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# IMPORTANCE OF SUPPLY CHAIN MANAGEMENT IN QUALITY OF HEALTH CARE SERVICE

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**Abstract**
In recent years, there has been a growing focus on supply chain management (SCM) and quality of healthcare services within the healthcare sector, presenting both a priority and a challenge for many healthcare sectors. With healthcare institutions facing an increasing variety of products, programs, and patients, effective SCM practices are essential for managing these complexities and maintaining service quality. This study aimed to investigate SCM practices in rural hospitals in Haryana (Kurukshetra), examining their impact on service quality and the challenges encountered in implementation. The research delved into various aspects, including SCM practices, their influence on service quality, and the hurdles faced in their execution. A conceptual framework was also presented. Employing a cross-sectional descriptive design, the study encompassed a census of seven block hospitals. Primary data was collected via structured questionnaires and subjected to descriptive analysis.
The findings revealed that certain SCM practices, such as post-procurement services and adherence to specifications, were widely implemented, while establishing relationships with suppliers remained an area for improvement. Moreover, a positive correlation emerged between healthcare service quality dimensions (tangibility, reliability, responsiveness, assurance, empathy) and specific SCM practices, including supplier relationships, compatibility, standards, specifications, delivery, and post-procurement services. While the study focused on hospitals in Haryana (Kurukshetra), future research could broaden its scope to include private healthcare facilities. Comparative studies across public, private, and military health sectors could also offer valuable insights.
Keyword: Supply Chain Management (SCM), Healthcare, Quality Services.

## INTRODUCTION

Health organizations face numerous challenges and new requirements, including customer dissatisfaction, rising healthcare costs, intensified competition, and reduced reimbursement rates. These factors compel health organizations to implement systems capable of addressing these demands, navigating continual changes, technological advancements, escalating healthcare expenses, heightened competition, and enhancing customer satisfaction (Ali et al., 2012). Private hospital administrators increasingly recognize the necessity of adopting supply chain management to propel healthcare advancement (Hong et al., 2012; Toba et al., 2008).

The Alma Ata Declaration of 1978 emphasizes the integral role of health in a country's -related socioeconomic development, outlining primary healthcare principles that encompass education, prevention, nutrition, and equitable resource allocation. India, as a signatory, commits to achieving health Millennium Development Goals (MDGs). However, despite economic growth, India faces health challenges due to disparities in its healthcare industry, encompassing public, private, and traditional medicine.

Cost control has elevated the significance of supply chain management within healthcare organizations to attain their objectives. Supply chain management involves managing flows of goods, information, and funds among partners to efficiently meet consumer needs (Chopra & Meindl, 2007). While traditional focus has been on material flows, managing information flows within the supply chain is equally crucial for competitiveness (Liu and Kumer, 2003; Omar et al., 2010).

Enhancing the quality of healthcare involves systematically restructuring the operational procedures within healthcare organizations to optimize outcomes, including healthcare service quality, patient satisfaction, staff contentment, and overall performance. This endeavor isn't solely pertinent to patients; it's a shared concern among governments, administrations, professionals, and hospitals worldwide, even in developing nations where access to quality services remains limited. Patients now demand healthcare services that meet higher standards and often gauge their experiences against those in countries known for superior quality.

Supply chain management encompasses the control of information, materials, services, and finances across all activities to enhance an organization's operational quality. It involves the implementation of new techniques and improvements to existing ones, guided by the principle that efficiency entails executing tasks correctly while productivity entails executing the right tasks (Ashcroft, 2006). Within SCM, there exist several critical challenges that must be addressed for optimal operations and decision-making. These challenges often arise from uncertainties in decision-making processes or difficulties in coordinating various activities and stakeholders (Turban, McLean, & Wetherbe, 2004). In the global healthcare

market, a harsh reality persists: many individuals in developed, developing, and underdeveloped nations either lack access to quality care or receive substandard treatment (Murray et al., 2002).

The influence of supply chain management on healthcare quality extends beyond mere administrative considerations. While medical service quality can be assessed from clinical and patient perspectives, this study focuses on the administrative viewpoint. From an administrative standpoint, healthcare service quality revolves around optimizing resource utilization and attracting new resources to meet exceptional service demands. This entails delivering appropriate services promptly and cost-effectively. Supply chain management (SCM) encompasses the orchestration of goods, information, and financial flows among partners to efficiently fulfill consumer needs (Chopra & Meindl, 2007).

Ensuring quality healthcare services at an affordable cost while optimizing resources should never compromise performance quality. Achieving this demands efficiency in both planning and execution, as well as personal and professional competency, along with a structured internal philosophy for engaging external stakeholders (Ayers, 2010). Furthermore, the pursuit of additional resources necessitates fostering public relations within the healthcare sector as a whole. This emphasis on interpersonal relationships becomes apparent in the intricate and convoluted administrative frameworks. The healthcare system, by its nature, is intricate and convoluted, requiring significant efforts to enhance administrative quality. This underscores the vital role of supply chain management in safeguarding the quality of medical services. Omar et al. (2010) further assert that supply chain management (SCM) encompasses overseeing the flow of products, information, and finances from the supply source through manufacturing and assembly to the final delivery to consumers.

In the healthcare supply chain, key stakeholders encompass producers, purchasers, and providers. Producers range from pharmaceutical to equipment manufacturers. Purchasers include GPOs and distributors, while providers consist of hospitals and alternate care facilities. Quality management initiatives prioritize patient outcomes and satisfaction, with a growing trend towards outsourcing supply data management.

In rural healthcare, the provision of quality health services faces numerous challenges, including rising customer expectations and escalating costs. This study seeks to investigate and assess the impact of supply chain management on healthcare service quality. Cost containment has compelled healthcare organizations to prioritize supply chain management as a crucial strategy for attaining organizational objectives.

While healthcare industries grapple with competitive challenges within network alliances, there remains a dearth of examination into sustaining a competitive edge within the healthcare supply chain (Hong et al., 2012). Evidence suggests a growing emphasis on quality management initiatives, aiming to enhance healthcare delivery and impact hospital performance and patient satisfaction (Jiang et al., 2006; Toba et al., 2008).

## RESEARCH METHODOLOGY

The current study used cross-sectional research design and a qualitative research approach. In the current study, the model and hypothesis was tested in the health care sector of Haryana. The health care sector of Haryana has been recognized as an important sector. For the data collection, the 500 questionnaires were distributed among the supply chain and procurement managers of the health care sector of Haryana by using the purposive sampling technique. Among the 500 questionnaires, 473 questions were returned, which yielded a 94% response rate. As, a questionnaire was used for data collection and it consisted of 3 sections which are as follows: The first section consisted of the demographic information of the respondents. The second section consisted of the questions regarding the variables under study. The third section consisted of the questions regarding the challenges in study The questionnaire was measured by a Likert scale ranging from 1-5, where 5=Strongly Disagree (SD), 4=Disagree (D), 3=Neutral (N), 2= Agree (A), and 1=Strongly Agree (SA).

To ensure the questionnaire validity, the questionnaire was "pilot-examined" by interviewing 4 managers and experts in the supply chain departments who agreed to fill in the questionnaire and also to comment on the scales employed. Then, their suggestions were collected and considered to improve validity of questionnaire. Moreover, the questionnaire was pre-tested by sending three questionnaires to different supply chain managers to get their comments and feedback. For the purpose of ensuring the reliability of the questionnaire, Cronbach's alpha was used as a measure of internal consistency reliability. A widely cited minimum threshold for the Cronbach's Alpha is 0.70 (Malhotra, 2004). However, the calculated Cronbach's Alpha for the questionnaire as whole was 0.78%.

## STATISTICAL ANALYSIS:

Data analysis Data were analyzed by SPSS- 18 using T-test, and Pearson correlation to compare service quality in terms of patients' demographic variables and assess the relationship between supply chain management and quality of healthcare services. Regarding the mean score, the overall supply chain management is (42.433), Quality of healthcare services is (48.727), and challenges is (18.533).

## RESULTS:

The results of the survey based on the data collected are below Table 1 shows the demographic characteristics of the sample respondents related to nominal variables (gender Based on the sample of 473 respondents, we can see that there were male response rate is 69.3% and the female response rate is 30.7% Age response rate is maximum 59.4% and the education response rate for Undergraduate is 10.1%, Graduate response rate is 30.7 % and postgraduate rate is 59.2 %. Work experience response rate is maximum between 3-6 years which is (34.0 %).

Table: 1 Demographic Profile of the Subjects

| Variables | Opts | Percentage (%) | Frequency (f) |
|---|---|---|---|
| Gender | Male | 69.3% | 328 |
| | Female | 30.7% | 145 |
| Age | 25-35 years | 59.4% | 281 |
| | 36-45 years | 26.2% | 124 |
| | 46-55 years | 9.3% | 44 |
| | Above 55 Years | 5.1% | 24 |
| Educational qualification | Undergraduate | 10.1% | 48 |
| | Graduate | 30.7% | 145 |
| | Postgraduate | 59.2% | 280 |

| Variables | Opts | Percentage (%) | Frequency (f) |
|---|---|---|---|
| Work experience | 0-3 years | 7.8% | 37 |
| | 3-6 years | 34.0% | 161 |
| | 6-8 years | 19.7% | 93 |
| | > 8 years | 38.5% | 182 |

Analysis and interpretation of data was done according to the objectives using descriptive and inferential statistics. The level of significance chosen was at p≤0.05.

**Main analysis and interpretation of data:**
This analysis shows the frequency & percentage distribution level of Supply Chain Management, Quality of Healthcare Services and Challenges. The level of score in which we measure the supply chain management N=473 as shown in table -2 where the frequency of Good Supply Chain Management 8%, Average Supply Chain Management is 19% and Poor Supply Chain Management is 72.5%. Where the Maximum score =100 Minimum score =20.

**Table –2: Frequency & Percentage distribution level of Supply Chain Management.**

| CRITERIA MEASURE OF SUPPLY CHAIN MANAGEMENT SCORE | | |
|---|---|---|
| **LEVEL OF SCORES N= 473** | **PERCENTAGE** | **FREQUENCY** |
| GOOD SUPPLY CHAIN MANAGEMENT.(74 -100) | 8.5% | 40 |
| AVERAGE SUPPLY CHAIN MANAGEMENT.(47 -73) | 19.0% | 90 |
| POOR SUPPLY CHAIN MANAGEMENT. (20-47) | 72.5% | 343 |

Maximum =100
Minimum=20

The level of score in which we measure the quality of healthcare services (N=473) as shown in table -3 where the frequency of Good Quality Of Healthcare Services 0 %, Average Quality Of Healthcare Services is 28.1 % And Poor Quality Of Healthcare Services Is 71.9 %. Where the Maximum score =125 Minimum score =25

**Table –3: Frequency & Percentage distribution level of Quality of Healthcare Services.**

| CRITERIA MEASURE OF QUALITY OF HEALTHCARE SERVICES SCORE | | |
|---|---|---|
| **LEVEL OF SCORES N= 473** | **PERCENTAGE** | **FREQUENCY** |
| GOOD QUALITY OF HEALTHCARE SERVICES.(93-125) | 0.0% | 0 |
| AVERAGE QUALITY OF HEALTHCARE SERVICES.(59-92) | 28.1% | 133 |
| POOR QUALITY OF HEALTHCARE SERVICES.(25-58) | 71.9% | 340 |

Maximum =125
Minimum=25

The level of score in which we measure the challenges score (n=473) as shown in table -4 where the frequency of high challenges 0 %, moderate challenges is 26.4 % and low challenges is 73.6%. Where the Maximum score =45 Minimum score =9

**Table –4: Frequency & Percentage distribution level of Challenges.**

| CRITERIA MEASURE OF CHALLENGES SCORE | | |
|---|---|---|
| **LEVEL OF SCORES N= 473** | **PERCENTAGE** | **FREQUENCY** |
| HIGH CHALLENGES. (34-45) | 0.0% | 0 |
| MODERATE CHALLENGES. (22-33) | 26.4% | 125 |
| LOW CHALLENGES. (9-21) | 73.6% | 348 |

Maximum =45
Minimum=9

**Hypothesis Testing:**
For a hypothesis to be accepted it needs to have a significant result ≤0.05, otherwise, it will be rejected. All hypotheses have significant results and are, thus, all accepted. Therefore, there is a positive and consequential influence of supply chain management dimensions on the quality of Healthcare Services in Kurukshetra (Haryana).

**Correlation:**

**Table -5: shows descriptive statistics**

| Descriptive Statistics | Mean | S.D | N |
|---|---|---|---|
| SUPPLY CHAIN MANAGEMENT | 42.433 | 14.989 | 473 |
| QUALITY OF HEALTHCARE SERVICES | 48.727 | 13.936 | 473 |
| CHALLENGES | 18.533 | 4.637 | 473 |

Table -6 shows the variables and the p valve for supply chain management with quality of healthcare services is <0.001 and the Pearson correlation is .920** which is significant. The p valve for supply chain management with challenges is <0.002

and the Pearson correlation is .440** which is significant. The p valve for quality of healthcare services with challenges is <0.003 and the Pearson correlation is .650 ** which is significant.

**Table -6: shows different variables and there correlation**

| Variable 1 | with | Variable 2 | Pearson Correlation | P Value | N | Result |
|---|---|---|---|---|---|---|
| SUPPLY CHAIN MANAGEMENT | with | QUALITY OF HEALTHCARE SERVICES | .920** | <0.001 | 473 | Significant |
| SUPPLY CHAIN MANAGEMENT | with | CHALLENGES | .440** | <0.002 | 473 | Significant |
| QUALITY OF HEALTHCARE SERVICES | with | CHALLENGES | .650** | <0.003 | 473 | Significant |

## DISCUSSION AND FINDINGS OF THE STUDY

In this section, we delve into how this article contributes to management professionals, with a specific focus on enhancing their knowledge to improve work performance or develop higher-quality management systems for health services. Our emphasis lies in elucidating the implications of the findings for managers and healthcare organizations. The article scrutinizes the influence of various dimensions of HSCM. Additionally, it outlines the requisite skills for managers and leaders of health centers, particularly within the rural health services context. The framework presented encompasses two overarching management domains—resource management and professional and personal utilization—as well as five technical domains, namely supplier relationship, compatibility, specification, and security.

Service quality stands as a pivotal indicator with the potential to yield numerous benefits for both customers and hospitals, ultimately aiding in the attainment of organizational objectives. This study delved into the impact of high-quality services, aiming to assess and analyze their influence on customer satisfaction within the organization. To accomplish these objectives, a sample of respondents was selected. The study unearthed several key findings, indicating that the average scores for quality of healthcare services (N=473) as shown in table -3 where the frequency of Good Quality Of Healthcare Services 0 %, Average Quality Of Healthcare Services is 28.1 % And Poor Quality Of Healthcare Services Is 71.9 %. Where the Maximum score =125 Minimum score =25. Hence, it can be inferred that customer satisfaction is contingent upon the service quality provided by any organization.

## CONCLUSION

The aim of this paper is to examine how factors such as supplier SCM sizing, specification, standards, delivery, and after-sales service is important for quality of healthcare services (responsibility, reliability, and safety) in Kurukshetra (Haryana). Based on our findings, we suggest increased involvement of regulators or their organizations in the healthcare sector. Our results indicate a significant relationship between SCM aspects and the quality of healthcare services in Kurukshetra (Haryana). Furthermore, this study delves into the SCM aspects of healthcare services management in the region. Although this article primarily focuses on the rural health sector in Kurukshetra (Haryana), its scope is limited. In future research, scholars may consider integrating other dimensions of HSCM to assess the quality of healthcare services or explore related fields using qualitative research methodologies.

## RECOMMENDATIONS

This study has examined how SCM influences the quality of patient care delivery in rural hospitals. Based on our research findings, we propose recommendations for improving healthcare management services both in Kurukshetra (Haryana) and rural health organizations. Specifically, the rural health sector in Kurukshetra (Haryana) should prioritize strategic management responsibility and implement efficient supply chain management (SCM) practices to enhance the quality of health services. It is crucial for practitioners and management in health organizations in Kurukshetra (Haryana) to prioritize communication and relationship-building with service providers to bolster service quality. We advocate for a targeted approach to recruit appropriate human resources and skilled professionals in healthcare supply chain management (HSCM) to elevate healthcare quality and practitioner management. Additionally, healthcare management should establish and adhere to suitable standards while ensuring timely deliveries to customers to maintain the quality of healthcare and efficient organizational management. Rural health organizations should adopt a customer-centric approach in their management behavior, ensuring positive interactions following the sale of goods and services.

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