

A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAM ON KNOWLEDGE REGARDING ACTIVATED CHARCOAL THERAPY FOR ORGANOPHOSPHATE COMPOUND POISONING PATIENTS AMONG IV YEAR B.SC. NURSING STUDENTS AT SELECTED COLLEGE IN KUMARAPALAYAM, NAMAKKAL DISTRICT

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ABSTRACT

Aim: The of this study was to assess the effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate poisoning patients among IV year B.Sc. nursing students.

Methods: The Pre-experimental one group pre and post -test research design was selected for this study. A total of 50 IV year B.Sc. nursing students selected by using convenient sampling technique. Assessment of the pretest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students by structured knowledge questionnaire. The interventions are video assisted teaching program regarding activated charcoal therapy for organophosphate compound poisoning. After the interventions, 7th day, the investigator conducted posttest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients by using the same structured knowledge questionnaire. The collected data were computerized and analyzed using SPSS version 25. The data was analyzed using descriptive statistics (distribution, mean, standard deviation) and inferential statistics (paired t test, and chi-square value test).

Results: The result shows in pretest, majority of students 29 (58%) had inadequate knowledge and 21 (42%) had moderately adequate knowledge and in post- test, majority of students 47 (94%) had adequate knowledge and 3 (6%) had moderately adequate knowledge.

Conclusion: The study concludes that video assisted teaching program was more effective on improving knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.

Keywords: Organophosphate compound poisoning patients, activated charcoal therapy, video assisted teaching program, Nursing students.

INTRODUCTION

Poison may be defined as any substance that can harm, kill, or disrupt a person's natural physiological processes, causing general or specific bodily harm or dysfunction. Poisoning is a widespread medical and societal issue. (Abebe Getie and Yaschilal Muche Belayneh, 2020) Organophosphate

compound poisoning are a group of chemicals that in both home and industrial settings. The most typical usage for them is insecticides. Organophosphorus chemicals are utilised frequently in suicide attempts due to their ease of availability and ability to kill a person if prompt medical attention is not given, despite the fact that their use in daily life cannot be disputed. As the

majority of organophosphates have a petroleum base, aspiration pneumonia is very prevalent. Parathion, fenthion, malathion, diazinon, dursban, quinalphos, and prothoate are all examples of organophosphate poisoning. (Mary Jancy Joy, et al., 2019)

NEED FOR THE STUDY

Though many studies are conducted in the area of organophosphate compound poisoning patients, the researcher could not find any valid study to effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients. The study of activated charcoal therapy for organophosphate compound (OPC) poisoning is essential for nursing students, primarily due to the high incidence and severity of organophosphate poisoning cases worldwide. organophosphate compound commonly use in pesticides, can lead to severe toxicology emergencies, making timely and effective intervention crucial. Activated charcoal, known for its ability to absorb and neutralize toxins in the gastrointestinal tract, is a critical component in the management of organophosphate compound poisoning. Therefore, what I am guessing here incorporating in-depth studies on activated charcoal therapy in the nursing curriculum is vital for preparing future nurses to effectively respond to organophosphate compound poisoning.

Hence, the researcher felt the need to assess the effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. Nursing students at selected College in Kumarapalayam, Namakkal District.

OBJECTIVES

- To assess the level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.
- To assess the effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.
- To find out the association between the pretest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students with their selected demographic variables.

HYPOTHESIS

H₁ -There is an significant difference between pretest and posttest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.

H₂ -There is an significant association between pretest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students with their selected demographic variables.

RESEARCH APPROACH

The research design was used in this study is **Quantitative research approach**.

RESEARCH DESIGN

In this study, **Pre-experimental one group pre and post -test research design** was used.

Diagrammatic representation of research design:

Group	Pre Test	Intervention	Post Test
Pre-experimental group	O1	X	O2

Keys:

O1 = Assess the pre test level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc nursing students.

X = Video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning.

O2 = Assess the post test level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning among IV year B.Sc nursing students.

SETTING OF THE STUDY

The study will be conducted in Sresakthimayeil Institute of Nursing & Research, Kumarapalayam, Namakkal District.

RESEARCH VARIABLES

Dependent Variable: The level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.

Independent Variable: Effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients.

STUDY POPULATION

The study population is defined as the entire aggregation of cases that meet a designed criterion. Population included in this study comprised of IV year B.Sc. nursing students in Sresakthimayeil Institute of Nursing & Research, Kumarapalayam, Namakkal District.

Target Population: IV year B.Sc. nursing students.

Accessible Population: IV year B.Sc. nursing students in Sresakthimayeil Institute of Nursing & Research, Kumarapalayam, Namakkal District and fulfills the inclusion criteria.

SAMPLE

The study sample is the 50 - IV year B.Sc. nursing students in Sresakthimayeil Institute of Nursing & Research, Kumarapalayam, Namakkal District and those who meet the inclusion criteria.

SAMPLING TECHNIQUE

In this study the investigator was used **non-probability convenient sampling techniques**.

CRITERIA FOR SELECTION OF SAMPLES

Inclusion Criteria

The study includes

- IV year B.Sc. nursing students who are all willing to participate in the study.
- Both gender

Exclusion Criteria

The study excludes,

- IV year B.Sc. nursing students who are absent on study periods.
- IV year B.Sc. nursing students who are having the health issues or illness during the data collection.

DESCRIPTION OF RESEARCH TOOL TECHNIQUE

The tool was developed and standardized from extensive review of literature, internet research and discussion with experts. The tool consist of two sections

- **Section - A:** Demographic variables of IV year B.Sc. nursing students.
- **Section - B:** Assessment of the level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.

PROCEDURE FOR DATA COLLECTION

Formal approval was obtained from selected college. The study was conducted for a period of 4 weeks. The investigator selected 50 samples which were divided into by using Non-probability convenient sampling technique. The investigator met the study nursing and introduced about self and briefly explained regarding the purpose of the study. Written consent was obtained and confidentiality was reassured.

During the pre-test, the demographic variables were collected by using personal data sheet, followed by this the structured knowledge questionnaire was administered for the students regarding activated charcoal therapy for organophosphate compound poisoning patients. Intervention, video assisted teaching program for the students regarding activated charcoal therapy for organophosphate compound poisoning patients. After 7th day, the investigator conducted posttest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients by using the same structured knowledge questionnaire was administered for the students.

ORGANISATION OF THE DATA

Data collected were organized under the following sections.

Section - A: Description of the socio-demographic variables among IV year B.Sc. nursing students.

Section - B: Assessment of the pre-test and post-test the level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.

Section - C: Effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.

Section - D: Association between the pretest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing

students with their selected demographic variables.

SECTION - A: DESCRIPTION OF THE SOCIO-DEMOGRAPHIC VARIABLES AMONG IV YEAR B.Sc. NURSING STUDENTS

Table – 1: Frequency and percentage wise distribution of socio-demographic variables among IV year B.Sc. nursing students (N=50)

S. No.	Socio-Demographic Variables	Frequency (N)	Percentage (%)
1	Age in years		
	a) 19 -21 years	45	90
	b) 22 - 24 years	5	10
	c) >24 years	0	0
2	Gender		
	a) Male	12	24
	b) Female	38	76
3	Religion		
	a) Hindu	39	78
	b) Muslim	7	14
	c) Christian	4	8
	d) Others	0	0
4	Place of Residence		
	a) Urban	28	56
	b) Rural	22	44
5	Types of family		
	a) Joint family	36	72
	b) Nuclear family	14	28
6	Family income (in rupees)		
	a) Less than Rs.10000	17	34
	b) Rs.10000 - Rs.20000	20	40
	c) Rs.20001 - Rs.30000	11	22
	d) More than Rs.30000	2	4
7	Place of posting (in internship)		
	a) Government Hospital	21	42
	b) Private Hospital	29	58
8	Experience in activated charcoal therapy for organophosphate compound poisoning		
	a) Yes	8	16
	b) No	42	84
9	Involved special training in activated charcoal therapy for organophosphate compound poisoning		
	a) Yes	4	8
	b) No	46	92

Table 1 shows frequency and Percentage wise distribution of socio-demographic variables among IV year B.Sc. nursing students. Out of the 50 students who were interviewed, Majority of students 45 (90%) were in the age group 19-21years, 38 (76%) were female, 39 (78%) were hindu, 28

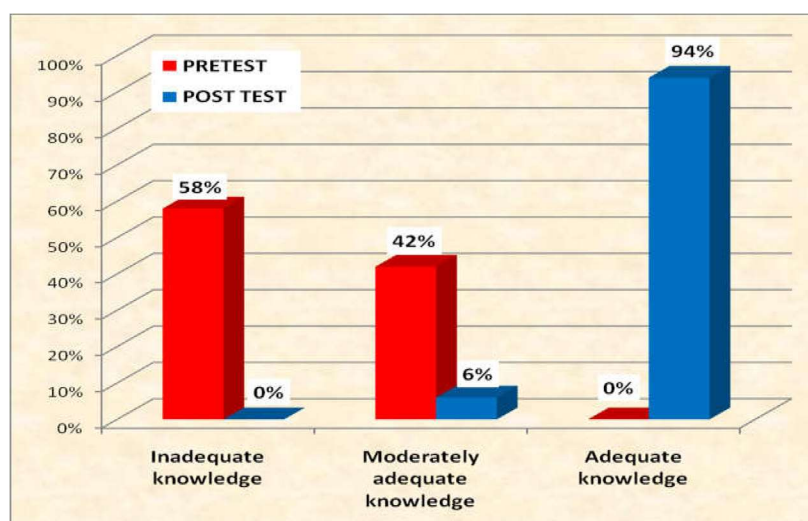
(56%) were urban, 36 (72%) were joint family, family income 20 (40%) were Rs.10000-20000/month, place of posting 29 (48%) were private hospital, 42 (84%) were not had experience in activated charcoal therapy for organophosphate compound poisoning and 46 (92%) were not had Training in activated charcoal therapy for organophosphate compound poisoning.

SECTION - B: ASSESSMENT OF THE PRE-TEST AND POST-TEST THE LEVEL OF KNOWLEDGE REGARDING ACTIVATED CHARCOAL THERAPY FOR ORGANOPHOSPHATE COMPOUND POISONING PATIENTS AMONG IV YEAR B.Sc. NURSING STUDENTS

Table – 2: Frequency and percentage wise distribution of pre-test and post-test the level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students. (N=50)

Level of knowledge	Pre Test		Post Test	
	N	%	N	%
Inadequate knowledge	29	58	0	0
Moderately adequate knowledge	21	42	3	6
Adequate knowledge	0	0	47	94
Mean	8.36 ± 2.52		22.08 ± 2.11	
Standard deviation				

Table 2 shows that frequency and percentage wise distribution of pre-test and post-test the level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.



In pre - test, majority of students 29 (58%) had Inadequate knowledge and 21(42%) had Moderately adequate knowledge and the mean and standard deviation of the level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students is 8.36 ± 2.52.

In post - test, majority of students 47(94%) had Adequate knowledge and 3(6%) had Moderately adequate knowledge and the mean and standard deviation of the level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students is 22.08 ± 2.11 .

SECTION - C: EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAM ON KNOWLEDGE REGARDING ACTIVATED CHARCOAL THERAPY FOR ORGANOPHOSPHATE COMPOUND POISONING PATIENTS AMONG IV YEAR B.Sc. NURSING STUDENTS

Table – 3: Effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students (N=50)

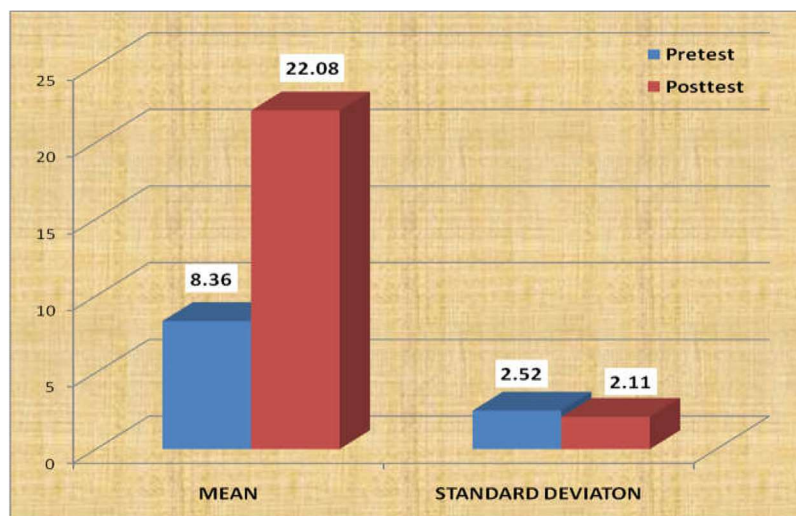
Effectiveness	Test	Mean	SD	Mean differenc	't' value Paired -t test	df	'p' value
Level of knowledge	Pretest	8.36	2.52	13.7	28.1	49	0.001* * HS
	Posttest	22.08	2.11				

**** -p < 0.001 highly significant.**

Table 3 shows that, Effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students

The mean score of Effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc.

nursing students in the pre-test was 8.36 ± 2.52 and the mean score in the post- test was 22.08 ± 2.11 . The calculated *paired 't' test* value of $t = 28.1$ shows **statistically highly significant** difference of effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.



SECTION - D: ASSOCIATION BETWEEN THE PRETEST LEVEL OF KNOWLEDGE REGARDING ACTIVATED CHARCOAL THERAPY FOR ORGANOPHOSPHATE COMPOUND POISONING PATIENTS AMONG IV YEAR B.Sc. NURSING STUDENTS WITH THEIR SELECTED DEMOGRAPHIC VARIABLES

Table – 4: Association between the pretest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students with their selected demographic variables (N=50)

S.No.	Socio-Demographic Variables	Pre-Test Level of Knowledge				Chi-square X ² and P-Value
		Inadequate		Moderate		
		N	%	N	%	
1	Age in years					X ² =4.02 3 Df=1 p =0.045 *S
	a) 19 -21 years	24	82.8	21	100	
	b) 22-24 years	5	17.2	0	0	
	c) >24 years	0	0	0	0	
2	Gender					X ² =21.8 Df=1 p =0.001 **HS
	a) Male	0	0	12	57.1	
	b) Female	29	100	9	42.9	
3	Religion					X ² =19.4 Df=2 p =0.046 *S
	a) Hindu	29	100	10	47.6	
	b) Muslim	0	0	7	33.4	
	c) Christian	0	0	4	19	
	d) Others	0	0	0	0	
4	Place of Residence					X ² =46.0 8 Df=1 p =0.001
	a) Urban	28	96.6	0	0	
	b) Rural	1	3.4	21	100	
						**HS
5	Types of family					X ² =26.8 Df=1 p =0.001 **HS
	a) Joint family	29	100	7	33.3	
	b) Nuclear family	0	0	14	66.7	
6	Family income (in rupees)					X ² =26.2 Df=3 p =0.001 **HS
	a) Less than Rs.10000	17	58.6	0	0	
	b) Rs.10000-Rs.20000	12	41.4	8	38.1	
	c) Rs.20001-Rs.30000	0	0	11	52.4	
	d) More than Rs.30000	0	0	2	9.5	
7	Place of posting (in internship)					X ² =26.2 1 Df=1 p =0.001 **HS
	a) Government Hospital	21	72.4	0	0	
	b) Private Hospital	8	27.6	21	100	

8	Experience in activated charcoal therapy for organophosphate compound poisoning					X²=13.1 df=1 p=0.001 **HS
	a) Yes	0	0	8	38.1	
	b) No	29	100	13	61.9	
9	Involved special Training in activated charcoal therapy for organophosphate compound poisoning					X²=6.00 df=1 p=0.014 *S
	a) Yes	0	0	4	19	
	b) No	29	100	17	81	

*-p < 0.05 significant, *-p < 0.001 highly significant

The **Table 4** depicts that the socio-demographic variables, *Age (in years)*, *Gender*, *Religion*, *Place of Residence*, *Types of family*, *Family income per month*, *Place of posting*, *Experience in activated charcoal therapy for organophosphate compound poisoning* and *Training in activated charcoal therapy for organophosphate compound poisoning* had shown statistically significant association between the pretest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students with their selected demographic variables.

MAJOR FINDINGS OF THE STUDY

The First objective of the study was to assess the level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.

Table – 2 shows that frequency and percentage wise distribution of pre-test and post-test the level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students. In pretest, Majority of students 29(58%) had Inadequate knowledge and 21(42%) had Moderately adequate knowledge and the mean and standard deviation of the level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students is 8.36 ± 2.52 . In post- test, Majority of students 47(94%) had Adequate knowledge and 3(6%) had Moderately adequate knowledge and the mean and standard deviation of the level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students is 22.08 ± 2.11 .

The second objective of the study was to assess the effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.

Table - 3 shows that, Effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students. The mean score of Effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students in the pre-test was 8.36 ± 2.52 and the mean score in the post- test was 22.08 ± 2.11 . The calculated paired 't' test value of $t = 28.1$ shows statistically highly significant difference of effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.

Hence H₁ - There is an significant difference between pretest and posttest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students was accepted and null hypothesis was rejected.

The third objective of the study was to find out the association between the pretest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students with their selected demographic variables.

The table 4 depicts that the socio-demographic variables, Age (in years), Gender, Religion, Place of Residence, Types of family, Family income per month, Place of posting, Experience in activated charcoal therapy for organophosphate compound poisoning and Training in activated charcoal therapy for organophosphate compound poisoning had shown statistically significant association between the pretest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students with their selected demographic variables.

Hence H₂ - There will be a significant association between the pretest level of knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students with their selected demographic variables was accepted and null hypothesis was rejected.

CONCLUSION

The present study to assess the effectiveness of video assisted teaching program on knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students in SSINAR.

The result shows in pretest, majority of students 29 (58%) had inadequate knowledge and 21 (42%) had moderately adequate knowledge and in post- test, majority of students 47 (94%) had adequate knowledge and 3 (6%) had moderately adequate knowledge. The result of this study showed that assisted teaching program was more effective on improves knowledge regarding activated charcoal therapy for organophosphate compound poisoning patients among IV year B.Sc. nursing students.

BOOKS REFERENCES

1. Abraham.J., Allegra.C.J., Gulley.J .L. (2005) Thebethesoa “**Hand book of clinical oncology**”. Third edition. Lippincott. Wolters Klawer. Publishers.
2. Bardia, A., & Baselga, J. (2014). “**Pre operative chemotherapy for operable breast cancer**”. InJ. Harris, M.Morrow, etal. (Eds.). Disease of the breast (5thed.) .Phila delphia, PA : Wolters Kluwer.
3. Barton-Burke. M., Wilkes.G.M. (2006). “**Oncology nursing drug hand book**”. 10thedition. Inc : Jones & Bartlett publishers.
4. Black,J.M. (2009) “**Medical Surgical Nursing :Clinical Management For Positive outcome**”. (8th Ed). New Delhi: Elsevier publications.
5. Bonadonna.G., Hortobagyi.G.N., Valagusa.P. 2010. “**Text book of Breast cancer a clinical guide to therapy**”. Third edition. Jones & Bartlett publishers.
6. Burn,N., & Grove,S.K (2011). “**Understanding Nursing Research**”. (5thEd.) Phila delphia: W.B Saundaers company.

7. Gulanick. (2011). **"Nursing Care Plans"**. 6th Edition, New Delhi: Elsevier publications.
8. Gupta,s.p. (2011). **"Statistical Methods"**. 41st Edition, New Delhi: Sultan Chand & Sons Publications.
9. Haber,J., & Wood,G.L (2006). **"Nursing Research Methods And Critical Appraisal For Evidence Based Practice"**. 7th Edition, New York: Mosby Elsevier Publications.
10. Hirshaut.Y., Pressman.P. 2001. **"Breast cancer"**. Third edition. Mesbyelsiver. Publishers.
11. Hungler,H.P., & Polit,D.F. (1999). **"Nursing Research: Principles and Methods"**. Philadelphia :Lippincott publishers.
12. Kothari,C.R. (2012). **"Research Methodology"**. 2nd Edition, New Delhi: New age Publishers.
13. Lewis.S.L., Heitkemper, M.M.Dirksen,R., OBrien P.G., B ucher,L. (2000) **"Medical Surgical Nursing : Assessment And Management of Clinical Problems"**. 7th Edition, London: Mosby Publication.
14. Madhavi.S., & Sharma.S.K. (2018). Brunner&Suddarth's **"Textbook of medical surgical nursing"**. South Asian edition. New Delhi: Wolters Kluwer publishers.
15. Osborne,M., & boolbol,S. (2014). **"Breast anatomy and development"**. 5th Edition, Philadelphia, PA :Wolters Kluwer.
16. Women. InJ. Harris, M. Lippman, M.Marrow, etal. (Eds.). **"Diseases of the breast"** 5th Edition, Philadelphia, PA: Wolters Kluwer.
17. Woods,p.L., Shafer's. (2002). **"Medical Surgical Nursing"**. 4th Edition, New Delhi: B.I. Publications.

JOURNAL REFERENCES

18. Acikalin A, Dişel NR, Matyar S, Sebe A, Kekec Z, Gokel Y, Karakoc E. Prognostic Factors Determining Morbidity and Mortality in Organophosphate Poisoning. *Pak J Med Sci*. 2017 May-Jun;33(3):534-539. doi: 10.12669/pjms.333.12395. PMID: 28811766; PMCID: PMC5510098.
19. Adal O, Hiamanot Y, Zakir A, Regassa R, Gashaw A. Knowledge, Attitude, and Practice of Nurses Toward the Initial Managements of Acute Poisoning in Public Hospitals of Bahir Dar City, Northwest Ethiopia 2022: Cross-Sectional Study. *SAGE Open Nurs*. 2023 Feb 16; 9:23779608231157307.
20. Bonilla-Velez J, J Marin-Cuero D. The Use of Activated Charcoal for Acute Poisonings. *Int J Med Stud*. 2017 Mar. 24; 5(1):45-52.
21. David Tibbutt. Poisoning with organophosphates. *SSMJ*. 2013; 6(1): 13.
22. Eddleston M, Juszczak E,; Ox-Col Poisoning Study collaborators. Multiple-dose activated charcoal in acute self-poisoning: a randomised controlled trial. *Lancet*. 2008 Feb 16; 371(9612):579-87.
23. Getie A, Belayneh YM. A Retrospective Study of Acute Poisoning Cases and Their Management at Emergency Department of Dessie Referral Hospital, Northeast Ethiopia. *Drug Healthc Patient Saf*. 2020 Mar 5; 12:41-48.
24. Jamie AH, Abdosh MZ. Patterns and Clinical Outcomes of Poisoning Among Poisoning Cases Presented in a Hospital: A Retrospective Study. *LokmanHekim Health Sci* 2021; 1(3):70–73.
25. Jhood AS Molan. "First Aid Knowledge of Basrah Nursing College Students in Poisoning Cases". *Acta Scientific Medical Sciences* 7.6 (2023): 100-105.
26. Joy MJ, Radhakrishnan B, Sekar M, David S. Organophosphate poisoning: Overview, management and nursing care. *Indian J ContNsgEdn*, 2019; 20:131-40.

27. Kang EJ, Seok SJ, Lee KH, Gil HW, Yang JO, Lee EY, Hong SY. Factors for determining survival in acute organophosphate poisoning. *Korean J Intern Med.* 2009 Dec;24(4):362-7. doi: 10.3904/kjim.2009.24.4.362. Epub 2009 Nov 27. PMID: 19949736; PMCID: PMC2784981.
28. Kumari K, Toppo M S, Alam M S. Assessment of Knowledge and Awareness Among Nurses of a Tertiary Care Hospital Regarding the Management of Acute Poisoning: A Cross-Sectional Study. *Cureus.* 2023; 15(3): e36781.
29. Leão SC, Araújo JF, Silveira AR, Queiroz AA, Souto MJ, Almeida RO, Maciel DC, Rodrigues TM. Management of exogenous intoxication by carbamates and organophosphates at an emergency unit. *Rev Assoc Med Bras (1992).* 2015 Sep-Oct; 61(5):440-5.
30. Samar Hussein Ahmed Mohamed, Magda Abdelaziz Mohamed, Jackleen Faheem Gendy and Shimaa Nabil Abdelsalam. Nurses Performance for Patient with Acute Organophosphate Poisoning. *Egyptian Journal of Health Care.* 2021; 12(4): 275.
31. Tefera GM, Teferi LG. Prevalence, Predictors and Treatment Outcome of Acute Poisoning in Western Ethiopia. *Open Access Emerg Med.* 2020 Nov 12; 12:365-375.
32. Zellner T, Prasa D, Färber E, Hoffmann-Walbeck P, Genser D, Eyer F. The Use of Activated Charcoal to Treat Intoxications. *DtschArztebl Int.* 2019 May 3;116(18):311-317. doi: 10.3238/arztebl.2019.0311. PMID: 31219028; PMCID: PMC6620762.

INTERNET REFERENCES

33. www.aegis.com
34. www.biomed.com
35. www.medscap.com