Clinician’s Satisfaction and Utilization of Laboratory Services in Selected Western Ethiopia Hospitals Nekemte Ethiopia

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Abstract

Background: From different customers of clinical Laboratory nurses and physicians are primary customers of the service so measuring their perception on the service is the best way of measuring the quality of the laboratory service.

Objective: The purpose of the study was to assess level of Clinicians’ satisfaction and utility of clinical laboratory service at selected hospitals in Western Ethiopia Nekemte.

Method: A facility based cross-sectional study was conducted in 207 clinicians of Western Ethiopia from January up to April 2017.

Result: From 207 participants of the study 140 (67.6%) and 67 (32.4%) were men and women. Half of the participants; 50.7% satisfied by general laboratory service. Satisfaction and words doesn’t have statically significant relation (OR = 0.69, 95% CI = 0.127-18.9. p value = 0.20), Sex is not associated with satisfaction (OR = 0.87, 95% CI = 0.315-2.40., p value = 0.97), Specialization and satisfaction are significantly related (OR = 1.2, 95% CI = 1.05-5.93, p value = 0.027). Satisfaction with the location will 2 times increase laboratory satisfaction having OR value 2.26 with 95% CI of 0.681-7.20. From the total participants 78.6% utilize the laboratory service.

Conclusion: Clinician satisfaction is the main quality indicators for medical laboratory service. Result reliability, adequacy of reagent and accurate results by the lab greatly increase satisfaction.

Keywords
Satisfaction, Utilization, Nekemte

Introduction

In health service, Clinical laboratories are one of the most important parts which can produce relevant information for the diagnosis of patients [1]. From different customers of clinical Laboratory nurses and physicians are primary customers of the service so measuring their perception on the service is the best way of measuring the quality of the laboratory service [2]. Before taking any measures to improve the service and its quality knowing and identifying the gap is very essential and necessary [3].

Assessment of the medical laboratories services plays a key role in programs for quality improvement to ensure that desired outcomes are produced. Generally, patient’s diagnosis, treatment, management and medical decisions, which considered by physicians, are depending on medical laboratory report [2]. Nowadays,
accreditation by different organizations is required assessing customer satisfaction with laboratory services for their quality assurance programs [4].

The satisfaction of customers is measured to identify problems and resolves them. It is also an important and useful quality improvement tool for the clinical laboratory, health care organizations, and business in general [2]. Hence, the aim of this study was to assess physicians’ and nurses’ satisfaction with the service provided by the laboratory at different Hospitals of western Oromia Ethiopia.

Materials and Methods

Study setting

A facility based cross-sectional study was conducted to assess the physician satisfaction and utility in hospitals at Western Ethiopia, from January up to April 2017.

The study was conducted in eight governmental hospitals located in western Ethiopia namely, Nekemte Referral Hospital, Gimbi Adventist Hospital, Arjo Hospital, Gimbi Hospital, Nedjo Hospital, DembiDolo Hospital, Mendi Hospital, Irrea Hospital, which are located in western Ethiopia. Except for Nekemte which is a referral others are General hospitals. All available and volunteer Clinicians; who were in duty during the study period were included in the study. Physicians who are working in the selected government hospitals of western Ethiopia were the source population. The inclusion criteria were having more than six months of working experience in the hospital.

Data collection and analysis

Data were collected using self-administered questioner and the quality is maintained by pre-testing the questionnaires. Data consistency and completeness were checked throughout the data collection, data entry, and analysis.

Data were analyzed using statistical package for social science (SPSS) version 20 software (SPSS Inc., USA). Results summarized as numbers, percentages, and frequencies. OR, 95% CI was used to see the association of the variables with a level of satisfaction. The Questions used to assess the level of satisfaction were analyzed using a 5-point Likert scale. For analytical purposes, strongly dissatisfied and dissatisfied were considered as dissatisfied and strongly satisfied and satisfied were considered as satisfied.

Ethical consideration

Before undertaking the research work, Permission letter obtained from the Research Director of, Wollega University. An official letter was written to each hospital for permission. Consent for the survey is obtained and confidentiality assured to improve the quality of data. Each questioner was coded and the confidentiality of the data was maintained.

Results

A Total of 384 surveys were distributed to the clinicians at the hospitals; 207 surveys were returned giving a response rate of 54%. Based on the result the majority of the respondents were males 140(67.6%) and the remaining 67(32.4%) were females. The participants of the study served the hospitals for a minimum of six months, the majority (36%) serving for more than 4 years. The number of participants from each Hospital is shown in Table 1.

Overall the laboratory service satisfaction with regard to ward is 32% and High level of satisfaction (32.4%) is present with the Clinicians present at Out Patient Department satisfaction with regard to ward is shown in Figure 1.

The relation between satisfaction and Work experience was found to be statically not significant with a p-value of 0.4. Satisfaction is also not associated with Work
experience having OR of 0.6 and 95% CI 0.53-6.25 as shown in Table 2.

Satisfaction and wards do not have a statically significant relation. This shows that being in any of the wards is not associated with satisfaction of the laboratory service. Sex is not related or associated with satisfaction; 67.6% of males and 32.4% of females were satisfied with the laboratory service.

In addition, satisfaction is also related to specialization like this, physicians are 29.0% satisfied, nurses 42.5%, midwife 15%, and psychiatry 1%, dental 1% and anesthetist 1.4%. Specialization and satisfaction are significantly related. Being a nurse will 1 times more satisfy with laboratory result having OR of 1.26 with 95% CI of 1.05-5.9.

We also studied staff respect with satisfaction and it is related, the relation between result reliability and satisfaction was studied and found to be 54.6%. Satisfaction with the result reliability will 17 times increase laboratory satisfaction.

Table 1: Socio-demographic characteristics of clinicians in Western Ethiopia, January - April 2017, Nekemte, Ethiopia.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>140</td>
<td>68%</td>
</tr>
<tr>
<td>Female</td>
<td>67</td>
<td>32%</td>
</tr>
<tr>
<td>Work Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; than 1 year</td>
<td>37</td>
<td>18%</td>
</tr>
<tr>
<td>1 year - 2 year</td>
<td>55</td>
<td>26%</td>
</tr>
<tr>
<td>3 year - 4 year</td>
<td>41</td>
<td>20%</td>
</tr>
<tr>
<td>&gt; 4 year</td>
<td>74</td>
<td>36%</td>
</tr>
<tr>
<td>Participatory Hospitals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mendi Hospital</td>
<td>19</td>
<td>9.2%</td>
</tr>
<tr>
<td>D/Dollo Hospital</td>
<td>29</td>
<td>14.0%</td>
</tr>
<tr>
<td>Ayra Hospital</td>
<td>26</td>
<td>12.6%</td>
</tr>
<tr>
<td>Arjo Hospital</td>
<td>24</td>
<td>11.6%</td>
</tr>
<tr>
<td>Gimbi Adventist Hospital</td>
<td>14</td>
<td>6.8%</td>
</tr>
<tr>
<td>Gimbi Hospital</td>
<td>21</td>
<td>10.1%</td>
</tr>
<tr>
<td>Nedjo Hospital</td>
<td>25</td>
<td>12.1%</td>
</tr>
<tr>
<td>NRH</td>
<td>49</td>
<td>23.7%</td>
</tr>
</tbody>
</table>

Figure 1: Level of clinical satisfaction with regard to ward in Western Ethiopia, January - April 2017, Nekemte, Ethiopia.
From the respondents, 46.4% were satisfied with Availability of test request within the lab. The relation between location and satisfaction was studied and found to be 88% were satisfied with the location of the laboratory. Satisfaction with the location will 2 times increase laboratory satisfaction. Having OR value 2.26 with 95% CI of 0.681-7.20.

Satisfaction and neatness of the laboratory found to be significantly related and neatness of the laboratory will increase satisfaction by 1 times. 84% were satisfied by the neatness of the lab. Staff availability is also significantly related with satisfaction availability of staff will 3 times increase satisfaction with OR of 4.37 with 95% CI of 1.26-15.22.

Adequacy of reagent is significantly related and Satisfaction will 20 times increase by the adequacy of reagent in the laboratory. Getting lab results urgently related to lab satisfaction and it will increase satisfaction 2 times. Completeness of laboratory result it’s related to satisfaction. Getting the lab results completely will increase satisfaction 3 time, and qualities of lab result also will increase satisfaction 4 times, OR value 4.83 with 95% CI of 1.19-19.6.

From total participants 36.6% of respondents were satisfied by the lab measure taken when a result is missed. Satisfaction and laboratory measurement for missed results are significantly related. With regard to departmentalization of the laboratory 53.7% were satisfied.

For the improvement of laboratory service from day to day, 52.2% were satisfied. Improvement of the laboratory service from time to time will increase satisfaction 8. Regarding the accuracy of the result, 49.7% were satisfied. Producing accurate result of the laboratory is significantly related with laboratory satisfaction and getting an accurate result from the lab to give 10 times more satisfaction by the laboratory.

From the total respondents, 51.7% were satisfied with the efficiency of the laboratory. The efficiency of the laboratory will 2 times increase the satisfaction of the laboratory having OR of 2.69, 95% CI of 0.06-12.03. Regarding notification of changes, 50.3% were satisfied and. Notifying changes in the laboratory will increase satisfaction by the laboratory with OR of 1.1, 95% CI of 0.245-5.5, notification of changes in the laboratory also significantly related with satisfaction with the lab having chi-square of 91.1 and p-value of 0.012.

From our finding we can also conclude the utilization of laboratory service by clinicians like this; from the total respondents 80.7% agree with the service present in request paper. 78.7% use service present in the paper. 56% agree that the patient got the exact diagnosis of the laboratory service. Regarding the advancement of the laboratory, only 18.8% agree that the laboratory has advanced lab service. From the total participated clinical 78.6% utilize the laboratory service consistently.

<table>
<thead>
<tr>
<th>S.N</th>
<th>Name of ward</th>
<th>Satisfaction by percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OPD</td>
<td>32.4%</td>
</tr>
<tr>
<td>2</td>
<td>Emergency</td>
<td>8.7%</td>
</tr>
<tr>
<td>3</td>
<td>Under five OPD</td>
<td>3.4%</td>
</tr>
<tr>
<td>4</td>
<td>Medical ward</td>
<td>9.2%</td>
</tr>
<tr>
<td>5</td>
<td>Surgical ward</td>
<td>14.5%</td>
</tr>
<tr>
<td>6</td>
<td>Delivery ward</td>
<td>8.7%</td>
</tr>
<tr>
<td>7</td>
<td>Pediatrics ward</td>
<td>3.9%</td>
</tr>
<tr>
<td>8</td>
<td>MCH</td>
<td>12.6%</td>
</tr>
<tr>
<td>9</td>
<td>TB clinic</td>
<td>1.9%</td>
</tr>
<tr>
<td>10</td>
<td>ART</td>
<td>3.4%</td>
</tr>
<tr>
<td>11</td>
<td>Dental</td>
<td>1.4%</td>
</tr>
</tbody>
</table>

Table 2: Satisfaction rate on laboratory service by different Wards in Western Ethiopia, January - April 2017, Nekemte, Ethiopia.
The mean satisfaction rate for general laboratory service is 3.4. The mean rate of satisfaction for different aspects of laboratory service ranged from 2.94-3.9. The highest mean rating of satisfaction was obtained for staff respect (3.9) and the lowest mean rating of satisfaction was given for adequacy of reagent (2.9) respectively as indicated in Table 3.

### Discussion

The overall objective of this study was to assess the level of Clinicians’ satisfaction and utilization of the laboratory service in a governmental hospital to develop an appropriate action plan. The questioner contains several statements covering different sections and details of laboratory services, which were considered as important to clinicians as primary customers for the laboratory.

In this study half of the clinicians (50.7%) were satisfied by the general service provided by the laboratory, this percentage is lower than the study conducted in eastern Ethiopia by Teklemariam, et al. [5] and in Nekemte by Geleta, et al. [5,6]. The difference may be attributable to the variation in the areas covered by the study and by sample size difference of the participants. But even if the number is different the reason for dissatisfaction was similar.

Within this study, the most clinician has encountered their satisfaction from abnormal results notification with the mean score of 3.2, while the other study done in Makah has the mean of 2.5 which is slightly lower than our study [2].
The result variation is may be due to the research was done in Makah is done within one Maternal and Child hospital and as has decreased number of Participants than our study.

In the other study done in Pusan National University School of Medicine, they analyzed satisfaction in multiple institutions and the mean satisfaction score for all institutions was ranged 2.5-4.6 [7]. In which the value is slightly higher than ours; The overall mean rating of satisfaction by clinicians in our study ranged between 2.9-3.4 out of 5. This is maybe because their study focuses only in one area of the laboratory that is phlebotomy service while ours study the general laboratory service.

Another study done by Jones B, et al. [8] in 138 institutions in America found the overall satisfaction score range from 2.9 to 5.0. Physicians were most satisfied with the quality of the result, while TAT is the main category of dissatisfaction [8]. This value is slightly higher than ours and this is may be due to increasing number of participant hospitals and the main result of dissatisfaction is due to the inadequacy of laboratory reagent.

A study was done by Addis Z, et al. [1] To study physicians and nurses satisfaction with the clinical lab service of Gonder University Hospital, in 2012. They study with 196 nurses and physicians. They found the level of satisfaction to be 51.1% for nurses and 51.5 for physicians [1]. While in our study physicians are 29% satisfied and nurses are 42% satisfied with laboratory services. The difference in satisfaction for two studies is due to less availability of reagent in the participant hospitals and our data is collected from different hospitals.

Another study conducted by Koh Y, et al. [7] at Busan, Korea with 370 physicians, 105 nurses and 347 outpatients on phlebotomy service. They found 58.1% satisfaction for physicians and nurses, the reason for dissatisfaction was specimen collection and delivery process, phlebotomy service [7]. In our study physicians are 29% satisfied and nurses are 42% satisfied with laboratory services. And the reason for dissatisfaction was the availability of reagent in the lab and reliability of the results, this much variation for satisfaction is maybe as a result of an absence of point of care tests in the lab, inappropriate notification of changes.

A paper-based survey was done in Saudi Arabia to measure physician satisfaction on laboratory service to measure reports to quality, communication, management, and TAT. They found that the overall satisfaction to be 2.6-3.8 out of 5. They conclude this research is helpful in observing works of the laboratory mainly missing laboratory results [9]. The overall mean rating of satisfaction by clinicians in our study ranged between 2.9-3.4 out of 5. This study is comparable with the above study.

Conclusion

From this study, 50% of clinicians were satisfied with general laboratory service. Thus, we conclude that work experience, ward, and sex are not associated with satisfaction by the hospital laboratory. Specialization, staff respect, the location of the laboratory, neatness and laboratory staff availability is associated with satisfaction getting laboratory results urgently, completely and with quality increase satisfaction more. The improvement of the laboratory, its efficiency and notification of changes in the laboratory also bring satisfaction.

We also conclude that use of reference by the laboratory, accessibility of the laboratory management, use of telephone, availability of point of care tests, TAT and service attitude of the lab personnel are associated with laboratory satisfaction. Result reliability, adequacy of reagent and accurate results by the lab greatly increase satisfaction. Measurements are taken when laboratory results missed, departmentalization of the laboratory and the presence of manual for TAT are not associated with satisfaction.

Our respondents use laboratory result mostly and they believe that the patient get the exact diagnosis and the tests that are in the request paper are done in the laboratory but the laboratory lacks advancement.
Competing Interest

All authors declare that they have no conflict of interest associated with the publication of this manuscript.

Acknowledgment

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Author’s Contribution

LH Conceived and designed the study and collected data, performed the analysis, interpretation of data, and draft of the manuscript. HM assessed with study design and collected data, performed the analysis, interpretation of data, and review of the manuscript. RD assessed with study design and collected data, performed the analysis, interpretation of data, and review of the manuscript. DD performed the analysis, interpretation of data, and review of the manuscript. WH assessed with study design and collected data, performed the analysis, interpretation of data, and review of the manuscript. All authors read and approved the final manuscript.

References


