

Effectiveness of Training on Competency Development

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ABSTRACT

Objective: Competency is a term applied for the evaluation of the performance level of workforce in any organizations. Competency measures performance in terms of three components knowledge, skill and attitude. All the three are crucial factors in healthcare service and if lacunae are found in any component of laboratory services it will result in dangerous mishaps. Studies done in the past two decades have highlighted the importance of continuous evaluation of staff employed in an organization, starting from recruitment, training and periodical assessment of their performance.

Purpose: To measure the effectiveness of training on competency development

Method: This study was undertaken in a diagnostic center in Chennai and has primarily focused on evaluating the competencies of both laboratory technologists and Incharges to assess the competency in terms of knowledge, skills and attitude. A pre and post assessment was done with training as an intervention tool.

Result: The results showed that there was significant improvement in all three parameters. Among lab technologist knowledge improved from 63 to 84% and skill level increased from 62% to 90%. In the case of lab in charges knowledge level rose from 71% to 96% and skill elevated from 70% to 84%.

Conclusion: The outcome of this study indicated gaps in competency. Skill level was found to be comparatively lesser than Knowledge and attitude. This revealed the need for Continuous Education through training which will facilitate knowledge enrichment and skill development.

Key Words: Competency, Performance, organization, CAP, CLIA, MCQ Questionnaire, healthcare

INTRODUCTION

The term competence was originally defined by R.W. White in 1959 and he defined it as having a model that enabled organizations to tap into their own desire to achieve proficiency of staff in any organization. This concept is now being used in all organizations from healthcare to sophisticated industries. Extensive studies have been done about the mode of competency evaluation among the work force of an organization. This review article summarizes the findings and recommendations on competency evaluation among the various levels of staff working in any organization.

In today's corporate world, competency evaluation has become a hot topic. Many companies are now investing on staff resources and training to retain them. One of the study outlined, 5 primary objectives of competency evaluations as assistance in recruitment, Job related developmental needs, support for continuous improvement and increased level of job satisfaction: The methods outlined to achieve the above 4 charter points are 360 degree feedback, personalized development plans, setting up of performance standards

and to recognize their skills and knowledge to enhance their career development. [1]

The four important competency evaluation markers are knowledge, skills, abilities and traits. They may be collectively achieved by the staff through pre-service education, in-service training and work experience. Competency evaluation should be consistent with ability, readiness to work on the assigned job in order to provide quality service to the customers. Although recruiting staff on experience is the first criteria, periodical evaluation on performance based protocol will give added benefits to the organization. [2]

In a study conducted in two South African provinces to evaluate the competency of nurses using stratified random sampling technique on 6 domains, the scores obtained were 8.6 on communication, 8.83 on problem solving, 8.67 on leadership management, 8.75 on staff management, 8.6 on planning & priority setting and 7.94 on financial management. Disparity has been observed between clinic managers and supervisors in evaluating the competency of nurses. The rating given by nursing managers were less than those given by clinic managers. [3]

A study carried out in Belgrade Primary Healthcare centers by a questionnaire on 14 management teams, before and after 6 months of management training has revealed statistically significant changes in interactions and competency gaps. Female managers showed higher competency levels in communication skills and problem solving and chief nurses showed improved leaderships. Before training the estimated competency gap was 6.29 for performance, 5.81 for team building and 5.70 for planning and priority setting. After 5 months training, while the gap remained in performance assessment, it was reduced to 3.18 with a p value of <0.05. [4]

Both academicians and healthcare organizers should collaborate to identify and prioritize major areas in educational outcome for healthcare management.

Studies among healthcare organizations reveal that evaluation of competency of their workforce is most challenging. [5]

Regular Competency assessment of workforce in an organization will ensure that the right people are employed to achieve performance outcome. Successful competencies will ensure the organizational goals which will help patient safety in healthcare. The American Hospital Association (AHA) guidelines stresses the need to assess competency based on a set of combination on knowledge, skills; personal characteristics, and individual & social behavior for doing the assigned job. Skill assessment could be done in one or two instances of employee performing a particular job. Further, competency assessment is a continuous process and should be validated over a period of time by using different methods and at various situations. Unless each person in every position is competent, the overall performance of an organization will not improve. The entire workforce should join together to achieve excellence in healthcare for the benefit of their own growth, patient safety and quality of care. [6]

The terms proficiency and competency are not same and there are distinct differences between them. While proficiency refers to an individual's performance in a particular job assigned to him, competency refers to the overall performance when a set of many different jobs are carried out. While analyzing a sample for a particular test and the quality of results produced assess that persons proficiency, analyzing, result generation and interpretation will collectively determine the competency of that person. [7]

In a study conducted by College of American Pathogenesis (CAP) using 1996 Q-Probe program for 522 Institutions, out of 89.8% participants who took written test competency assessment, 98.1% followed annual competency evaluation, 87.5% were assessed by direct observations, 77.4% test on quality control, 52.2% on written test, and other methods 20.8%. [8]

In a survey conducted for microbiologists in Ontario, Canada through questionnaire with 21 questions which included Yes or No, Multiple choice and short answer formats, among the 111 respondents, 6 did not have any formal evaluation program. Among the remaining 105, 87% perform evaluation once in 1 or 2 years, 61% test/task performance, and 16% and 10% focus only on problem solving areas and high volume tasks. The most common areas of evaluation were found in EQA, work observation and work sheet review. This study has revealed that methods used to assess the competency of laboratory staff are not standardized and uniform. This study has recommended the revision of existing microbiology staff competency evaluation program. [9]

In a computer-based competency evaluation on gram stain interpretation of 278 staff from 40 clinical laboratories through Multiple Choice Questions (MCQ), the overall mean score was 88%. Based on categorization of cell types, the scores obtained were host cells 93%, yeast 92%, gram positive 90% and gram negative 88%. Among the highest scoring questions, 5 were identified by structure and 1 by name and among lowest scoring questions, 5 by gram negative and 1 by host cells and by interpretation 2 by structure and 4 by name. This study has proved that gram stain identification as a reliable method of assessing microbiology laboratory technologist. [10]

In an exploratory study on competency evaluation based on CLIA-88 guidelines, it was observed that no consistent method of competency evaluation was found among 20 laboratories spread across 12 states covering hospitals, and blood banks, physician's office, group practice and some private laboratories. Learning & documenting of what various laboratories have done will be very useful in improving the competency evaluation. [11]

The success of any Clinical laboratory depends upon the importance of recruiting the right caliber of staff,

enhancement of quality through proper training and evaluation of their competencies. During the recruitment process, the organization should select employees who are innovative with a drive for excellence beyond all odds and with high aspirations. Trainings should be based on both in-house and external. Once competency evaluation is done, the organization should consider enhancing the salary based on score, identifying further training need based on the organizations expansion plan. The competency evaluation system will become a failure if management considers it as waste of time & resources. Hence recruitment, training and competency evaluation should be given priority by laboratories to enhance the viability of healthcare organizations. [12]

A study done in Australia has stressed the importance of laboratory skills such as organism isolation, visualization and identification as core elements of competency assessment in microbiology. The elaborative model designed stressed the importance of assessing in sub-areas such as skill assessment in light microscopy, Gram staining, Pure culture, aseptic techniques, serial dilutions, pipetting and final calculations. [13]

A Chinese study has developed a model practical guide for work force competencies with key elements such as skills, knowledge and attitude doing away with the philosophy of "Higher is better". This gave elaboration on work bench standards, increasing competency levels of individuals, Identify skills and knowledge to assess further training needs and its type and period of training, high lighting possibilities for future growth of individuals. [14]

Competency evaluation among non-accredited clinical laboratories in Sri Lanka has shown poor knowledge of technicians in quality testing. 10% of consistently reliable and valid results were highly doubtful. The outcome of this study further revealed that <40% of laboratories with adequate quality control methods with respect to management, equipment and reporting

results. Erroneous procedures were followed in many laboratories in testing. The four major deficiencies observed were Inappropriate handling of equipments, non-usage of quality control samples, irrelevant test methods and errors in reporting of results. The other three major deficiencies observed were calibration issues, insufficient facilities and environments and poor documentation. [15]

MATERIALS AND METHODS

TARGET AUDIENCE

Laboratory technologists working at Techmed Health centre & Diagnostic Pvt. Ltd, Chennai with Diploma or degree holders in medical lab technology with 2-3 years of experience as well as lab In charges – Post graduates in medical lab technology with 3-5 years of experience were recruited for this competency evaluation.

SAMPLE SIZE

Laboratory Technologists – 38

Laboratory In charges – 05

RESEARCH DESIGN

The design for the present study was Experimental

PERIOD OF STUDY

25.08.2015 - Pre Assessment

24.06.2016 - Training

- Post assessment

TOOLS USED FOR ASSESSMENT

Competency was measured in terms of knowledge, skill and attitude by way of a written test to measure knowledge and a checklist of parameters to measure skills through observation.

MODE OF ASSESSMENT FOR LABORATORY TECHNOLOGISTS

KNOWLEDGE – This was measured by written test covering pre analytical, analytical and post analytical process and laboratory maintenance.

SKILL –Skills were assessed through observations of the technologists at their work place. They were evaluated on their skills in lab practices like phlebotomy, infection control practices, disposal of waste, patient handling, patient preparation,

education, documentation, sorting and processing techniques

ATTITUDE - This component was measured through observation techniques based on their interaction with the patient, social skills, co ordination and behavior

MODE OF ASSESSMENT FOR LABORATORY INCHARGE

KNOWLEDGE – This was tested through a written test, seminar and analytical skill

SKILL – This was tested in terms of comprehension, organizing and coordinating skills, new initiative, communication and presentation skills, correspondence, analytical skills to identify and resolve issues.

ATTITUDE – This was evaluated in terms of interaction with colleagues, subordinates, updation, maintaining time frame in completing assignments etc.

COMPARISON OF KNOWLEDGE AND SKILLS BEFORE AND AFTER TRAINING

Category	Parameter Used	Before	After	P
Lab Technologist	Knowledge	63 %	84%	0.0001
	Skills	62%	90%	0.0001
In charge	Knowledge	71%	96%	0.0001
	Skills	70%	84%	0.0001

RESULTS

The outcome of this study indicated gaps in competency. Skill level was found to be comparatively lesser than Knowledge. Hence an attempt was made in the year 2016 to enhance and strengthen the employee's competency in skills through a 3 day skill development program incorporating training session's practical sessions and demonstration.

The result of this training program was remarkable.

Laboratory Technologists - The knowledge level increased from 63% - 84% and it is found to be highly significant with a p value of 0.0001.

Skill level increased from 62% - 90% with high significant p value 0.0001. Thus indicating a strong impact of training on post performance.

Laboratory In charges - Knowledge scores increased from 71% - 96%. The p value 0.0001 indicates a significantly positive relationship between training and performance

The p value 0.0001 of skills indicates that training has a positive and significant effect on the performance. The scores show an increase from 70% - 84%.

This revealed that Continuous Education by way of training will facilitate knowledge enrichment and skill development.

DISCUSSION

Competency evaluation is an important tool in any organization to assess the performance, reward the performance by providing promotional avenues and increment. Diverse types of methods are being used across healthcare organizations. Written test, oral interview and observations as well as online testing is being used. Each type of assessments has its own merits and demerits. [1, 2] Studies done in the past have mainly chosen written tests. Our method of evaluation in the study it is consistent with these done earlier. [3, 4] In a study done in Canada, the performance achieved on different grading were from 61 to 81 %, whereas is our method, we have achieved a maximum of 90% performance level. A Saudi Arabian study has achieved a maximum of 87.2%. [9, 12] An assessment done by CAP using written test a maximum of 87.5%, compared to the outcome of our study at 90%. A MCQ evaluation done has shown 90% achievement in performance level. [9, 10] A Jamaica university study has shown 85.7% achievement.

The outcome of our method of competency evaluation has shown improved performance levels as compared to earlier studies.

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