Analyzing the Blood Bank Service Quality from Indian Blood Donors’ Perspective: An Empirical Evidence

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Abstract

Objective: The objective of this study is to assess the levels of service quality provided by blood banks from blood donors’ perspective and simultaneously judge the opinion of their satisfaction level based on SERVQUAL (service quality) variables, namely Reliability, Assurance, Tangibility, Empathy, and Responsiveness. Materials and Methods: A self-administered and respecified structured SERVQUAL questionnaire is prepared to address expectation and perception of services experienced by blood donors. A total of 280 blood donors’ responses were collected by visiting blood banks. Results: The study endorsed all the significant five dimensions affecting the blood donors’ expectation with actual service experienced during the exercise of donation. Average of overall service quality index gap is 0.38. Highest gap scores were significantly perceived in “Assurance” (Gap score 0.55) and “Empathy” (Gap score 0.49). In addition, “Tangibles,” “Reliability,” and “Responsiveness” scores are equitable, implying the blood donors’ satisfaction level with the blood bank services. Conclusions: This study divulges blood bank’s need to dissect and evaluate the level of service quality provided by them, along with consideration to the measurements of service quality gap models for the better fulfillment of blood contributors and retention.

Keywords: Blood, blood bank service quality, expectation of blood donors, perception of blood donors

INTRODUCTION

The service quality in the healthcare sector is considered to be complex as compared to other services due to the involvement of human life.[1] Most of the first-time blood donors avoid their second donation not just because of medical reasons but for pandemonium conditions such as long, arduous screening time and incompetent staff behavior encountered in blood banks,[2,3] leaving them frustrated with a resolve not to visit a blood bank again.[4] As a result, more than one donor at every donation session is lost due to bad management of the blood banks.[5] If this sordid saga continues, sooner or later, public faith in the blood donation system will erode significantly in the near future.[6] Therefore, the current strategic challenge in the operations of blood donation is the requirement of improved service quality, guarantees,[7] blood donor satisfaction,[8,9] and their retention.[10] Changing the perception of the blood donors toward the quality of blood bank services by the management will be the introductory reform in the healthcare sector.[3,8] Thus, the use of the SERVQUAL model can be set up as a benchmarking tool to understand the differences between the services being offered and actual services being provided.[11,12] Customer satisfaction is well acknowledged in the marketing literature and is gaining extensive recognition in the healthcare sector as well.[13] Therefore, to ensure adequate blood supplies, an initiative with an objective to assess the level of service quality was taken by blood banks from the blood donors’ point of view by using the SERVQUAL model.

MATERIALS AND METHODS

The study conducted from April 2016 to December 2016 covered central and NACO-supported blood banks in various districts of Bihar and Jharkhand as per the convenient sampling technique. Researchers adopted and respecified the scale items of SERVQUAL model that consists of five dimensions.

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namely Reliability, Assurance, Tangibility, Empathy, and Responsiveness proposed by Parasuraman et al. 1988[14] as an instrument to measure the level of service quality of a blood bank from blood donor’s perspective. Use of the SERVQUAL model allowed us to identify the gap between service offered, quality of services,[15-17] followed by real-time services experienced by blood donors,[18] so that, necessary action could be initiated by the management of blood banks to close the gap of perception for a better service. Consequently, the self-structured questionnaire was administered to 300 donors visiting blood banks. Almost 280 finally returned the filled-in questionnaire, giving a response rate of 93.33%. The language of the questionnaire was both English and Hindi. The validity and reliability of the scale have been recognized by the host of the researchers in their original study.[1,3,14-18] Content validity has been tested and achieved successfully. Statistical analyses were done using the Statistical Package for Social Sciences (SPSS) software, version 20.0 (IBM, Armonk, New York City, USA).

RESULTS

To determine the expectation and perception view of the blood donors, we selected gap 5—“Customer’s expectations versus their perceptions of the service delivered” model from SERVQUAL seven gap model proposed by Parasuraman et al. 1988[14] to assess the service quality being offered by blood banks. Here, the blood donor’s gap is considered to be the most important gap in the management of services of blood banks, where it shows the difference between donor’s expectation and perceptions – on, before, and after blood donation.[19] Expectation refers to the standards, which donors believe it should happen, while perceptions refer to the assessment of the actual service experienced during the exercise of donation.[3]

The reliability analysis was performed, and the result of Cronbach’s alpha in Table 1 registered 0.90 (Expectation) and 0.73 (Perception), confirmed good consistency. Another reliability tool, KMO, has been used to measure the sampling adequacy; as a result, KMO value of 0.85 and 0.75 for the complete sample in blood donors’ questionnaire support the reliability coefficient. Moreover, Bartlett’s test of sphericity shows fair Chi-square value of 3090.082 and 2184.80, respectively, and reflects $P < 0.05$ with 91 degrees of freedom, indicating that the data were appropriate for SERVQUAL analysis.

| Table 1: Result of reliability analysis |
|----------------------------------------|
| **Expectation** | **Perception** | **Gap** |
| Cronbach’s alpha | 0.90 | 0.73 | 0.88 |
| KMO sampling adequacy | 0.852 | 0.75 | 0.84 |
| Bartlett’s test of sphericity | | | |
| $\chi^2$ | 3090.082 | 2184.805 | 2608.903 |
| df | 91 | 91 | 91 |
| Significant | 0.000 | 0.000 | 0.000 |

Note: KMO: Kaiser-Meyer Olkin; $\chi^2$: Chi-square

In Table 2, the analysis has been done on statements, with due coding for ease in computation and references. Further, Table 3 depicts the average mean between expectation and perception of each of the statements in the SERVQUAL questionnaire, as emphasized. The average of expectation, perception, and Gap 5 for each of the five dimensions have been analyzed based on responses on the statements [e.g., Table 2]. Moreover, the gap scores will allow the blood bank manager to evaluate current service quality and thus quantify the gap that exists in proposed and actual services which have been provided to the blood donors by the blood bank. Therefore, the priorities of the SERVQUAL dimensions were determined by asking each of the blood donors to rank them from 1 to 5 (1 – fully disagree and 5 – fully agree). The responses of blood donors’ were then calculated to facilitate arriving at a solution for each dimension of service quality. The average of each dimension was then calculated using the SPSS software. Finally, the aggregated weighted average for each priority was identified through a multiplication operation ($Weight \times Mean$).

DISCUSSION

An insight into Gap 5 scores [e.g., Table 3] emphasizes that all the five dimensions moderately affect the blood donors’ expectation with their actual perception. It is also seen that among the five service quality dimensions, the importance of Empathy factor is having the highest priority for the blood donors (the weight amounted to approximately 26%). The second priority among the service quality dimensions was Assurance, which had a weighting of 23%, followed by Responsiveness, Reliability, and Tangibility [e.g., Table 4].

Furthermore, the aggregated weighted scores of expectation [e.g., Table 5] show positive values, which further cements the fact that blood donors are having noble intent and commitment to blood donation. The dimensions of Tangibles, Reliability, and Responsiveness, somehow, jointly scored a dismal 0.28. All of these weighted dimensions are indicators of a positive turnabout in the management of blood bank services. However, the dimension of “Assurance,” where the services score provided by blood bank is 0.55, and the dimension of “Empathy” scoring a high 0.49 on the service quality index, require the immediate attention of the management of the blood bank.

The aim of this study is to use SERVQUAL model to assess quality level service provided by blood banks and judgmental point of view of blood donors. This study additionally added “GAP” model[3] as a powerful instrument for blood donation center administrators to recognize the zones of insufficiencies in administration.[20] The study likewise contributes that the blood donation center manager needs to analyze, dissect, and evaluate the level of service quality provided and ways of measuring the impact of the general fulfillment level of blood contributors.

CONCLUSIONS

The administration of blood donation centers must give consideration to the measurements of “Assurance” and
Table 2: Coding of statements

| SERVQUAL dimension | Coding | Statements                                                                                      | Citations                                      |
|---------------------|--------|-------------------------------------------------------------------------------------------------|------------------------------------------------|
| TA                  | TA1    | Blood bank has up-to-date equipment                                                             | Babakus and Mangold (1992); Brahmbhatt and Josha (2011); Al-Zubaidi and Asousi (2012) |
| TA2                 |        | Physical facilities at blood bank are visually appealing                                        |                                                 |
| TA3                 |        | Employees well-dressed at the blood bank                                                        |                                                 |
| TA4                 |        | The appearance of the physical facilities is consistent with the type blood bank                |                                                 |
| RL                  | RL1    | The blood bank meets their promised time frames for response                                    |                                                 |
| RL2                 |        | The blood bank must have to be sympathetic and reassuring when the patients have problems       |                                                 |
| RL3                 |        | Blood bank is dependable                                                                        |                                                 |
| RL4                 |        | Blood bank provides their services at the times promised                                         |                                                 |
| RN                  | RN1    | Blood bank should not be expected to tell customers exactly when the service will be performed  |                                                 |
| RN2                 |        | Blood bank not reasonable to expect prompt service from employees                               |                                                 |
| RN3                 |        | Employees do not always have to be willing to help customers, negative at blood bank            |                                                 |
| RN4                 |        | It’s ok to be too busy to respond promptly to customer requests at blood bank                   |                                                 |
| AS                  | AS1    | Employees should be polite at blood bank                                                        |                                                 |
| AS2                 |        | Employees at blood bank should get adequate support from the firm to do their job well          |                                                 |
| AS3                 |        | Employees should be trustworthy at blood bank                                                    |                                                 |
| AS4                 |        | Patients should feel safe when transacting with employees at blood bank                         |                                                 |
| EM                  | EM1    | Blood bank should not be expected to give each customer individualized attention                 |                                                 |
| EM2                 |        | Employees should not be expected to give each customer individualized attention at blood bank   |                                                 |
| EM3                 |        | It is unrealistic to expect employees to fully understand the needs of the customer at blood bank|                                                 |
| EM4                 |        | It is unreasonable to expect employees to have the best interests of the customer at heart at blood bank |                                |
| EM5                 |        | Blood bank should not necessarily have to operate at hours convenient to all customers          |                                                 |

Note: R: Reverse; TA: Tangibles, RL: Reliability, RN: Responsiveness, AS: Assurance, EM: Empathy, SERVQUAL: Service quality

Table 3: Service quality dimensions and summary of means of blood donor’s expectations, perception, and gap scores (n=280)

| Dimension | Statement | Perceived score | SD  | Expected score | SD  | Gap score | SD  |
|-----------|-----------|-----------------|-----|----------------|-----|-----------|-----|
| TA        | TA1       | 1.61            | 0.488 | 4.12           | 0.743 | 1.5054    | 0.889 |
|           | TA2       | 1.60            | 0.491 | 4.15           | 0.877 | 1.5627    | 1.026 |
|           | TA3       | 1.56            | 0.497 | 4.31           | 0.723 | 2.7455    | 0.871 |
|           | TA4       | 4.23            | 0.421 | 3.93           | 0.749 | 1.7024    | 0.805 |
| RL        | RL1       | 1.71            | 0.454 | 4.04           | 0.710 | 2.3226    | 0.824 |
|           | RL2       | 1.60            | 0.491 | 4.20           | 0.737 | 2.6022    | 0.887 |
|           | RL3       | 1.59            | 0.510 | 3.90           | 0.589 | 2.7542    | 0.886 |
|           | RL4       | 1.48            | 0.527 | 4.13           | 0.615 | 2.1365    | 0.887 |
|           | RL5       | 1.86            | 0.378 | 4.33           | 0.429 | 2.4845    | 0.895 |
| RN        | RN1       | 4.20            | 0.401 | 3.79           | 0.675 | 0.8456    | 0.757 |
|           | RN2       | 1.86            | 0.347 | 3.78           | 0.658 | 0.8710    | 0.770 |
|           | RN3       | 1.96            | 0.259 | 3.42           | 0.673 | 0.6722    | 0.761 |
|           | RN4       | 4.10            | 0.165 | 4.13           | 0.671 | 0.6112    | 0.750 |
| AS        | AS1       | 1.69            | 0.465 | 4.02           | 0.825 | 2.3405    | 0.979 |
|           | AS2       | 1.61            | 0.488 | 4.10           | 0.855 | 2.4946    | 1.034 |
|           | AS3       | 1.56            | 0.389 | 3.96           | 0.836 | 2.6450    | 0.998 |
|           | AS4       | 1.73            | 0.562 | 4.32           | 0.844 | 2.1599    | 1.015 |
| EM        | EM1       | 1.62            | 0.486 | 4.09           | 0.88  | 2.4695    | 1.041 |
|           | EM2       | 1.48            | 0.501 | 4.44           | 0.778 | 2.9534    | 0.952 |
|           | EM3       | 1.72            | 0.449 | 4.05           | 0.791 | 2.3262    | 0.916 |
|           | EM4       | 1.83            | 0.374 | 3.82           | 0.627 | 1.9857    | 0.734 |
|           | EM5       | 1.65            | 0.451 | 4.10           | 0.625 | 2.4152    | 0.910 |

Note: TA: Average gap score for tangible items=(TA1 + TA2 + TA3 + TA4)/4, RL: Average gap score for reliability items=(RL1 + RL2 + RL3 + RL4 + RL5)/5, RN: Average gap score for responsiveness items=(RN1 + RN2 + RN3 + RN4)/4, AS: Average gap score for assurance items=(AS1 + AS2 + AS3 + AS4)/4, EM: Average gap score for empathy items=(EM1 + EM2 + EM3 + EM4 + EM5)/5, SD: Standard deviation
Table 4: Results of service quality dimensions of blood bank

| Dimensions | Weight (%) | Expectation | Perception | GAP |
|------------|------------|-------------|-------------|-----|
| TA         | 17.14      | 4.12        | 0.77        | 2.25 |
| RL         | 15.35      | 4.12        | 0.77        | 1.65 |
| RN         | 18.58      | 3.78        | 0.66        | 3.03 |
| AS         | 22.85      | 4.06        | 0.84        | 1.65 |
| EM         | 26.08      | 4.1         | 0.76        | 1.66 |

Note: SD: Standard deviation, TA: Tangibles, RL: Reliability, RN: Responsiveness, AS: Assurance, EM: Empathy

Table 5: Aggregated and weighted scores and overall service quality index

| Dimensions | Expectation | Perception | Gap |
|------------|-------------|------------|-----|
| TA         | 0.70        | 0.38       | 0.32 |
| RL         | 0.63        | 0.25       | 0.38 |
| RN         | 0.70        | 0.56       | 0.14 |
| AS         | 0.92        | 0.37       | 0.55 |
| EM         | 0.92        | 0.43       | 0.49 |
| Overall service quality index | 0.77 | 0.39 | 0.38 |

Note: OSQ=(TA + RL + RN + AS + EM)/5; TA: Tangibles, RL: Reliability, RN: Responsiveness, AS: Assurance, EM: Empathy; Overall service quality

“Empathy” for the better fulfillment of blood contributors and retention. There is a need to enhance methodologies to empower inspirational state of mind by improving employees code of conduct, better compensations, and need to develop strong attitude to work hard for both society and workplace, so that, the employees can convey better services to the blood contributors.[5] In conclusion, based on the result of the study, there is a need for infrastructure modernization and the technical upgradation of skills and equipment in blood banks which would definitely provide a dynamic transfusion service network.

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Conflicts of interest
There are no conflicts of interest.

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