



A Study To Assess The Effectiveness Of Self-Instructional Module On Knowledge Regarding Arterial Blood Gas Interpretation Among Staff Nurses Working In A Selected Hospital At Bhopal.

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Abstract: When treating patients with respiratory issues and modifying oxygen therapy as necessary, measurements of blood pH as well as arterial oxygen and carbon dioxide tensions are collected. The amount of blood oxygenation is indicated by the arterial oxygen tension (also known as partial pressure or PaO_2), whereas the effectiveness of alveolar ventilation is indicated by the arterial carbon dioxide tension (also known as partial pressure or PaCO_2). ABG investigations help evaluate the kidneys' and lungs' capacities to reabsorb or excrete bicarbonate ions in order to maintain a normal body pH as well as the lungs' capacity to supply enough oxygen and expel carbon dioxide. Additionally, serial ABG analysis is a sensitive marker of lung injury following chest trauma. An artery puncture at the radial, brachial, or femoral levels is used to get the ABG level.

I. INTRODUCTION

Measurements of blood pH and of arterial oxygen and carbon dioxide tensions are obtained when managing patients with respiratory problems and adjusting oxygen therapy as needed. The arterial oxygen tension (partial pressure or PaO_2) indicates the degree of oxygenation of blood, and the arterial carbon dioxide tension (partial pressure or PaCO_2) indicates the adequacy of alveolar ventilation. ABG studies aid in assessing the ability of the lungs to provide adequate oxygen and remove carbon dioxide and the ability of the kidneys and to reabsorb or excrete bicarbonate ions to maintain normal body PH. Serial ABG analysis also is a sensitive indicator of whether the lung has been damaged after chest trauma. ABG level are obtain through an arterial puncture at the radial, brachial, or femoral artery of through an indwelling arterial catheter.

Patient whose ABG level are monitored repeatedly with blood obtained from arterial punctures should receive an explanation of the purpose of the procedure. Because of the nerves in arterial walls, patients often unaware of the purpose of the puncture and the fact that the ABG result could make a major difference in their treatment (Crawford, 2004)

PROBLEM STATEMEN

“A study to assess the effectiveness of self-instructional module on knowledge regarding arterial blood gas interpretation among staff nurses working in selected hospital at Bhopal (M.P.)”

OBJECTIVE

- To assess the pretest knowledge score regarding arterial blood gas interpretation among staff nurse working in selected hospital at Bhopal.
- To assess the post-test knowledge score regarding arterial blood gas interpretation among staff nurse working in selected hospital at Bhopal.
- To evaluate the effectiveness of the self-instructional module on knowledge regarding arterial blood gas interpretation among staff nurses by comparing mean pretest and post-test knowledge score.
- To associate between the pretest knowledge score with selected demographical variables.

HYPOTHESIS

H1: - there is a significant difference between pretest score and post test score knowledge regarding arterial blood gas interpretation among staff nurses working in selected hospital at Bhopal

- H2: -There will be significant association between pre-test knowledge score with selected socio demographical variable.

3.1 Population and Sample:

The population of the present study are staff nurses working in selected hospital.

Sample size for the study 60 staff nurses working in selected hospital which fulfil the sample criteria. According to tablet, a sample is a portion of the population that has been selected to represent the population of interested.

Purposive sampling of non-probability sampling approach was thought to be appropriate for this study. A purposive sample is a group of individuals readily available for participation in the study.

In the present study staff nurses were selected by purposive sampling technique by the investigator. It was suitable keeping in view, the time provided for data collected and the study.

. 3.2 Data and Sources of Data For this study secondary data has been collected:

- Staff nurses who are willing in to participate in the study.
- Staff nurses who are not willing to participate in the study.

The most important and crucial aspects of any research is data collected, which provide answer to the question under study. Data collection relies on instrument.

The present study at the effectiveness of self-instructional module in term of knowledge gained by staff nurses working in selected hospital at Bhopal. Thus, questionnaire was prepared and used collection

3.3 Theoretical framework Variables of the study contains dependent and independent variable.

Conceptual frame work represent a less formal attempt at organizing phenomena. It deals with obstruction or concepts that are assembled by the virtue to their relevance to a common them. The conceptual frame work can serve as a spring board for the generation of research hypothesis and can provide an important contest for further research. (Polit & Hungler 1990)

The conceptual model provides a certain frame of sequence for clinical practice, research and education. The utility of the conceptual model from the organization provides thinking for observation and for interpreting with is seen.

Treece and Treece (1996) state that, “one of the important purposes of conceptual frame work communication clearly and interrelationship of various concepts” conceptualization provide a frame of reference for research education and practice. It directs research by pointing out solution to practical problems.

The conceptual frame work theoretical approach to the study of problem that is scientifically base and which lay emphasis on the solution arrangement and clarification of conceptual frame work formulize the thinking process so that other may read and know basic to the research problem.

Polit and Hungler (1999) a conceptual frame work is cohesive support linkage of selected. Interrelated objective observation, even and experience. It serves as guideline to research and spring board for the generation of research hypothesis.

The conceptual frame work selected for the study is based on Imogene M KINGS “goal attainment model”.

The theory focuses on interpersonal system relicts’ king’s believe that the practice of nursing differentiated from that of other health professional by what nurse do with and for individual. The major elements of theory of goal attainment are seen in the interpersonal system in which two people who are usually strangers, come together in a health care organization to help and be helped to maintain a state of health that permits functioning in roles.

I. RESEARCH METHODOLOGY: for assessing the knowledge of staff nurses if includes the description of research approach design, setting of the study sample and sample technique, development of data collection tools and questionnaire, procedure for data collection and the plan for data analysis.

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John Hopkins University (2018), Letha K. Mathew (2019), Schneiderman J, Corbridge S, and Zerwic J J. (2020),

3.3 Theoretical framework Variables of the study contains dependent and independent variable. **Variables**

According to Polit and Hungler (1999) “a variable, as the name implies is something that varies or a variable is quality of an organism, group or situation that makes difference values”.

Dependent variable

The dependent variables are the condition or characteristics that appear, disappear or change as the investigator introduce removes independent variable. The dependent variable of this study was knowledge of staff nurses regarding arterial blood gas interpretation.

Independent variable

The independent variable is the condition or characteristics that the investigator manipulates or control in his or her attempt to ascertain their relationship to observed phenomena. In the present study, independent variable was self-instructional module.

3.4 Statistical tools and econometric models This section elaborates the proper statistical/econometric/financial models which are being used to forward the study from data towards inferences. The detail of methodology is given as follows.

. IV. RESULTS AND DISCUSSION

4.1 Results of Descriptive Statics of Study Variables Table

The pretest and post- test knowledge score obtained through structured questionnaire and analysed using description inferential statistics.

Category	Pretest		Post test	
	Frequency	Percentages	Frequency	Percentages
Poor (0-7)	20	33.4%	8	13.4%
Average (7-14)	30	50%	24	40%
Good (15-21)	10	16.6%	28	46.6%
Total	60	100%	60	100%

Overall mean standard deviation (SD) Mean differences standard error and post-test knowledge score.

In order to find out the significant difference between pretest and post-test knowledge score paired “t” test was computed.

Knowledge score	Mean	Mean deviation	Standard deviation	“t” values
pretest	10.36		4.13	

Chi- square value showing relationship between pretest knowledge score and selected demographical variable N.60.

DEMOGRAPHICAL VARIABLE	CHI/TEST	TABLE VALUE	DF	P- VALUE	RSEULT
Age	16.81	7.82	3	0.05	Significant
Gender	0.0	3.84	1	0.05	Not Significant
Education status	338.77	7.82	3	0.05	Significant
Year of experience	6.14	5.99	2	0.05	Significant
Area of experience	324.05	7.82	3	0.05	Significant
Previous information regarding ABG interpretation	18.45	3.84	1	0.05	Significant
Sources of previous information	74.69	7.82	3	0.05	Significant

S= Significant N.S = Not Significant

0.05

CONCLUSION

Self-instructional module was effective in order to improve the knowledge of staff nurses.

The mean pre-test score was 10.35 and mean post test score 13.83 this mean that self-instructional module was effective in order to increase the knowledge regarding arterial blood gas interpretation among staff nurses working in selected hospital. It is also indicated that good results were obtained after administration of self-instructional module.

Thus, it is conducted that the self-instructional module was effective. The association finding was done to find out the relationship of knowledge with the selected demographic variables by using chi square test and calculating the ‘p’ value. Age, gender, education status, total year of experience, area of experience, previous information regarding ABG interpretation and sources of previous information are significant.

Hence, on the basis of above findings, it could be concluded undoubtedly that the self-instructional module was effective to increase the knowledge regarding arterial blood gas interpretation among staff nurses working in selected hospital.

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