

Competency mapping of Healthcare Professionals- A case study of Bengaluru city

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Abstract

As competition is increasing with growth in Healthcare organizations industry in India, Healthcare organizations in Bangalore have to prepare to grab the opportunity, as well to meet the requirements and expectations of customers. To survive and achieve competitive advantage, an organization needs to improve their performance. Human resource of an organization is one component which contributes significantly to improve the performance. Competency mapping as a tool for assessment is widely used in various type of Industry for evaluating personnel and process. The present study studies the importance of competency mapping in healthcare organisations in Bengaluru. The healthcare organisations were selected by the bed size of the hospitals placing in three categories 9 hospitals were selected for research. Three categories of respondents were selected in this current study i.e. (administrative, medical and para medical staff). The study follows conclusive research design. Simple Random sampling technique used and survey method is used to collect data using well-structured questionnaires in this study. The correlation between HRD Climate, Employee Engagement, Patient satisfaction with regard to the competencies of healthcare professionals is studied. The results show that there is positive correlation between all the variables that is studied supporting the hypothesis formulated.

Keywords: Competency mapping, Healthcare Professionals, Employee Engagement, HRD Climate, Patient Satisfaction

Introduction

The role of the health care professional is constantly evolving. Healthcare professionals should constantly improve and develop as their responsibilities should meet the expanding technology, as well as its changing accreditation, patient safety, and legislative issues. In the health care, the term competency is often defined as the knowledge to be able performs at a particular task (Kathryn, 2008). "Competency is defined as the ability of a health worker to perform according to predefined standards. Competency is developed through pre-service education, in-service training, hands-on experience, and the assistance of mentors and preceptors" (Neeraj Kak., et.,al, 2001). Competencies are generally defined as the knowledge, skills, attitudes and general and specific behaviours required to perform the job of a clinical specialty these are the criteria to be met by healthcare professionals. But the questions are what determines the ability of a physician, nurse or any other healthcare professional to acquire those competencies, does the people with special abilities provide patient care, is there any criteria to judge professional performance to be studied further (Maestre JM., 2016).

Competency is not only knowledge, it is the understanding of knowledge, clinical, technical, and communication skills, and also the ability to solve problem through clinical judgment. Competencies help educators, learners, and practitioners in creating unique standards within disciplines and specialties (Norman, 1985). Health care professionals with competencies can reach performance excellence, and also can have systematic approach to professional development in turn improve their job satisfaction (Sarita, et al., 2006). There is no competency model that defines a set of expected skills both "vertically" and "horizontally" between health care professions. Interprofessional education lacks the shared competencies and common vocabulary for the members of the healthcare education team to teach and evaluate (Shewchuk, 2005). Though performance can be measured, there is a lack of evidence to suggest that good performance alone and always is not an indicator of highest degree of

competence (Stedman, 1985 and While, 1994). There are many areas of competence yet to be explored. Complex challenges inherent in the health care system, providers need to be prepared with a different set of competencies to improve healthcare that are developed in educational programs today. Technical skills and knowledge specific to the restraint remain vital to health professions education. But, have forced the educators to envisage the hidden curriculum embedded in clinical education (VanGeest and Cummins, 2003). As Healthcare Professionals have different practice setting where competency will be determined, (e.g., education, research, direct patient care areas), as determination of competency in these areas will require different evaluation measures. While addressing the challenges in healthcare systems and preparing skilled health care professionals to take on this task requires a common vision across the professions centered on a commitment to, first and foremost, meeting patients' needs as intended. In the Quality Chasm report (Institute of Medicine, 2001) the committee recommended that all professional boards and health care professionals to periodically demonstrate their ability to deliver care within five competencies. The competencies are (1) Provide patient-centered care, (2) Work in interdisciplinary teams, (3) Employ evidence-based practice, (4) Apply quality improvement, and (5) Utilize informatics. All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics. There is a need for agreement on the concept of an evidenced-based, customer-oriented approach to healthcare education by: (1) identifying the key knowledge, skills, and abilities that contribute to the success of health care organizations and managers; (2) measuring student mastery of such; and (3) moving toward a higher level of mastery throughout the field (Griffith, 1999).

Review of literature

Healthcare, particularly as it applies to hospital system occurs in a very complex management environment. Today health care requires the application of sophisticated technology, as well as highly skilled staff who are usually employed in organizations. As healthcare is a service industry, the quality is depending upon the overall skill and performance of the people employed within the system. It is a complex industry and quality is determined in large part by the way people are managed, organized and motivated (Tim Mazzarol et.al. 2005). The Biggest challenge and most demanding issue faced by Healthcare in present situation especially in India is about recruiting skilled professional which puts healthcare organizations in tough spot Scarcity of qualified employees, Confusion between Education and Experience, limited resource for increasing competitors (Dr.Dake Rajesh,2019). There is a requirement to measure employee competence and benefits from training and ongoing performance appraisal has been recognized as important to the health services sector (Waddell, 2001). The success of health care service HRM requires a strategic approach within which HR processes are regularly monitored and reviewed, with regular input and participation from employees so to align their own goals with those of the organization, and receive suitable rewards and recognition for their effort (Zairi, 1998). In the health care literature, the term competency is often used to describe the knowledge to be able perform at a particular task. Competency is more than knowledge. It includes the understanding of knowledge, clinical, technical, and communication skills, and the ability to problem solve through the use of clinical judgment (Norman (1985).

Given the revolutionary changes occurring in the health care industry, there is increasing agreement that academicians and practitioners must collaborate to identify and prioritize major educational outcomes for health care management. Several competency initiatives have been undertaken or completed in health care and health care management. Health care leaders who have undertaken such endeavors reveal that the task is most formidable. (Calhoun JG et. al., 2002). The medical institution with high competitiveness must have great health care professionals, and to enhance the organization's competitiveness must start from the staff recruitment (K. H. Chen, 2004).

Collaborative competencies examples: "Describe one's roles and responsibilities clearly to other professions, recognize and observe the constraints of one's role, responsibilities and competence, yet perceive needs in a wider framework, recognize and respect the roles, responsibilities and competence of other professions in relation to one's own. Work with other professions to effect change and resolve conflict in the provision of care and treatment, work with others to assess, plan, provide and review care for individual patients, tolerate differences,

misunderstandings and shortcomings in other professions. Facilitate inter professional case conferences, team meetings, etc. Enter into interdependent relations with other professions” (Barr ,2005).

Healthcare executives are increasingly having conversations with their board leaders about the value of competency-based leadership development. Competency-based leadership development does not just drift, but is intentionally focused on clear career aspirations. Whether for the board, medical staff or administration, modern healthcare leaders can find value in the discipline of career mapping, or designing and executing a clear action plan for individual development over a multiyear period. Career planning for health leaders is a universal challenge. All societies and organizations need a fresh look at leadership as well as innovative strategies for its development among both individuals and teams. Boards and chief executives can only succeed when they invest in a culture and infrastructure that recognizes, celebrates, and aligns its compensation programs and systems with continuous leadership development of individuals and teams that extend vertically up and down their organizations, and horizontally across the board the C-suite, and the medical staff (Rice, 2006).

A multi-hospital health system was facing urgent new demands related to staff development, driven by internal and external factors. To improve the standard of care, and to counter increasing public criticism, its leaders wanted to offer more effective skill development opportunities for employees. At the same time, they needed to respond to governing bodies which had begun to demand more data about the levels of staff competency. (David, 2004). It is the role and responsibility of health care educators to prepare future health care executives to cope with an environment that will be ever-changing. Therefore, it is imperative that the essential management competencies for the future be identified and incorporated into and across all education, training, and development curricula for the profession (Hudak et. al. 2000).A review of health care workforce challenges illustrates the need to refrain staff both by enhancing skills and by introducing new roles such as multi skilling as a response to the challenges of cost containment and improvement in quality of care (Buchan J, 2002). The problem of providing managers with the requisite competencies to help address efficiency, effectiveness and responsiveness in the delivery of health services is identified. Hospital managers feel that people management and self-management skills are the most valuable for the efficient and effective management of hospitals, followed by “hard management skills” and skills related to the ability to think strategically. Specific skills or knowledge related to health care delivery were perceived to be least important (Rubin, 2008). (Alan et. al, 1999) identified five clusters of competencies – personal attributes, interpersonal, self-management, information management and technical knowledge skills – and this form the basis of a competency framework of measurable criteria to assess proficiency as well as staff training needs to devise strategies to meet the requirements and challenges of clinical governance. (Cronenwett et al., 2007) defined six competencies to guide health professional development: Patient- Centered Care, Teamwork and Collaboration, Evidence-Based Practice, Quality Improvement, and Safety and Informatics. Each competency has requisite Knowledge, Skills, and Attitudes.

Objectives

Proposed Research has the following objectives:

1. To survey the competency mapping practices of Healthcare Organizations in Bengaluru city.
2. To assess the effectiveness of the competency mapping practices in Healthcare Organizations.
3. To suggest measures for improving the competency mapping practices in Healthcare Organizations.

Hypothesis

1. There is a positive relationship between Competency of Healthcare Professionals and Patient satisfaction

The clinical competency in healthcare system will help to provide more the quality care would be and this results in increased patient satisfaction (Ghalje, et. al, 2008). The skills and knowledge are needed to effectively treat a patient (Jahanshahi, 2017). A competent healthcare professional increases and assure the quality of care and patient satisfaction (Lenburg, 2010).

2. There is a positive relationship HRD Climate and Competency of Healthcare Professionals

Human Resource Development is people-oriented concept concerned with their skill, knowledge and competencies. In any organisation competency, motivation and progress of its employees can be ensured by its human resource development climate (Surendran, 2012). Healthy HRD climate can be created by employees who can produce the best output by developing their competencies, skills, knowledge, and ability (Harish Shukla and Ravi Parmar, 2016). Organizations which utilize Employee Competencies to an optimum extent can create a healthy Organizational Climate is required (Jain, 2013).

The knowledge, attitudes and skills are required to perform in different tasks or functions or different areas of job for effective job performance and improving the human resource climate in the organization (Jain, 2013). By developing employees' skills on the job, including interactive skill results have positive impact on the level of morale, which, in turn, enhances commitment to the organization and improves the healthy HRD climate (McKenna, 2000).

3. There is positive relationship between HRD climate and Employee engagement

The impact of HRD climate on employee attitude is important and paves way to their organizational performance (Akinyemi and Iornem, 2012). The companies which are having higher quality of work environment that is opportunity for career growth, a culture of support and openness will have higher profits and business success compared to companies with a poor quality of work environment (Lau & May, 1998). There is theoretical evidence of HRD climate and Employee Engagement levels have positive impact on profitability in turn leads to Organizational performance by way of its increased profits. The favorable HRD climate will enhance Employee Engagement levels so there is a positive relationship. The higher employee engagement levels higher is the Productivity per employee (Murthy and Manchala, 2016).

4. There is a positive relationship between Employee engagement and Patient satisfaction

Many studies show that employee engagement in health care settings lead to greater job satisfaction, organizational satisfaction and patient satisfaction (Jimmy Peltier and Andy Dahl, 2009). There is a positive relationship between staff satisfaction and patient satisfaction, that correlations between employee engagement scores and customer experiences (Harmon and Behson 2007; Heskett et al. 2008). Hospitals with higher levels of staff engagement provide higher-quality services and have better financial performance (West et al. 2011).

5. There is a positive relationship between Competency of Healthcare Professionals and employee engagement.

If organization wants to develop their employee engagement, they should focus on mapping their talent management to meet their engagement challenges. One of the finest methods to do this is to use competencies (Cipd, 2011). Knowledge and skills are the competencies that help employees to achieve the expected outputs or results and also they are drivers of employee engagement. In order to nurture employee engagement, it is important for the employers to fit the right people in the right jobs. The goals and objectives should be clearly communicated, their effort to be appropriately rewarded and opportunities for development and promotion to be provided (Dilys Robinson, Sarah Perryman and Sue Hayday, 2004).

6. There is a positive relationship between HRD climate and patient satisfaction.

The Human Resource climate of an organization has an impact on organizational outcomes, on customer service indices (Kirk et. al., 2001). HRD Climate is positively related customer satisfaction (Shweta et.al., 2016). Organization climate will help to enhance the interactions with customers (Bitner, 1992).

Research methodology

Research design:

The present study follows conclusive research design. It is applied to generate findings which are practically useful in arriving conclusions. In this type, objectives and data requirements should be clearly defined. This research design confirms the findings of exploratory research studies. The conclusive research design deals with application of quantitative methods of data analysis and it is deductive in nature. The objective of this research design is to test the hypotheses and relationship among the study variables for decision making.

This study has adopted a survey for data collection using questionnaire. A well-structured questionnaire was used to capture all the attributes influencing the competency mapping and patient's satisfaction. The results from the conclusive research and literature review shows which determinants influence patient satisfactions.

Pilot study: -

Pilot study was conducted in one of the hospitals to validate the questionnaire and to confirm the feasibility of the study. The filled in Questionnaires were collected from 105 respondents and Cronbach's Alpha Criterion values were significant and findings were discussed with experts in research methodology and hospital management to set their feedback and suggestions to strengthen the methodology and plan of study.

Units of study: -

Primary data was collected through standardized questionnaires and framed questionnaire

1) The healthcare organizations in Bangalore were selected for study based on bed size of the hospitals. The hospitals were grouped in three groups, less than 500 more than 200, less than 1000 more than 500, more than 1000. From each group 3 hospitals each were

selected randomly. Totally 9 hospitals were selected.

2) The respondents in this study are four types of respondents: -

- ☐ Medical personnel, randomly selected 50 respondents from each hospital totally 250 respondents.
- ☐ Para-Medical personnel, randomly selected 50 respondents from each hospital totally 250 respondents.
- ☐ Administrative personnel, randomly selected 50 respondents from each hospital totally 250 respondents.
- ☐ Patients, randomly selected 50 respondents from each hospital totally 250 respondents.

Secondary Data was collected from hospital records and publications, research reports, Journals, Magazines, Publications, Books, Dailies, Periodicals, Articles, Research Papers, Websites, Company Publications, Manuals and Booklets.

Sampling:-

Selection of Sampling Area: - Bangalore has been selected as the sampling area for the present study. Bangalore is one of the metropolis cities in India and the capital of Karnataka. Bengaluru has also enjoyed a favourable locating that has created job opportunities and rising income levels in excess of population growth.

Method of sampling: - Simple Random sampling technique used in this study. In statistics, a simple random sample is a subset of individuals (a sample) chosen from a larger set (a population). Each individual is chosen randomly and entirely by chance, such that each individual has the same probability of being chosen at any stage during the sampling process.

Questionnaire:

This includes range of response questions, close-ended questions, providing limited answers to specific responses or on a numeric scale. Four questionnaires were administered and their reliability was calculated. The questionnaires are:

1. Competency Mapping (Skill, Knowledge, Attitudes) Questionnaire (staff wise, Medical, Para-medical, Administrative).
2. HRD Climate survey Questionnaire.
3. Employee Engagement Questionnaire.
4. Patient Satisfaction Questionnaire.

Competency mapping questionnaire: - the following items were taken from Model for Competency Mapping (82), Model of common management competencies (83), and five core managerial competencies for global markets (85) from Srinivas R. Kandula's book Human Resource Management in Practice with 300 Models, Techniques and Tools.

The competency items used in this study are as follows: -

Competency Items (SAK)		
SKILL	ATTITUDES	KNOWLEDGE
Experience	Relationship Management	Management Knowledge
Time taken to complete task successfully	Communication	Domain Knowledge
Invention in work methods	Task proficiency	Business Knowledge
Success rate of tasks completed	Leadership	Learning from experiences
Expertise in the area	Adaptability	Learning from training
	Emotional intelligence	General Knowledge
	Motivation	Common sense
	Job satisfaction	
	Commitment	

HRD Climate Survey Questionnaire: -

To measure the HRD Climate an instrument developed by Rao and Abraham is used. It consists of 38 items a 5-point scale ranging from 5 (Always almost true) to 1 (Not at all true) to measure the elements of HRDC which can be grouped into 3 broad categories i.e. general Climate, OCTAPACE Culture, and HRD Mechanisms which was. In OCTAPACE Culture seven factors namely, Openness, Confrontation, Trust, Autonomy, Pro-activity, Authenticity and Collaboration and in the HRD mechanism factors such as training, performance appraisal, potential appraisal, organization development, feedback, and performance coaching, career planning, rewards, employee welfare, quality of work life and human resource information systems.

Employee Engagement Questionnaire: -

A 12-question survey which identifies strong feelings of employee engagement was the creation of Gallup Organization. The Gallup Organization started creating a feedback system since a decade ago for employers that would identify and measure elements of worker engagement most tied to the bottom line—things such as sales growth, productivity and customer loyalty. After hundreds of focus groups and thousands of interviews with employees in a variety of industries, Gallup came up with the Q12. Results from the survey show a strong correlation between high scores and superior job performance. A six-point Likert scale varying from Strongly Disagree to Strongly Agree was used to rate all the variables.

Patient Satisfaction Questionnaire: -

The survey questionnaire was obtained from , Pareek, U., & Purohit, S. (2018). *Training instruments in HRD and OD* (4th ed.). Sage Publications.

Reliability of the Questionnaires: -

Reliability of an instrument is the degree of consistency between multiple measurements of variables. Reliability was estimated through internal consistency method which is applied to measure the consistency among variables in a summated scale.

Validity:-

All the instruments is informally or formally tested for validity. Validity of a latent construct is assessed by using face validity, convergent validity and discriminant validity.

Results and discussion:

This includes key findings and discussion based on the results of administrative data, medical data and para medical data. This begins with sample profile of the respondents followed by correlation analysis for the current study variables. Three categories of respondents were selected in this current study i.e. (administrative, medical and para medical staff). A total of 650 questionnaires were administered for each area of staff. Of the respondents profile, 502 belonged to administrative staffs, 648 were medical staffs and 592 from para medical staffs.

Table 1.1 Sample profile for Administrative data

	Variables	Frequency (%)
Designation	First Line Managers	56 (12.4%)
	Second Line Managers	199 (44.2%)
	Other Clerical Jobs	195 (43.4%)
Gender	Male	163 (36.2%)
	Female	287 (63.8%)
Age	25-35 Years	262 (58.2%)
	36-46 Years	144(32.0%)
	47-57 Years	39 (8.7%)
	Above57 Years	5 (1.1%)
Education Qualification	Post-Graduation	145 (32.2%)
	Graduation	194 (43.1%)
	Diploma Or Other Necessary Qualification	111 (24.7%)
Experience in health care	0-10 years	274 (60.9%)
	11-21 years	128 (28.4%)
	22-32 Years	43 (9.6%)
	above 32 Years	5 (1.1%)
Experience in Current Position	0-5 Years	300 (66.7%)
	6-11	107 (23.8%)
	12-16	38 (8.4%)
	above 17	5 (1.1%)
Salary	10000-50000	226 (50.2%)

	51000-100000	209 (46.4%)
	>100000	15 (3.3%)
Sources of Recruitment	Employment exchange	16 (3.6%)
	Employee referrals	89 (19.8%)
	Retired employees	11 (2.4%)
	Attrition employees	10 (2.2%)
	Job portals	257 (57.1%)
	HR agencies	20 (4.4%)
	Advertisements	47 (10.4%)

Table 1.2 Sample profile for Medical data

	Variables	Frequency (%)
Designation	Senior Consultant	122 (18.8%)
	Consultant	160 (24.7%)
	Doctor/ Surgeon	204 (31.5%)
	Others	162 (25%)
Gender	Male	348 (53.7%)
	Female	300 (46.3%)
Age	25-35 Years	216 (33.3%)
	36-46 Years	280(43.2%)
	47-57 Years	152 (23.5%)
Education Qualification	MBBS	229 (35.3 %)
	MD/MS	397 (61.3%)
	Additional Qualification (Diploma Or equal qualification in any medical discipline Qualification	22 (3.4%)
Experience in health care	0-10 years	229 (35.3%)
	11-21 years	288 (44.4%)
	22-32 Years	131 (20.2%)
Experience in Current Position	0-5 Years	297 (45.8%)
	6-11	325 (50.2%)
	12-17	26 (4%)
Salary	10000-50000	216 (33.3%)
	51000-100000	99 (15.3%)

	>100000	333 (51.4%)
Sources of Recruitment	Employment exchange	14 (2.2%)
	Employee referrals	246 (38%)
	Attrition employees	7 (1.1 %)
	Job portals	230 (35.5%)
	HR agencies	31 (4.8%)
	Advertisements	36 (5.6 %)
	Internet	72 (11.1%)
	Others	12 (1.2%)

Table 1.3 Sample profile for Para Medical data

	Variables	Frequency (%)
Designation	Nurse	127 (21.5%)
	Radiologist	133 (22.5%)
	Technician(Lab, ECG, X-Ray)	140 (23.6%)
	pharmacist	124 (20.9%)
	Others	68 (11.5%)
Gender	Male	309 (52.2%)
	Female	283 (47.8%)
Age	25-35 Years	414 (69.9%)
	36-46 Years	157 (26.5%)
	47-57 Years	21 (3.5%)
Education Qualification	BSc	358 (60.5 %)
	MSc	84 (14.2%)
	Diploma	135 (22.8%)
	Additional Courses	15 (2.5%)
Experience in health care	0-10 years	423 (71.5%)
	11-21 years	148 (25%)
	22-32 Years	21 (3.5%)
Experience in Current Position	0-5 Years	430 (72.6%)
	6-11	150 (25.3%)
	12-17	12 (2%)
Salary	10000-30000	471 (79.6%)

	51000-100000	115 (19.4%)
	>500000	6 (1%)
Sources of Recruitment	Employment exchange	6 (1%)
	Employee referrals	265 (44.8%)
	Job portals	177 (29.9%)
	HR agencies	63 (10.6%)
	Advertisements	72 (12.2) %)
	Internet	9 (1.5%)

Correlation Analysis

Correlation is a statistical technique that can be used to find the linear relationship between two quantitative variables. It is denoted as r which ranges from -1 to 1. If both independent and dependent variables moves in the same direction (i.e. increases or decreases), then it is called positive correlation. This value lies between 0 to 1. If one variable increase then other variable decreases or vice versa, then it is called negative correlation which ranges from -1 to 0. Also r^2 means coefficient of determination which explains the proportion of variance in dependent variable (Y) i.e predictable from independent variable (X).

Table 1.4 :correlational analysis for administrative data.

VARIABLES	COMP	HRDC	EE	PS
COMP	1			
HRDC	0.684**	1		
EE	0.636**	0.627**	1	
PS	0.556**	0.638**	0.509**	1

Note: COMP: Competency, HRDC: HRD Climate, EE: Employee Engagement and PS: Patient Satisfaction. ** Correlation is significant at the 0.01 level (2-tailed)

Correlation among the study variables is represented in table 1.4. The present study has the positive relationship between competency and patient satisfaction because results from the correlation analysis revealed that $r=0.556$, $p<0.01$ which support the hypothesis 1. Here coefficient of determination (r^2) = 0.309 shows that there is 30.9% of patient satisfaction depends on competency and remaining 69.1% of patient satisfaction depends on the other factors such as HRD climate, employee engagement.

The results from the correlation analysis table shows that $r=0.684$ with $p<0.01$) which indicates that there is positive relationship between competency and HRD climate. This supports the hypothesis 2_Here $r=0.684$ and $r^2 = 0.468$ indicates that there is 46.8% of HRD climate depends on competency and remaining 53.2% of HRD climate depends on the other factors such as patient satisfaction, employee engagement

This study results revealed a positive relationship between HRD climate and employee engagement from the correlation analysis. It shows that $r=0.627$, $p<0.01$ which supports hypothesis.3_ $r^2 = 0.393$ indicates that there is 39.3% of employee engagement depends on HRD climate and remaining 60.3% of employee engagement depends on the other factors such as patient satisfaction, competency.

The results from the correlation analysis reveal that $r=0.509$, $p<0.01$ which shows that there is a positive relationship between employee engagement and patient satisfaction which supports hypothesis 4. The coefficient

of determination (r^2) = 0.259 indicates that there is 25.9% of patient satisfaction depends on employee engagement and remaining 74.1% of patient satisfaction depends on the other factors such as HRD climate, competency.

The present study has the positive relationship between competency and employee engagement. The results from the correlation analysis revealed that $r=0.636$, $p<0.01$ which indicates that there is a positive relationship between these variables. This supports hypothesis 5. Here $r=0.636$ and $r^2 = 0.404$ shows that there is 40.4% of employee engagement depends on competency and remaining 59.5% of employee engagement depends on the other factors such as HRD climate, patient satisfaction.

This study revealed a positive relationship between HRD climate and patient satisfaction. ($r=0.638$, $p<0.01$) which supports hypothesis 6. $r^2 = 0.407$ shows that there is 40.7% of patient satisfaction depends on HRD climate and remaining 59.2% of patient satisfaction depends on the other factors such as employee engagement, competency.

Table 1.5: correlation analysis for medical data.

VARIABLES	COMP	HRDC	EE	PS
COMP	1			
HRDC	.505**	1		
EE	.368**	.385*	1	
PS	.495**	.596**	.340**	1

Note: COMP: Competency HRDC: HRD Climate EE: Employee Engagement PS: Patient Satisfaction * Correlation is significant at the 0.05 level (2-tailed) ** Correlation is significant at the 0.01 level (2-tailed)

The present study has a positive relationship between competency and patient satisfaction for medical dataset because results from the correlation analysis revealed that ($r=0.495$, $p<0.01$) which supports hypothesis 1. The coefficient of determination (r^2) = 0.245 shows that there is 24.5% of patient satisfaction depends on competency and remaining 75.5% of patient satisfaction depends on the other factors such as HRD climate, employee engagement.

The results from the correlation analysis shows that ($r=0.505$, $p<0.01$) which indicates that there is a positive relationship between HRD Climate and competency. This support the hypothesis 2 and r^2 (0.256) indicates that there is 25.6 % of HRD climate depends on competency and remaining 74.4% of HRD climate depends on the other factors such as patient satisfaction, employee engagement.

The present study revealed a positive relationship between HRD climate and employee engagement from the correlation analysis ($r=0.385$, $p<0.05$) support hypothesis 3, $r^2 = 0.148$ infers that there is 14.8% of employee engagement depends on HRD climate and remaining 85.2% of employee engagement depends on the other factors.

The results from the correlation analysis infer that ($r=-0.340$, $p<0.01$) there is a positive relationship between patient satisfaction and employee engagement. This support hypothesis 4, r^2 (0.116) describes that there is 11.6% of patient satisfaction depends on employee engagement and remaining 88.4% of patient satisfaction depends on the other factors such as HRD climate, competency.

The current study has a positive relationship between competency and employee engagement. ($r=-0.368$, $p<0.01$) which supports the hypothesis 5, $r^2 = 0.135$ shows that there is 13.5% of employee engagement depends on competency and remaining 86.5% of employee engagement depends on the other factors such as HRD climate, patient satisfaction

The results from the correlation analysis ($r=0.596$, $p<0.01$) confirms that there is a positive relationship of HRD Climate with patient satisfaction. This support the hypothesis 6, $r^2 = 0.355$ explains that there is 35.5% of patient satisfaction depends on HRD climate and remaining 64.5% of patient satisfaction depends on the other factors such as employee engagement, competency.

Table 1.6 :correlational analysis for para medical data

VARIABLES	COMP	HRDC	EE	PS
COMP	1			
HRDC	.495*	1		
EE	.553**	.525**	1	
PS	.550**	.602*	.432**	1

Note: COMP: Competency, HRDC: HRD Climate EE: Employee Engagement PS: Patient Satisfaction.* Correlation is significant at the 0.05 level (2-tailed).** Correlation is significant at the 0.01 level (2-tailed)

The present study has a positive relationship between competency and patient satisfaction for para medical dataset. The results from the correlation analysis revealed that ($r=-0.550$, $p<0.01$) which support the hypothesis1. The coefficient of determination (r^2) = 0.303 explains that there is 30.3% of patient satisfaction depends on competency and remaining 69.7% of patient satisfaction depends on the other factors such as HRD climate, employee engagement.

Similarly for rest of the variable, correlation between HRD climate and competency ($r=0.495$, $p<0.05$, $r^2 = 24.5$), between employee engagement and HRD climate ($r=0.525$, $p<0.01$, $r^2 = 0.275$), employee engagement and patient satisfaction ($r=0.432$, $p<0.01$, $r^2 = 0.186$), competency and employee engagement ($r=0.553$, $p<0.01$, $r^2 = 0.305$) and HRD Climate and patient satisfaction ($r=0.602$, $p<0.05$, $r^2 = 0.362$) all variable have significantly positive correlation which supports the hypothesis 2, hypothesis 3, hypothesis 4, hypothesis 5.

Conclusions: The study focuses on Competency mapping as a tool for assessment to effectively assess the changing situation in the healthcare industry. Healthcare sector is expanding rapidly, competition is intensifying. As human resource functioning is important for any service industry, Indian healthcare sector is also focusing on future to meet the challenges and sustain. Healthcare organizations with competitive advantage only can survive in this environment. Competency mapping practices in the selection and training of human resources provide competitive advantage in people to healthcare organizations. Bangalore has becoming growing as the global healthcare hub in the recent years and the study will help how the healthcare organizations are prepared to the future. The results obtained gives more evidence in favour of the literature review done. Competency mapping holds important at the present context for healthcare professionals to be updated with there competencies to meet the demand and challenges they go through every day to survive long in this field.

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