthalmologists' experiences on ophthalmic practice health hazards using semi-structured questionnaire. **Results:** Most practitioners felt eye surgical procedures 40 (75.5%) and examination of eye patients (62.3%) were potentially hazardous to practitioners and, 49 (92.5%) thought clerking was not. Most, 92.5% had experienced patients' halitosis/cough during ophthalmoscopy and, 77.4% experienced hand smeared with patients´ eye discharges/tears. Important health hazards experiences included, having contacted systemic diseases (5.7%) and infective eye diseases (18.9%), knife cut during surgical procedure (7.6%), needle pricks (49.1%) and hand smeared with patients´ blood (49.1%). Others were neck pain at ophthalmoscopy (35.9%), blurred vision at retinoscopy (20.8%) and hoarseness while performing visual acuities (1.9%). **Conclusions:** Eye practitioners are exposed to hazards in their practice including potentially life threatening ones. Necessary precautions at work, use of hazard free ophthalmic equipment and working conditions would reduce hazards in ophthalmic practice.

1. Introduction

Occupational hazards or working conditions that can lead to an illness or death constitute important health challenge across the globe[1, 2]. This is so as work related health hazards are potential sources of fear, psychological and emotional disturbance[3, 4]. It can be a source of discomfort, pain and disability[5]. Moreover, vocational induced hazards may be life threatening and at times a cause of death[6]. Therefore, so as long man engages in vocations, interest remains in occupational health hazards.

Different health hazards exist as there are different vocations. Hence the type and nature of health hazards are peculiar to particular occupation and the practitioners are essentially prone to such hazards. For instance, among ophthalmologists, there were reports of work related back pain[7, 8], infectious conjunctivitis[9], contact dermatitis[10, 11], chronic headache[8], and visual disturbances[8]. Generally, health care workers are exposed to an array of physical, chemical, biological, and psychosocial hazards[12]. Viral hepatitis is a dreaded occupational health hazard among health personnel[13], ophthalmologists inclusive.

Man has to work to earn a living however, he should be protected from work related hazards to give optimal service and, prevent grief/disability and avoidable deaths. Avoidable risks should be known and be guarded against. Like practitioners in other vocations especially medical field, ophthalmic practice exposes its practitioners to health hazards ranging from inconsequential non-life threatening to life threatening ones.

While there were documentations on job-specific hazards for many vocations in resource-endowed society[14, 15], it is a sharp contrast for most occupations in resource-limited society. Interestingly, ophthalmologists concern themselves studying eye related hazards in many vocations[16-19] paying

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little attention to studying health hazards of ophthalmic practice to the practitioners. This might suggest low level of awareness of inherent practice health hazards among practitioners. This paper documented, in a resource-limited setting, ophthalmologists experiences on ophthalmic practice related health hazards and suggested ways to reduce them.

2. Materials and methods

This was a cross-sectional survey of eye care practitioners' experiences on ophthalmic practice health hazards in Nigeria using semi-structured questionnaire. The study was conducted following the guidelines as contained in the declaration of Helsinki.

A systematic random sampling method was employed to select participants. Every fourth eye care practitioners attending the opening session of 33rd Ophthalmological Society of Nigeria annual congress and scientific meeting held in September 2008, at Ile -Ife Nigeria, was approached for consent to fill a semi-structured questionnaire.

The questionnaire sought to know practitioners' social demography including age, sex, professional cadre, duration in ophthalmic practice, and the place of practice. Also, it sought opinion on whether ophthalmic practice was hazardous, the potential hazardous areas in ophthalmic practice, and health hazards previously experienced as an eye care practitioner. Suggestions on ways to reduce ophthalmic practice health hazards to practitioners were noted. Allowance was given to participants for additional information not listed on hazards experienced and suggestions for improvement. The questionnaire was pretested and corrected ahead of the survey.

Of the 60 questionnaires distributed among consenting eye care practitioners, 56 were returned. However, 53 questionnaires were eventually analyzed as 3 of the questionnaires were returned with areas of interest not filled. The eye care practitioners as referred in this paper were qualified medical doctors who were committed to eye care. However, the practitioners differ in cadre and sophistication and, often had additional qualification in eye care. For instance, consultant ophthalmologist had additional Fellowship qualification in ophthalmology with or without subspecialty training[20].

A senior registrar was undergoing Fellowship residency training in ophthalmology but had passed part I Fellowship examination but yet to pass part II Fellowship examination[21]. A registrar was undergoing Fellowship residency training in ophthalmology but had not passed part I Fellowship examination[21]. A diplomate had two-year structured training in ophthalmology leading to award of diploma in ophthalmology (DO)[22].

The responses were collated and analyzed using SPSS 15.0 (Chicago, IL). The test of significance was performed using *Chi* square test and statistical significance was taken at $P<0.05$.

3. Results

The experiences of 53 eye care practitioners consisting of 25 (47.2%) males and 28 (52.8%) females whose age ranged between 28-59 years (39.13±6.66), were analyzed. The distribution of eye care practitioners by cadre is in Figure 1.

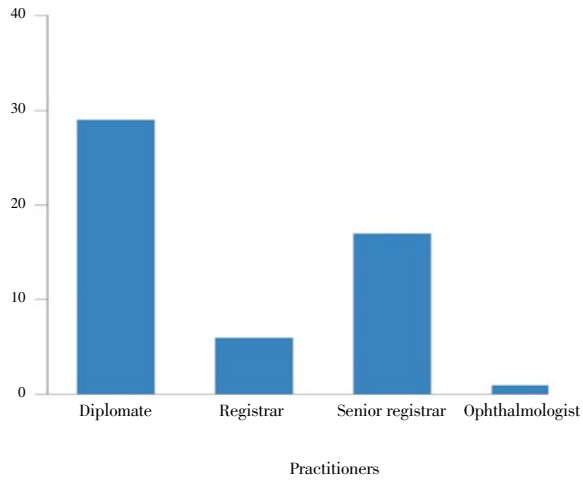

Figure 1. Cadres of eye care practitioners (n=53).

The duration spent in eye care practice ranged between 1 to 30 years [(8.89±7.17) years old]. Their locations of practice spread across 18 cities/towns in Nigeria.

Twenty-nine (54.7%) considered ophthalmic practice hazardous, 21 (39.6%) considered it non-hazardous, and 3 (5.7%) were uncommitted in their opinion. The distribution of eye care practitioners by their opinion on areas of ophthalmic practice with potential for health hazards is in Table 1.

Table 1
Distribution of eye practitioners by opinion on areas of practice (n=53) [n (%)].

Areas of ophthalmic practice	Opinion on whether areas has hazard potential	
	Yes	No
Clerking ophthalmic patients	4 (7.6)	49 (92.4)
Examining ophthalmic patients	33 (62.3)	20 (37.7)
Investigating ophthalmic patients	6 (11.3)	47 (88.7)
Surgical procedure on eye patients	40 (75.5)	13 (24.5)

χ^2=80.686, df=3, P=0.001.

The eye care practitioners have experienced hazards including potential life threatening ones in their practice (Table 2).

Table 2
Distribution of eye practitioners by hazards experienced in eye ractice (n=53) [n (%)].

Type of hazards experienced	Yes	No
Hoarseness while performing visual acuities	1 (1.9)	52 (98.1)
Blurred vision during retinoscopy	11 (20.8)	42 (79.2)
Neck pain during ophthalmoscopy	19 (35.9)	34 (64.1)
Exposure to patient halitosis/cough during ophthalmoscopy	47 (88.7)	6 (11.3)
Bare hand in contact with patients' eye discharges/tears	41 (77.4)	12 (22.6)
Bare hand in contact with eye patients' blood	26 (49.1)	27 (50.9)
Needle prick during procedure on eye patients	26 (49.1)	27 (50.1)
Knife cut during surgical procedure on eye patients	4 (7.6)	49 (92.4)
Contacted infective eye disease while managing eye patients	10 (18.9)	43 (81.1)
Contacted systemic disease while managing eye patients	3 (5.7)	50 (94.3)

χ^2=190.878, df=9, P=0.001.

The eye care practitioners offered suggestions on ways

to reduce hazards to practitioners in ophthalmic practice (Figure 2).

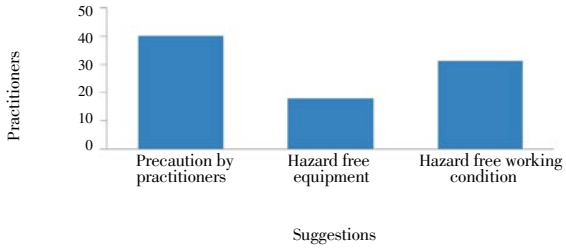

Figure 2. Practitioners' suggestions to reduce eye practice hazards.

4. Discussion

Eye care practitioners in resource-limited economy are faced with many challenges including health hazards in ophthalmic practice like their counterparts in resource-endowed societies. However, unlike their counterparts in resource-endowed societies, the inadequate resources including equipment and working conditions, most likely make them at higer risk of ophthalmic practice health hazards. This paper documented ophthalmic practice health hazards among ophthalmologists in a resource-limited setting.

The mean age showed practitioners with long years of practice underscoring need for hazard free practice. The gender distribution was balanced, making the study representative of the experiences across gender divide. The mean duration of years of practice as well as the spread of locations of practice makes the study representative. Furthermore, the distribution of the practitioners across cadres, from relatively less skilled to highly skilled should make this study representative of possible health hazards eye practice could pose to the practitioners.

This study showed that all areas of ophthalmic practice were potentially hazardous, and of course with some more hazardous than the other. For instance, most practitioners adjudged clerking and investigating ophthalmic patients as non-hazardous as compared with either examining or carrying out surgical procedure on eye patients.

Clerking ophthalmic patients should of course not constitute serious health hazards to the practitioners as observed in this study. The chance of health hazards may be low but it is not rare during clerking when it happens to clerking mentally deranged patients who may be potentially violent. Besides, patients with communicable diseases like open tuberculosis can be health risk to practitioners. Furthermore, inappropriate consulting chairs may cause back pain in a busy ophthalmic clinics. Some practitioners did admit clerking was potentially hazardous in this study.

Examination of ophthalmic patients essentially involves some degree of close contact with patients and some 'risk of exposure'. Close proximity to patients in direct ophthalmoscopy exposes practitioners to patients' breaths including halitosis and communicable open tuberculosis.

Examining patients essentially entails positional changes including rising from sitting position and flexion in neck bending. It is not uncommon for practitioners to complaint of neck pain after series of ophthalmoscopy on patients in a busy ophthalmic clinic as found in this study.

Inappropriate examination chairs for practitioners and patients in slit lamp examination could be a source of neck and back pain in busy ophthalmic clinics. In an ergonomic assessment of the posture of surgeons performing endoscopic transurethral resections, the necessity to hold the endoscope continuously in close contact with the eye has been associated with urologist awkward postures with resultant muscular strain and fatigue[23].

Furthermore, practitioners' hands get smeared/soiled with patients' body fluids especially eye discharges/tears as reported in this study. There are reports of blood and body fluids exposures among hospital doctors[24] and primary health care workers[24]. Eye discharge/tears are potential source of infective agents including bacteria, fungal and virus especially the dreaded HIV. As many as 19% of the practitioners admitted having infective eye disease and nearly 6% systemic disease which were contacted while managing eye patients. In a study, it is demonstrated that eye practitioners are contaminated with pathogenic organisms after contact with eye patients[26].

Investigating ophthalmic patients is never hazard free. For instance, it is not impossible having needle prick while taking blood samples towards investigating ophthalmic patients. Nearly half (49%) of the practitioners in this study experienced needle pricks during procedure on eye patients and the same number reported having their hands soiled with patients' blood in their practice.

Surgical procedures being considered hazardous by many practitioners might be borne of the fact that it involved the use of sharp instruments that are potentially injurious to practitioners especially accidental injuries. It is not impossible for surgeons to having knives cut at surgery. In this report almost 8% had experienced knife cut during surgical procedure on eye patients. It is remarkable less than 2% of the practitioners experienced hoarseness while performing visual acuities on patients. This could be so as visual acuities are performed by other cadres of eye care workers especially ophthalmic nurses working with ophthalmologists. It is not uncommon for ophthalmic nurses complaining of stress including hoarseness after performing visual acuities on many patients in a busy ophthalmic clinic. The suggestions offered by practitioners would definitely reduce ophthalmic hazards among eye care worker if given the necessary attention. Eye care workers taking precautionary measures while working would reduce chance of health hazards. An improvement in the safety culture among practitioners can be expected to reduce the number of blood and body fluids exposures[24, 25]. Hand washing, though appeared simple, is basic to prevent contagious/infective eye conditions from patients to practitioners. This has been recognized for long however, the compliance among the practitioners needs to be improved[27]. Barrier caring, including wear of gloves and /or use of face masks while examining patients having eye discharge or with known infective or contagious diseases should be protective.

Funduscopy should be deferred in patients with infective purulent or epidemic viral keratoconjunctivitis and open tuberculosis till such patients could be adjudged safe. Maintaining an appropriate posture including sitting, bending and rising while clerking, examining, investigating and while performing an operation on patients would reduce incidence of neck and back pain among practitioners. Of course, there should be complementary appropriate positioning of patients for optimal benefit. Meanwhile, manufacturers of basic eye equipment should improve on the production of hazard free ophthalmic equipment[23] including chairs, couches, operating tables, operating microscopes, ophthalmoscopes among others.

Furthermore, owners of eye care facilities should ensure hazard free condition of service including building, environment, equipment, consumables, continuing medical education on work hazard prevention/management among others. The practitioners should acquaint themselves with hazard free equipment, insist and persuade employers to equip eye care facility with hazard free equipment rather than obsolete and hazardous ones. Donor agencies should desist from 'Beggars have no choice' attitude of donating any kind of obsolete and hazardous equipment to 'have nots' societies[28].

In conclusion, ophthalmic practice is potentially hazardous to the practitioners' health including life threatening ones. The need for extra care during invasive procedure underscored. A combination of necessary precautions while managing patients, use of hazard free ophthalmic equipment and working conditions would lessen incidence of work hazards in ophthalmic practice.

Conflict of interest statement

We declare that we have no conflict of interest.

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