

A Study to Assess The Effectiveness STP on Knowledge Regarding Arterial Blood Gas Analysis Among BSc Nursing Students in Vydehi Institute of Nursing, Bangalore

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Abstract:

Normal function of body cells depends on regulation of the hydrogen (H⁺) concentration within very narrow limits. The arterial blood gases are one of the most important investigations for assessment of clinical oxygenation and acid base status in critically ill patient. A Pre-experimental research design was adopted and Non-probability purposive sampling technique was used to select 50 students at Vydehi Institute of Nursing College, Bangalore. Self structured questionnaires were used to assess the knowledge regarding ABG analysis. The finding of the study reveals that (62%)students had inadequate knowledge, (38%) students had moderate knowledge and (0%) students had adequate knowledge. Post-test study finding revealed a marked improvement in knowledge level of students that is(16%)students had in adequate knowledge,(70%)students had moderate knowledge and (14%) students had adequate knowledge. Present study shows that, the mean post-test knowledge score(13.56)was significantly higher than the mean pre-test knowledge score (9.68) and t value is 9.379. Finding shows that there is no significant association between pre test knowledge and any of the selected socio demographic variables of students. The study reveals that after the administration of structured teaching program, majority of the students have adequate knowledge and few have moderate knowledge where as none have inadequate knowledge which shows the effectiveness of the structured teaching program.

KEYWORDS: Arterial blood gas, Interpretation, Effectiveness, Knowledge, Acidosis.

INTRODUCTION

Normal function of body cells depends on regulation of the hydrogen (H⁺) concentration within very narrow limits. The body normally regulates the amount of oxygen and carbon dioxide in the blood as low blood oxygen level can lead to many serious complications and can cause damage to individual organ systems in the body.¹

Continuous arterial blood gas analysis is a real time monitoring tool, which reliably detects the onset of adverse pulmonary effects. It gives rapid confirmation of ventilator settings changes and resuscitation and helps to ensure precise adjustment of therapy.²

Acidosis refers to any pathological process that causes a relative excess of acid in

the body. Acidemia is excess acid in the blood.³

Since the nurses are the primary care giver and is most readily available for the client, early interventions to correct acid-base problems would expedite the clients recovery. So the nurses understanding of ABG report and interpretation is very essential skill to provide appropriate intervention. Critical care nurses play a dynamic role in management of acid base disorders as they collaborate in the administration of drug therapy, TV therapy, oxygen therapy and mechanical ventilation when indicated by the help of ABG test.

Materials & Method

Study Design:- The study used pre-experimental research design.

Variables: Study variables for the study includes age, gender, previous knowledge, workshop undergone for ABG analysis, have ever performed ABG analysis and source of information.

Setting of the study: The present study was carried out in lecture room, Vydehi institute of nursing, Bangalore. The criteria for selecting the setting were feasibility of conducting the study and availability of the samples and familiarity of the investigators with the setting.

Sample size: 50 B.sc nursing students Sampling

Technique: Non-probability Purposive sampling technique was used to select the samples.

Inclusion criteria

Students,

- Who were more than 20 years of age
- Present at the time of data collection
- Studying in 3rd year B.sc nursing
- Who were willing to participate in the study

Exclusion criteria

Students,

- Who were below 20 years of age
- Who were not willing in the study
- Who were absent during the study

Development of tool:

After an extensive review of literature and discussion with the experts the structured questionnaires were prepared to assess the knowledge regarding arterial blood gas analysis among b.sc nursing students. The tool consists of the following sections:

Section A:

Socio-demographic data: Age, gender, any previous knowledge, workshop undergone, performance, source of information.

Section B:

Self structured Questionnaires related to ABG analysis to assess the level of knowledge among B.sc nursing students which consists of 22 questions.

Results

The collected data were analysed according to the objectives of study.

Study shows that in the pre- test (62%) students had inadequate knowledge, (38%) students had moderate knowledge and (0%) students had adequate knowledge. But the post-test findings showed a marked improvement in knowledge level of students that is (16%) students had inadequate knowledge, (70%) students had moderate knowledge and (14%) students had adequate knowledge.

Effectiveness of structured teaching programme on knowledge regarding ABG analysis.

Study shows that, the mean post-test knowledge score (13.56) was significantly higher than the mean pretest knowledge score (9.68) and t value is 9.379.

Association between selected socio-demographic variables and pretest knowledge score.

Chi square test was used to find the association between pretest knowledge score and socio demographic variable. The study finding shows that there is no significant association between pretest knowledge and any of the selected socio-demographic variables of the students.

Discussion Based on the result of the present study, in pre-test among 50 students (62%) students had inadequate knowledge, (38%) students had moderate knowledge and (0%) students had adequate knowledge. But in post-test study finding showed there was a marked improvement in knowledge level of students that is (16%) students had inadequate knowledge, (70%) students had moderate knowledge and (14%) students had adequate knowledge.

And the mean post-test knowledge score (13.56) was significantly higher than the mean pre-test knowledge score (9.68) and t value is 9.379.

The study result found that there is no significant association between pre-test knowledge and any of the selected socio-demographic variables of the students. A similar finding was identified by a study conducted to assess the knowledge and interpretation of ABG analysis among 50 staff nurses working in Sri Ram Cardiac Hospital in Jalandhar, Punjab through convenience sampling techniques and 2 tools were used- self structured questionnaire and observational checklist. The findings revealed that in pre-test, majority of nurses 33(55%) were below average score and 27 (45%) above average score and after post-test 26(43.3%) nurses were in good score. (4) It was also consistent with the result of the study conducted on 50 ICU staff nurses in Bharati Hospital at Sangali, Maharashtra, to assess the level of knowledge and interpretation of Arterial Blood Gas analysis. The sampling techniques used in the study was non probability purposive sampling technique.

The data was collected by using self-reported structured questionnaire. The result reveals that the mean knowledge score about Arterial Blood Gas Analysis of staff nurses in pre-test was 11.50 and post-test was 15.98.(5)

Conclusion

The present study findings indicate that in the pre-test majority of the students have inadequate knowledge and none was having adequate knowledge.

In the post-test, most of the students had adequate knowledge and few were had moderate knowledge whereas none of the students had inadequate knowledge.

Finding related to effectiveness of STP- shows pre-test value is 9.68 and post-test value is 13.56 and t value is 9.379.

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