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## DETERMINANTS OF DEMAND FOR EYE CARE SERVICES AMONG NEW CLINIC ATTENDEES IN A NIGERIAN TERTIARY HOSPITAL

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### ABSTRACT

**Aim:** To assess how gender and socio-economic factors influence demand for eye health care services among new outpatient clinic attendees.

**Methods:** This was a cross-sectional study of patients attending the outpatient eye clinic of a Nigerian tertiary health institution for the first time. Interviewer-administered questionnaire was used to obtain bio-demographic data and information relating to persons involved in decision taking for eye health services demands.

**Result:** One hundred and fifty respondents were recruited into the study consisting of 68 (45.3%) males and 82 females. Age range of respondents was 1-94 years with a mean age of  $42.8 \pm 22.9$  years. The average age of males was significantly higher than females ( $p=0.007$ ). Males that fully self-funded their services were significantly higher than females (51.5% vs 28.0;  $p=0.002$ ) while monthly average personal income was not significantly different between the genders. Males also had overall worse visual status. Statistically notable predictors of financial obstacles constituting a delay to accessing eye care services were, female gender, self-only funding of eye care visit, low income level, worse visual status.

**Conclusion:** Demand for eye care services is often beyond individual factors but rather the household play a role in eye health-related decisions.

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### INTRODUCTION

Demand for healthcare is a complex and variable phenomenon which is only partially explained by the concept of interrelationship between health-seeking behavior, resources and health itself.[1] Health-seeking behaviour has been defined as a "sequence of remedial actions that individuals undertake to rectify perceived ill-health." [2] In its widest sense, behaviors include all those behaviors associated with establishing and retaining a healthy state, plus aspects of dealing with any departure from that state.

Individuals make choices about medical care. They decide when to visit a doctor when they feel sick, whether to go ahead with an operation, whether to immunize their children, and how often to have checkups. The process of making such decisions can be complicated, because it may involve accumulating advice from family members, friends, physicians, and others, weighing potential risks and benefits, and foregoing other types of consumption that could be financed with the resources used to purchase medical care. An individual's likelihood of seeking treatment is jointly determined by observed individual- and household-level characteristics as well as unobserved or unobservable

household-level characteristics.[3] Decision-making on health matters are often taken by members of a household and not merely by the individual. Household decision-making on health care is usually complex - it is a 'process' involving several steps, not an end in itself. Therefore, health care decisions can therefore not be viewed as a single choice.[4] Cost is obviously a major consideration for households in choosing among health care options.[5] Households assess the characteristics of providers in relation to household income and severity of illness. Hence, the main provider characteristics taken into account are cost, convenience and perceived quality of care.[6]

Financing eye health services and the uptake of eye correction is usually provided by the bread winners in the family or household. In cases where the patient does not have personal savings, the main source of financing their health-related costs are generally supported by other family members.[7] Sauerborn *et al* reported age bias, but not gender bias, in households' decisions to allocate scarce resources for health care in West Africa,[8] while gender bias in intra-household resource allocation in South Asia has long been reported.[9] Being able to detect age or gender bias in household decisions

may help in devising policies to improve access to eye health care. Several studies have highlighted factors that influence eye health-seeking behavior but have failed to closely explore the household level biases that go a long way in deciding why, when, where and whether to seek/utilize eye health care services. Even though eye diseases are rarely directly life-threatening, they often constitute significant discomfort to sufferers; affect socioeconomic activities thereby reducing individual and household quality of life. This study assessed the influence of gender, household decision making, social capital and socio-economic factors on eye health service utilization among new patients attending the outpatient (non-emergency) clinic of a tertiary health institution in south west Nigeria.

## METHODOLOGY

Consecutive consenting new patients attending the general outpatient Eye Clinic of a Nigerian tertiary hospital over a 12-week period between November 2015 to January, 2016 were recruited and responded to an interviewer-administered questionnaire which assessed respondent's socioeconomic status, important persons involved in current demand for eye healthcare and future decision making and causes of delay to access eye healthcare. Ethical approval was obtained from the local ethics and research board. The respondents' anamnesis, important findings of detailed ocular examination and diagnosis were documented. Data was imputed and analyzed with IBM SPSS<sup>®</sup> version 20. Chi-square test and Student t-test was used to assess the relationship between categorical and quantitative data variables respectively. Binary logistic regression was used to assess the odds of categories of patients reporting financial difficulty in the course of assessing eye care services. A p-value less than 0.05 was considered statistically significant.

## RESULT

One hundred and fifty patients were evaluated over the 12-week period. One hundred and twenty-seven patients (84.7%) of patients were capable of responding to questionnaire on their own while 23(15.3%) patients were minors therefore care-givers/informant responded on their behalf. Age range of respondents was 1-94 years with a mean age of  $42.8 \pm 22.9$  years. Male-to-female ratio was 1:1.2. About 56.7% of patients were within the active adult age bracket of 15-60 years with significantly higher proportion of females. The difference in the distribution of respondents with respect to the place of domicile (with respect to proximity to eye health facility) was not statistically significant between both genders. Significantly, higher proportion of males had their first visit for eye care services fully self-funded. Higher proportion of females considered their spouses influential in the eye care seeking decision making More than one-third of respondents (38.7%) sought for advice within the family. This underscores the role the family plays in seeking health services. The distribution of respondents by both average personal and household monthly income showed that majority were low income earners and there was no difference between average earnings of males and females. Other data are as presented in tables 1 to 3.

## DISCUSSION

The study evaluated the determinants of accessing eye care services in a tertiary health institution by new patients

attending the outpatient Eye Clinic over a three-month period. This study demonstrated that a slight majority of attendees were males with majority of females belonging to the middle age while the males predominantly belong to the elderly age group. The study showed that majority of the respondents reside within the community hosting the health institution and while majority of respondents were females, the distribution of respondents between the two genders was statistically comparable. While it should be noted that cost of accessing eye care services in the institution is not free, it is relatively subsidized when compared with health facilities of similar cadres in neighboring states. The studies showed that majority of males were wholly self-sponsored while the reverse obtained among female respondents. This underscores the issue of financial dependence of females in our society. This is considered to possibly play a role in taking health-related decisions within households. Although, men are generally responsible for the financial support of the family and develop the more valued resources of earning power,[10] this study did not find any significant difference in the average monthly personal income between both genders. The study also showed that more females consider their spouses the most influential individual involved in the process of taking health-related decisions. This reflects the statement in Blood and Wolfe's classic work on marital power conceptualized as the "potential ability of one partner to influence the other's behavior manifested through the ability to make decisions." [11] Fox and Murray in an overview on family research from a feminist perspective concluded that although couples view their marriages as equal their family roles as egalitarian, husbands are more likely to maintain an upper hand in decision-making processes.[12] Finance-related obstacles were identified as an impediment to accessing eye care services in only 22% (n=33) of patients. The study identified by multivariate regression analysis that females, respondents that wholly self-funded their expenses, patients with low personal income and the severity of visual impairment were notable factors delaying access to available eye care services. The disadvantage females tend to have with accessing health care services have been shown in several studies to arise from household-related biases and socioeconomic limitations.[13] Household healthcare expenditure often largely favour males and the reasons for this have been attributed to both cultural patterns and social factors within the household and wider community.[14] A low level of control over household resources by women, which seems especially likely in poor households, often harms health outcomes for them and their families.[15]

This study has shown that majority of patients attending the Eye clinic live on resources below the current national minimum wage of approximately US \$50(18,000 Naira) and individuals with higher income were highly unlikely to report financial obstacle as a reason for delayed access to eye health care services. Cost of healthcare services may deter or delay patients, especially the poor, from seeking appropriate care as poor economic conditions and low income are known to suppress demand for health services. Affordability or perceived costs of care is a significant factor influencing healthcare behavior such as choice of the provider and time of care.[16] Finance-related obstacles in this study were more likely among respondents with worse vision which might be a consequence of delay in seeking treatment. Poverty and visual impairment have long been reported to be closely interrelated such that either act as a cause and effect of the other. [7]

**Table 1** Pattern of Demographic and Socio-economic Decision Influencers by Gender

	Overall Freq. (%)	Male (%)	Female (%)	p-value
<b>Age Group (Functional)</b>				
Pediatrics (0-14 years)	17	7 (41.2)	10 (58.8)	
Adults (15-59 years)	85	31 (36.5)	54 (63.5)	
Elderly (60 years or more)	48	30 (62.5)	18 (37.5)	<b>0.014</b>
<b>Mean Age (years)</b>	42.84 ± 22.91	48.29 ± 24.743	38.32 ± 20.33	<b>0.007</b>
<b>Person Consulted for Advice on Provider</b>				
None	45	21 (46.7)	24 (53.3)	
Spouse	34	11 (32.4)	23 (67.6)	
Nuclear Family Member (not spouse)	24	14 (58.3)	10 (41.7)	
Others	47	22 (46.8)	25 (53.2)	0.259
<b>Self only funding</b>				
Yes		35	23	
No		23	46	<b>0.002</b>
<b>Borrowed money</b>				
Yes	18	9 (50.0)	9 (50.0)	
No	132	59 (44.7)	73 (55.3)	0.672
<b>Most Influential in Health-related Decisions</b>				
None/ Self	41	22	19	
Spouse	26	8	18	
Nuclear Family Member	37	17	20	
Others	23	11	12	0.331
<b>Average Monthly Household Income</b>				
\$50	45	19 (42.2)	26 (57.8)	
\$50- \$125	45	18 (40.0)	27 (60.0)	
\$126- \$250	17	6 (35.3)	11 (64.7)	
>\$250	23	13 (56.5)	10 (43.5)	
Not Known	1	-	1	0.548
<b>Average Monthly Personal Income</b>				
\$50	96	40 (41.7)	56 (58.3)	
\$50- \$125	34	17 (50.0)	17 (50.0)	
\$126- \$250	13	7 (53.8)	6 (46.2)	
>\$250	7	4 (57.1)	3 (42.9)	0.661
<b>Number of Dependents</b>				
Nil	35	14	21	
1-3 dependents	39	16	23	
4-6 dependents	44	19	25	
7-9 dependents	18	11	7	
10 or more dependents	7	3	4	0.641
<b>Factors that Delayed Eye Care Services</b>				
Financial	33	12 (36.4)	21 (63.6)	
Non-financial	117	56 (47.9)	61 (52.1)	0.241

**Table 2** Pattern of Ocular Morbidity by Gender

	Overall Freq. (%)	Male (%)	Female (%)	p-value
<b>Better Eye Visual State</b>				
Normal Vision	80	28 (35.0)	52 (65.0)	
Mild Visual Impairment	36	19 (52.8)	17 (47.2)	
Moderate Visual Impairment	8	3 (37.5)	5 (62.5)	
Severe Visual Impairment	1	1	-	
Blindness	19	15 (78.9)	4 (21.1)	<b>0.005</b>
<b>Worse Eye Vision</b>				
None/ Normal vision	58	18 (31.0)	40 (69.0)	
Unilateral Mild VI	12	3 (25.0)	9 (75.0)	
Bilateral Mild VI	15	7 (46.7)	8 (53.3)	
Unilateral Mod-Severe VI	32	20 (62.5)	12 (37.5)	
Bilateral Mod-Severe VI	27	18 (66.7)	9 (33.3)	
Unclassified (Infant)	6	2 (33.3)	4 (66.7)	<b>0.007</b>
<b>Obstacles to Eye Care Services Access</b>				
Financial	33	12 (36.4)	21 (63.6)	
Non-financial	117	56 (47.9)	61 (52.1)	0.241
<b>Diagnosis</b>				
Cataract	27	19 (70.4)	8 (29.6)	
Glaucoma	20	13 (65.0)	7 (35.0)	
Glaucoma Suspect	10	2 (20.0)	8 (80.0)	
Refractive Error	46	12 (26.1)	34 (73.9)	
Allergy	17	9 (52.9)	8 (47.1)	
Retina/Vitreous Disorders	10	6 (60.0)	4 (40.0)	
Pterygium/Corneal Disorders	8	4 (50.0)	4 (50.0)	
Others	12	3 (25.0)	9 (75.0)	<b>0.002</b>

Table 3 Binary Logistic Regression of Predictors of Financial Obstacles to Delayed Access to Eye Healthcare

Predictor Variable	Odds Ratio	95% C.I.	p-value
<b>Sex</b>			
Male	Ref		
Female	3.77	1.24 – 11.45	0.019
<b>Source of Expenses</b>			
Self only	4.81	1.61 – 14.38	
Others	Ref.		0.005
<b>Required Spousal Financial Support</b>			
Yes	3.42	0.81 – 14.39	
No	Ref.		0.094
<b>Average Personal Income</b>			
\$50	Ref.		
\$50 - \$125	0.37	0.11 – 1.24	0.106
\$126 or more	0.07	0.01 – 0.66	0.020
<b>Visual Status in Better Eye</b>			
Normal Vision	Ref.		
Mild Visual Impairment	3.69	1.15 – 11.81	0.028
Moderate Visual Impairment	2.35	0.29 – 18.88	0.421
Severe Visual Impairment/Blindness	8.27	1.92 – 35.67	0.005

In Nigeria, a significant proportion of the population lives below the poverty threshold, thereby limiting their access to critical healthcare and other basic needs. Male respondents in this study had a diagnosis of predominantly age-related eye diseases, (cataract, glaucoma and retina diseases) whereas majority of female respondents were diagnosed with refractive error which is less economically demanding. This could be explained by the mean age of male respondents in this study was significantly higher than females. This could also infer that males tend to access eye care services when they have serious sight-threatening symptoms. Lubega *et al* reported that men's attitude towards seeking healthcare appears similar worldwide. They shun going for routine medical check-ups, preventive care or health counseling, and, often, ignore symptoms or delay seeking medical attention when sick, in pain, or even when their lives are in grave danger.[17]

## CONCLUSION

This study demonstrated that there is significant gender-based variation in the age and pattern of ocular diseases of patients that seek eye health care services. It also showed that the decision to access eye health care services is often beyond individual factors but rather the household play a role in health-related decisions.

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