

# Predictors of Patient Satisfaction with Ophthalmic Services: A Case Study at Sunyani Municipal Hospital, Ghana

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**Abstract** This study seeks to assess patient and health provider factors influencing satisfaction with ophthalmic services at Sunyani Municipal Hospital, Brong Ahafo, Ghana. The participants in the study were patients with eye conditions who visited the eye clinic at the time of the research. A sample size of 318 was drawn and employed in the study through simple random sampling method and the Cochran formula allowing 5% error margin. A structured questionnaire was used for the data collection. Satisfaction level was determined by estimating patient satisfaction scores with PSQ-18 reporting means and standard deviation. To assess patient factors and health provider factors influencing satisfaction, a bivariate analysis was used to assess the effects of all the domains of satisfaction as well as the socio-demographic characteristics on overall satisfaction. Overall satisfaction was 57.31% with a mean score value of 2.900. Highest satisfaction score was associated financial status with mean score value of 3.066 (61.32%) and lowest was also associated with technical quality with mean score value of 2.760 (55.20%) compared to other domains. Among the patient factors; number of visits, type of visits and financial status of patients had significant influence on overall satisfaction. On the other hand all the health provider factors had significant effect on overall satisfaction. Among all the factors put together, waiting time and financial status has the strongest association with overall satisfaction with R-square values of 0.43(43%) and 0.42(42%). Though overall patient satisfaction score was quite good, it can still be inferred from the score that close to half of clients were dissatisfied with services rendered at the eye clinic.

**Keywords** Satisfaction, Ophthalmic, Patient Satisfaction Questionnaire (PSQ-18)

## 1. Introduction

Satisfaction, like many other psychological concepts, is easy to understand but hard to define. The concept of satisfaction overlaps with similar themes such as happiness, contentment and quality of life. Satisfaction is not some pre-existing phenomenon waiting to be measured, but a judgment people form over time as they reflect on their experience. Simple and practical definition of satisfaction would be the degree to which desired goals have been achieved [14,22].

Over the last decade, patient satisfaction with healthcare has been regarded as an important indicator for measuring quality of health care and a critical component of

performance improvement and clinical effectiveness [8,14]. Patient satisfaction is measured over a range of health service dimensions, including waiting time, accessibility and convenience of services, technical quality of the providers, interpersonal skills, financial status of patients and the physical environment where services are delivered [14-21]. Some studies suggest that certain patient demographic and clinical characteristics, including age, health status and the severity of illness, are associated with patient's satisfaction [6,23]. In Ghana, health facilities are required to provide quality health care that meets the expectations of clients. The Ministry of Health (MOH) in its national health policy document identifies complaints from users about the abusive and humiliating treatment by the healthcare providers and shortages of equipment, consumables, supplies and some essential drugs as some of the challenges to delivering high quality of service [2].

A study conducted by Peparah and his group at Sunyani Regional Hospital to assess patient satisfaction with healthcare services identified factors that play "critical role in satisfaction of patients to include the attitudes of nurses

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toward patients, the capacity to deliver prompt service without wasting time, ability to disseminate information to patients and the availability of up-to-date equipment” [9]. Various studies have identified patient and provider level factors that influence patient satisfaction, for example a study by Ziaei and group indicates that provider level factors such as technical quality, accessibility and convenience, communication, waiting time, interpersonal relationships have influence on patient satisfaction [13]. In addition Chakraborty and his colleagues did a study on satisfaction at West Bengal showing that patient level factors such as general satisfaction and financial status of patient have influence on overall patient satisfaction [1].

A study led by Ziaei using Patient Satisfaction Questionnaire-18 (PSQ-18), on determinants of patient satisfaction with ophthalmic services, discovered that among 550 selected patients, the average satisfaction score, measured, was  $4.05 \pm 1.1$  from a maximum of 5 [13]. However anecdotal evidence from Sunyani Municipality in the Brong Ahafo Region of Ghana indicated that patients who suffer eye related conditions within the Sunyani Municipality are becoming dissatisfied with services received from health facilities, including Sunyani Municipal Hospital that provide ophthalmological services [9]. These situations if allowed to persist have a serious health implication for patients with eye related conditions leaving them in a more deplorable state. Statistical records from the hospital show that monthly outpatient attendance to the eye clinic had declined consistently since 2016. For instance in March 2016, monthly patient attendance was 1,120. By September 2016, this declined to 673.

Hence the objective of this study is to assess patient and health provider factors influencing satisfaction with services at the eye clinic of Sunyani Municipal Hospital.

## 2. Materials and Methods

This study was given ethical approval from Ghana Health Service Ethics Review Committee of the Research and Development Division with the approval number: GHS-ERC 47/02/17. An observational cross-sectional study with quantitative approach was then carried out at the eye clinic of Sunyani Municipal Hospital in Sunyani Municipality of Brong- Ahafo Region, Ghana. The target study population was patients who attended the eye clinic between May 2017 and June 2017.

A sample size of 318 was drawn and employed in the study through Simple Random Sampling method and the Cochran formula allowing 5% error margin. A structured questionnaire was used for the data collection.

The questionnaire contained the client’s background characteristics, other characteristics such as, health insurance status, the number of visits, type of visit and also a standard tool for measuring satisfaction referred to as short-form patient satisfaction questionnaire PSQ-18 [7]. Analysis was done using STATA version 14 and SPSS version 20

statistical software. Satisfaction level was determined by estimating patient satisfaction scores with PSQ-18 reporting means and standard deviation. To assess patient factors and health provider factors influencing satisfaction, a bivariate analysis was used to assess the effects of all the domains of satisfaction as well as the socio-demographic characteristics on overall satisfaction.

**Table 1.** Socio-Demographic Characteristics of Respondents

Characteristics	Frequency	Percent
<b>Age of clients</b>		
<18	20	6.3
18-28	64	20.1
29-39	42	13.2
40-50	40	12.6
51-61	56	17.6
62-72	50	15.7
>72	46	14.5
<b>Religious affiliation</b>		
Muslim	51	16.0
Christian	253	79.6
Traditionalist	5	1.6
Others	9	2.8
<b>Sex</b>		
Male	122	38.4
Female	196	61.6
<b>Marital status</b>		
Married	155	48.7
Single	106	33.3
Divorced	21	6.6
Widowed	36	11.3
<b>Educational level</b>		
No formal	81	25.5
Primary	74	23.3
Secondary	82	25.8
Tertiary	81	25.5
<b>Employment status</b>		
Employed	211	66.4
Unemployed	107	33.6
<b>NHIS registered</b>		
Yes	299	94.0
No	19	6.0
<b>Valid NHIS</b>		
Yes	298	93.7
No	20	6.3
<b>Type of visit</b>		
Initial Visit	193	60.7
Follow-up visit	125	39.3
<b>Number of visit</b>		
Once	191	60.1
Twice	45	14.2
Three times	43	13.5
More than 3 times	39	12.3

### 3. Results

This section of the paper presents the findings of the study. It covers socio-demographic characteristics of respondents, patients and health provider factors related to patient satisfaction at the eye clinic of the Sunyani Municipal Hospital.

#### 3.1. Socio-Demographic Characteristics of Respondents

Table 1 shows information on the socio-demographic characteristics of respondents. A total of 318 questionnaires were administered. All of the 318 were successfully retrieved, giving a 100% response rate. From Table 1 approximately 52.2% of the respondents were aged below 50 years while 47.8% were aged above 50 years. More than half of the respondents were females contributing to a percentage of 61.6%. Majority of the patients were Christians (79.6%) with 17.6% affiliated to Islamic and other religions. About 48.7% of them were married with few single (35.3%), divorced (6.6%) and others widowed (11.3%). Most of the respondents had some level of education (74.5%) as opposed to few who had no education (25.5%). Nearly, two-thirds of the clients (patients) were employed (66.4%) with 33.6% unemployed. As large as 94.0% were registered and in possession of valid NHIS card. More than half of the clients (60.7%) were visiting the hospital for the first time; whereas 39.3% were making follow-up visit. Among those making follow-up visits some had made visits for two times (14.2%), three times (13.5%) and greater than three times (12.3%).

#### 3.2. Distribution of Respondents by Service Satisfaction

Table 2 shows a measure of the level of satisfaction of respondents across the seven domains of satisfaction scaled from a score of 1 to 5. The results showed that the mean satisfaction was highest for financial domain with a mean value of 3.066 (61.32%). This was followed by communications from health providers (Mean=2.940, 58.81%), interpersonal relationship of health providers (Mean=2.912, 58.24%), waiting time while receiving services (Mean=2.910, 58.20%), accessibility and convenience of health facility (Mean=2.781, 55.61%) and

technical quality of health providers (Mean=2.760, 55.2%). On the average, it can be concluded that overall satisfaction of clients across all the satisfaction domains was 2.900 (57.31%).

**Table 2.** Distribution of Respondents by service Satisfaction (n=318)

Domains of patient satisfactions	Mean±SD	Satisfaction in percentage
Technical quality	2.760±0.484	55.20
Interpersonal Relationship	2.912±0.633	58.24
Communication	2.940±0.682	58.81
Financial status	3.066±0.777	61.32
Waiting time	2.910±0.732	58.20
Accessibility/convenience	2.781±0.519	55.61
Overall satisfaction	2.900±0.368	57.31

SD: Standard deviation

#### 3.3. Factors Influencing Overall Satisfaction with Ophthalmic Health Services

To determine the influence of both patient and health provider factors on the overall patient satisfaction status with health services offered at the eye clinic of the Sunyani Municipal Hospital, a bivariate analysis was conducted to identify factors that significantly influence patient overall satisfaction status and presented in Table 3. The table is structured to have two section, section one present the bivariate analysis between the patient related factor and patient overall satisfaction status while that of section two also present the bivariate analysis between the health provider related factors and patient overall satisfaction status. Each section is made up of five columns with the first column indicating the variables or factors under assessment, the fifth displaying the various P-value resulting from the bivariate analysis which is used to confirm the significance of a variable on the overall satisfaction. The other two (second and third) present a cross tabulation number of patients between the individual factors and overall patient satisfaction status. The fourth column present the totals of the cross tabulation with the corresponding percentage presented in bracket.

**Table 3.** Bivariate analysis on factors that influence overall satisfaction

Variable	Overall Satisfaction, n (%)		Total	P-value
	Not satisfied	Satisfied		
<b>Patient related factors</b>				
<b>Age of clients</b>				0.548
<18	1	19	20(6.29)	
18-28	5	59	64(20.12)	
29-39	5	37	42(13.21)	
40-50	7	33	40(12.58)	
51-61	5	51	56(17.61)	
62-72	3	47	50(15.72)	
>72	6	40	46(14.47)	
<b>Total</b>	32	286	318(100)	
<b>Sex</b>				0.782

Variable	Overall Satisfaction, <i>n</i> (%)		Total	<i>P</i> -value
	Not satisfied	Satisfied		
<b>Patient related factors</b>				
Male	13	109	122(38.37)	
Female	19	177	196(61.63)	
Total	32	286	318(100)	
<b>Marital status</b>				
Married	15	140	155(48.74)	0.561
Single	9	97	106(33.33)	
Divorced	2	19	21(6.60)	
Widowed	6	30	36(11.33)	
Total	32	286	318(100)	
<b>Educational level</b>				
None	10	71	81(25.47)	0.155
Primary	6	68	74(23.27)	
Secondary	4	78	82(25.79)	
Tertiary	12	69	81(25.47)	
Total	32	286	318(100)	
<b>Religious affiliation</b>				
Muslim	4	47	51(16.04)	0.838
Christian	26	227	253(79.56)	
Traditionalist	1	4	5(1.57)	
Others	1	8	9(2.83)	
Total	32	286	318(100)	
<b>Employment status</b>				
Employed	20	191	211(66.35)	0.627
Unemployed	12	95	107(33.65)	
Total	32	286	318(100)	
<b>NHIS registered</b>				
Yes	31	268	299(94.03)	0.473
No	1	18	19(5.97)	
Total	32	286	318(100)	
<b>Type of visit</b>				
Initial Visit	12	181	193(60.69)	0.005**
Follow-up Visit	20	105	125(39.31)	
Total	32	286	318(100)	
<b>Number of visits</b>				
Once	12	179	191(60.06)	0.032*
Twice	8	37	45(14.15)	
Three times	5	38	43(13.52)	
More than 3 times	7	32	39(12.26)	
Total	32	286	318(100)	
<b>Eye conditions</b>				
Glaucoma	4	56	60(18.87)	0.315
Cataract	6	39	45(14.15)	
Conjunctivitis	14	71	85(26.73)	
Squint	0	14	14(4.40)	
Refractive Error	4	46	50(15.72)	
Low Vision	3	38	41(12.89)	
Others	1	22	23(7.23)	
Total	32	286	318(100)	
<b>Health status</b>				
				0.954

Variable	Overall Satisfaction, <i>n</i> (%)		Total	<i>P</i> -value
	Not satisfied	Satisfied		
<b>Patient related factors</b>				
Poor	3	23	26(8.18)	
Moderate	12	113	125(39.31)	
Good	17	150	167(52.51)	
<b>Total</b>	<b>32</b>	<b>286</b>	<b>318(100)</b>	
<b>Financial status</b>				0.000**
Not satisfied	22	18	40(12.58)	
Satisfied	10	268	278(87.42)	
<b>Total</b>	<b>32</b>	<b>286</b>	<b>318(100)</b>	
<b>Health Provider factors</b>				
<b>Communication</b>				0.000**
Not satisfied	19	19	38(11.95)	
Satisfied	13	267	280(88.05)	
<b>Total</b>	<b>32</b>	<b>286</b>	<b>318(100)</b>	
<b>Interpersonal manner</b>				0.000**
Not satisfied	17	12	29(9.12)	
Satisfied	15	274	289(90.88)	
<b>Total</b>	<b>32</b>	<b>286</b>	<b>318(100)</b>	
<b>Waiting time</b>				0.000**
Not satisfied	22	23	45(14.15)	
Satisfied	10	263	273(85.84)	
<b>Total</b>	<b>32</b>	<b>286</b>	<b>318(100)</b>	
<b>Technical quality</b>				0.000**
Not satisfied	27	33	60(18.87)	
Satisfied	5	253	258(81.13)	
<b>Total</b>	<b>32</b>	<b>286</b>	<b>318(100)</b>	
<b>Accessibility and convenience</b>				0.000**
Not satisfied	25	39	64(20.13)	
Satisfied	7	247	254(79.87)	
<b>Total</b>	<b>32</b>	<b>286</b>	<b>318(100)</b>	

\*\* $p < 0.01$ , \* $p < 0.05$

Among the patient related factors; number of visits, type of visits and financial status of patients had significant impact on the overall patient satisfaction status of the ophthalmic services offered at the eye clinic since their respective bivariate analysis resulted in *P*-value less than 5% level of significance. However, none of the socio-demographic variables and type of eye conditions had significant effect on the overall satisfaction at 5% level of significance.

All the health provider related factors: waiting time while receiving services, communications from health providers, interpersonal relationship, technical quality of health providers, accessibility and convenience of health facility had significant effect on overall patient satisfaction status with ophthalmic health services at 5% level of significance.

#### 4. Discussion

This section discusses the findings from the study so as

to assess the various factors that influence the overall satisfaction of clients with ophthalmic services at Sunyani Municipal Hospital. Patient satisfaction is measured using standard instrument patient satisfaction questionnaire-PSQ-18 [1]. It is found that the overall satisfaction of clients at the eye clinic is 57.31% with mean score of 2.900. This is consistent with a study conducted by Ziaei and his group at an Ophthalmic Hospital in Iran, to assess patient satisfaction with eye care services which also predicted overall satisfaction of 60% [13]. Additionally, some of the patient satisfaction surveys in Nigeria and Ghana recorded overall satisfaction of 84% [4,11], 75% [10], 67% [14] and 53% [12]. It can be seen that the level of overall satisfaction normally associated with health care at eye clinics are relatively greater than 50%. In the current study, the highest satisfaction level was related to financial status with a mean score value of 3.066 (61.32%) and the lowest was related to technical quality of service provider (Mean=2.760, 55.2%).

This is similar to the study findings by Ziaei and his group, where highest satisfaction level was related to interpersonal manner and financial aspects [13]. However on the contrary, the lowest was related to convenience and accessibility. It is also important to note that all the domains of satisfaction: general satisfaction (Mean=2.859, 57.17%), technical quality (Mean=2.760, 55.2%), communication (Mean=2.940, 58.81%), interpersonal manner (Mean=2.912, 58.24%), financial status, accessibility and convenience (Mean=2.781, 55.61%) and waiting time (Mean=2.910, 58.20%) had higher mean scores value which are comparable to study findings in [1].

The bivariate analysis revealed that the socio-demographic variables, health status, registration with NHIS and the eye conditions of patients had no influence on overall satisfaction with health care delivery at the eye clinic. A similar study by Hall and Dornan showed that there was no significant association between patient satisfaction and socio-demographic variables [3]. However a study led by Quintana in Spain showed age, gender, level of education and marital status to be significant predictors of patient satisfaction [5]. The number and type of visits had significant influence on overall patient satisfaction. This is because about 60.7% of the patient had visited the hospital for the first time with just a few engaged with follow-up visits (39.3%). Consequently, satisfaction at first time could be low due to unfamiliarity with health facility environment as well as no sign post at the facility making location of the eye clinic quite difficult. Hence, this could have an effect on the relatively lower value in the level of satisfaction (57.31%) as opposed to other studies.

The outcome of the current study shows that all the health provider factors from patient perspective have significant influence on overall patient satisfaction with ophthalmic services. With respect to Communication as a health provider factor, it is seen from this current study to play key role in influencing satisfaction with ophthalmic services (\*\* $p < 0.01$ ). This is in harmony with earlier reports by Andaleeb which asserts that if therapeutic communication is offered by health providers to patients, it goes a long way to alleviate uncertainties about their expectation and consequently increase their satisfaction [15,18].

Waiting Time is seen to be a strong predictor of satisfaction as evidenced in this work (\*\* $p < 0.01$ ). The shorter the waiting time at consultation room, the higher the satisfaction score and vice-versa. This is affirmed by other studies including that of Abdosh which found that shorter waiting time for being seen by health providers is associated by higher satisfaction scores [16]. Also a study by Doe [2] as well as Boudreaux et al [17] indicates that provider's respect for patient waiting time is amongst the most powerful predictor variables.

In the current study, Interpersonal Manner/relationship also presents significant association with overall patient satisfaction in regards to ophthalmic services (\*\* $p < 0.01$ ). Interpersonal manner is the attitude and the relationship established between provider and client. This is also stressed

upon in an inquiry by Fielding and group [20] that one of the predictors identified as being most influential in overall satisfaction is the quality of relationship, firstly with doctors and secondly with nurses. Key items in these domains include how the doctor gives information, the doctor's manner and the respect that he or she shows towards patients. In addition, a study by Zaiei and group shows that highest satisfaction level was related to interpersonal manner/relationship [13].

Technical Quality is also evidenced in the current study to have significant influence on overall patient satisfaction at the eye clinic (\*\* $p < 0.01$ ). Technical quality involves the competence and professionalism that health providers show in their respective service delivery. In a study by Dzomeku et al, among all the respondents who were interviewed, 40% had an expectation that they would be physically examined by the clinicians. Out of these, 33% felt satisfied with the care received as a consequence of the physical examination (in the form of palpation, percussion and auscultation) which was conducted. The analysis obviously confirms that physical examination which is a component of Technical Quality is an influential variable in assessing the overall satisfaction with health care delivery [21]. This is in congruent with current research which proves that technical quality is a predictor of overall satisfaction.

Accessibility and convenience as a health provider factor describes how reachable and suitable the health facility and its environs is to patients. According to the present study, it is observed that this domain also has significant association with overall patient satisfaction (\*\* $p < 0.01$ ). Even though similar study by Zaiei and group indicates that accessibility and convenience has influence on overall patient satisfaction, it however had the weakest association with overall patient satisfaction [13].

## 5. Conclusions and Recommendations

The overall satisfaction of health care delivery at the eye clinic of the Sunyani Municipal hospital is estimated to be 57.31%. Though overall patient satisfaction was quite good, it can still be inferred that close to half of clients were dissatisfied with the ophthalmic services. Patient factors such as the number and type of visits as well as all the health provider factors considered in the study had significant influence on the overall patients' satisfaction with ophthalmic services. Nonetheless, the study brought to light that socio-demographic variables had no influential role in assessing patient satisfaction.

In our experience, waiting time, interpersonal manner/relationship and the rest of the health provider factors had strong association with overall patient satisfaction. Hence conclusion can be made that both patient factors and health provider factors influence the level of satisfaction of patients from patients' perspective.

In order for hospital management to improve upon quality of services from the viewpoint of patients at eye clinic, the following must be top priority:

- Waiting time at health facilities should be reduced.
- The manner in which staff relates to clients must be well improved upon.
- The technical competence of staff should be monitored and evaluated periodically.
- Improving on accessibility and convenience of service delivery.
- Improving on communication between health providers and patients.
- Initiate policies and programs that can lead to improved client-provider relationship which will result in increased utilization such as in-service training on customer satisfaction.

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