

Training Need Analysis

**Internship Training
at
Burjeel Hospital, VPS Healthcare,
Abu Dhabi, United Arab Emirates**

**By
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**Under the guidance of
Brig. (Dr.) S K Puri**

**Post Graduate Diploma in Hospital & Health Management
2012–14**



**Institute of Health Management Research
Jaipur
2014**

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TO WHOMSOEVER MAY CONCERN

This is to certify that **Dr Vijay Desai** student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur has undergone internship training at **VPS Healthcare, Abu Dhabi** from **11st February 2014 to 10th May 2014**.

The candidate has successfully carried out the study designated to him during internship training and his approach to study has been sincere, scientific and analytical.

The internship is in fulfillment of the course requirements.

I wish him all success in all his future endeavors.



Dr. Ashok Kaushik
Dean, Academics and Student Affairs,
IIHMR Jaipur



Dr. S. K. Puri
Professor
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Date: 19th May 2014

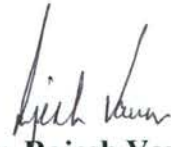
To whomsoever it may concern,

This is to certify that **Dr. Vijay Namdev Desai** has successfully completed his internship from **11th February 2014** to **10th May 2014** in the department of **Human Resources** and has successfully completed his dissertation project on **"Training Need Analysis"** in **VPS Healthcare's Burjeel Hospital, Abu Dhabi, UAE.**

He comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning.
We wish him all the best for future endeavors.



Mr. Amrish Rai
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Mr. Rajesh Varma
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**INSTITUTE OF HEALTH MANAGEMENT RESEARCH,
JAIPUR**

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled Training Need Analysis and submitted by **Dr Vijay Desai Enrollment No. 1397** under supervision of **Dr S K Puri** for award of Post Graduate Diploma in Hospital and Health Management of the institute carried out during the period from 11th February 2014 to 10th May 2014 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.



Signature

Abstract

An intensive care unit is a specialized area of a hospital where patients' serious illnesses or injuries receive special medical and nursing care. ICU nurses are highly knowledgeable and skilled health care professionals that work in an ICU in association with members of the hospital team to provide optimum patient care. The purpose of critical care training is to enhance patients' safety. ICU nurses need critical care specialist training to work effectively in intensive care unit. Nurses in specialty training for intensive care and emergency nursing must be trained in ICU under the supervision of sufficient training employees. They should not be seen as alternate for regular intensive care nursing staff but may be progressively assigned to patient care according to their actual intensity of training. The aim of the present research is to study training practices need for ICU nurses followed in Burjeel hospital located at Abu Dhabi, UAE. This study gives idea about training needs and training programs carried in the ICU for Registered Nurses (RN) and Practical Nurses (PN) Hospital management should design training programs which help to enhance the knowledge and skills of its ICU nurses. The findings of this research focus on a variety of critical care training programs.

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JAIPUR**

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled Training Need Analysis and submitted by **Dr Vijay Desai Enrollment No. 1397** under supervision of **Dr S K Puri** for award of Post Graduate Diploma in Hospital and Health Management of the institute carried out during the period from 11th February 2014 to 10th May 2014 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Signature

Acknowledgment

I respect & thank **Mr. Rajesh Varma, HR Director, VPS Healthcare** for giving me an opportunity to do the study on Training Need Analysis.

The guidance and support received from **Mr. Nigel Haigh, Director of Nursing, Burjeel Hospital** who contributed to this study, was vital for the success of study. I am grateful for their constant support and help.

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Table of Contents

Table of Contents	7
List of Graphs	7
List of Tables	8
List of Symbols and Abbreviations	9
Dissertation Study	11
Training Need Analysis of ICU Nurses	11
Introduction	11
Aim of Study	12
Objectives	13
Literature Review	13
Methodology	22
Results of Need Assessment:	23
Discussion	32
Conclusion	34
Recommendations	35
Ethical Considerations	37
Study Limitations	38
Instrument	39
Bibliography	43

List of Graphs

Graph 1: Training needs of RN - Tasks with their respective average difference score.....	24
Graph 2: Training needs of PN - Tasks with their respective average difference score.....	28

List of Tables

Table 1: Training needs of RN with their average difference score arranged in descending order.....	23
Table 2: RN's Quality of work performance.....	25
Table 3: RN's Competence to carry out current job.....	25
Table 4: RN's Satisfaction with current performance.....	25
Table 5: Training Needs of PN with their average difference score arranged in descending order.....	27
Table 6: PN's Quality of work performance.....	29
Table 7: PN's Competence to carry out current job.....	29
Table 8: PN's Satisfaction with current performance	29
Table 9: Training Program.....	34

List of Symbols and Abbreviations

RN: Registered Nurse

PN: Practical Nurse

ICU: Intensive Care Unit

ECG: Electro Cardio Gram

NIV: Nin-Invasive Ventilation

ABG: Arterial Blood Gas

BLS: Basic Life Support

ACLS: Advanced Cardiac Life Support

Dissertation Study

On

Training Need Analysis of
ICU Nurses

Introduction

An essential preliminary step to be gone through prior to planning and designing a training programme is to determine the objectives of the programme. The objectives of the programme are to be framed in the light of the training requirements of the employees in an organization. The assessment of the training needs is, therefore a necessary exercise to be undertaken before designing a training program.

Intensive care provides severe medical treatment to the most ill or injured patients in the hospital. These patients have need of continuous monitoring and sophisticated medical treatment. The serious patient is frequently attached to several machines and monitors which provides supportive care required to prolong life. Intensive care unit is open or closed or a combination of both types of units. Nursing, pharmacy, and respiratory therapy staff is ICU based for critical patients. In ICU, patients receive care primarily from physicians. The skills and knowledge of critical care nurses possibly will be directed towards health promotion, crisis interference, maintenance and treatment of critical patients. Training primarily focuses on teaching organizational members how to perform their current jobs and helping them performs. (Jones, George and Hill, 2000). ICU nurses can sustain professional competence through ongoing education, training, research and skill development and attempt to provide evidence-based practice through promotion of research within their specialty areas. Critical care is provided by an ICU-based team of critical care physicians, nurses, pharmacists, respiratory therapists, and other health professionals. Advanced medical technology allows the treatment of illnesses and injuries earlier thought not curable, in addition to the aging of the population; there is no reason to expect admissions to intensive care units to turn down. Advanced healthcare technology and ICU environment need to develop their practice to meet the changing critical care environment. The intensive care unit offers patients sophisticated medical interventions and specialized staffing. Often after experiencing a sudden, unexpected painful event such as an acute illness or injury patients are admitted to the ICU. In some cases patients are admitted to ICU subsequent deliberate medical procedures such as surgery for stabilization and monitoring. Employees in ICU face traumatic situation include “the medical and technological equipment, the constant monitoring of the patient, the alarm signals” (Delva et al., 2002). Staff development involves the training, education and career development of staff members (Adamolekun 1983). Quality healthcare delivery requires many components including a community able to provide a qualified and skilled labor force to work in hospitals. A shortage of skilled workers creates a stress on healthcare delivery systems and undermines hospital quality. The purpose of this research is to study training needs of Registered Nurses (RN) and Practical Nurses (PN) and training programs carried for ICU nurses.

Aim of Study

To suggest training program based on training needs of ICU Nurses.

Objectives

1. To assess the training needs of Registered Nurses (RN) and Practical Nurses (PN) working in Intensive Care Unit (ICU).
2. To prioritize training needs.
3. To customize training as per needs.
4. To suggest training program for based on the training need.

Literature Review

Aim of Training

Organizational goals effectively can be grouped into technical skills, human skills and conceptual skills. Training should not only enable people to perform their present roles effectively, but also prepare them to shoulder greater responsibilities in the future. The ultimate aim of training is to improve the effectiveness of the achievement of organizational goals and objectives.[1]

Training As a Sub-System of Human Resource Management System

Unfortunately training is generally looked upon as some kind of an isolated event in the career of an employee by the employees themselves, the organization in which they work and the training institution. This is one of the reasons why it has not been possible to derive the maximum benefit from training. In fact, the training has to be regarded as an integral part of the overall career and work-life of an employee. In other words, training and development has to be perceived as a sub-system of the overall system of Human Resource Management System. A system may be defined as a group of inter-related and interdependent parts or processes operating in sequence, according to predetermined plan, in order to achieve a goal or a series of goals. [1]

The Sub-Systems of Training

In order to ensure the expected results which training is meant to bring, training itself should be taken as a system where its various steps or processes are actually its sub-systems. This means that the different phases/processes of training function are highly inter-dependent and inter-linked; the ultimate aim of each phase is the achievement of predetermined goals of training.

The main sub-systems of the training system are:

- I. Identification of Training Needs;
- II. Formulation of Training Objectives;
- III. Design of Training Programmes;
- IV. Implementation of Training Programmes,
- V. Evaluation of Training Effectiveness

Training Need

For effective and efficient performance of duties and responsibilities of any position in an organization, a certain level of competencies in terms of knowledge, skills and attitudes is required. An individual holding the position should normally have this level of competence, as otherwise he or she will not be able to do justice to his or her role and attain the objectives of the organization. At the same time, the knowledge, skills and attitudes actually possessed by the position-holder may fall short of the expected requirements of the position. Thus, there is likely to be a gap between the desired level of competence required for a position and the level of

competence actually possessed by the individual occupying the position. The training need may be described as the gap between the expected and existing levels of competence in individuals holding different positions in an organization. [1]

Reasons for Training Need Assessment

The whole effort of training starts with the realization of some need for training or, in other words, some gap in the expected and actual level of competency of a person or group of persons. If this training need is not identified properly, it may lead to a lot of wastage of resources of all kinds, i.e., wastage of human resources, of time and of material. Training then will become a ritual for its own sake and not for the sake of the individual in the organization or for the benefit of the organization. Trainees may also not feel motivated to learn in a training programme, if they find the contents irrelevant to their needs.

Training need analysis helps in designing a training programme effectively. Which areas of knowledge, attitude or skill are to be dealt with, how much time should be given to each, which methods would be more appropriate, all these decisions depend upon the actual training needs of a particular group of employees.

Kinds of Training needs

In order to have a comprehensive assessment of training needs the organization will have to analyze the needs at the following three levels:

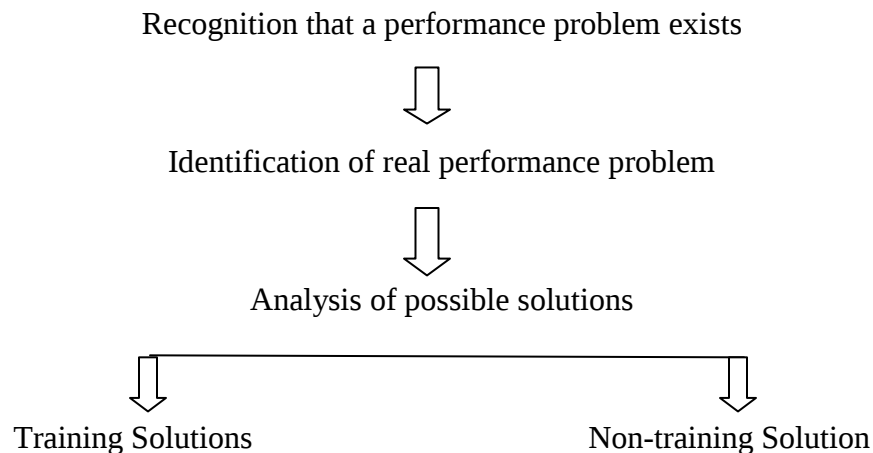
- A. Organizational level- the gap between the organization's desired performance and its actual performance in achieving the overall goals of the organization
- B. Group level- the gap between the functional groups desired level of performance and its actual performance in achieving the group objectives
- C. Individual level- the gap between the individual's desired performance and his or her actual performance in achieving individual objectives in major key performance areas

These needs can then be further classified under the following categories:

- I. Short-term vs. long-term needs
- II. Needs which can be met by internal resources vs. those to be met by external resources
- III. Needs which can be met by only face-to-face interaction in groups vs. needs which can be met by an individual himself or herself

Process of Determination of Training Needs

The general process of identification of training needs may be understood as follows:



As the model reveals, at the first step, organization has to identify the problems, then an analysis of problems is made and the third step involves possible solutions through brainstorming or by any other method.

Methods for Identifying Training Needs

The investigator has a number of options open to him or her, when he or she sets about identifying and assessing training needs. The methods used by an investigator will depend on a number of factors the existing information, the size of the training problem, the time and resources available, the cooperation of the major stakeholders etc. All these are likely to influence the ways in which the investigator will set about identifying training needs. Some of the methods the investigators can use in identifying the training needs are as follows:

1. Manpower Planning
2. Role Analysis
3. Studying the changes in policies, procedures and technology
4. Observation
5. Interviews
6. Questionnaires
7. Review of Performance Appraisal Record
8. Study of complaints
9. Diary Method
10. Tests and Assessment
11. Managerial Requests

12. Experience of Others

13. Reports of the Committees, Conferences etc. [1]

The **aims of the Hennessy-Hicks Training Needs Assessment Questionnaire** are:

- To identify training needs at the individual, group or organizational level
- To prioritize these training needs

The development of the assessment instrument

The development stages of the instrument followed formal psychometric principles. Thematic analysis of the available literature, together with data obtained from focusgroups and semi-structured interviews were analyzed and synthesized into themes to provide construct validity. From each theme a range of items was developed into questionnaire format, informed by the previous stage, to ensure a degree of content validity. The pilot questionnaire was administered to health care professionals from all disciplines; their responses were analyzed using a variety of multivariate techniques. This stage allowed refinement of the instrument into its most reliable and valid items. The final questionnaire has since been used with over 7000 health care professionals globally, providing a robust data-base.

The structure of the instrument

The instrument comprises five sub-sections –

- research/audit
- communication/teamwork
- clinical tasks
- administration
- management/supervisory tasks

These allow measurement of training needs within broad categories, as well as affording comparisons between categories. Each category can therefore be used independently of the others, or in any combination to provide the information required by the researcher.

The instrument is semi-opaque, which means that respondents are less likely to be able to distort their responses and therefore, that the data obtained will be a more accurate reflection of the training requirements. In this way, the instrument has an advantage over other similar ones.

The data which emerge from the instrument have the capacity to:

- Identify training needs at the individual, team, group or organizational levels
- Inform educational and training packages at the individual, group or organizational levels
- Evaluate educational outcomes
- Customize training to meet local needs
- Aid priority setting
- Inform policy development

The instrument is unique in that it is tailored for use specifically with health care teams, but can easily be adapted to meet the particular objectives of a clinical specialty, management or organization. For example, the instrument has been used to identify training requirements to upgrade general nurses working in primary care to specialist nurse status, informed the training required and was also used to assess the effectiveness of that training. The instrument has been successfully used in developed and developing countries, with equal success.

It can be adapted to meet the requirements of any given health care setting, team or group without compromising its validity and reliability. By following the basic processes outlined and highlighted under the 'development' section, up to 8 of the 30 existing items can be replaced, thereby enabling the instrument to be customized for a specified purpose. In addition, up to a further 10 additional items can be added without compromising the psychometric properties, but these must be developed in accordance with basic principles of questionnaire design - briefly described above.

HENNESSY-HICKS TRAINING NEED ANALYSIS QUESTIONNAIRE: INSTRUCTIONS TO THE RESEARCHER

The basic questionnaire: assessing training needs alone

The full details of the basic questionnaire are provided in Section 3, but an introductory outline will be given here.

Each item in the basic questionnaire is rated along a 7-point scale in 2 different ways - How important a task is to the respondent's job (Rating A); and how well the task is currently performed (Rating B).

Interpreting the ratings:

Rating A provides an index of how important the task is to the respondent's job, while Rating B provides an index of how well it is currently being performed. Comparing the scores for importance/performance provides an assessment of where the greatest training needs lie. The greater the difference in scores, the greater the training need.

- Where a task gets a high rating on A but a low rating on B, the training need is high and should be the top priority for training (important task, not well performed).
- Where the task is rated low on A and low on B, then the task could be considered for training, but as a lower priority (unimportant task, not well performed)
- Where the task is rated high on A and high on B then there is no training need (important task, well performed)
- Where the task is rated low on A and high on B there is no training need (unimportant task, well performed).

Various comparisons and analyses may be performed depending on the purpose of the study e.g.: different groups of staff may be compared on their performance of any given task; or they may be compared on the differences between rating A and B (their training needs); or the differences between Ratings A and B can be calculated before a training program and again afterwards to assess whether the training has reduced the training need.

In addition to these basic questionnaires, an open response section has been included so that respondents can record any training needs they have which have not been covered by the questionnaire.

Finally, because the instrument is psychometrically robust, up to 25% of the items (up to a maximum of 8) may be swapped for items of the researcher's choice without invalidating the questionnaire and another 10 items may be added. However, these new items should have been obtained via thematic reviews of the literature, focus groups or interviews, in order to ensure that they have some validity. The biographical questions on the front sheet may also be adapted to suit the research.

Making sense of your findings

Depending on the purpose of your study, there are several ways in which you can analyze the results from the TNA. Remember that high scores on an item's importance together with low scores on its performance are indicative of a training need.

IDENTIFYING TRAINING NEEDS – AN INTRODUCTION

Training needs are identified where there are the biggest gaps are between the importance attributed to a task/item (Rating A on the questionnaire) and how well the person believes they perform this task (Rating B on the questionnaire). The biggest gaps indicate the greatest training need. This can be done for an individual or for groups.

You will also need to bear in mind, however, the absolute degree of importance attributed to a given item, since you might observe a training need on an activity that is not considered to be particularly important; for example, an item may be given a score of 4 for importance, but only 1 for performance. This would suggest a training need, but not an urgent one, as the actual task is perceived to be of only moderate importance.

Training needs can be plotted according to their importance and performance as illustrated in Figure 1.

COMPARING DIFFERENT GROUPS ON THEIR TRAINING NEEDS

You may wish to compare different professional groups on their training needs, to see where the areas of difference and similarity are. Where there are similarities, this might open up the possibility of shared learning when developing training. Where there are differences between groups in terms of their training needs, then this may reflect differences in professional roles and requirements; this in turn could mean that development customized for specific groups might be required.

APPROACHES TO ANALYSIS

The following guidelines look at individual and group questionnaire analysis, using either graphs or inferential statistics. We will use the following data from just 5 questionnaire tasks/items to illustrate the different approaches.

(A = importance of the task, B = performance on the task, C = relevance of organizational development to improving performance on this task, D = relevance of training course to improving performance on this task).

Table 1: a sample of hypothetical data

QUESTIONNAIRE ITEM RATINGS

A B C D

1. Establishing a relationship with patients 7 5 2 7
2. Doing paperwork and/or routine data inputting 3 4 5 3
3. Critically evaluating published research, in order to inform standards/protocols in your clinical area 6 2 1 7
4. Appraising your own and other's performance 4 4 1 5
5. Recognizing and managing risk in clinical care 7 2 2 7

1. Individual questionnaire analysis

Sometimes you might want to look at the training needs of a particular individual. For example, an annual performance review as part of a staff development program might consider the particular development needs of individual members of staff. The following suggest some ways of analyzing the results from a single person's questionnaire:

SIMPLE SUBTRACTION: you can subtract the performance score (Rating B) from the importance score (Rating A) for each individual questionnaire item. This will give you a difference score which reflects the degree of training need – high scores on importance and low scores on performance indicate a training need. The bigger the difference score, the greater the training need. You can rank order the training needs by the size of these differences. This means, for example, that limited training budgets could be focused on the top-ranking items. For each of the training needs you can look to see whether the respondent considers organizational development

(Rating C) or a training course (Rating D) would be more effective in enhancing performance on that task, depending on which of these has a higher score.

Using the sample data above, the following difference scores are obtained for items 1 – 5 (Rating A – Rating B):

Item 1 = +2

Item 2 = -1

Item 3 = +4

Item 4 = 0

Item 5 = +5

This means that item 5 has the greatest training need, followed by items 3 and 1.

Items 2 and 4 have no training need. Looking at the scores given to the relevance of organizational development (Rating C) vs training courses (Rating D) for developing these training needs, it can be seen that for all three items with identified training needs (5, 3 and 1), that training courses are considered to be more useful than organizational development in improving performance on these.

Group questionnaire analysis

The aims of group analysis are comparable to those of the individual analysis and therefore, the basic principles of analyzing the data are similar. However, rather than using individual scores, you will need to calculate the average scores for the group. The sorts of analysis you might wish to undertake for groups are as follows:

SIMPLE SUBTRACTION: for every respondent and each item in turn, you would first subtract the performance score (Rating B) from the importance score (Rating A) to obtain the difference, or training need. For instance, if you had 100 respondents and the basic 30-item questionnaire, you would have 100 difference scores for each of the 30 items in the questionnaire. You would then calculate the average difference score for each item, giving you an average score for each of the 30 items. The bigger the average difference score, the greater the group's training need; these averaged difference scores can then be rank ordered to establish what the training priorities are for the group.

Alternatively, you might want to look at the relative training needs for each of the 5 sub-categories of task. In this case you would calculate the average difference scores for the items in each of the given sub-categories [2]

Methodology

The objective of present research is to study training need analysis of RN and PN working in ICU and training programs run by hospital. The focus of this research is to collect responses and information from RN's and PN's regarding their training needs and various training methods adopted by intensive care unit of hospital. The theoretical structure of the study model utilized research articles as the basis for data collection and analysis.

Burjeel Hospital is currently running 14 beds in ICU. All 30 nurses working in ICU were chosen for study, out of which 20 are Registered Nurses (RN) and 10 are Practical Nurses (PN). A self-assessment questionnaire was designed for ICU nurses for collection of data. Finally, the collected data were analyzed and the conclusion and recommendation was drawn.

Problem Statement

ICU Nurses of hospital are required to undergo training on clinical and technical knowledge.

Research Questions

1. Are nurses working in ICU clinically and technically competent to deliver quality and standardized care?
2. What kind of knowledge and skills do ICU nurses have?
3. Who are the nurses to be trained?
4. Which training techniques should be employed for nurses?

Study design and methods

1. **Type of study**: Analytical Study
2. **Location of study**: ICU of Burjeel Hospital, Abu Dhabi (UAE)
3. **Study Population**: ICU Nurses (Registered Nurses and Practical Nurses)
4. **SampleSize**: 30*

*(All nurses working in ICU were chosen for study, out of which 20 are Registered Nurses and 10 are Practical Nurses)

5. **Data collection tools**:
 - I. Primary Data Collection: Self-assessment questionnaire for Assessment of Nurse's training need. (Hennessy-Hicks Training Needs Analysis Questionnaire)

Results of Need Assessment:

Method used to analyze the responses:

- Nurses were asked to register their response in given self-assessment questionnaire. This questionnaire contains 47 clinical as well as administrative tasks/skills which a nurse needs to perform at her job. There are 2 sections next to each task named A and B respectively.
- The first section (A) is concerned with how important the activity is to the successful performance or his/her job; the second section (B) is concerned with how well nurse currently perform that activity.
 - For Section A, Rating of 1 to 7:
Not well = 1 to Very well = 7
 - For Section B, Rating of 1 to 7:
Not at all important = 1 to Very important = 7
- All nurses working in ICU were asked to fill up this self-assessment questionnaire. 20 registered nurses (RN) and 10 practical nurses (PN) rated the tasks in these questionnaires.
- Formula of Training Need Analysis:
 $\text{Desired Performance} - \text{Actual Performance} = \text{Possible Training Needs}$

- **Interpreting the ratings:**

Rating A provided an index of how important the task or skill is to the nurse's job, while Rating B provided an index of how well it is currently being performed. Comparing the scores for importance/performance provided an assessment of where the greatest training needs lie. The greater the difference in scores, the greater the training need.

- Where a task gets a high rating on A but a low rating on B, the training need is high and should be the top priority for training (important task, not well performed).
 - Where the task is rated low on A and low on B, then the task could be considered for training, but as a lower priority (unimportant task, not well performed)
 - Where the task is rated high on A and high on B then there is no training need (important task, well performed)
 - Where the task is rated low on A and high on B there is no training need (unimportant task, well performed).
- The first step of analysis was subtracting the performance score (Rating B) from the importance score (Rating A) to obtain the difference, or training need for every respondent and each task in turn.
 - The second step was to calculate the average difference score for each item, giving us an average score for each of the 47 items. The bigger the average difference score, the greater the group's training need; these averaged difference scores then ranked in order to establish what the training priorities are for the RN's and PN's.

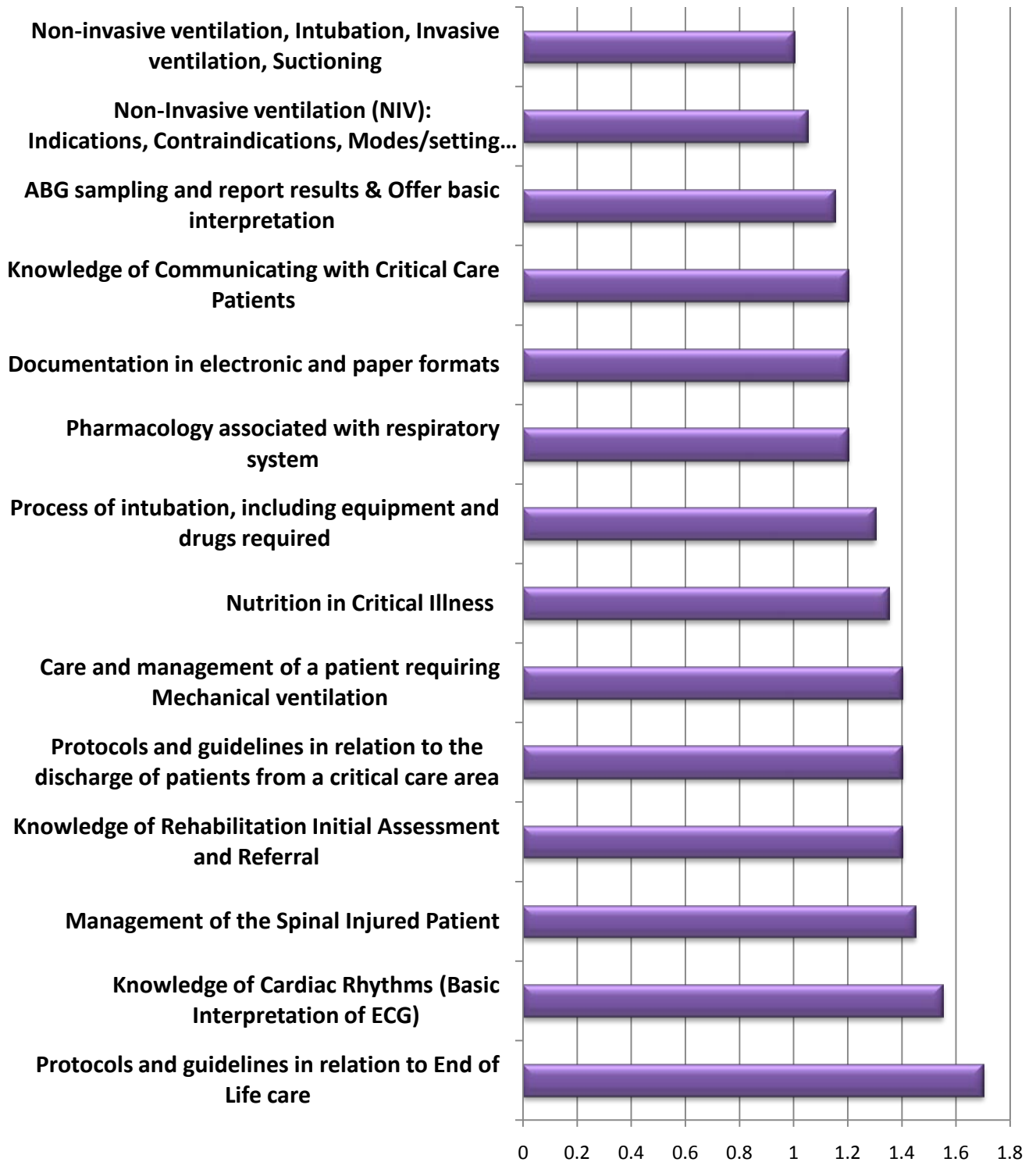
A. Training Needs of Registered Nurses (RN):

- I. Average difference score {Ave (Section A – Section B)} for each of 47 tasks was calculated and it was found that scores recorded were ranging from 0 to 1.7. The greater is the score; greater is training need for that task. For the purpose of identification of training needs, it is assumed that the tasks whose average difference score is 1 and more than 1 needs urgent attention and these tasks should be given priority in training program.

S No	Task/ Skill	Average Difference Score
1	Current national and local policies, protocols and guidelines in relation to End of Life care	1.7
2	Knowledge of Cardiac Rhythms (Monitoring and interpretation of basic 3 or 5 lead ECG)	1.5
3	Management of the Spinal Injured Patient	1.4
4	Knowledge of Rehabilitation Initial Assessment and Referral	1.4
5	Protocols and guidelines in relation to the discharge of patients from a critical care area	1.4
6	Care and management of a patient requiring Mechanical ventilation	1.4
7	Nutrition in Critical Illness - assessment of the patient's nutritional status using an appropriate tool	1.3
8	Process of intubation, including equipment and drugs required	1.3
9	Pharmacology associated with respiratory system	1.2
10	Prepare and complete appropriate documentation in electronic and paper formats	1.2
11	Knowledge of Communicating with Critical Care Patients	1.2
12	Safely perform ABG sampling and report results to appropriate team member, Offer basic interpretation	1.1
13	Care and management of the patient requiring Non-Invasive ventilation (NIV): Indications, Contraindications, Modes/settings used	1.0
14	Under supervision and with appropriate support, manage the patient who requires: Non-invasive ventilation, Intubation, Invasive ventilation, Suctioning	1.0

Table 1: Training needs of RN with their average difference score arranged in descending order.

Average Difference Score



Graph 1: Training needs of RN - Tasks with their respective average difference score.

II. Quality of work performance:

Nurses were asked to tick the grade which denotes their current quality of work performance. The table no. 3 shows the responses received from RN's

Nurse (RN)	Very Good	Good	Average	Fair	Poor	Total
Number	3	14	3	0	0	20
Percentage	15%	70%	15%	0%	0%	100%

Table 2: RN's Quality of work performance

III. Competence to carry out current job:

Nurses were asked to tick the grade which denotes their competence to carry out current job. The table no. 4 shows the responses received from RN's

Nurse (RN)	Very Good	Good	Average	Fair	Poor	Total
Number	3	17	0	0	0	20
Percentage	15%	85%	0%	0%	0%	100%

Table 3: RN's Competence to carry out current job

IV. Satisfaction with current performance:

Nurses were asked to tick the grade which denotes their satisfaction with current performance. The table no. 5 shows the responses received from RN's

Nurse (RN)	Highly satisfied	Satisfied	To some extent	Very little	Not at all	Total
Number	0	16	2	2	0	20
Percentage	0%	80%	10%	10%	0%	100%

Table 4: RN's Satisfaction with current performance

V. Specific Training Needs for RN:

Registered Nurses were asked to write specific training needs apart from the 47 skills, they feel learning to perform their current job. Below mentioned are specific training needs registered nurses mentioned in self-assessment questionnaire. (Percentage of RN in favor of that training need is shown next to that training need)

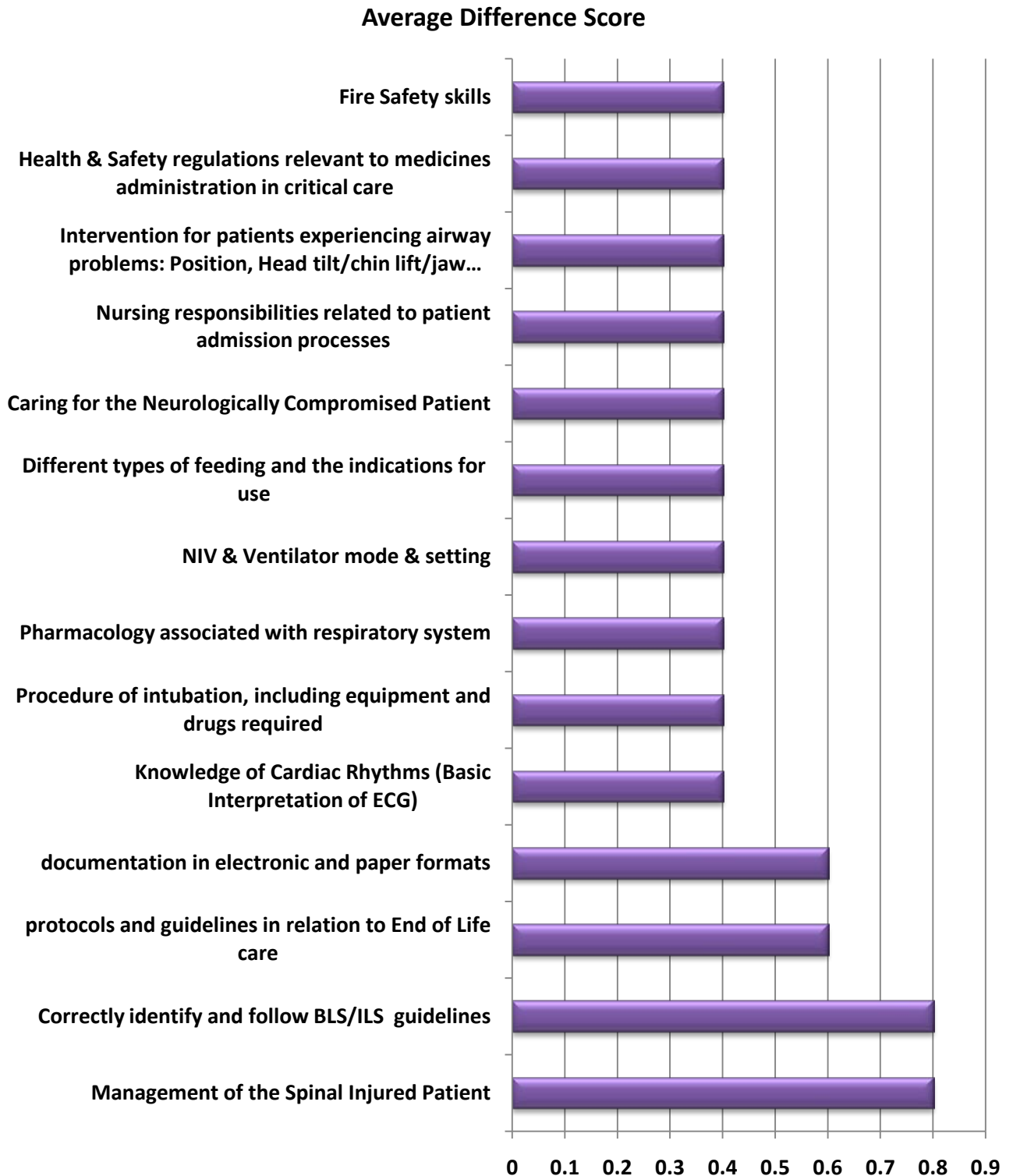
- ECG Interpretation (40%)
- Ventilator Modes & Settings (25%)
- Critical care management course (15%)
- BLS & ACLS (15%)
- Wound care management (15%)
- Learn Arabic language (5%)
- ABG Interpretation (5%)
- Cardiac anatomy and physiology (5%)
- Pharmacology of commonly used medicines (5%)
- Protocol for end of life care (5%)
- Knowledge of communicating with critical care patient (5%)
- Time & Stress management (5%)
- Leadership training program (5%)

B. Training Needs of Practical Nurses (PN):

1. **Average difference score {Ave (Section A – Section B)}** for each of 47 tasks was calculated and it was found that scores recorded were ranging from 0 to 0.8. The greater is the score; greater is training need for that task.
For the purpose of identification of training needs, it is assumed that the tasks whose average difference score is 0.4 and more than 0.4 needs urgent attention and these tasks should be given priority in training program.

S No	Task/ Skill	Average Difference Score
1	Management of the Spinal Injured Patient	0.8
2	Correctly identify and follow BLS/ILS guidelines where appropriate	0.8
3	Current national and local policies, protocols and guidelines in relation to End of Life care	0.6
4	Prepare and complete appropriate documentation in electronic and paper formats	0.6
5	Knowledge of Cardiac Rhythms (Monitoring and interpretation of basic 3 or 5 lead ECG)	0.4
6	Procedure of intubation, including equipment and drugs required	0.4
7	Pharmacology associated with respiratory system	0.4
8	Care and management of the patient requiring Non-Invasive ventilation (NIV): Indications, Contraindications, Modes/settings used	0.4
9	Different types of feeding and the indications for use	0.4
10	Caring for the Neurologically Compromised Patient	0.4
11	The nursing responsibilities related to patient admission processes	0.4
12	Provide appropriate intervention for patients experiencing airway problems: Position, Head tilt/chin lift/jaw thrust, Insertion of airway, Manual ventilation	0.4
13	Health & Safety regulations relevant to medicines administration in critical care	0.4
14	Fire Safety skills	0.4

Table 5: Training Needs of PN with their average difference score arranged in descending order.



Graph 2: Training needs of PN - Tasks with their respective average difference score.

2. Quality of work performance:

Nurses were asked to tick the grade which denotes their current quality of work performance. The table no. 3 shows the responses received from PN's

Nurse (PN)	Very Good	Good	Average	Fair	Poor	Total
Number	6	4	0	0	0	10
Percentage	60%	40%	0%	0%	0%	100%

Table 6: PN's Quality of work performance

3. Competence to carry out current job:

Nurses were asked to tick the grade which denotes their competence to carry out current job. The table no. 4 shows the responses received from PN's

Nurse (PN)	Very Good	Good	Average	Fair	Poor	Total
Number	6	4	0	0	0	10
Percentage	60%	40%	0%	0%	0%	100%

Table 7: PN's Competence to carry out current job

4. Satisfaction with current performance:

Nurses were asked to tick the grade which denotes their satisfaction with current performance. The table no. 5 shows the responses received from RN's

Nurse (PN)	Highly satisfied	Satisfied	To some extent	Very little	Not at all	Total
Number	0	10	0	0	0	10
Percentage	0%	100%	0%	0%	0%	100%

Table 8: PN's Satisfaction with current performance

5. Specific Training Needs for PN:

Practical Nurses were asked to write specific training needs apart from the 47 skills, they feel learning to perform their current job. Below mentioned are specific training needs practical nurses mentioned in self-assessment questionnaire. (Percentage of PN in favor of that training need is shown next to that training need)

- ECG Interpretation (20%)
- Critical care management course (20%)
- BLS & ACLS (20%)
- Learn Arabic language (20%)
- Time & Stress management (20%)

Discussion

After doing analysis of the responses received from registered nurses (RN) and practical nurses (PN), It is found that registered nurses needs training in 14 out of 47 tasks or skills and also practical nurses needs training in 14 out of 47 tasks or skills.

The RN requires training in following areas/skills:

1	Current national and local policies, protocols and guidelines in relation to End of Life care
2	Cardiac Rhythms (Basic interpretation of ECG)
3	Management of the Spinal Injured Patient
4	Rehabilitation Initial Assessment and Referral
5	Protocols and guidelines in relation to the discharge of patients from a critical care area
6	Care and management of a patient requiring Mechanical ventilation
7	Nutrition in Critical Illness - assessment of the patient's nutritional status using an appropriate tool
8	Procedure of intubation, including equipment and drugs required
9	Pharmacology associated with respiratory& cardiovascular system
10	Documentation in electronic and paper formats
11	Knowledge of Communicating with Critical Care Patients
12	ABG sampling and basic interpretation.
13	Care and management of the patient requiring Non-Invasive ventilation (NIV): Indications, Contraindications, Ventilator Modes/settings used
14	Non-invasive ventilation, Intubation, Invasive ventilation, Suctioning

These are areas which needs immediate attention and should be focused upon in building training program for ICU nurses. Most of the tasks mentioned above in table are very important for a RN to successfully perform her duty and a nurse should have knowledge of these tasks without any doubt.

Similarly, the study revealed below mentioned 14 areas where PN needs training:

S No	Task/ Skill
1	Management of the Spinal Injured Patient
2	BLS/ILS guideline
3	Current national and local policies, protocols and guidelines in relation to End of Life care
4	Knowledge of documentation in electronic and paper formats
5	Knowledge of Cardiac Rhythms (basic interpretation of ECG)
6	Procedure of intubation, including equipment and drugs required
7	Pharmacology associated with respiratory system
8	Non-Invasive ventilation (NIV): Indications, Contraindications, Modes/settings

	used
9	Different types of feeding and the indications for use
10	Caring for the Neurologically Compromised Patient
11	The nursing responsibilities related to patient admission processes
12	Knowledge of providing intervention to patients experiencing airway problems: Position, Head tilt/chin lift/jaw thrust, Insertion of airway, Manual ventilation
13	Health & Safety regulations relevant to medicines administration in critical care
14	Fire Safety skills

This table shows that PN nurses need training in more of clinical areas compared to RN. Usually PN plays role to support RN but it is very important for PN to have sound knowledge of these tasks. There are some common tasks like BLS, ACLS, NIV, ECG interpretation in which both RN and PN needs training.

As per responses received from RN and PN, It is noticed that 71% of RN think that their quality of work is good while 60% of RN think that their quality of work is very good.

About 82% of RN believes that they have good competence to carry out their current job and are satisfied with their current performance.

All PN are satisfied with their current performance.

Following are the areas/ tasks, which majority of nurses (RN & PN) would like to get training in:

- ECG Interpretation
- Ventilator Modes & Settings
- Critical care management course
- BLS & ACLS
- Wound care management
- Learn Arabic language
- ABG Interpretation
- Cardiac anatomy and physiology
- Pharmacology of commonly used medicines
- Protocol for end of life care

Conclusion

- The study revealed that the RN & PN nurses need to undergo training majorly for below mentioned clinical as well as some administrative topics:
 - ✓ Cardiac Rhythms/ ECG Interpretation
 - ✓ Ventilator Modes and setting
 - ✓ Critical Care management
 - ✓ BLS & ACLS
 - ✓ Wound care management
 - ✓ ABG Interpretation
 - ✓ Pharmacology of commonly used medicines
 - ✓ Protocol for end of life care
- Most of registered nurses and practical nurses think that their quality of work performance is good and are satisfied with their work performance.

Recommendations

It can be observed from results of study that both registered nurses and practical nurses need training on almost same topics. On the basis of the training needs of both registered and practical nurses following training program can be implemented. The total duration of this program should be decided after consulting with faculties chosen for training program.

The following program is prepared to cater the immediate and basic training needs came out of study:

Module No.	Module Name	Type of training	Trainer
1	Essentials of Anatomy and Physiology of : ➤ Cardiovascular System ➤ Endocrine System ➤ Respiratory System ➤ Central Nervous System ➤ Gastro Intestinal Tract ➤ Renal/ Urinary System	Classroom PowerPoint Presentation	Professor – Physiology
2	Orientation to terminology & diseases of: ➤ Cardiovascular System ➤ Endocrine System ➤ Respiratory System ➤ Central Nervous System ➤ Gastro Intestinal Tract ➤ Renal/ Urinary System	Classroom PowerPoint Presentation	Professor – Pathology or Specialist Internal Medicine
3	Basic ECG Interpretation	Classroom PowerPoint Presentation	Specialist - Cardiologist
4	Basic ABG Interpretation	Classroom PowerPoint Presentation	Intensivist
5	BLS & ACLS	Classroom PowerPoint Presentation & Practical on Manikin	Intensivist
6	Pharmacology of Essential & Emergency Medicines	Classroom PowerPoint Presentation	Professor – Pharmacology
7	Equipment used in ICU	Classroom PowerPoint Presentation & Practical on Manikin	Intensivist

8	Ventilator modes and settings	Patient Bedside	Intensivist
9	Clinical Procedures	Classroom PowerPoint Presentation	Nurse In Charge
10	Administrative Procedures	Classroom PowerPoint Presentation	Nurse In Charge
11	Time and Stress Management	Classroom PowerPoint Presentation	Director of Nursing

Table 9: Training Program

Ethical Considerations

Permission to conduct the study was obtained from the Director of Nursing, Burjeel Hospital. Ethical clearance was obtained from the Ethics Review Committee Burjeel Hospital. All questionnaires were filled up by nurses and handled in strictest confidence.

Study Limitations

As always, caution must be displayed in interpreting study findings, taking into consideration certain limitations.

First is the small targeted population and sample size, attributed to the study's aim and subsequent design. To counteract this inherent limitation, participants were all nurses working in ICU and were from two different groups: registered nurse (RN) and practical nurse (PN).

Self-reported biases were unavoidable because the TNA is an instrument of perceived job-related expectations (duties and responsibilities) and self-assessed competence. However, several studies have demonstrated its capacity to elicit reasonably objective data in a systematic way.

Instrument

Training Need Analysis Questionnaire (For Nurses)

Purpose

The purpose of this questionnaire is to find out your views with regard to your job performance and the knowledge and skills required so as to gather information about the kind of training needed for effective performance of the current and future responsibilities.

Instructions

1. Please responds to all questions
2. Gives your views honestly and frankly as possible as you can without consulting others.
3. Your answers will be handled in strictest confidence.

Part I

Personal Data

1. Department: _____
2. Designation: _____
3. Qualification: _____
4. HAAD License: Yes / No
5. Experience in present department:
6. Sex:
7. Nationality:

Part II

Work Performance

What would you say about your current job performance? Indicate your views on the scale given

	Very Good	Good	Average	Fair	Poor
1. Quality of work performance					
2. Competence to carry out current job					
3. Are you satisfied with your current performance?					
Highly Satisfied	Satisfied	To some extent	Very little	Not at all	

Part III

Knowledge and Skills

Instructions for completion:

This questionnaire comprises two sections that are to do with your training needs.

Please answer all the questions as honestly as possible to enable us to compile a complete picture of your training requirements. Each section is prefaced by instructions for completion.

Please read and follow these carefully.

In order to perform your job effectively you need relevant skills. You will see listed below a range of skilled activities many of which you undertake in performing your job.

Look at each of these activities and then rate each one by writing the appropriate number in the box. The first rating (A) is concerned with how important the activity is to the successful performance of your job; the second rating (B) is concerned with how well you currently perform that activity.

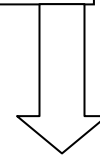
B: How well do you consider that you currently perform this activity?

Rating of 1- 7: Not well = 1; Very well = 7

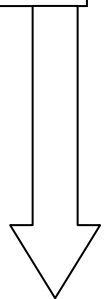
A: How important is this activity to the successful performance of your job?

Rating of 1- 7:

Not at all important = 1; Very important = 7



A



B

Observation and monitoring of the patient requiring respiratory care		
Actions you would take to restore respiratory function in response to observations including oxygen therapy		
Safely perform ABG sampling and report results to appropriate team member, Offer basic interpretation		
Assemble relevant equipment and administer oxygen therapy via: simple face mask, Venturi system, Nasal cannulae, Reservoir mask		
Provide appropriate intervention for patients experiencing airway problems: Position, Head tilt/chin lift/jaw thrust, Insertion of airway, Manual ventilation		
Care and management of the patient requiring Non-Invasive ventilation (NIV): Indications, Contraindications, Modes/settings used		
Process of intubation, including equipment and drugs required		
Care and management of a patient requiring Mechanical ventilation		

Management of Secretions		
Under supervision and with appropriate support, manage the patient who requires: Non-invasive ventilation, Intubation, Invasive ventilation, Suctioning		
Tracheostomy Care		
Pharmacology associated with respiratory system		
Assess and monitor the patient requiring cardiovascular support		
Prepare for and assist in the safe insertion of an arterial line		
Safely prepare for and assist with the insertion of a central line		
Managing Fluid Replacement (Knowledge of Clinical indications that necessitate fluid intervention, Differences between colloids, crystalloids and blood products)		
Knowledge of Cardiac Rhythms (Monitoring and interpretation of basic 3 or 5 lead ECG)		
Correctly identify and follow BLS/ILS guidelines where appropriate		
Prepare and administer medications used to support the cardiovascular system		
Methods of measuring and recording fluid output (e.g. Urine output)		
Nutrition in Critical Illness - assessment of the patient's nutritional status using an appropriate tool		
Different types of feeding and the indications for use		
GCS (Glasgow Coma Scale) Assessment		
Management of the Spinal Injured Patient		
Caring for the Neurologically Compromised Patient		
Practice required to prevent pressure damage (Skin Bed Sores)		
Health & Safety regulations relevant to medicines administration in critical care		
Bio Medical Waste Management		
Process of administration in critical care		
Practices used in critical care to minimize the risk of harm to the individual or reduce the risk of error in medication and fluid administration		
Knowledge of Indications and rationale for patient admission to the critical care setting		
The nursing responsibilities related to patient admission processes		
Initial patient physical and psychological assessments		
Referral process		
Prepare and complete appropriate documentation in electronic and paper formats		
Protocols and guidelines in relation to the discharge of patients from a critical care area		
Current national and local policies, protocols and guidelines in relation to End of Life care		
Knowledge of Rehabilitation Initial Assessment and Referral		

Knowledge of Communicating with Critical Care Patients		
Knowledge of Patient and Family Rights		
Knowledge of Informed Consent		
Knowledge of Patient and Family Education		
Fire Safety skills		
Hospital Emergency Codes (e.g. code blue, red, etc)		
Legal responsibilities of written documentation		
Knowledge, understanding and skills to contribute to Infection Prevention and Control in critical care.		
International Patient Safety Goals		

Part IV

Specific training needs

Please specify the areas of your job in which you would like to receive further training or instruction. List these in order of importance:

1.

2.

3.

4.

5.

Thank you for your time and assistance.

Bibliography

[1] Readings on Training Need Analysis by Dr S C Gupta & Dr Vinita Mathur

[2] http://www.who.int/workforcealliance/knowledge/HennessyHicks_trainingneedstool.pdf