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EYE CARE UTILISATION AMONG SLUM DWELLERS IN THE GREATER ACCRA REGION, GHANA

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ABSTRACT

Objective: To investigate the pattern of eye care utilisation and the knowledge of eye care services and personnel among slum dwellers in the Greater Accra Region of Ghana.

Design: Cross-sectional descriptive study.

Setting: Structured questionnaire was administered to each participant by trained interviewers using the local language where it is evident that participants cannot communicate in English Language.

Subjects: Study subjects originally comprised 700 randomly selected adults from seven randomly selected clusters from Accra Metropolitan Assembly designated slum areas in the Greater Accra Region of Ghana.

Results: Responses from the remaining sample of 699 subjects (aged 18 – 80 years) comprising 355 (50.8%) males and 344 (49.2%) females were analysed. Majority had little or no formal education. 38.9% of the respondents have health insurance. 44.1% had no knowledge about eye care while 68.7% did not know any eye care professional. 44.7% of those who have had an eye problem had not presented for an eye examination. Some of the respondents still undertake unorthodox and harmful traditional practices such as using sea water to irrigate the eye and applying breast milk to treat eye infections.

Conclusions: From our study, we conclude that there is poor uptake of eye care services and poor knowledge of eye care services and personnel in the Greater Accra Region of Ghana.

INTRODUCTION

Slums are spontaneous communities which are formed by people who move to a place in search of better means of livelihoods. The United Nations Expert Group in 2002 operationally defined a slum as a human settlement that is characterised by inadequate access to safe water; inadequate access to sanitation and other infrastructure; poor structural quality of housing; overcrowding; and insecure residential status (1). The Accra Metropolitan Assembly defines a place as a slum when it lacks one of the following conditions: security of tenure of land acquisition, sufficient living space, durable housing, access to safe water and access to adequate sanitation (*informal communication*). Slums arise as a consequence of rapid urbanisation and globalisation. "Slums are a physical and spatial manifestation of urban poverty and intra-city inequality. However, slums do not accommodate all of the urban poor, nor are all slum dwellers always poor" (1). It is estimated that about one billion people live in slums globally (1). According

to the latest Global Report on Human Settlements, 37% of the urban population in developing regions lives in slums. In sub-Saharan Africa, 62% of urban residents are slum-dwellers (2).

There exists a cyclical causal relationship between poverty and health – the so called "vicious cycle" of health and poverty (3). Notwithstanding that health services are more available in urban areas than rural areas, urban slum dwellers have poorer health compared to urban and rural dwellers (4). There are evidence suggesting that there is higher morbidity, poorer access to health services and higher mortality among poor urban residents of Africa than their rural counterparts (5 – 8).

Several socio-economic factors have been found to be associated with blindness and uptake of eye care services. These include lack of money, ignorance, and the eye condition not causing much discomfort to warrant attention as well as level of education (9, 10). Results from Pakistan have clearly demonstrated that poor neighbourhoods are at higher risk of blindness than those from affluent neighbourhoods

(11). Slums dwellers are usually characterised by lower educational levels. Studies have consistently shown that education levels are associated with under-corrected refractive errors (12).

Studies have largely investigated socio-economic factors influencing eye care utilisation in the general population. There are no many studies focusing on population of slum dwellers. The objective of this study is to provide baseline information on the patterns of eye care utilisation and the knowledge of eye care practitioners among slum dwellers in slum communities of the Greater Accra Region of Ghana.

MATERIALS AND METHODS

We conducted a cross-sectional descriptive survey to investigate the knowledge and patterns of eye care utilisation among slum dwellers in the Greater Accra Region of Ghana. Advocacy visit was made to the Accra Metropolitan Assembly, in order to secure administrative permission to conduct the study. Relevant information such as the estimated population of the slum areas in the municipality was also obtained during this visit.

The proposal for the study was submitted to and approved by the Department of Optometry, University of Cape Coast, Ghana. A questionnaire was used to elicit responses from 699 subjects living in slum areas of the Greater Accra Region. Seven clusters from Accra Metropolitan Assembly designated slum areas were selected for the study. Questionnaires were administered to a sample of 100 adult subjects (aged 18 and above) from each cluster. One questionnaire was not returned.

The questionnaire comprised of both closed and open ended questions. Questions on knowledge of eye care related to what respondents know about eye care, eye care personnel, knowledge of common eye conditions in the neighbourhood and others. Questions on utilisation of eye care services related to whether respondents have had any eye examination

when they have an eye condition, use of alternative eye medicines, use of spectacles, uptake of eye surgery, sources of eye care services and registration with the National Health Insurance Scheme (NHIS). Barriers to uptake of eye care services were also investigated.

Data analysis: The responses were coded and entered for data analysis. Descriptive and inferential statistics of the relevant finding were computed using SPSS version 16. Proportions were compared using a two-tailed χ^2 test while means were compared using the t-test. A p-value ≤ 0.05 was used for the standard of statistical significance.

RESULTS

Socio-demographics of study subjects: A total of 700 subjects were selected for the study. One questionnaire was not returned giving a participation rate of 99.8%. The results of 699 subjects are presented. This comprised of 355 (50.8%) males and 344 (49.2%) females. The subjects were aged 18 – 80 years. Three subjects did not state their ages. The mean age of the 696 who stated their ages was 35.8 ± 14.1 years (95% CI = 35.53 to 36.19). Over 60% of the respondents were aged 37 years or younger. Table 1 shows the age distribution and the level of education of the respondents. The mean age of the male respondents was 36.77 years (SD = 14.57, 95% CI = 35.25 – 38.30) while that of the female respondents was 34.86 years (SD = 13.64, 95% CI = 33.42 – 36.31). There was no statistical difference between the age of the male and female respondents ($t = 1.783$, $p = 0.075$).

A total of 554 (79.3%) had various levels of education while 142 (20.3%) of the respondents had no formal education. Three (0.4%) subjects did not respond when asked about their level of education. The level of education appeared to be associated with gender ($\chi^2 = 30.836$, $p < 0.0001$). More females had no formal or lower levels of education compared to males, while more males had higher levels of education compared to females (Table 1).

Table 1
Distribution of respondents by age and gender

Age group (yrs)	Gender		Total
	Male	Female	
18 - 27	118 (33.4)	135 (39.4)	253 (36.4)
28 - 37	82 (23.2)	89 (25.9)	171(24.6)
38 - 47	75 (21.2)	61 (17.8)	136 (19.5)
48 - 57	45 (12.7)	25 (7.3)	70 (10.1)
58 - 67	17 (4.8)	27 (7.9)	44 (6.3)
68 - 77	13 (3.7)	6 (1.7)	19 (2.7)
78 - 87	3 (0.8)	0 (0.0)	3 (0.4)
Total	353 (100.0)	343 (100.0)	696 (100.0)
Level of education			
No formal education	54 (15.3)	88 (25.5)	142 (20.4)
Primary school	60 (16.9)	81 (23.7)	141 (20.3)
Junior High School	98 (27.7)	95 (27.8)	193 (27.7)
Senior High School	87 (24.6)	51 (14.9)	138 (19.8)
Vocational School	42 (11.9)	18 (5.3)	60 (8.6)
Tertiary	13 (3.7)	9 (2.6)	22 (3.2)
Total	354 (100)	342 (100)	696 (100)

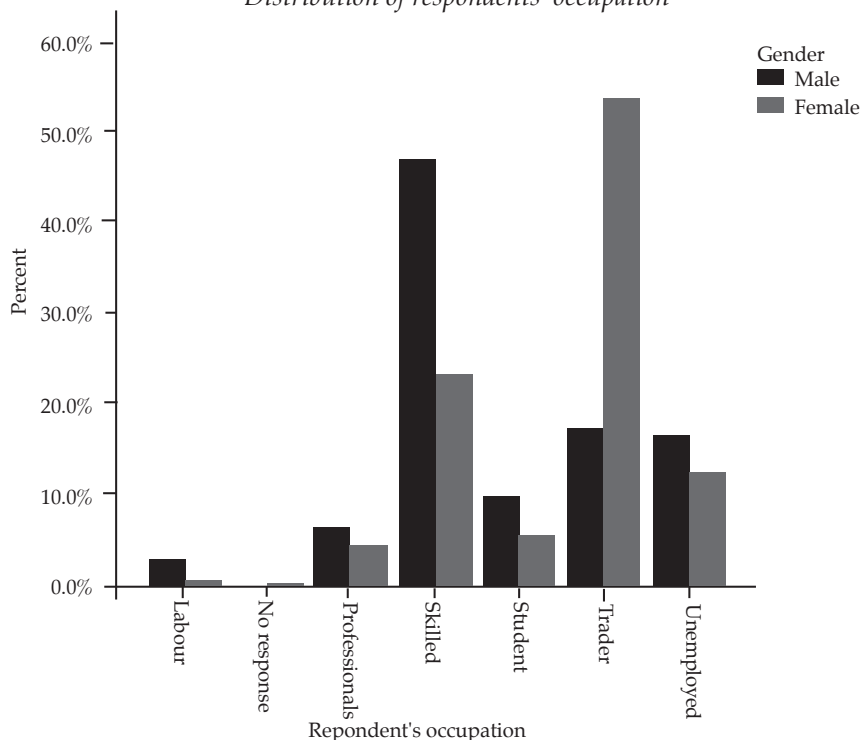
$$\chi^2 = 30.836, df = 5, p < 0.0001$$

Three hundred and fifty three (50.7%) of the 696 respondents were married while 263 (37.9%) were never married. Fourty two (6.0%) were widowed and 38 (5.4%) were divorced. Three male respondents did not report their marital status.

One hundred and one (14.5%) of the 698 respondents were unemployed while 597 (85.5%) were employed in various sectors (figure 1). One respondent did not report employment status.

Registration with National Health Insurance Scheme (NHIS): Majority of the respondents (61.1%) had not registered with the NHIS. Whether a respondent has registered with the NHIS was not associated with gender ($\chi^2 = 0.237, p = 0.62$), marital status ($\chi^2 = 5.65, p = 0.13$) and age group ($\chi^2 = 3.662, p = 0.056$). It was however associated with level of education ($\chi^2 = 71.307, p < 0.0001$). Out of 103 respondents who were older than 50 years, 49 (47.6%) had registered with NHIS compared to 37.6% of the 593 respondents younger than 50 years.

Figure 1
Distribution of respondents' occupation



Those who had not registered with the NHIS gave various reasons for not registering. These include “not having money to register” (52.5%), “it was not necessary to register” (10.6%), “no specific reason” (21.4%), and other reasons (15.5%). The other reasons given were that some respondent thought the government was not sincere; it was fraudulent, poor treatment of those who have registered and the belief that they are rarely sick (figure 2).

Knowledge about eye care: Of the 699 respondents, 391 (55.9%) had some knowledge about eye care

while 308 (44.1%) had no knowledge about eye care. Knowledge of eye care was significantly associated with gender ($\chi^2 = 21.495, p < 0.001$); age ($\chi^2 = 37.318, p = 0.000$); education level ($\chi^2 = 75.200, p = 0.000$); occupation ($\chi^2 = 18.463, p = 0.002$) and marital status ($\chi^2 = 8.607, p = 0.035$). Respondents who reported having knowledge about eye care gave indications of what they thought eye care entails. Eighty six (22.0%) of those who had knowledge of eye care thought eye care involves protecting the eyes from harmful substances (figure 3).

Figure 2
Reasons for not registering with NHIS

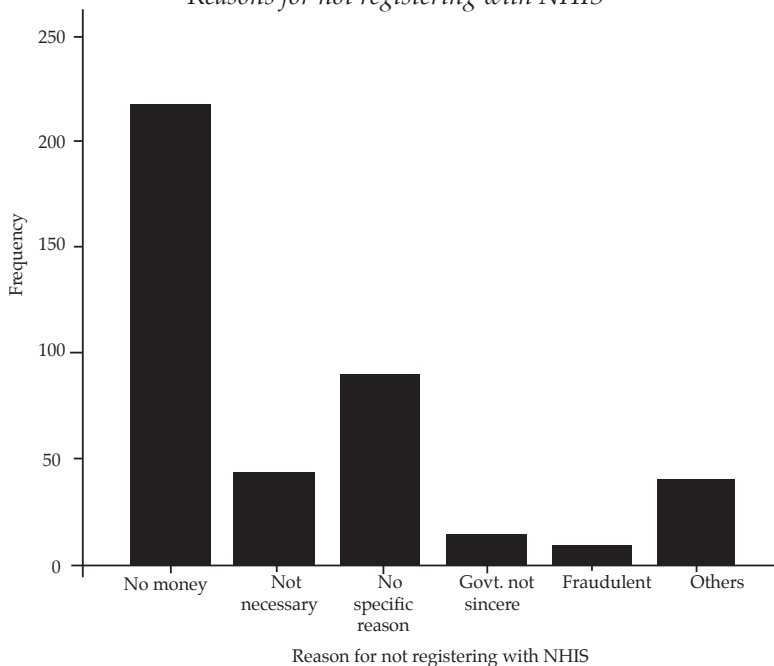


Table 2
Gender distribution of knowledge of eye care

Knowledge of eye care	Male (%)	Female (%)	Total (%)
Yes	229 (64.5)	162 (47.1)	391 (55.9)
No	126 (35.5)	182 (52.9)	308 (44.1)
Total	355 (100)	344 (100)	399 (100)

$\chi^2 = 21.495, df = 1, p = 0.000$

The sources of respondents' knowledge varied from hearsay to electronic media (figure 4) Of the 699 respondents, 480 (68.7%) did not know of any eye care professional while 219 (31.3%) reported that they had knowledge of some eye care professionals. Of these 219 who had knowledge of eye care professionals,

49 (22.4%) knew about ophthalmologists, 18 (8.2%) knew about optometrists, 111 (50.7%) knew about opticians, while 41 (18.7%) knew about ophthalmic nurses. The relationship between knowledge of eye care professionals and gender is shown in Table 3.

Figure 3
Reported knowledge about eye care among respondents

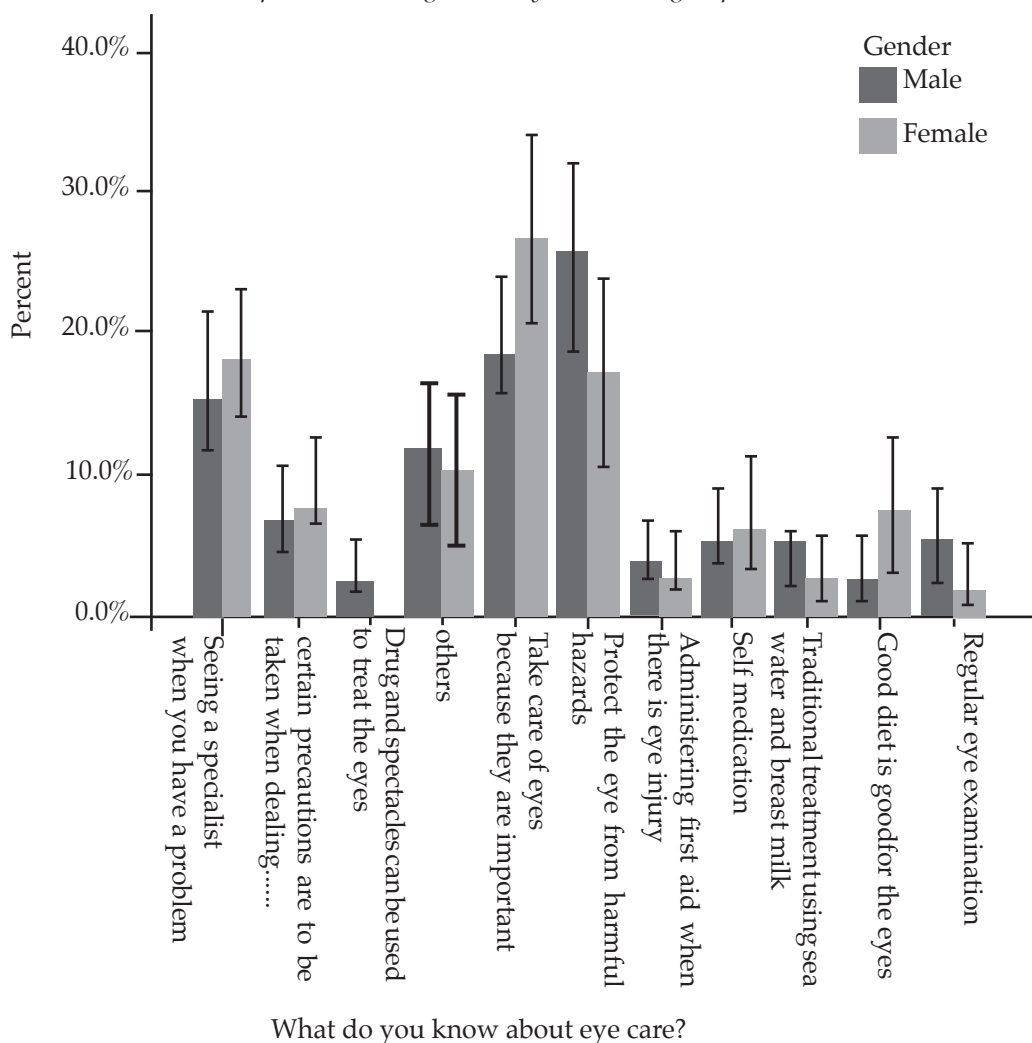


Figure 4
Source of Eye Health Information

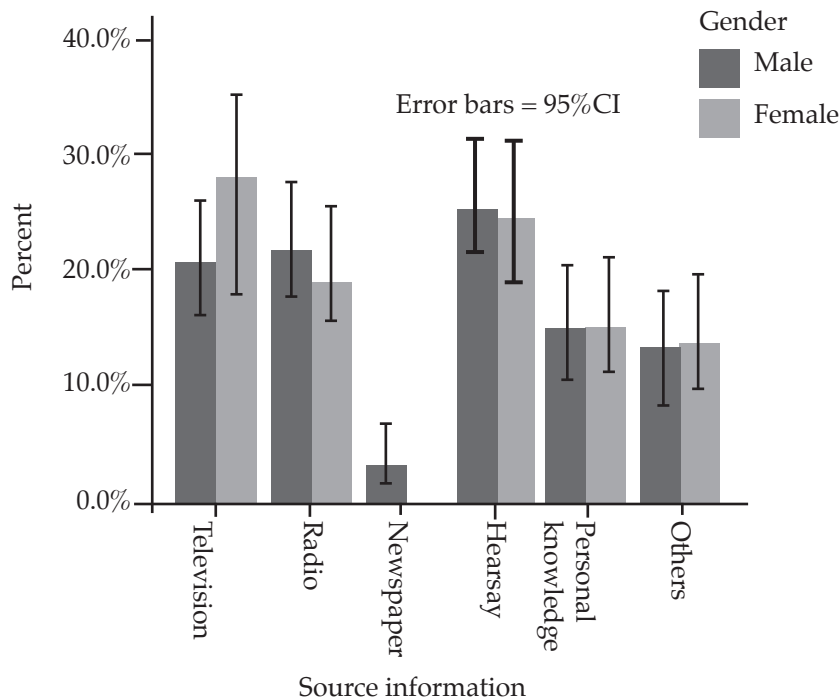


Table 3
Gender and knowledge of eye care professionals

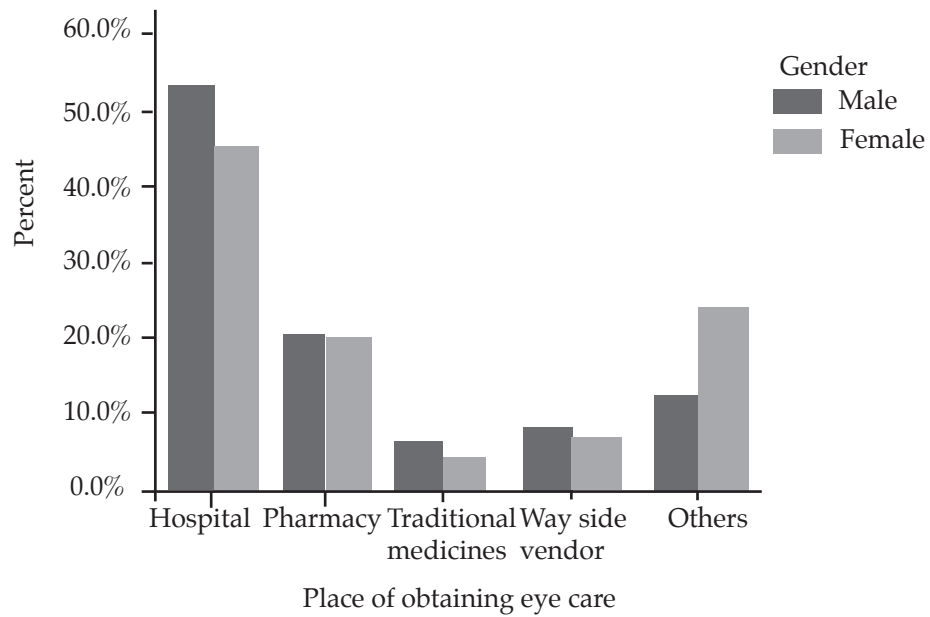
Profession	Response	Male (%)	Female (%)	χ^2	p-value	Significance
Ophthalmologists	Yes	35 (9.9)	14 (4.1)	8.674	0.003	S
	No	350 (90.1)	325 (95.9)			
Optometrists	Yes	10 (2.8)	8 (2.4)	0.139	0.710	NS
	No	345 (97.2)	330 (97.6)			
Opticians	Yes	79 (22.3)	32 (9.5)	21.043	0.000	S
	No	276 (77.7)	306 (90.5)			
Ophthalmic nurses	Yes	24 (6.8)	17 (5.0)	1.904	0.386	NS
	No	330 (93.0)	321 (95.0)			

S = significant (at $\alpha^2 = 0.05$), NS = Not significant (at $\alpha = 0.05$)

Utilisation of eye care services: Five hundred and ninety three respondents knew about eye care services in the hospital. Two of these did not respond to whether they utilised the services or not. Of the 591 who responded, 202 (34.2%) reported that they had consulted eye care professionals in the hospitals while 389 (65.8%) said they had not. Utilisation of eye care services in the hospital was not influenced by gender ($\chi^2 = 2.707$, $p = 0.100$) but was associated with level of education ($\chi^2 = 40.052$, $p < 0.0001$). Three hundred and seventy

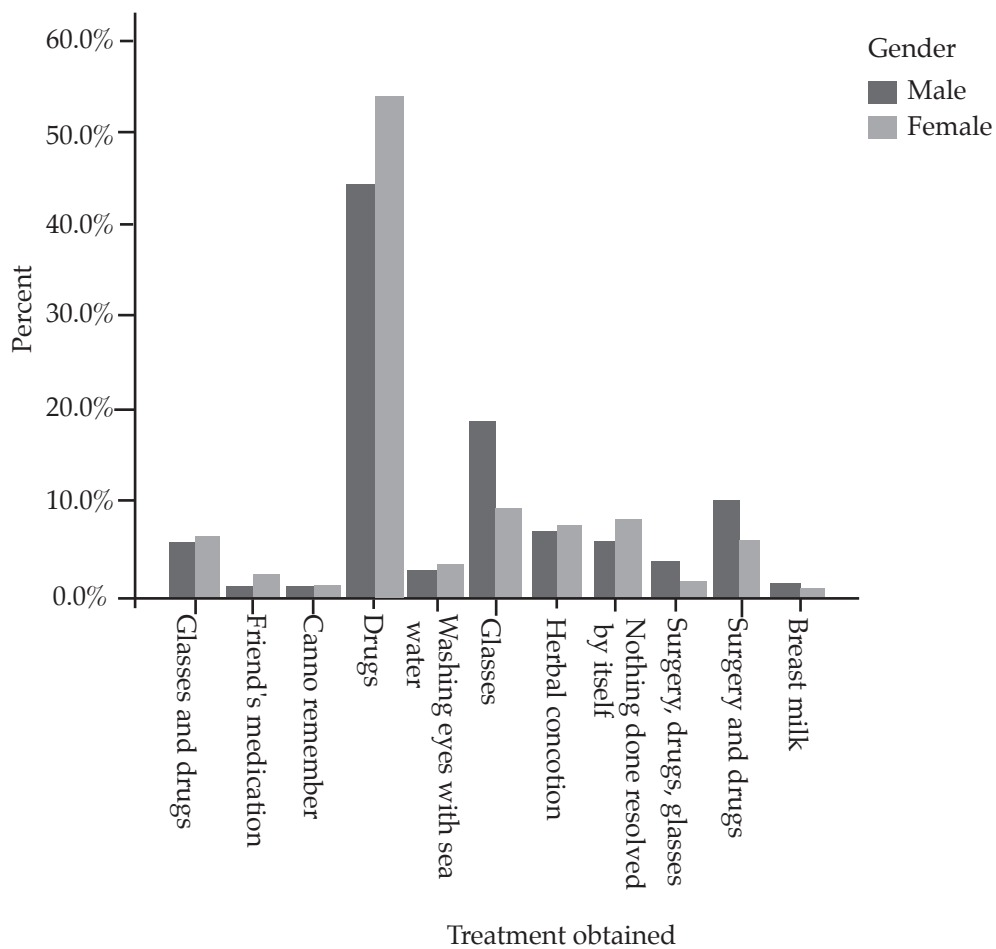
eight (54.1%) of the 699 respondents have had an eye problem. Of these, 209 (55.3%) had had an eye examination while the remaining 167 (44.7%) had not had any eye examination. Figure 5 shows the sources of eye care services for the 209 respondents who have had an eye examination. There was no significant association between gender and source of obtaining eye care ($\chi^2 = 9.345$, $p = 0.053$). The eye care professional consulted was however associated with level of education ($\chi^2 = 58.273$, $p < 0.0001$).

Figure 5
Source of eye care services



The form of treatment obtained by respondents when they had an eye problem is shown in figure 6.

Figure 6
Treatment obtained by respondents



The choice of where respondents obtained their eye care where informed by factors such as proximity, cost, effectiveness of services, timespent at facility among other factors (Figure 7). Three fourty five respondents rated facilities where eye care where obtained. One hundred

and one (29.3%) rated hospital services excellent while 23 (6.7%) rated pharmacy services as excellent. Seventy one (20.6%) and 54 (15.7%) gave a good rating to hospital and pharmacy eye care services respectively. Twenty one (8.4%) rated all the facilities as poor (Figure 8).

Figure 7
Reasons for choosing place of treatment

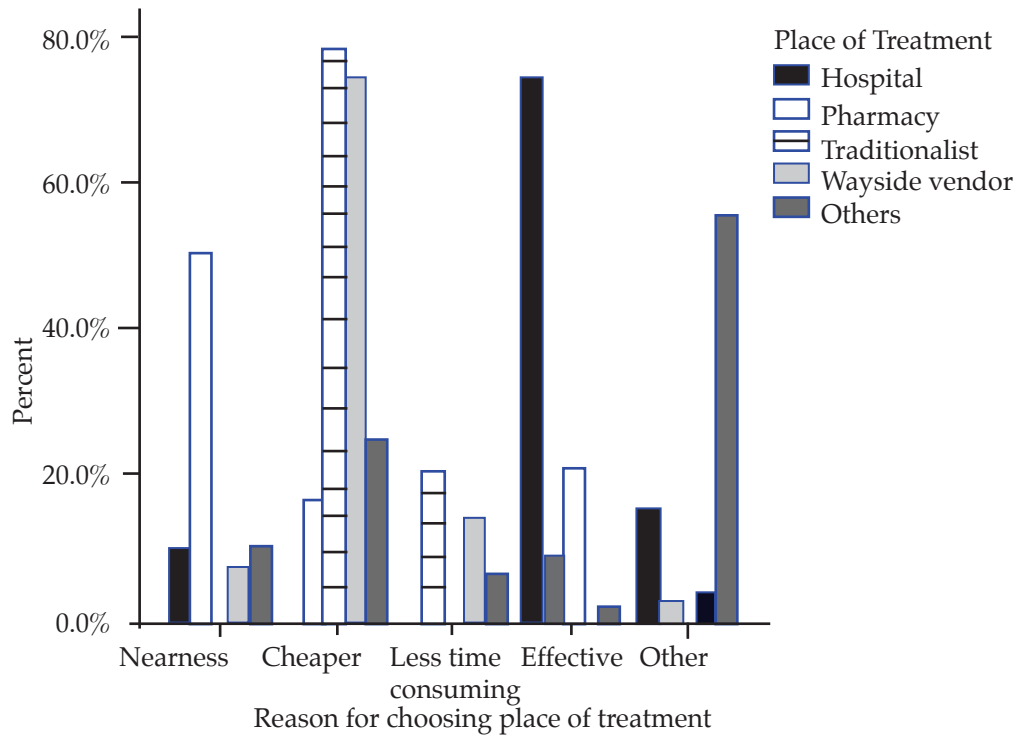
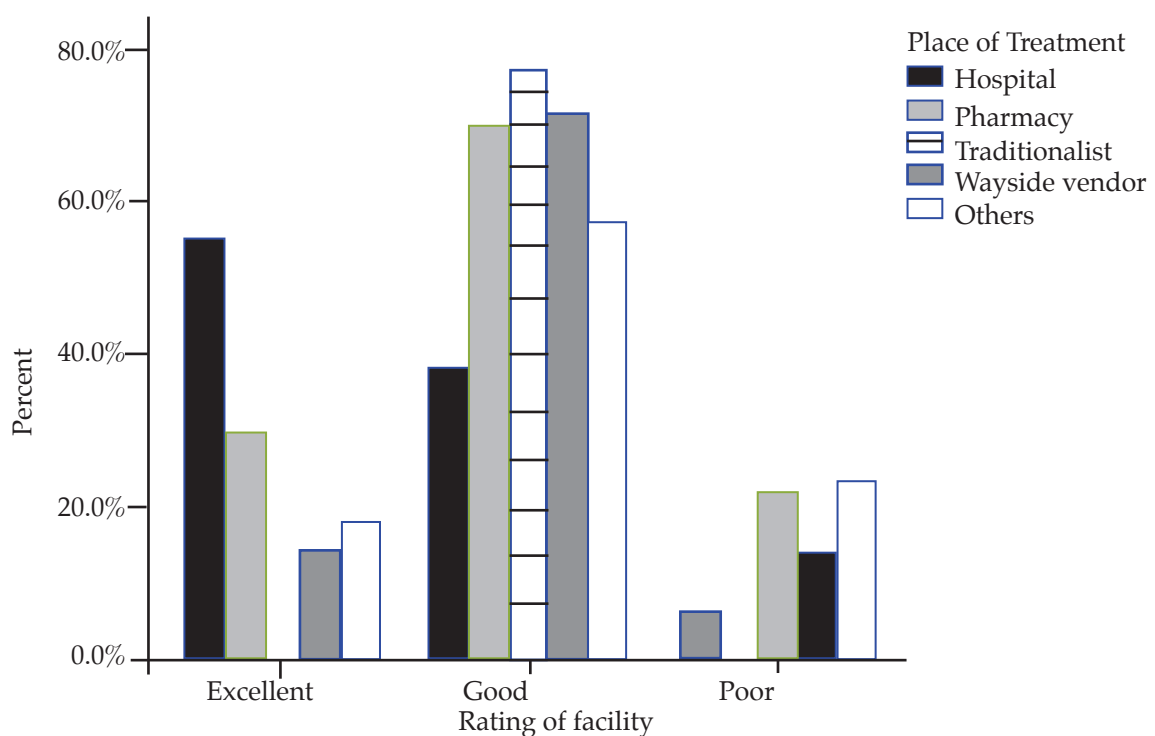


Figure 8
Rating of facility



DISCUSSION

Our study revealed that majority of slum dwellers in the Greater Accra Region of Ghana are young adults (≤ 37 years old) and have no formal education or have low education levels (68.4%). Gender inequality was noted in level of education. Some 77.8% were engaged in various employments. This is consistent with findings that the drive for employment opportunities is a factor in the increasing number of people living in slum areas. It is generally thought that slum dwellers are engaged in various occupational endeavours within and outside their immediate place of domicile.

Most of the respondents had not registered with the National Health Insurance Scheme (NHIS). Although Universal health insurance coverage is thought to provide universal access to healthcare, studies have shown that it usually fails to achieve this objective (13 – 16). This phenomenon whereby health programmes designed to provide care for the poor rather serves the rich has been described as the "Inverse Care Law" (17). Compared to homeless Hawaiians where 77% have health insurance (18), only 38.9% of respondents in our study have health insurance. Notwithstanding, Barnes *et al* (18) reported that holders of insurance coverage do not use it for eye care services. In Ghana, the NHIS does not cover provision of refractive error services. This is despite the fact that refractive error is a common cause of visual impairment in Ghana (19 – 21). The study revealed that registration with NHIS was not associated with gender, marital status and age group. It was however associated with the level of education. Not having money was the single most reported reason for not registering with the scheme. Some respondents who had not registered with NHIS have not done so because they thought the scheme was fraudulent, the government was not sincere and the poor treatment meted out to those already registered. There is therefore the need for a public education to increase uptake of the NHIS and to improve service delivery to those already on the scheme to serve as incentive to those who have not registered. Perceived susceptibility to illness was also given as a reason for not registering with the NHIS. According to the health belief model (HBM) (22), individual's action with respect to health behaviour is influenced by their perceived susceptibility to illness

Knowledge and eye care utilisation: In the present study, conceptualisation of knowledge of eye care services was related to the common forms of eye care practices readily provided in Ghana. Thus refractive surgery, contact lens use and care were not explored. These services are not widely practiced in Ghana. There was a poor knowledge of eye care services among

the slum dwellers. This is consistent with findings among homeless Hawaiians (18). The knowledge of eye care among the respondents was significantly determined by level of education, occupation, age, gender as well as marital status. These findings are consistent with studies that have reported that education is an important determinant of eye care utilisation (9, 23). There was also poor knowledge of personnel who provide eye care services. Knowledge of eye care providers is important in the uptake of eye care services. Barnes *et al* (18) have shown that 48.8% and 66.7% of homeless Hawaiians did not know where to seek eye care and corrective glasses and contact lens services respectively. Optometrists were the least known eye care providers. This is probably because although the practice of optometry has been in Ghana since pre-colonial era, the formal training of optometrists in Ghana only began in the last two decades. More so majority of optometrists in Ghana provide their services as private-for-profit practices although some optometrists work in the public service. Most of these private practices are located in city centres far removed from slum areas. In addition, private optometric practices are often registered as optical centres; it is not unlikely that the general public may designate optometrists as opticians. Furthermore, until recently, in Ghana, optometrists were referred to as ophthalmic opticians (opticians for short) after the former British terminology.

Almost half of the respondents who have had an eye problem had not presented for eye examination. This is similar to the findings in rural India (10). In an urban India population, 59% of subjects with visual impairment had not sought treatment for their poor vision (24). Among those who have had an eye examination when they have an eye problem, the results further revealed that over 50% of them resort to obtaining treatment without an eye examination from drug stores, traditional eye medication, wayside peddlers among others. This is different from the perception of rural Indians who believed that the hospital is the most likely place to seek treatment for cataract, blurred vision and watery eyes (10). Ntim-Amponsah *et al* (25) have reported that herbalists and chemical sellers (drug stores) still provide substantive eye care. They also noted that some of these practices may be harmful to the eyes. According to Barnes *et al* (8) less than one-third of homeless diabetic Hawaiians have had an ophthalmologic evaluation.

Furthermore, the present study showed that some of the slum dwellers in Greater Accra Region still engage in harmful traditional practices such as using sea water to irrigate the eye, traditional concoctions, applying breast milk to treat eye infections and using friend's medication. Some of these practices have been shown to have severe

deleterious effects on the eyes (26). This results show that there is poor uptake of eye care services in the communities studied. They further revealed that harmful traditional practices are still common among slum dwellers.

In conclusion, from our study, we can conclude that there is poor uptake of eye care utilisation among slum dwellers. This is due to poor knowledge of eye care personnel, barriers such as cost and susceptibility to illness. The use of unorthodox and harmful traditional practices is still quite common among slum dwellers. There is also a low uptake of the National Health Insurance Scheme among the study population.

Following from these conclusions, it is our recommendation that there is need for increased health education among slum dwellers on the importance of routine eye examination to prevent blindness. The identified barriers to uptake of eye care and health insurance should be adequately addressed by relevant government agencies. Eye care providers can also play an important role in providing eye health education among the slum dwellers. These will in turn reduce the burden of blindness and poverty in the slums of Greater Accra Region.

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