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A Study on Evidence-based Decision Making in Hospitals of Haryana

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ABSTRACT

In India, healthcare is one of the largest sectors in concerning to revenue and employment. It comprises of hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment. The study was conducted to discover Evidence-based Decision Making in Public and Private hospital sector. The objective was to determine the various factors affecting the Evidence-based Decision Making and to know the significant difference for various demographic factors for challenges faced in Evidence-based Decision Making. The value of ANOVA indicated that the doctors, nurses and administration staff with different salary have different opinion regarding the challenges on evidence-based decision making. In decision making process goal orientation should be the prime factor to be considered.

Keywords: Decision making, Evidence-based, Hospital management, Services

INTRODUCTION

The Healthcare industry in India is growing at its rapid speed due to certain reasons; these reasons are increasing coverage, services and the increasing expenditure by public as well private players prevailing in the market. Two major components which are serving the healthcare industry are public sector and private sector. The public sector which is owned by the government consists of two main institutions which are delivering the healthcare system i.e. secondary and tertiary institutions in major cities of India and it mainly focuses on providing the health care amenities by providing the facility of the major health care centers in rural areas. The private sector of healthcare system mainly deals in Tier I and Tier II cities by providing majority of "secondary, tertiary and quaternary health care institutions." India has large pool of competitive advantage and it lies in the hands of well-trained medical professionals. India is cost competitive as compared to its fellowship countries i.e. Asia and Western countries, for example- the cost of surgery in India is about one-tenth of that in the US or Western Europe.

The Healthcare Information Technology (IT) market is valued at US$ 1 billion (April 2016) and is expected to grow 1.5 times by 2020. Over 80 per cent of the antiretroviral drugs used globally to combat AIDS are supplied by Indian pharmaceutical firms. There is an important scope for enhancing and enriching healthcare services considering that healthcare spending as a percentage of Gross Domestic Product (GDP) is rising. Rural India, which accounts for over 70 per cent of the population, is set to emerge as a potential demand source. A total of 3,598 hospitals and 25,723 dispensaries across the country offer AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy) treatment, thus ensuring availability of alternative

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medicine and treatment to the people. The hospital and diagnostic centers attracted Foreign Direct Investment (FDI) worth US$ 4.83 billion between April 2000 and September (DIPP).

The infrastructure which already exists in the healthcare is not enough to meet the needs and demands of the population in the country. The high out-of-pocket expenses in India stem from the fact that 76 per cent of Indians do not have health insurance. Primary health care centers are short of more than 3,000 doctors, with the shortage up by 200 per cent over the last 10 years to 27,421. On daily basis managers must take effective and efficient decisions which support the vision and mission of the organization. The more an organization acquires information from multiple sources increases the likelihood of better-informed decisions (Honarpour *et al.*, 2012). The validity and reliability of the data should be checked while making the decision in the organizations. Decision taken in the health sector is a very crucial task either it is taken by the doctors, nurses, administration staff of the organization. The validity and reliability of the data should be checked by each manager of the organizations. To decide relevant there should be paper supporting that document. Without the support of proper availability of resources, the decisions taken will be totally based on the intuition that will not lead to proper results that will be more challenging for the organization. For example, it has been found that management decisions are often heavily influenced by and over rely on "habits, fads, convention, and guesswork" when making decisions (Rousseau, 2011). Evidence-based decision making continuously encounters the challenges that are faced so that they can overcome those challenges such as lack of understanding about the concepts, about the facts related to the decision. Evidence helps to take decisions in the organizations, by considering evidences will help the employees or the managers to take decisions. Doctors, nurses and the other administration staff consider evidences so that they can take better decisions for the patients, for their organization. The decisions taken in health sector are on the synthesis of the internal and external evidence. Internal evidence comprises of the knowledge, facts, education and training gained or imparted from the respective institutions. External evidence comprises of the accessible information that is gained through practice and specific experience gained from the doctor-patient relationship. Best Available research Evidence is that evidence in which firstly the research is done then that evidence is taken for the decision making. The decision totally depends on the best available research done.

There are certain stages of the decision-making process. These stages are Gathering evidence, interpreting and applying evinces. A potential challenge in convincing leadership with the current evidence-based management research is the lack of empirical knowledge to support the success of the concept of evidence-based decision making in the organizations. Reay *et al.* (2009) illustrated in their systematic review of the evidence-based management literature a high volume of expert opinion writings. For the purpose of this study, an experienced doctor, experienced nurses have been taken into account. The main aim of this study is to provide empirical evidence to support the development of evidence-based decision making as a meaningful practice for hospitals to adopt, as well as, to build on the foundation for future empirical studies which will add to the growing sector of evidence-based decision-making research.

METHODOLOGY

The study was conducted to discover Evidence-based Decision Making in Public and Private sector with the objectives to determine the various factors affecting the Evidence-based decision making and to know the significant difference for various demographic factors (such as gender, age, Qualification, Nature of Job, Nature of Organization, Designation, Experience) for challenges faced in Evidence-based Decision Making (EBDM). To achieve the objectives of the study doctors' survey from different hospitals of Haryana region of public sector and private sector hospitals (ESI hospital, Radha Kishan hospital, Arogya hospital, Aggarwal hospital, Ravi hospital, Mahajan hospital, PGIMER Chandigarh, Kalpana Chawla GMC) was taken into consideration. For collection of data a Google Doc questionnaire was designed for the employees to know their opinion for the same. The data were collected from primary and

secondary sources. The opinions of respondents from north region's Haryana (Ambala, Yamunanagar, Chandigarh and Karnal) and Non-probability Sampling Design were taken into consideration; attempts were made for sample to be more representative, proficient and in accordance with the objectives of the study. Few personal interviews were conducted with the Doctors of the various hospitals and general discussion with the nurse and the administration staff regarding the decision-making process. Out of total population the sample taken for study was 152, which includes doctors, nurses and administration staff of different hospitals, Cronbach's Alpha comes to be .844, for the 33 statements of the questionnaire used proves reliability of tool.

RESULTS AND DISCUSSION

The KMO measure was 0.682 indicating the adequacy of the sample. Moreover, the overall significance of the correlation matrices was tested with Bartlett Test (Approx. Chi-square= 646.777 and significant at 0.000) at 105 degree of freedom as well a support for the data for factor analysis. It was observed from the above Table 2 that only 2 factors had eigen value more than one and accordingly we proceed with these factors. The total variance explained by these factors (1 and 2) was 3.819 and 1.532 of variance, whereas the cumulative variance explained by these two factors was found 47.736 and 66.880 percent and rest of the variance was due to the factors which are beyond the scope of the study.

The Table 3 shows each statement corresponding to the highlighted factor loading which is correlated with the factors corresponding to that factor loading. Higher the factor loading, stronger is the correlation between the factors and statement. On the basis of rotated component matrix, the factor extraction table was prepared which is as given in table below. The table also stated that factors were in the order of degree of importance i.e. Factor1 (F1) was more importance than the other factor 2 (F2). The F1 and F2 had 47.699 and 19.182 percentage of variance.

Table 4 shows that the sig 2-tailed value is less than 0.05 of the g statements i.e. B5, B6, B7, and B9. Thus, the hypothesis that there is a significant difference in the perception of male and female for evidence-based decision making is accepted. The table also shows that the sig 2-tailed value is less than 0.05 of the statements "B3 and B7." And the hypothesis that there is a significant difference on the basis of qualification for evidence-based decision making was accepted. The above table also shows that the sig 2-tailed value is less than 0.05 of the statements "B1 and B2." As such there was a significant difference based on nature of organization for evidence-based decision making.

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.682
Bartlett's Test of Sphericity	Approx. Chi-Square	646.777
	df	28
	Sig.	.000

Table 2: Total Variance Explained

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	Percentage of variance	Cumulative (%)	Total	Percentage of variance	Cumulative (%)	Total	Percentage of variance	Cumulative (%)
1	3.819	47.736	47.736	3.819	47.736	47.736	3.816	47.699	47.699
2	1.532	19.144	66.880	1.532	19.144	66.880	1.535	19.182	66.880
3	.904	11.298	78.178						
4	.687	8.592	86.770						
5	.400	4.996	91.766						
6	.337	4.214	95.980						
7	.181	2.259	98.239						
8	.141	1.761	100.000						

Table 3: Rotated Component Matrix and Total Variance Explained

Factors	Components		%tage of variance
	1	2	
F1 Goal Oriented			
Before any decision is taken, we systematically evaluate internal data to better understand the nature of the problem.	.887		47.699
If we make mistakes in our decision-making, we systematically evaluate the outcomes and try to learn from them.	.833		
We rely on the practice wisdom of employees having long experience in particular field as a guide for making decisions.	.771		
We use benchmarking to identify best practices from other organizations and published statistical industry data to help improve our organization.	.758		
We systematically evaluate the effectiveness of new policies and practices we introduce.	.753		
We use consultants to help us make decisions about how to solve our problems.	.725		
F2 Quality Improvement			
Decision-making within our organization is impulsive rather than educated.		.874	19.182
We make decisions by looking at what other organizations and our competitors are doing.		.806	

Table 4: Independent samples test

Statements	Gender Sig. (t-value)	Qualification Sig. (t-value)	Nature of Organization Sig. (t-value)
Poor quality data (B1)	.133	.102	.001
No analysis or feedback from supervisors on data (B2)	.187	.054	.000
Unwillingness to accept shortcomings in data (B3)	.351	.000	.527
No set criteria for data collection and analysis (B4)	.097	.146	.022
Frequent data duplication and inconsistency (B5)	.000	.749	.372
Often too much information (B6)	.009	.106	427
Data slow to reach relevant levels (B7)	.001	.006	.124
No incentives for data utilization (B8)	.907	.210	.050
No culture of focusing on outputs and outcomes (B9)	.003	.887	.490
Lack of skills to analyze and use data (B10)	.452	.221	.753
Use of data is only for keeping records and not for program support/ monitoring (B11)	.512	.261	.220

Table 5 shows that for age sig. value from ANOVA was less than 0.05 of the. “B1, B2, B3, B4, B6, B7 and B8.” Thus the hypothesis was that there was a significant difference based on age for evidence-based decision making. It also showed that for nature of job, the sig value of ANOVA was less than 0.05 of the statements “B1, B2, B3, B5, B6, B7 and B9.” Thus, the hypothesis accepted was that there was a significant difference on the basis of nature of job for evidence-based decision making. Further the Table 5 also shows that for salary the sig. value of ANOVA was less than 0.05 of the statements “B1, B2, B6, B7, B8 and B10.” Thus, there was a significant difference based on salary for evidence-based decision making.

Table 6 shows that the improvement in quality of data was the best strategy. According to the data in Table 6, the mean score of improvement in the quality

Table 5: ANOVA

Statements	Age		Nature of Job		Salary	
	F	Sig.	F	Sig.	F	Sig.
Poor quality data (B1)	7.065	.000	19.012	.000	7.450	.000
No analysis or feedback from supervisors on data (B2)	17.773	.000	6.537	.002	6.727	.000
Unwillingness to accept shortcomings in data (B3)	10.890	.000	29.049	.000	2.313	.078
No set criteria for data collection and analysis (B4)	7.853	.000	0.143	.867	1.210	.308
Frequent data duplication and inconsistency (B5)	0.502	.682	13.309	.000	0.384	.765
Often too much information (B6)	4.172	.007	5.086	.007	4.749	.003
Data slow to reach relevant levels (B7)	16.295	.000	9.057	.000	5.448	.001
No incentives for data utilization (B8)	13.838	.000	0.180	.835	6.916	.000
No culture of focusing on outputs and outcomes (B9)	3.390	.020	20.778	.000	13.910	.000
Lack of skills to analyze and use data (B10)	1.439	.234	0.124	.883	5.099	.002
Use of data is only for keeping records and not for program support/ monitoring (B11)	1.983	.119	2.991	.053	1.986	.119

Table 6: Proposed Strategies

S.No.	Statements	Mean	Std. Deviation	Rank
1.	Publicly availability of results	2.86	1.240	12
2.	Timeliness of data	3.35	1.025	8
3.	Simplicity of data software	3.50	1.223	5
4.	Uniformity of data reporting/feedback systems at all levels	3.43	1.071	6
5.	Data reports availability at appropriate levels	3.52	1.266	4
6.	Top level leadership encouragement	3.43	1.171	6
7.	Provide incentives for results	3.32	1.182	9
8.	Clearly identified and linkage of data for needs at all levels	3.54	1.016	3
9.	Improvement in the quality of data	3.67	1.078	1
10.	Training for importance of data collection, analysis and use	3.30	1.296	10
11.	Training for management on the use of data for policy and program management	3.65	1.278	2
12.	Regular reviews of performance by advocacy groups	3.30	1.245	10

of data was 3.67 and the standard deviation of the same is 1.078; hence this strategy was the best strategy to be adopted that can be used to overcome challenges. The least efficient strategy to be used to overcome the challenges was the publicly availability of the results. In comparison to all the strategies publicly availability of results was the least used strategy to overcome the challenges in evidence-based decision making.

CONCLUSION

The study revealed that various demographic factors affected the evidence-based decision making. Difference in salary of doctors, nurses and administration staff affected how they perceive the evidence-based decision making. The value of ANOVA table indicated that the doctors, nurses and administration staff of different salary had different opinion regarding the

challenges on evidence-based decision making. The hospitals should focus on more improvement in the quality of data while making strategies for the evidence-based decision making. The hospitals should pay less attention on the publicly availability of results for evidence-based decision making.

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