



A STUDY ON COMPETENCY MAPPING AMONG NURSES AT A TERTIARY CARE HOSPITAL, KAKINADA-ANDHRA PRADESH

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ABSTRACT The project report titled "A Study on Competency mapping among nurses at Tertiary care Hospital, Kakinada" is carried out to identify the gap of an individual's performance or job related skills in order to fill those gaps through effective training. To achieve this defined objective questionnaire is prepared. The prepared questionnaire is used to get the direct responses from the 102 nurses of a Tertiary care centre, Kakinada. The study highlights the need of organisations to gain measures of the skills and competencies held by the members of their workforces. Consequently, the hospital has been able to identify skill gaps, along with competency deficiencies, within its workforce.

This exercise provides the organization with a tool to plan their training programmes for all the nurses. The data was analyzed using the statistical tools like percentage analysis, student T test and Consistent tests (Cronbach alpha and AHP).

KEYWORDS : Skill Matrix, Technical Skills, Performance, Competency Mapping

INTRODUCTION

The Big challenges and most pressing issue faced by Healthcare in present scenario is in regards to recruiting skilled professional nurses which puts healthcare organizations in tough spot Scarcity of qualified employees, Dilemma between Education and Experience, High attrition rate among nurses – limited resource for increasing competitors

This hampers the patient care by juniors and new nurses who joined the organisation from a different setup whose policies and procedures are different. In this competitive scenario, giving the right kind of training to the right employee does not only improve the efficiency of the organization but also cuts down cost considerably. Healthcare organizations don't have the luxury of occasionally making the wrong hire. On top of the high cost of on boarding a new hire there are also legal risks associated with hiring an individual who purposefully or inadvertently breaks protocol, or harms patients.

SURVEY OF LITERATURE

McClelland has pioneered Competency movement. In his study, he has presented data to show that traditional achievement and intelligence scores may not be able to predict Job Success¹² and it is only the exact competencies required to perform a given job effectively and measuring them using a variety of tests, one can be sure about his profile^{3,4}. Katz in his study on Competency Mapping grouped competencies under three categories including Technical, Managerial and Behavioural (Human)^{5,6,7}. Solomon in his study on Competency mapping has tried to explore the level of Competency prevailing among the executives of public sector⁸. The results of the study show that nearly half of the respondents have moderate level of managerial HR and general competencies^{9,10}. Yuvaraj has explained the Job Competencies required working in a manufacturing industry, professionals for knowledge, ability and attitude. Gap analysis was also made to a limited extend¹¹. Md. Ishtiaq Uddin in his study Competency Mapping: A Tool for HR Excellence" has explained various tools for implementing Competency Model including Job Analysis, Job Description, Job Specification, Competency Matrix, 360 degree Feedback etc. He is of the view that Competency mapping can also be used for coaching and succession planning¹².

OBJECTIVES

The study has been undertaken with the following objectives in mind.

1. To study the Job roles and descriptions of the Nurses.
2. To study the various competencies possessed by the nurses as per their job roles.
3. To study the level of leadership competence as required by their future expected roles.
4. To study the gaps in actual and desired competencies.

METHODOLOGY

Primary Data has been used for the study. The total study is of Descriptive type because each item is clearly described. A well structured Questionnaire is used to collect primary data.

The research was conducted at a Tertiary care hospital, Kakinada – Andhra Pradesh. Sample size is 102. The researcher adopted non probability sampling for the study

RESEARCH INSTRUMENT

The research instrument that is used in this study is questionnaire. Statistical tools like percentage analysis, student T test, Consistent tests (Cronbach alpha and AHP).

SAMPLE DESIGN

All the nurses were included in this study

ANALYSIS AND DISCUSSION

The questionnaire is of 100 skills, which include Basic nursing skills, technical skills, patient care, nursing communication skills, cultural competency, critical thinking skills and decision making skills. All the nurses in respective areas were evaluated according to the defined questionnaire and were rated according to competency ratings that are specified in Table 1.

Table 1: Competency Ratings and its denotation

Competency level	Denotation
Level 1	Absence of knowledge / Has an exposure to the knowledge area but not practiced it
Level 2	Has an exposure to the knowledge area and practiced it with supervision
Level 3	Has an exposure to the knowledge area, practiced over a period of time, and is a perfectionist.
Level 4	Excellence – master in the particular knowledge area and can Train others

We arrived with a department wise data regarding competency ratings and which need to be addressed (Table 2).

Later we made a customised training calendar based on skill gaps & competency deficiencies and trained all the nurses. We reassessed all the nursing staff with same mechanism (Table 3). Department wise growth is analysed (Table 4) which showed significant improvement in the skills of all the nurses irrespective of the department. Training efficiency is found to be good which is evident in overall competency rating and competency score (Table 5, 6).

Table 2: Initial skill assessment

Department	No of Nurses Assessed	1*	2*	3*	4*	Competency score
Dialysis	4	1	1	1	1	1.75
HDU	7	1	3	2	1	2
OT	19	5	10	3	1	2
CATHLAB	3	1	1	1	0	2
WARDS	16	5	2	8	1	2.1
SICU	4	1	1	1	1	2.5
Neuro ICU	8	1	2	4	1	2.6
CTICU	11	0	5	5	1	2.6
CICU	8	0	3	5	1	2.75
MICU	11	0	3	7	1	2.8
ER	10	0	2	7	1	2.9
Endoscopy	1	0	0	1	0	3
TOTAL	102	15	33	45	10	2.41

Table 3: AFTER TRAINING SKILL ASSESSMENT

Department	No of Nurses	1*	2*	3*	4*	Competency Score
Endoscopy	1	0	0	1	0	3
OT	19	0	4	10	5	3.05
HDU	7	0	1	4	2	3.1
WARDS	16	0	2	10	4	3.1
CTICU	11	0	0	8	3	3.2
CICU	8	0	0	6	2	3.2
MICU	11	0	0	8	3	3.2
Dialysis	4	0	0	3	1	3.25
Neuro ICU	8	0	0	5	3	3.3
ER	10	0	0	7	3	3.3
CATHLAB	3	0	0	1	2	3.6
SICU	4	0	0	1	3	3.75
TOTAL	102	0	7	64	31	3.25

Table 4: DEPARTMENT WISE COMPETENCY GROWTH

DEPARTMENT	INITIAL COMPETENCY SCORE	POST TRAINING COMPETENCY SCORE
ENDOSCOPY	3	3
OT	2	3.05
HDU	2	3.1
WARDS	2.1	3.1
CTICU	2.6	3.2
CICU	2.75	3.2
MICU	2.8	3.2
DIALYSIS	1.75	3.25
Neuro ICU	2.6	3.3
ER	2.9	3.3
CATHLAB	2	3.6
SICU	2.5	3.75

Table 5: Training efficiency

TRAINING EFFICIENCY		
LEVEL	INITIAL (No of nurses)	POST TRAINING (No of nurses)
1	15	0
2	33	7
3	45	64
4	10	31

Table 6: Competency score

	INITIAL	POST TRAINING
TOTAL	2.41	3.25

Weightage for competencies

Assigning the weights on Nurse Competencies is one of the most effective ways to communicate the relative importance of competencies and goals to Nurses. Knowing the relative weights helps employees to prioritize their work and efforts on a day-to-day basis, as well as make decisions when faced with competing demands. When assigning weights to competencies and goals on competency assessment, it is ensuring that these truly reflect the organizational values and priorities. Getting agreement on weighting can sometimes be a challenge, but the resulting discussion is always valuable. Since pair wise comparisons are the keystone of these decision-making processes, correctly quantifying them is the most crucial step in multi-criteria decision-making methods. The values of the pair wise comparisons in the Analytic Hierarchy Process (AHP) are determined according to the scale introduced by Saaty (1977). According to this scale, the available values for the pair wise comparisons are members of the set: {9, 8, 7, 6, 5, 4, 3, 2, 1, 1/2, 1/3, 1/4, 1/5, 1/6, 1/7, 1/8, 1/9}. From AHP Weightage for the 7 competencies are derived as shown in table 8.

Competency level of employees

The assessment process provides an opportunity for the supervisor and employee to assess what has been accomplished against agreed upon individual objectives and job requires. From the survey, the competency levels of employee (N) are assessed by their immediate superior (N+1) and survey results for 102 Nurses in the organisation were collected and used for data analysis.

Table 8: Criteria Weightage

COMPETENCY SKILLS	CRITERIA WEIGHTAGE (CW)
Basic nursing skills	0.345108545
Technical skills	0.144971299
Patient care	0.111823457
Nursing communication skills	0.06694727
Cultural competency	0.060944214
Critical thinking skills	0.073203129
Decision making skills	0.072417369

Cronbach alpha

It is an estimate of the internal consistency, that is, how closely a set of items are related as a group. It is considered to be a measure of scale reliability. The data set is said to be consistent if the alpha value is greater than 0.7. This method depends on the average inter-item covariance among the items and the average variance. The cronbach alpha was performed with the skill matrix of 102 nurses to test the internal consistency. The data set of the initial competency assessment is taken for the analysis. From the analysis, the alpha value is recorded as 0.78. This interprets that the dataset is consistent or reliable using the average inter item covariance among the items and the average variance.

Statistical analysis

An independent 2-sample t- test was performed with the sample size N=102. The nurses were assessed before and after the training with the grades. This data is used for this analysis and t values are tabulated

t- Value > critical value (t value at 5% level of significance) is the condition for rejecting the null hypothesis. This shows that, there is a significant difference in employees' competency gap between the case and the control group. i.e., the t- test results rejecting the null hypothesis and predominantly accepting the alternate hypothesis for 99% two-sided confidence interval.

CONCLUSION

While there's challenge in recruiting skilled nurses, healthcare organizations should begin developing proactive training strategies to enhance the nursing professional skills which is highly required to make patient happy with an organization in a long term association. This 100 skill matrix chart helps healthcare as a tool to identify skill gaps, along with competency deficiencies. The organization should review its performance Appraisal System to incorporate the results of this analysis and employee job role assessment. It will improve the employee competencies and will help in growth of the organization. We are sure this tool brings positive impact for the health care organisations in training area.

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