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**A STUDY TO EVALUATE THE EFFECTIVENESS OF SELF-INSTRUCTIONAL  
MODULE REGARDING OXYGEN THERAPY IN TERMS OF KNOWLEDGE,  
ATTITUDE AND PRACTICE AMONG NURSES WORKING IN EMERGENCY AND  
INTENSIVE CARE UNIT DEPARTMENT OF SELECTED HOSPITAL OF  
VADODARA, GUJARAT**

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**ABSTRACT**

**Background of the study:** Oxygen is an indispensable element of life; its deficiency has deleterious consequences to all organs of the human body leading eventually to cell dysfunction and death. Supplemental oxygen helps to forestall hypoxemia issues; once inappropriately directed, the patient can go over the danger of hypoxemia, respiratory brokenness even passing. Supplemental oxygen is a lifesaving treatment in emergency conditions and is commonly used as a therapeutic agent in emergency and ICU departments at health care institutions of majorly at tertiary level hospitals. Therefore, researcher intended to organize this study to assess knowledge, attitude And practice of nurses regarding oxygen therapy. **Objective:** To evaluate the effectiveness of self- instructional module regarding oxygen therapy in terms of knowledge, attitude and practice among nurses working in emergency and intensive care unit department of selected hospital of Vadodara, Gujarat. **Material and method:** A Quantitative approach is used. A pre-experimental one group pre-test post-test research design was opted. The study was conducted over staff nurses working in emergency and ICU units of hospitals of Vadodara. 100 sample sizes were selected through non-probability Purposive Sampling Technique. Effectiveness of self-instructional module was assessed **Result:** It was divulged through the findings that the self-instructional module found significantly effective to enhance the

knowledge, attitude and practice level of staff nurses regarding oxygen therapy. **Conclusion:** The study findings observed that provided self- instructional module enhancing staff nurse's knowledge, improved their attitude and fining their practice standard towards oxygen therapy. Therefore, researcher further recommended that such specific module should be created and kept in emergency and ICU unit, so that the staff will take an appropriate action towards oxygen therapy kind of life-saving process.

**Keywords: Self-Instructional Module, Oxygen therapy, Staff Nurse, ICU, Emergency**

## INTRODUCTION

Oxygen (O<sub>2</sub>) is a fundamental for practically earth's creatures in general. In the clinical area, O<sub>2</sub> is utilized as a treatment for different pathophysiological conditions like pneumonia, cardiovascular breakdown and hemorrhagic shock (HS). Cell reinforcements show up normally in the body and are utilized to forestall harm brought about by free revolutionaries' O<sub>2</sub> toxicity [1].

Supplemental oxygen is a lifesaving treatment in emergency conditions and is commonly used as a therapeutic agent in emergency and ICU departments at health care institutions of majorly at tertiary level hospitals. Without additional oxygen treatment, many patients cannot survive [2]. Oxygen treatment is a one of treatment used to oversee tissue hypoxia. Nurses accomplish a great deal function the extent that this concerned, the Disappointment of nurses to give oxygen to the basic sick patient. It saves lives and similarly perilous on the off chance that not controlled expertly to the degree that it can even reason demise [3]. As per Browne and Crocker; Oxygen

ought to be regulated to accomplish an objective immersion of 94-98% for most basically sick patients or 88-92% for those in danger of respiratory inadequacy of hypercapnia [4].

The reasoning to recommend Oxygen treatment is to further develop the oxygen supply and diminish respiratory work. Speculations in regards to negative impacts of hypoxemia and the positive effect of oxygen treatment have been created and it has been contended that quite a long time back [5].

Oxygen affects the lung tissue. A high grouping of oxygen could make changes in the lung that causes oxygen harmfulness. Creation of surfactant is

Impacted by high centralization of oxygen which thus falls alveoli. Oxygen ought to be controlled by an expertly prepared nurses [6].

Numerous specialists contend that in emerging nations, the staff isn't thoroughly prepared in focusing on fundamentally sick patients, prompting an absence of information on basic consideration standards and that make a boundary quality

consideration. A need to refresh the information on staff nurses, preparing depending on the situation is fundamental and ought to be coordinated into their plan for getting work done routinely [7].

## MATERIALS AND METHODS

### Research Approach:

This study employs a Quantitative Approach to determine knowledge, attitude and practice among nurses working in emergency and intensive care unit department of selected hospital of Vadodara, Gujarat. Research Design Pre-experimental research design with one group pre-test post-test design was adapted in this study to determine the knowledge, attitude and practice among nurses working in emergency and intensive care unit department of selected hospital of vadodara, gujarat.

### Place of Study

The study was conducted in at Dhiraj Hospital, Vadodara Gujarat.

### Source of Data

Source of data for this study are staff Nurses working in emergency and intensive care unit.

### Sample description

**Population** The population of present study comprises Staff Nurses working in emergency and intensive care unit of selected hospital of Vadodara.

### Sample size

The sample size of the study consisted of

100 Staff Nurses working in selected hospital of Vadodara, Gujarat.

### Sampling Technique

In the present study, the sample selected for data collection by non- probability, purposive sampling technique.

### Selection Criteria

#### Inclusion criteria for sampling:

- Staff Nurses working in emergency and intensive care unit
- Staff Nurses who are present at time of data collection.
- Staff Nurses who can read and write in English, Gujarati and Hindi.
- Staff Nurses who are having registered nursing degree such as Post Basic, GNM and B.Sc.

#### Exclusion Criteria for sampling:

- Staff Nurses who are not working in emergency and intensive care unit are excluded from this research study.

### Description and development of tool

In this study the research tools consist in four parts, named as Section-I as Socio-demographic information's, Section-II as Multiple - Choice Knowledge Structured Questionnaire, Section- III, Likert Attitude Scale and Section-IV, Expressed Practice Checklist.

### Section-I Demographic variables

Demographic variables of staff nurses consisting of 6 items:

- Age in Years

- Gender
- Years of Experience
- Working area
- Education of staff nurses
- Previous knowledge regarding oxygen therapy obtained from.

### Description of tool

#### Section-I Demographic variable

This section includes demographic variables such as Age in Years, Gender of nurses, experience of the staff nurses, working area, education status of the staff nurses and Previous knowledge regarding oxygen therapy.

#### Section-II Structured Knowledge Questionnaire:

The present structured knowledge questionnaire related to oxygen therapy among staff nurses prepared with an aim to assess staff nurse's knowledge regarding oxygen therapy. It has total 30 questions.

#### Section-III Likert Attitude Scale

##### SECTION-I

Presented **Table 1A** stated the age of study subjects and mirrored that bulk number of nurses 68(68%) were aged in between 22 to years then 21 (21%) were ranged in between 36 to 49 years and remaining 11 (11%) were aged in 50 year and above.

**Table 1B** stated the gender-wise frequency and percentage distribution of socio-demographic variables of the nurses and revealed that majority of nurses 55 (55%) were female and rest 45 (45%) were male.

This scale will be assessing the attitude of staff nurses regarding oxygen therapy. It has assessed at three-point scale starting from Agree (3), Neutral (2) and Disagree (1). It covers total 10 items.

#### Section-IV Expressed Practice Check-list

This check-list will be assessing the practice skills of staff nurses regarding oxygen therapy. It has assessed at two-point Yes (2) or No (1) and covers total 16 items. Option particularly related to them.

#### SECTION-V

Mean standard deviation and t-value in comparison of pre-test and post-test knowledge, attitude and practice of staff nurses regarding oxygen therapy

#### SECTION-VI

Correlational between pre-test Knowledge with pre-test attitude and pre- test practice level among nurses regarding oxygen therapy

### RESULTS

**Table 1C** depicted that majority of nurses 68 (68%) were having work experience in between  $\leq 5$  year, then 21 (21%) were having experience in between 6 – 10 year and remaining 11 (11%) were experienced in 11 year and above.

**Table 1D** stated the work area of nurses, and it divulged that maximum nurses 54 (55%) were working in ICU department and remaining nurses 45 (45%) were working in emergency department.

**Table 1E** revealed that majority of subjects

37 (37%) was GNM qualified, then 36 (36%) were Post Basic B.Sc. Nursing qualified and remaining 27 (27%) was B.Sc. Nursing qualified nurses.

**Table 1F** stated that maximum of nurses 31 (31%) got previous knowledge about oxygen therapy by newspaper, then equal number of nurses 23 (23%) each were got knowledge through seminar, conference and workshop

### SECTION-II

Placed **Table 2** has specified that the frequency and percentage of knowledge level of staff nurses before and after self-instructional module implementation. In pre-test data, the majority of nurses 58 (58%) were having good level of knowledge, then 20 (20%) were having very good knowledge, 18 (18%) were expressed average level of knowledge, and least number of nurse 4 (4%) were shown poor level of knowledge.

In post-test the majority of nurses 76 (76%) have shown very good level of knowledge, then 12 (12%) expressed excellent level of knowledge, 8 (8%) were showing good knowledge level and least number of nurses 4 (4%) still represented average level of knowledge and there is a visible improvement in knowledge level of staff nurses regarding oxygen therapy after self-instructional module implementation

### SECTION-III

Placed **Table 3** has specified that the

frequency and percentage of attitude level of staff nurses before and after self-instructional module implementation. In pre-test data, the majority of nurses 45(45%) were having neutral level of attitude, then 39 (39%) were having Disagree level of attitude and least number of nurse 16 (16%) were shown Agree level of attitude and post-test it was found with improved. Statistic and represented that majority of nurses 63 (63%) have shown Agree level of attitude, then 31 (31%) expressed neutral level of attitude and least number of nurses 6 (6%) represent Disagree level of Attitude and there is a visible improvement in attitude level of staff nurses regarding oxygen therapy after self-instructional module implementation

### SECTION-IV

In pre-test data, the highest of nurses 53 (53%) were having poor level of practice, then 42 (42%) were having average level of practice and least number of nurse 5 (5%) were shown very good level of practice and post-test it was found with improved categories and that majority of nurses 74 (74%) have shown very good level of Practice, then 24 (24%) expressed average level of practice and least number of nurses 2 (2%) represented poor level of practice and there is a visible improvement in practice level of staff nurses regarding oxygen therapy after self-instructional module implementation (**Table 4**).

## SECTION-V

**Table 5** communicated the t- test value to express the effectiveness of self-instructional module. The mean and standard deviation of pre-test and post-test structured knowledge questionnaire calculated as  $17.80 \pm 11.09$  and  $25.10 \pm 1.91$ , respectively with t-value of 20.25 at 99 degree of freedom (df) and its table value was 1.98. It represented that the table value found lower than the calculated value, therefore it found significantly effective to enhance knowledge level of nurses at significant level of  $<0.05$ . Based on presented analysis **the null hypothesis rejected H01 and accepted the research hypothesis H1**.

Similarly, for nurse's attitude it observed as  $14.00 \pm 18.59$  for pre-test and  $24.98 \pm 6.24$  for post-test with t- value as 21.67 at 99 df, and

## SECTION- VI

**Table 6** communicated the correlational level among pre-test level of knowledge with attitude and practice among nurses regarding oxygen therapy. It stated that there is weak positive correlation found between pre-test knowledge and pre- test attitude (0.209) at significance level of 0.05, whereas there is weak positive correlation found between pre-test knowledge and pre-test practice (0.008).

**Table 7** communicated the correlational

table value was 1.98. It represented that the table value found lower than the calculated value, therefore it found significantly effective to improve attitude level of nurses at significant level of  $<0.05$ . Based on presented analysis **the null hypothesis rejected H02 and accepted the research hypothesis H2**.

Regarding the mean and standard deviation for nurses practice, it calculated as in pre-test  $17.43 \pm 1.42$  and at post-test  $26.89 \pm 9.17$ . The calculated t-value of it was 29.071 at 99 df, and table value was 1.98. It represented that the table value found lower than the calculated value, therefore it found significantly effective to improve practice level of nurses at significant level of  $<0.05$ . Based on presented analysis **the null hypothesis rejected H03 and accepted the research hypothesis H3**.

level among post-test level of knowledge with attitude and practice among nurses regarding oxygen therapy. It stated that there is strong positive correlation found between post-test knowledge and post- test attitude (0.217) and there is strong positive correlation found between post-test knowledge and post-test practice (0.112) at significance level of 0.05. Based on presented analysis the null hypothesis rejected H04 and accepted research hypothesis H4 at  $<0.05$  significant level.

**Table 1: Frequency and Percentage Distribution of Demographic Variables**  
**A: Age in Years (N=100)**

Age in Years	Frequency	Percentage
22 to 35Year	68	68 %
36 to 49Year	21	21 %
50 Year and above	11	11 %
<b>Total</b>	<b>100</b>	<b>100</b>

**B: Gender of Nurses (N=100)**

Gender	Frequency	Percentage
Male	45	45 %
Female	55	55 %
<b>Total</b>	<b>100</b>	<b>100 %</b>

**C: Experience of Staff Nurses (N=100)**

Experience	Frequency	Percentage
≤ 5 year	68	68 %
6 – 10 year	21	21 %
11 year and above	11	11 %
<b>Total</b>	<b>100</b>	<b>100 %</b>

**D: Working Area (N=100)**

Work Area	Frequency	Percentage
ICU Department	55	54 %
Emergency Department	45	45 %
<b>Total</b>	<b>100</b>	<b>100 %</b>

**E: EDUCATION OF STAFF NURSES (N=100)**

Education	Frequency	Percentage
Post Basic B.Sc Nursing	36	36 %
GNM	37	37 %
BSc.	27	27 %
<b>Total</b>	<b>100</b>	<b>100 %</b>

**F: Previous knowledge regarding oxygen therapy (N=100)**

Previous knowledge regarding oxygen therapy obtained from	Frequency	Percentage
Seminar	23	23 %
Conference	23	23%
Workshop	23	23%
Newspaper	31	31 %
<b>Total</b>	<b>100</b>	<b>100 %</b>

**Table 2: Frequency and percentage wise distribution of sample based on pre-test and post-test knowledge level regarding oxygen therapy (N=100)**

Knowledge Level	Pre-Test		Post-Test	
	F	%	F	%
Excellent	0	0	12	12
Very good	20	20	76	76
Good	58	58	8	8
Average	18	18	4	4
Poor	4	4	0	0

**Table 3: Frequency and percentage wise distribution of sample based on pre-test and post-test attitude level regarding oxygen therapy (N=100)**

Attitude Level	Pre-Test		Post-Test	
	F	%	F	%
Agree	16	16	63	63
Neutral	45	45	31	31
Disagree	39	39	6	6

**Table 4: Frequency and percentage wise distribution of sample based on pre-test and post-test practice level regarding oxygen therapy (N=100)**

Practice Level	Pre-Test		Post-Test	
	F	%	F	%
Very Good	5	5	74	74
Average	42	42	24	24
Poor	53	53	2	2

**Table 5: Mean standard deviation and t-value in comparison of pre-test and post-test knowledge, attitude and practice of staff nurses regarding oxygen therapy**

Variables	Mean	Std. Deviation	t Value	DF	Table Value	Sig/Non Sig
Pre-test Knowledge	17.80	11.09	20.25	99	1.98	Sig
Post-test Knowledge	25.10	1.91				
Pre-test Attitude	14.00	18.59	21.67	99	1.98	Sig
Post-test Attitude	24.80	6.24				
Pre-test Practice	17.43	1.42	29.071	99	1.98	Sig
Post-test Practice	26.89	9.17				

**Table 6: Correlational level among pre-test Knowledge with pre-test attitude and pre- test practice level among nurses regarding oxygen therapy:**

			Pre-test Attitude	Pre-test Practice
Spearman's rho	Pre-test Knowledge	Correlation Coefficient	.209*	0.008
		Sig. (2-tailed)	.037	0.934
		N	100	100

\*. Correlation is significant at the 0.05 level (2-tailed).

**Table 7: Correlational level among posttest Knowledge with posttest attitude and post-test practice level among nurses regarding oxygen therapy**

			Post-test Attitude	Post-test Practice
Spearman's rho	Post-test Knowledge e	Correlation Coefficient	0.217	0.112
		Sig. (2-tailed)	0.030	0.269
		N	100	100

\*. Correlation is significant at the 0.05 level (2-tailed).

## CONCLUSION

This study made use of a quantitative research approach with pre-experiment alone group pre- test post-test research design. The population of the study consisted of staff nurses working in emergency and ICU of hospitals of Vadodara. The researcher used a non-probability purposive sampling technique to recruit the total sample size of 100 staff nurses. The samples were recruited in the study based on inclusion and exclusion criteria. The research tools were developed by a systematic process and tools in four sections were identified. The Section-I was socio-demographic tool, section- II structured knowledge questionnaire, section- III Likert attitude scale and section- IV was practice check-list to assess the knowledge, attitude and practice among nurses about oxygen therapy. To assess the feasibility of study and assessing the reliability of tools, a pilot study was organized by researcher and its result stated that the study tools were reliable and feasible. Before that the validity of tool were assessed by experts from nursing experts. Process of study scheduled to gather all relevant information in one go. The gathered data were arranged in master sheet and calculated under Microsoft excel.

After the detailed analysis, this study leads to the following conclusions: The Calculated analysis clearly stated that the

knowledge, attitude and practice level frequency and percentage gain a visual improvement after implementation of SIM. The mean and standard deviation of knowledge, attitude and practice of before and after intervention implementation gave a clear picture that the staff nurses knowledge, attitude and practice improved in a significant way. The correlation level also stated that there was a positive correlation in between knowledge and attitude prior to intervention implementation whereas the pre-test knowledge and pre-test practice were demonstrated weak negative correlation. It was also assessed after intervention as well and it communicated as post-test knowledge and post-test attitude found positive correlation and the post-test knowledge and post-test practice were having negative correlation. All study hypothesis were tested <0.05 significant level.

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