DISSERTATION ON

A STUDY TO ASSESS THE EFFECTIVENESS OF NEEM EXTRACT IN PROMOTING ORAL HYGIENE AMONG UNCONSCIOUS PATIENTS ADMITTED IN RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI.

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A study to assess the effectiveness of neem extract in promoting oral hygiene among unconscious patients admitted in Rajiv Gandhi Government General Hospital, Chennai.

Approved by Dissertation Committee on 21-10-2014

Nursing Research Guide _____

Dr. V. Kumari, M.Sc.,(N).,Ph.D.,
Principal,
College of Nursing,
Madras Medical College,
Chennai-600 003.

Clinical Speciality Guide

_____.

Mrs. A.Thahira Begum , M.Sc(N)., M.Phil., MBA.,
Reader and Head of the Department,
Department of Medical & Surgical Nursing,
College of Nursing,
Madras Medical College,
Chennai-600 003.

Medical Guide

_____

Dr.Ranganathan Jothi, MBBS.,M.Ch.,D.N.B (Neurosurgery)
Director,
Institute of Neurosurgery,
Rajiv Gandhi Government General Hospital,
Chennai-600 003.

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CERTIFICATE

This is to certify that this dissertation titled **"a study to assess the effectiveness of neem extract in promoting oral hygiene among unconscious patients admitted in Rajiv Gandhi Government General Hospital, Chennai"** is a bonafide work done by Miss. Karthiga Priyadharshini . A , II year M.Sc(N) student, College of Nursing, Madras Medical College, Chennai submitted to the **Tamil Nadu Dr. M.G.R. Medical University, Chennai** in a partial fulfillment of the University rules and regulations towards the award of the degree of Master of Science in Nursing-Branch I: Medical Surgical Nursing under our guidance and supervision during the academic period from 2014 – 2016.

Dr.V. Kumari, M.Sc(N).,Ph.D
Principal,
College Of Nursing,
Madras Medical College,
Chennai-03.

Dr.R..Vimala,M.D.,
Dean,
Madras Medical College,
Chennai-03.

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ABSTRACT

Title: A study to assess the effectiveness of neem extract in promoting oral hygiene among unconscious patients admitted in Rajiv Gandhi Government General Hospital, Chennai.

Care of mouth is considered to be one of the most basic nursing activities. Especially unconscious patients require frequent and meticulous oral hygiene to prevent oral health problems.

Need for the study: Unconscious patients do not experience the same oro dental problems as the general population face. Poor oral hygiene may also impact negatively on the treatment planned for the patient. Even though it's a simple and basic procedure still there are so many incidental reports regarding poor oral health among unconscious patients. Among some of the herbal products, neem extract play a vital role in control of dental problems because of its antimicrobial property and their extracts shown significant advantages over the chemical ones. So this study is to assess how much the oral health is improved through the use of neem extract for unconscious patient.

Objectives

1. To assess the oral hygiene among unconscious patients both in control group and experimental group.
2. To assess the effectiveness of neem extract in promoting oral hygiene in experimental group.
3. To compare the effectiveness of neem extract in promoting oral hygiene between experimental group and control group.
4. To find the association of post test score in both control group and experimental group with selected demographic variables.

Research methodology

Research approach	-	Quantitative research approach.
Study setting	-	Selected wards at Institute of Neurology, Rajiv Gandhi Government General Hospital, Chennai
Study design	-	Experimental study design.
Study population	-	Unconscious patients
Sample size	-	60 samples (30- experimental group and 30-control group)
Sampling technique	-	Simple random sampling.
Tool	-	Demographic profile, clinical data and Oral health assessment tool.

Data collection procedure: After getting approval from the ethics committee, Madras Medical College, Chennai, formal permission was obtained from the Director of concern department, the data collection was done for the period of four weeks. 60 unconscious patients were selected by simple random sampling technique. Pre assessment was done in both experimental and control group using oral health assessment tool. Oral care with neem extract was given for the experimental group twice a day for seven days. For control group routine oral care was given. Post assessment was conducted using the same tool after seven days.

Data analysis: The data were analyzed using descriptive statistics like mean, standard deviation, percentage and frequency. Inferential statistics like chi square test, paired and unpaired‘t’ test.

Study results: After oral care with neem extract, the oral hygiene score of experimental group was reduced upto 42.3%. With routine care, the oral hygiene score of control group was reduced upto 5.4% . Hence, neem extract is effective in improving oral hygiene of unconscious patients and it was statistically significant(p=0.001).with the confidence interval of 95%.

Discussion: Oral care with neem extract group shows a significant(p=0.001) result when compared to the routine care group and hence the hypothesis was proved. This shows the effectiveness of neem extract in promoting oral hygiene among unconscious patients.

Conclusion: The study was concluded that mouth wash with neem extract is highly effective. Since it has high antimicrobial property and also cost effective one it can be used for the clients with unconsciousness, which improves the oral health, prevents the oral complications and promotes comfort of the patients.

key words : Oral hygiene, unconscious patients, neem extract

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LIST OF ABBREVATIONS

ABBREVIATIONS	EXPANSION
CPIS	Clinical Pulmonary Infection Score
GCS	Glascow Coma Scale
OHAS	Oral Health Assessment Scale
DF	Degree Of Freedom
CI	Confidence Interval
UTS	Ultimate Tensile Strength
ICU	Intensive Care Unit
VAP	Ventilator Associated Pneumonia
P	Probability.
H1,H2	Hypothesis
F	Frequency

CHAPTER – I

INTRODUCTION

A genuine smile comes from the heart, but
a healthy smile needs good dental care.

-Wayne Chirisa

Mosby's Dictionary defines, Oral hygiene as "The condition or practice of maintaining the tissues and structures of the mouth" **.** Dependent or unconscious patients are assisted in maintaining a healthy oral condition. The mouth is vital for eating, drinking, taste, breathing and communication. Saliva which has antibacterial properties and is part of the body's defense against infection. Poor oral hygiene is well known to be associated with painful and unpleasant diseases such as gingivitis, dental caries, halitosis and xerostomia and more recently, has linked to chest infections and pneumonia (**Ministry Of Health, 2004)**

Oral care is a fundamental aspect of nursing that impacts on the health, well-being and comfort of patients. Providing effective oral hygiene for patients in critical care units is particularly challenging as the patient's oral health may be compromised by medical conditions, treatment interventions, equipment, and the patient's inability to attend to his or her own oral care. Practical experience while working in critical care units has confirmed the authors impression that oral hygiene is not perceived by critical care nurses to be a very important patient care activity. Most people implement oral hygiene practices on a daily basis, such as brushing teeth and rinsing the mouth. Why then does it appear that oral hygiene care for the critically ill receives meager attention?

Oral health in critical illness :Oral hygiene is a complex and important procedure that should be done effectively on all patients. This is particularly true for critically ill patients who are immune compromised and at risk of developing infections. It is essential that the potential pool of organisms in the mouth is reduced by good oral hygiene practices. Effective oral hygiene care

practices in the critically ill patient play a role in infection prevention and control by limiting dental plaque colonisation and the development of Nosocomial respiratory tract infections, and can reduce the negative effects of required therapy.

Oral hygiene must not be rated as a low priority by critical care nurses, and specific focus on education and training is needed to emphasize the importance of oral hygiene care. There is a need for evidence-based guidelines for oral hygiene care in the critically ill patient. Ayurveda prescribes Dinacharya modalities like brushing the tooth (Dantadhavana), gargling (Kavala and Gandoosha) to keep up the health of the oral cavity, prevention and treatment of diseases of the oral cavity. Use of safe, quality products and practice must be ensured, based on available evidence and traditional medicine has to be acknowledged as part of primary health care. Scientific validation of the Ayurveda oral health practices given above could justify their incorporation in to modern oral health care. Publicity of these techniques using appropriate media would benefit the general population by giving more confidence in ancient practices, thus preventing the decay and loss.

Neem is a cornerstone of the ancient Ayurvedic healing tradition and is one of the most widely used medicinal herbs in the world. The neem tree has been described in Ayurveda's prime text, charaka, samhita, as sarva roga nivarini (that which keeps all diseases at bay) or arishtha (reliever of disease).

There is a relation between neem and oral care. Neem is traditionally called the "toothbrush tree". Neem tree twigs are traditionally used for tooth brushing in India and Asia. In India is not uncommon to see people chewing sticks from the neem trees. Chewing on the bark releases juices directly to the teeth and gums to clean teeth, restores gums and eliminate bad breath.

Replace harsh, detergent based tooth pastes and alcohol based mouthwashes which are harmful to natural ecology and important bacteria that live in the mouth. Instead switch to a natural neem extract it keeps healthy oral cavity.

1.1.Need for the study

A healthy oral status is fundamental for the comfort and general well-being of the patient. Care of mouth is considered to be one of the most basic nursing activities, yet nurses knowledge on oral health problems is often limited and in clinical practice is not always regarded as a priority. yet patients often suffer from inadequate mouth care. Poor oral care can affect speech, nutrition, physical expression, cause misery, dysphagia, loss of taste and can have an effect on a person's psychological well-being. Poor oral hygiene may also impact negatively on the treatment planned for the patient.

Oral hygiene care includes a combination of nursing activities that they are often placed very low on the priority care list for a dependent patients. This may have detrimental implication for the patients.

An unconscious patient require frequent and meticulous oral hygiene to prevent oral health problems from developing. Because these patients usually breathe through their mouth and unable to take in anything by mouth, sordes can easily accumulate on the lips, teeth and tongue causing additional health concerns. Because unconscious patients are at risk for aspirating during oral hygiene, its a quiet difficult task for the nurse to do this procedure. Since an unconscious patient cannot report any mouth pain or discomfort. It should be identified through oral assessment.

Even though its a simple and basic procedure still there are so many incidental reports regarding poor oral health among unconscious patients. So this study is to assess how much the oral health is improved through use of neem extract for unconscious patient. Various herbal products and their extracts shown significant advantages over the chemical ones. If such mouthwashes can be formulated which can be easily prepared and used , it may lead to promotion of oral hygiene especially for an unconscious patients who are in need of regular oral care. It is important to keep patient's mouth clean when they cannot do so themselves.

Neem tree is said to be , the "**tree of a thousand uses**" have been used for medicinal, cosmetic, agricultural and other purposes due to its antifungal,

antibacterial, antiviral, pest-control, sedative and many more effects. This tree, (in Sanskrit, Nimba and Arishta) is a native of India, and is cultivated in all parts of the subcontinent on account of its medicinal properties. Neem mouth rinse is also very effective in the treatment of infections, tooth decay, bleeding and sore gums. Even at 5% concentration neem extract showed some inhibition of growth for all the four species of organisms, i.e. *Streptococcus mutans, Streptococcus salivavius, Streptococcus mitis and Streptococcus sanguis.* These organisms are common among unconscious patients.

All these facts described above, evoked a thought in the researcher's mind that there is a strong need to incorporate the use of neem extract into nursing practice while performing oral care for unconscious patients. Even though the use of neem extract in oral care is an effective method, it is not widely used like other mouth washes. Hence researcher felt the need to evaluate the effectiveness of neem extract in promoting oral hygiene among unconscious patients.

1.2 Statement of the problem

"A study to assess the effectiveness of neem extract in promoting oral hygiene among unconscious patients admitted in Rajiv Gandhi Government General Hospital, Chennai".

1.3 Objectives

1. To assess the oral hygiene among unconscious patients both in control group and experimental group.
2. To assess the effectiveness of neem extract in promoting oral hygiene in experimental group.
3. To compare the effectiveness of neem extract in promoting oral hygiene between experimental group and control group.
4. To find the association of post test score in both control group and experimental group with selected demographic variables.

1.4 Operational definition

- **Assess –** It refers to find out the effectiveness of neem extract in promoting oral hygiene.
- **Effectiveness-** It refers to promotion of oral hygiene through oral care with neem extract.
- **Neem extract-** It refers to the mouth wash solution prepared from the fresh neem leaves, which is used to provide oral care in this study.
- **Oral hygiene –** It refers to keep the oral cavity healthy which prevent tooth decay and gum diseases.
- **Unconscious patient –** It refers to the patients who are unable to respond to the external stimuli and Glascow Coma Scale score less than 8/15.

1.5 Assumptions

The researcher assumes that

- It is difficult to maintain oral hygiene among unconscious patients and are prone to develop dental problems.
- Use of neem extract for oral care helps in promoting oral hygiene.

1.6 Hypothesis

H1: There will be a significant effect in promoting oral hygiene after providing oral care with neem extract.

H2 : There will be a significant association between the selected demographic variables and oral care with neem extract in promoting oral hygiene among unconscious patients.

1.7 Delimitations

- The study was conducted in selected wards at Institute of Neurology, Rajiv Gandhi Government General Hospital, Chennai.
- The study was conducted to a period of one month.
- Only 60 patients were taken for this study.
- The study was conducted on unconscious patients.

CHAPTER – II

REVIEW OF LITERATURE

2.1 Review of related studies

The task of reviewing literature involves the identification, selection, critical analysis and written description of existing information on the topic of interest. In this chapter, an attempt has been made to bring out the available literature, which helps in projecting the widened perspectives of the study.

The collected literatures related to this study have been divided into three sections, which is described below.

Section A : Literature related to effectiveness of neem extract.

Section B : Literature related to oral decontamination.

Section C : Literature related to oral health of unconscious patients.

Section A : Literature related to effectiveness of neem extract.

N. C. J. Packia Lekshmi, **et al (2013)** conducted a study in Maharashtra to evaluate the antimicrobial properties of neem extract against three bacterial strains causing dental caries using disc diffusion method. The pathogenic bacteria such as Streptococcus mutans, Streptococcus salivarious and Fusobacterium nucleatum were isolated from dental caries. Among the four extracts of neem, petroleum ether and chloroform extract showed strong antimicrobial activity against S. mutans with inhibition zone of 18 mm at 500 µg concentrations. Chloroform extract of neem showed strong activity against Streptococcus salivarius with inhibition zone of 18 mm. The third strain Fusobacterium nucleatum was highly sensitive to both ethanol and water extract of neems with inhibition zone of 16 mm. The results demonstrate that the chloroform extracts of neem has a strong antimicrobial activity and suggest that it can be useful in the treatment of dental caries.

Sowmyia, et al (2012) conducted a study to compare the short-term efficacy and safety of *Azadirachta indica* mouthrinse on gingival inflammation and microbial plaque, compared to 0.12% chlorhexidine. Study subjects were recruited from a slum in Brazil.

Fifty-four subjects were enrolled and randomly assigned in two groups (26 neem group, 28 chlorhexidine control). Interventions consisted of a seven day therapy of the *A. indica*-based mouth rinse and chlorhexidine 0.12%, respectively. Plaque index, gingival index and gingival bleeding index were obtained at baseline, as well as after one and four weeks. All clinical index scores were reduced in both groups seven and 30 days after treatment. There was no statistically significant difference between groups in clinical and microbiological parameters. As a conclusion *A. indica*-based mouth rinse was highly efficacious and that it may be used as an alternative therapy in the treatment of periodontal diseases.

Hossainian N (2011) conducted a study in Trissur primary health care centre, to assess the effects of neem bark on prevention of plaque and gingival inflammation. The results of the studies included in this review showed that neem bark do not consistently prevent plaque accumulation when used as a short term mono therapy. When used as a long adjunct to daily oral hygiene, the results of one study indicate that neem bark reduces gingival redness.

Yudhira R(2007) conducted a study on clinical trial of tooth whitening with neem solution and salt. The purpose of the study was to compare tooth whitening with hydrogen peroxide with neem solution and salt in a three weeks randomized controlled trial at a Belgium dental school. Subjects received either the neem solution with salt and hydrogen peroxide, placebo strip and sodium fluorite. This was used 30 minutes twice daily for 3 weeks. There were no significant ($p>0.18$) differences between the whitening dentifrice groups at any time points. All treatments were well tolerated, with minor tooth sensitivity and oral irritation representing the most common findings.

Baylas H, et(2002) conducted a study on the effect of adjunctive neem oil on clinical parameters and gingival fluid cytokine levels in untreated plaque associated gingivitis, conducted study in Nagpore. 50 gingivitis patients were randomized neem oil or placebo groups. Neem oil group rinsed with placebo group for four weeks. Within the limitations of this study, Neem oil rinse as adjuncts to daily plaque control could be useful in management of plaque associated gingivitis.

Brinci I(2002), conducted a study on neem bark extract mouth rinse in orthodontic patients in South Africa. The objective of the study was to assess the effectiveness of neem bark extract mouth rinse on streptococcus mutants and lactobacilli in orthodontic patients with fixed appliances. Twenty patients aged 20-18, with fixed orthodontic appliances participated in the study. The levels of S. Mutants and lactobacilli in saliva samples were evaluated in the four stages, 1 week after the introduction of neem bark extract mouth rinse, and at the fourth week. The changes in S mutant and lactobacilli levels were analysed via wilcoxon test. The result was a significant decrease in S mutants levels was observed 1 week after the introduction of neem bark extract mouth rinse. They concluded that a neem extract mouth rinse decreased S mutants levels but had no effect on lactobacilli levels.

Soares CJ,et al(2001) conducted a study on effects of neem oil on irradiated enamel and dentin. This study was conducted in korea. The effectiveness of mouth wash protocol gamma irradiation therapy damage to the ultimate tensile strength (UTS) of enamel and dentin is unknown. It was hypothesized that the use of neem oil mouth wash would maintain the UTS of dental structures. One hundred and twenty teeth were divided into two groups. The specimen were evaluated by micro testing. Mouthwash with neem oil partially prevented the damage to the mechanical properties of the irradiated crown dentin, whereas the 0.05% sodium fluoride irradiated enamel showed UTS similar to that of non irradiated enamel.

Glockmann (2000) found antibacterial effect of neem bark. Conducted a study in Uttar Pradesh.The result suggest a relatively favourable relation between maximum bactericidal effect when comparing with other mouth wash solution. When compared with chlorhexidine digluconate, a somewhat more favourable relation between minimum bacteriostatic and toxic concentration of the agent was established.

Section B : Literatures related to oral decontamination

Bundesgessundhei Itsblatt, et al (2009) conducted a study on oral hygiene in nursing home residents in Meghalaya. Impact of an oral health education programme for nursing personnel on the residents. This programme was evaluated by examining the

oral and dental health status of the residents, prior to and up to 12 months after the hygiene education. Within the 4 months, 29 of 57 residents with recommendation for dental therapy had been seen by the dentist, 12 months after the first examination, dental therapy had to be recommended to only 19 residents. Thus the study concludes that the health education programme was effective.

Tantipong H, et al(2007) conducted a study on randomized controlled trail and meta analysis of oral decontamination with chlorhexidine mouth wash for the prevention of ventilator associated pneumonia in Tokyo. The patients were randomized to receive oral decontamination with chlorhexidine mouth wash or normal saline until their endotracheal tubes were removed. The outcomes measures were the development of VAP and oropharyngeal colonization with gram negative bacilli in patients receiving oral care with normal saline. The characteristics of the patients in the chlorhexidine mouth wash and the normal saline group were significantly different. Oral decontamination with chlorhexidine mouth wash is an effective and safe method for preventing VAP in patients who receive mechanical ventilation.

Van den Broke AM, et al (2006) conducted a study on review of the current literature on management of halitosis in Texas Dental College. In approximately 805 of all cases, halitosis is caused by microbial degradation of oral organic substance. Major degradation products are volatile sulphur-containing compounds. In this review, the available management methods of undoubtedly, the basic management is mechanically reducing the amount of micro- organisms and substrates in the oral cavity. Masking products were found to be not very effective and antimicrobial ingredients in oral healthcare products are only temporary effective in reducing micro- organisms or their substrates. Good short term results were reported with chlorhexidine.

Becerik S, et al, (2005) conducted a study in Sri lanka regarding antimicrobial effect of adjunctive use of betadine mouth rinse in untreated gingivitis : a randomized, placebo-controlled study. The aim of this study was to examine the effectiveness of betadine mouth rinse. Betadine mouth rinse while placebo group rinsed with placebo mouthwash. In the betadine mouth wash group the total bacteria count is significantly reduced in posterior teeth, while no significant decrease was observed in the placebo mouth wash group. Betadine mouth wash as an adjuvant to daily plaque control could be used in the management of plaque associated gingivitis and in reducing the sub gingival total bacteria count especially in posterior teeth.

Bellissimo-Rodriges F, et(2005) conducted a study of effectiveness of oral rinse with chlorhexidine solution in preventing nosocomial respiratory tract infections, intensive care unit patients. The study design was a double blind randomized, placebo- controlled trail.oral rinsed with chlorhexidine solution or placebo where performed two times a day throughout the duration of the patient's stay in the hospital. Oral application of a chlorhexidine solution prevent respiratory tract infections among ICU patients.

Menendez (2005) conducted a study in Mysore. Regarding the antibacterial effects of hydrogen peroxide mouthwash on streptococcus

mutants. Hydrogen peroxide mouthwash has been proposed as a potent antimicrobial effect against oral bacteria. Sixteen healthy adult subjects were randomly assigned to one of four rinse groups using a 4-cell crossover design. The groups rinse twice a day for 7 days with one of the following : Hydrogen peroxide, chlorhexidine. No significant different were seen in S. Mutants levels among the groups; however, the levels of total streptococci on the day 7 samples were significantly lower in the hydrogen peroxide. There was no additional decrease seen in Mutants or total streptococci levels in the group receiving oral care with hydrogen peroxide compared to other solution alone. Adding other solutions did not result in further decrease in S. Mutants levels.

Peridex, Zila(2003) conducted a study in Belgium. This study assess the commercial toothpaste and essential oil mouthwash. Commercial tooth paste has a strong affinity for tooth and tissue surfaces. Long term use of an essential oil mouthwash is microbiologically safe, with no changes observed in the bacterial composition of supra gingival plaque, and no evidence of antimicrobial resistance. A number of trails have demonstrated the long term plaque gingivitis reducing properties of both the commercial tooth paste and essential oil mouthwashes. These studies clearly demonstrate that these agents have lasting efficacy and can access hard to reach areas.

Gusberti FA, et al (2002) conducted a study on microbiological and clinical effects of potassium permanganate solution on developing plaque and gingivitis. The purpose of this study was to compare the clinical and microbiological effects of an established therapeutic agent such as potassium permanganate solution with that of other mouth wash solution in the experimental gingivitis mode. At the end of the experimental period, the group rinsing with potassium permanganate solution showed 95 % reduction in plaque scores compared to the group rinsing with placebo. Conversely, the group using other mouth wash solution showed a marginal reduction in gingivitis incidence of 15 % and a 28% reduction in bleeding sites compared to the placebo group, but no significant reduction in plaque scores. The

microbiological results showed that potassium permanganate solution was an excellent broad spectrum antimicrobial agent which significantly reduced the number of both facultative and obligate anaerobes in plaque.

Vollmer WM,et al(2000) conducted a study in Chattishgar. Regarding the effect of salt water rinse for treating dental caries. Dental caries is one of the primary cause of tooth loss among adults. The prevention of adult dental caries study is a multicenter, placebo- controlled, double blind, randomized clinical trial of the efficacy of salt water rinse in preventing dental caries. The cause effectiveness analysis also will be considered. The new dental treatment, if efficacious and approved for use by the food and drug administration, would become new in office, anti microbial agent for the prevention of adult caries in the United States.

Dona BL (1998) conducted a study in Kashmir. A study to assess the inhibitory effect of salt application on 3 day plaque accumulation. In a blind, randomized 4 cell cross over study, the effect of salt application with a perforate solution on the in vivo plaque inhibiting effect of salt was examined. After a thorough professional prophylaxis including inter-dental cleaning, 12 subjects to rinse according to 4 different regimens. After 72 hours, the subjects were scored for plaque, and a washout period of 4 days followed. Cross over was randomly assigned according to a Latin square design. Following this procedure, all subjects went through all 4 regimens. This results suggest a

positive interaction between salt application and perforate solution can result in more effective short term plaque growth inhibition than rising with salt application.

Section C : Literatures related to oral health of unconscious patients.

Lancashire P (2010) conducted a study on the oral hygiene and gingival health of paraplegic inpatients across sectional survey in Ranchi. This study surveyed the oral hygiene of paraplegic patients in a specialized centre to determine their oral hygiene and gingivitis was prevalent and severe. Plaque

and gingivitis was increased in quadriplegic compared to hemiplegic patients. The data indicate that as a part of rehabilitation of paraplegic patients there is a need for oral hygiene programmes to be established.

Chin J Dent Res (2008) conducted a study on oral health condition in individuals with no oral hygiene and its association with plaque acidogenesis in Manipur. The objective of the study is to find the association of long term deposited plaque, due to lack of oral hygiene, with acidogenesis of the plaque bacteria. 77 subjects with poor oral hygiene were selected. Among them 16 were comprised caries active, 27 were caries free, comprised the caries free group. Long term deposited plaque due to lack of oral hygiene may have less carcinogenic capability although patients susceptibility to periodontal disease would increase.

Montal S, et al(2005) conducted a study on oral hygiene and the need for treatment of the dependent institutionalized elderly, a cross sectional study of 321 elderly patients was conducted at several geriatric services of Montpellier, France. The clinical evaluation dental status was recorded together with medical information. Dental and prosthetic hygiene, status of dentures, caries experience, dependence conditions and treatment needs were evaluated, the prevalence of edentulism was relatively low, while the need for prosthodontic rehabilitation, especially for men, was still very high. The dental hygiene was globally inadequate. This evaluation emphasis the care demand and need for help in oral hygiene procedures for the dependent institutionalized elderly.

Hastruk H(2004) conducted a study in China, a randomized clinical trial was performed to test the efficacy of a dry neem powder application on gingivitis. A total of99 subjects were included in the study and were randomly assigned to receive either placebo or test neem powder . Eastman bleeding index was significantly reduced in the test group to baseline ($p<0.05$). In contrast, only the Eastman bleeding index was significantly reduced in the

control group($p<0.05$). The reduction in the index of gingival inflammation for the test group was significantly greater than for the control group($p=0.0004$). The results of this study indicate that dry neem powder effectively whitens teeth and significantly reduces gingivitis.

Mary Jo Grap, et al (2004) conducted a study in Bangalore. To assess the early oral application of neem solution on oral microbial flora in bedridden patients. The purpose of this study was to describe the effect of an early post intubation oral application of neem solution on oral microbial flora to bedridden patients. Thirty four patients were randomly assigned to neem solution spray or swab or to the control group. There was a trend for fewer positive cultures in the combined treatment groups. The mean Clinical Pulmonary Infection Score (CPIS) for control group increased to a level indicating pneumonia(4.7 to 6.6), whereas the CPIS for the treatment group increased only slightly (5.17 to 5.57). Trends in the data suggest that use of neem extract in the early period may migrate or delay the development of microbial flora in the bedridden patients.

Daurte Fde F, et al(2000) conducted study on local delivery of dry neem leaf powder in patients with aggressive periodontitis. Eleven consecutive comatose patients with aggressive periodontitis were recruited for this study in Punjab. Two sites received scaling and root planning and placement of dry neem leaf powder and the other two sites received scaling and root planning only. The authors concluded that the adjunctive use of the biodegradable dry neem leaf powder resulted in greater reduction of periodontal pocket depth in patients with aggressive periodontitis when compared to scaling and root.

Ernestine,et al(2000), conducted a study to assess the effectiveness of neem extract in reducing prevalence of nosocomial pneumonia in unconscious patients was conducted in Delhi. The objective of the study was to test the effectiveness of neem extract oral rinse in decreasing microbial colonozation of the respiratory tract and nosocomial pneumonia in unconscious patients. The

overall rate of nosocomial pneumonia was reduced by 52% (4/270 v/s 9/291; p=21) in the neem extract treated patients. Among patients intubated for more than 24 hours who had cultures that showed microbial growth (all pneumonias occurred in this group), the pneumonia rate was reduced by 58%(4/19 v/s 9/18; p=0.06) in patients treated with 'x' mouth wash. In patients at highest risk for pneumonia (incubated > 24 hours, with cultures showing the most growth), the rate was 71% lower in the neem extract group lower than in 'x' group(2/10 v/s 7/10; p=0.02). Although rates of nosocomial pneumonia were lower in patients treated with significant only in those patients intubated more than 24 hours who had the highest degree of bacterila colonization.

.**Weitz M, et al (1992)** conducted a study on effect of a twice daily neem oil rinse on the oral health of unconscious patients in Assam multi-speciality hospital. The inhibitory effect of neem oil rinse on gingival inflammation and plaque accumulation has been well documented. Thirty six subjects were randomly divided into two groups, active and control. The subjects, following baseline measurements, were required to rinse twice daily for 30 seconds with either 15 ml of neem oil or a placebo and instructed to continue their normal oral hygiene routine. The data were statistically analyzed. When active and control groups were conducted, whether total or within their stratified subdivisions. Significant difference were observed ($p<0.001$). The active group had a 10.27 and 16.68 % reduction in the gingival and plaque indexes, respectively compared to insignificant changes in the control groups. It was concluded that although neem oil proved effective in reducing inflammation and plaque scores, this reduction was not influenced by the type of prosthesis worn.

2.2 Conceptual framework

Conceptual framework serves as a spring board for theory development. The conceptual framework for research study presents the measurement on which purposes of the proposed study was based. The framework provides the prospective from which the investigator views the problem. The study is

designed to assess the effectiveness of neem extract in promoting oral hygiene among unconscious patients admitted at Rajiv Gandhi Government General Hospital , Chennai.

The study is based on the concept that oral care with neem extract helps in promoting oral hygiene.The investigator adopted the Wiedenbach's theory of helping art of clinical theory, 1964 for conceptual framework.

Wiedenbach's prescriptive theory directs action toward an explicit goal. It consists of three factors: central purpose, prescription and realities. A nurse develops a prescription based on a central purpose and implements it according to the realities of the situation.

Ernestine Wiedenbach proposed a prescriptive theory for nursing, which is described as conceiving of a desired situation and the ways to attain it.

According to this theory, nursing practice consists of three steps, which include

Step I: Identifying the need for help

Step II: Ministering the needed help

Step III: Validating that the need for help was met

This theory views nursing as an art based on a goal or central purpose. It consists of three factors: central purpose, prescription and realities.

Central purpose refers to what the nurse wants to accomplish. It is the overall goal towards which a nurse strives. In this study the main central purpose is to assess the effectiveness of neem extract in promoting oral hygiene among unconscious patients.

In identifying the need for help, the nurse identifies the need for help by selecting the samples based on criteria for sample section. Unconscious patients were assigned to experimental and control group and effectiveness of neem extract was assessed. Ministering the needed help refers to the provision of required help for the identified need. It has two components i) Prescription ii) Realities

Prescription refers to the plan of care for a patient. In this study, the investigator provides oral care with neem extract twice. Realities refers to the physical, psychological, emotional and spiritual factors that the affect the nursing action. The five realties identified by Wiedenbach's theory are agent, recipient, goal, means and frame work. In this study agent is the investigator, recipient is unconscious patients with poor oral hygiene., Goal is promotion of oral health,, Means is oral care with neem extract , Frame work is selected wards at Institute of Neurology.

In validating that the need for help was met. The nurse validated the ministered help by assessing the oral health through oral health assessment tool in the experimental and in the control group.

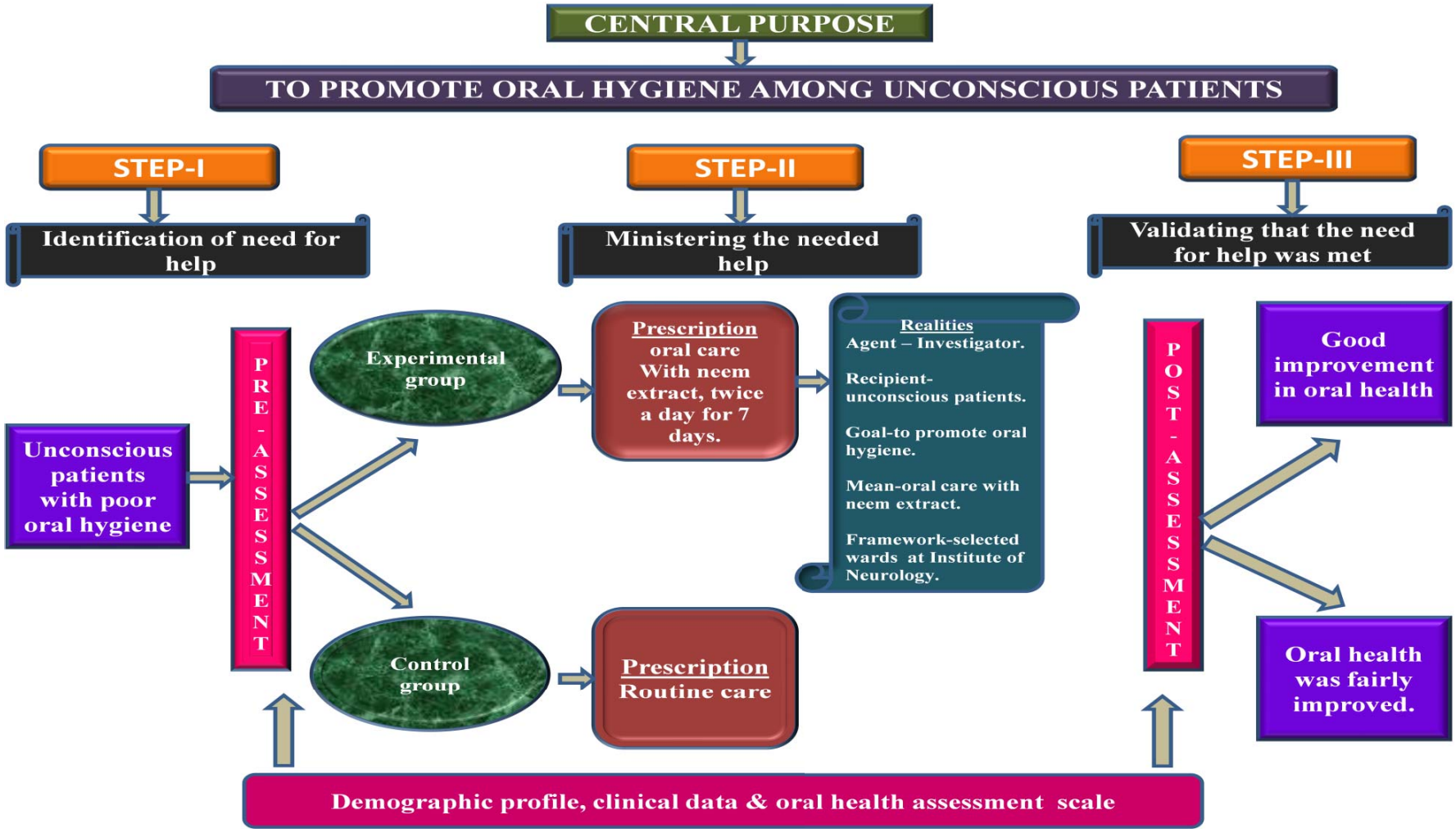


Fig : 2.1 Modified Wiedenbach's Theory.

CHAPTER-III

RESEARCH METHODOLOGY

This chapter deals with the methodology followed to determine the effectiveness of neem extract in promoting oral hygiene among unconscious patients admitted in Rajiv Gandhi Government General Hospital, Chennai.

Research methodology includes research design, variables of the study, setting, population, sample criteria for sample selection, sampling technique, sample size, development and description of the tool, content validity, pilot study, procedure for data collection and plan for data analysis.

3.1 Research approach

Research approach is the most significant part of any research. The appropriate choice of this research approach depends upon the purpose of the research study which has been undertaken in order to accomplish the main objectives of the study.

A quantitative evaluative research approach using pre-assessment and post- assessment was adopted for this study in order to accomplish the objectives.

3.2. Duration of the study

The study was conducted for the period of one month (16-07-2015 to 15-08-2015)

3.3. Study setting

The study was conducted in selected wards at Institute of Neurology, Rajiv Gandhi Government General Hospital Chennai. Institute of Neurology consists of Head injury ward, post operative ward, Intensive care unit Neuro medical and surgical ward. Total bed strength is 180.

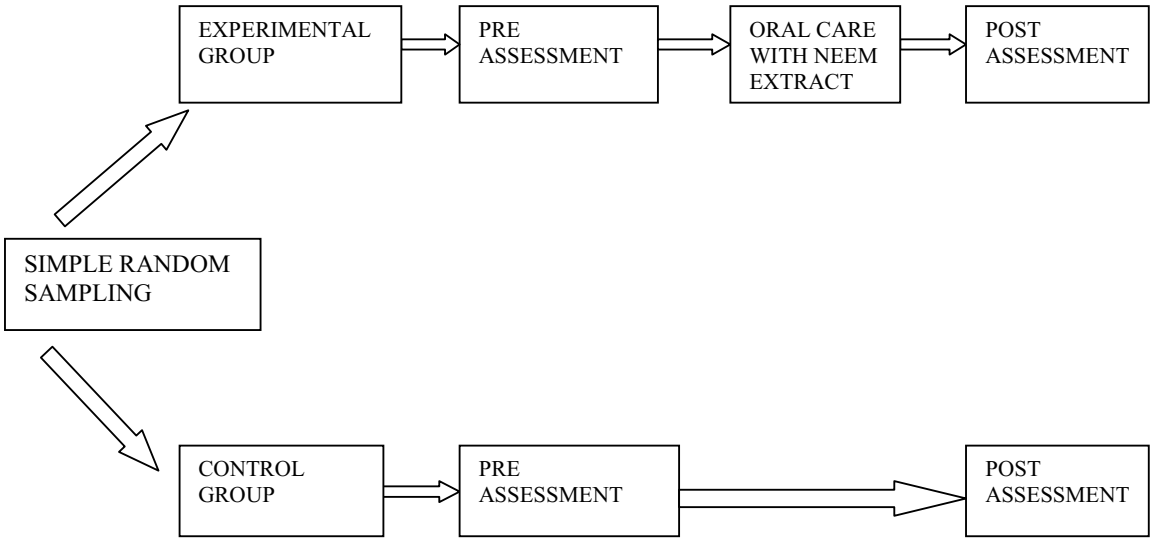
3.4. Study design

The research is designed as explicit blue print for research activities to be carried out. Research designs helps the researcher in selection of samples, identification of variables, their manipulation, control and randomization.

Research design incorporates some of the most important methodological decisions that the researcher makes in conducting the study. A research design is a researcher's overall plan for obtaining answers to research questions or for testing the research hypothesis. Research design focuses on the basic strategy that the researcher adopts to develop information in accurate and interpretable manner. Observation are to be made and different types of statistical analysis are used to interpret the data.

The research design selected for this study is Experimental research design – Pre test and post test for control group and pre test, intervention with neem extract and post test for experimental group.

Experimental Study design



Experimental group

Patients in experimental group were given oral care with neem extract.

Control group

Patient in control group were given oral care with routine mouth wash solution.

3.5. Study Population

The study population is unconscious patients admitted in selected wards at Institute of Neurology, Rajiv Gandhi Government General Hospital, Chennai during this period of study.

3.6. Sample size

The sample size for this study is composed of 60 adult subjects. 30 for each experimental and control group.

Experimental group : 30 patients receiving oral care with neem extract.

Control group : 30 patients receiving routine oral care.

3.7.Sampling criterion

The sample were selected based on the following inclusion and exclusion criteria

3.7.1 ***Inclusion Criteria***

- Both female and male unconscious patients.
- Unconscious patients above 18 years of age.
- Patients whose GCS level less than 8/15.

3.7.2 ***Exclusion criteria:***

- Unconscious patients who are having facial and maxillary bone fracture and who underwent faciomaxillary procedures.
- Unconscious patients with active oral mucositis.
- Unconscious patients with oral cancer.

3.8.Sampling Technique

The samples were selected by simple random sampling technique based on the inclusive criteria.

3.9. Research variables

Independent variable : Oral care with Neem extract

Dependant variable : Oral hygiene among unconscious patients

3.10.Development and Description of tool

3.10.1 Development of the tool

The researcher developed the tool on the basis of objectives of the study. Tools was developed after extensive review of literature from various text book, journals, internal search and discussion and guidance from the experts in the field of nursing, Institute of Neurology and personal experience of the researcher in the clinical field and statistician were consulted for the development of tool. The tool was developed in English and translated into Tamil congruency was maintained in translation.

3.10.2 Description of the Tool

Data collection instrument consists of following sections:

- **Section A :** Demographic data and clinical data of the client.
- **Section B :** Oral Health Assessment Scale.

Interpretation of the tool

Section-A

It is comprised of 14 items seeking information on demographic and clinical data of the patient like age, in patient number, religion, gender, education, occupation, diet pattern, marital status, cause of illness, length of hospital stay, duration of illness, ventilated or non ventilated, mode of ventilation and GCS score.

Section-B

This section contains modified tool for Oral Health Assessment Scale.

Scoring Techniques

The questionnaire consist of 8 questions with the score. The score is categorized as follows.

Interpretation of score :

0	-	Normal (Oral hygiene is good)
1-5	-	Mild (Oral hygiene is fair)
6-10	-	Moderate (Oral hygiene is poor)
11-16	-	Severe (Oral hygiene is very poor)

3.10.3. Content Validity

Approval was obtained from the Director of Neurology Institute, Rajiv Gandhi Government General Hospital, Chennai, and Medical Surgical Nursing experts from various institutions. They suggested certain modification in the tool. The modification were incorporated in the final preparation of tool. After that the tool was agreed for assessing the oral health of unconscious patients.

3.11. Ethical consideration

The study objectives, intervention, tool and data collection procedure were approved by the research and ethics committee of the institution. The research proposal was approved by the experts prior to the pilot study and permission for the main study was obtained from the Director of Neurology Institute, Rajiv Gandhi Government General Hospital, Chennai. An informed consent was obtained from the patient's attender before starting the data collection. Assurance was given for confidentiality and privacy.

3.12.Pilot Study

Pilot study was conducted in selected wards at Institute of Neurology, Rajiv Gandhi Government General Hospital, Chennai. In order to test the feasibility, relevance and practicability of the study. The study was conducted on 10patients for 1 week.

The pilot study was conducted in selected wards at Institute of Neurology. By simple random sampling technique, ten unconscious patients were selected. Pre assessment of the oral health was assessed using Oral health assessment tool. For experimental group oral care was given with neem extract twice a day and for control group routine mouth care was given twice a day.

Post assessment was done after seven days using same tool. The study showed the feasibility to conduct the proposed study as planned. These samples were not included in the main study.

3.13.Reliability of the tool

After pilot study reliability of the tool was assessed by using Test retest method and its correlation co-efficient value is 0.82. This correlation co-efficient is very high and hence the tool is found to be reliable.

3.14. Data collection procedure

Formal permission was obtained from Institute of Neurology, Rajiv Gandhi Government General Hospital, Chennai. Data was collected from 16-07-2015 to 15-08-2015. The samples were selected by using simple random sampling technique.

Phase-1 : Pre Assessment

The investigator introduced herself and explained the purpose of the study and obtained written consent from the patient's attender which ensures confidentiality. Demographic and clinical data were collected and oral health was assessed using Oral health assessment tool.

Intervention protocol :

Preparation at home :

1. Boil 250 ml of water for 10 minutes.
2. Add 10 fresh neem leaves in the boiling water and allow to boil it for two minutes (Adding the neem leaves at the end will minimize the bitter taste of the neem, So that it can be used for oral care).
3. Stain the neem extract.
4. 10 ml of neem extract is diluted with 10 ml of sterile water and can be used for oral care.

Procedure at hospital :

Protocol	**Experimental group**	**Control group**
Place	Selected wards at Institute of Neurology.	Selected wards at Institute of Neurology.
Recipient	Unconscious patients	Unconscious patients
Intervention	Oral care with neem extract	Routine oral care
Frequency	Twice a day	Twice a day
Time	7am and 7 pm	7am and 7pm
Duration	Seven days	Seven days
Administered by	Investigator	Investigator

Phase II : Post Assessment

The investigator conducted the post assessment after seven days of intervention using Oral Health Assessment Tool.

3.15. Data entry and analysis

The data were analyzed using descriptive statistics such as mean, standard deviation, frequency, percentage and inferential statistics such as paired 't' test unpaired 't' test chi square test.

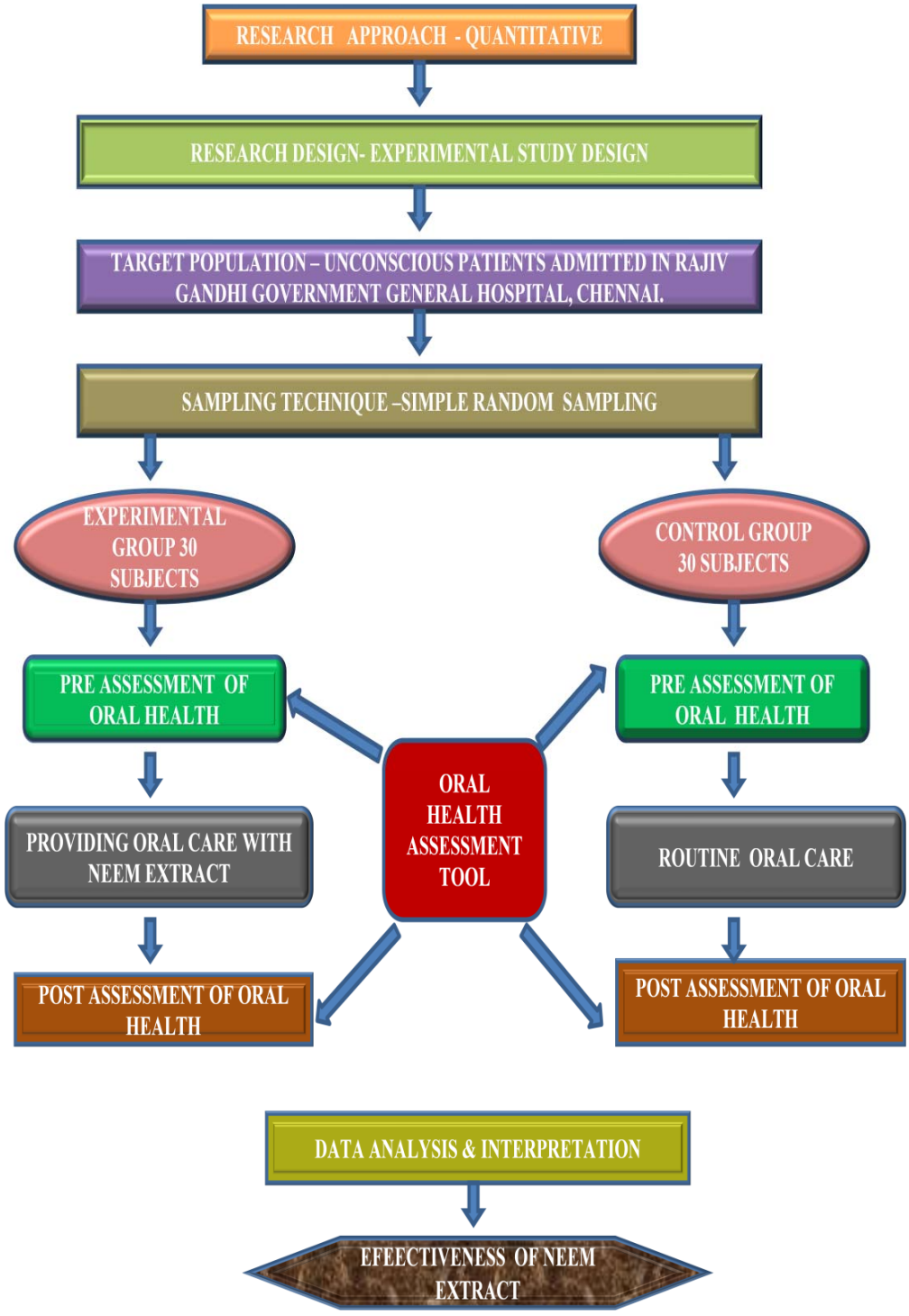


Fig 3.1 Schematic representation of research methodology.

CHAPTER-IV
DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collection from 60 unconscious patients admitted in selected wards at Institute Of Neurology, Rajiv Gandhi Government General Hospital, Chennai. Statistical procedure enabled the researcher to deduce, summarize, organize, evaluate, interpret and communicate the numeric information. Statistical analysis is a method of reducing quantitative information in a meaningful and intelligible way. The analysed data were tabulated and presented according to the objectives.

Organisation of data :

Section I

Part A – Distribution of demographic variables of unconscious patients.

Part B- Distribution of clinical variables of unconscious patients.

Section II

Assessment of oral hygiene of unconscious patients both in experimental and control group.

Section III

Compare the effectiveness of neem extract in promoting oral hygiene between experimental and control group.

Section IV

Effectiveness of oral hygiene among unconscious patients.

Section V

Association of post-test score with selected demographic and clinical variables .

Table 4.1: Distribution of demographic variables

Demographic profile		Experimental group		Control group		Chi square test
		f	In %	f	In %	
Age	18-29 years	8	26.7	3	10.0	$\chi 2=5.61$ p=0.23
	30-39 years	2	6.7	5	16.7	
	40-49 years	8	26.6	9	30.0	
	50-59 years	6	20.0	10	33.3	
	>60 years	6	20.0	3	10.0	
Gender	Male	21	70.0	14	46.7	$\chi 2=3.36$ p=0.07
	Female	9	30.0	16	53.3	
Religion	Hindu	24	80.0	21	70.0	$\chi 2=2.00$ p=0.36
	Muslim	5	16.7	5	16.7	
	Christian	1	3.3	4	13.3	
Occupation	Government	2	6.7	4	13.3	$\chi 2=5.9$ p=0.11
	Private	18	60.0	10	33.4	
	Business	3	10.0	9	30.0	
	Unemployed	7	23.3	7	23.3	
Education status	No formal education	6	20.0	6	20.0	$\chi 2=3.22$ p=0.36
	Primary education	13	43.4	7	23.3	
	Higher secondary	7	23.3	12	40.0	
	Graduate	4	13.3	5	16.7	
Diet pattern	Vegetarian	1	3.3	1	3.3	$\chi 2=0.00$ p=1.00
	Mixed diet	29	96.7	29	96.7	
Marital status	Married	26	86.7	27	90.0	$\chi 2=0.16$ p=0.68
	Single	4	13.3	3	10.0	

* significant at P≤0.05 ,** highly significant at P≤0.01 , *** very high significant at P≤0.001.

Table 4.1 shows that with regards to *age,*26.7% of unconscious clients in experimental group were in the age group of 20-29 years and 33.3% of the clients in control group were in the age group of 50-59 years.

In the view of *gender* 70.0% of the unconscious clients in experimental group were male and 53.3% of them in control group were female.

With regards to *religion* 80% of the clients in experimental group and 70.0% of the clients in control group were Hindu

With regards to *occupation* 60.0% of the clients in experimental group and 33% of the clients in control group were employed in private limited.

In the view of *educational status* 43.4% of the clients were educated upto primary level in experimental group and 40.4% of the clients in control group were educated upto higher secondary.

Based on *dietary pattern* 96.7% of the clients in both the group were taking mixed diet.

In the view of *marital status* 86.7% of the clients in experimental group and 90.0% of the clients in control group were married.

SECTION I : b) This section describes the distribution of clinical variables of experimental group and control group of unconscious patients.

Table 4.2 : Distribution of clinical variables

Clinical variables		Experiment group		Control group		Chi square test
		f	In %	f	In %	
Cause of illness	Road traffic accident	19	63.3	14	46.6	$\chi 2=3.03$ p=0.22
	Infection	3	10.0	8	26.7	
	Systemic illness	8	26.7	8	26.7	
Length of hospital stay	< 5 days	8	26.7	4	13.4	$\chi 2=4.15$ p=0.24
	5-10 days	9	30.0	7	23.3	
	11-15 days	4	13.3	10	33.3	
	> 15 days	9	30.0	9	30.0	
Duration of hospital stay	≤1 days	5	16.7	2	6.7	$\chi 2=2.10$ p=0.55
	2-3 days	4	13.3	7	23.3	
	4-5 days	3	10.0	3	10.0	
	> 5 days	18	60.0	18	60.0	
Ventilation status	Ventilated	19	63.3	19	63.3	$\chi 2=2.33$ p=0.05
	Non Ventilated	11	36.7	11	36.7	
Mode of ventilation	Nil	11	36.7	11	36.7	$\chi 2=0.54$ p=0.76
	Tracheostomy	4	13.3	6	20.0	
	Endotracheal intubatin	15	50.0	13	43.3	
GCS Score	3-5/15	14	51.7	11	36.0	$\chi 2=1.76$ p=0.41
	6-8/15	13	48.3	19	62..7	

* significant at P≤0.05 , ** highly significant at P≤0.01 , *** very high significant at P≤0.001.

Table 4.2 shows that the *cause of illness* for 63.3% of the unconscious clients in experimental group and 43.6% of the clients in control group met With Road traffic accidents.

With regards to *length of hospital stay* 30.0% of the clients in experimental group stayed in hospital for more than 15 days and 33.3% of the clients in control group stayed for 11-15 days.

Based on their *mode of ventilation,* 50.0% of the unconscious clients in experimental group and 43.3% of the clients in control group were on endo tracheal intubation.

In the view of *level of consciousness*, 46.7% of the unconscious clients in experimental group were in between the GCS score of 3-5/15 and 56.7% of the clients in control group were in between the GCS score of 6-8/15.

Section II : a) Data on pre test level of oral hygiene for unconscious patients both in experimental and control group.

Table 4.3 : Pre test level of oral hygiene score among unconscious patients

Score	Experimental group		Control group		Chi square test
	f	In %	f	In %	
Normal	0	0.0	0	0.0	$\chi 2=0.16$ P=0.68
Mild	4	13.3	3	10.0	
Moderate	19	63.4	21	70.0	
Severe	7	23.3	6	20.0	
Total	**30**	**100.0**	**30**	**100.0**	

* significant at P≤0.05 , ** highly significant at P≤0.01 , *** very high significant at P≤0.001.

In pre-test, among experimental group, none of the clients have normal oral hygiene score, 13.3% of them have mild score, 63.3% of them have moderate score and 23.3% of the clients have severe score. Among control group, none of the clients have normal oral hygiene score, 10.0% of them have mild score, 70.0% of them were have moderate score and 20.0% of the clients showed severe score in the level of oral hygiene. Statistically there was no significant difference between experiment and control group

Section II : b) Data on post test level of oral hygiene for unconscious patients both in experimental and control group.

Table 4.4 : Post test level of oral hygiene score among unconscious patients

Score	Experimental group		Control group		Chi square test
	f	In %	f	In %	
Normal	6	20.0	0	0.0	$\chi 2=31.48$ P=0.001
Mild	22	73.3	7	23.3	
Moderate	2	6.7	20	66.7	
Severe	0	0.0	3	10.0	
Total	**30**	**100.0**	**30**	**100.0**	

* significant at P≤0.05 , ** highly significant at P≤0.01 , *** very high significant at P≤0.001.

In post test, among experimental group, 20% of the clients have normal oral hygiene score, 73.3% of the clients have mild score, 63.3% of them have moderate score and 6.3% of them have severe oral hygiene score. Among control group, none of the clients have normal oral hygiene score, 23.3% of the clients have mild score, 66.7% of them have moderate score and 3.0% of them have severe oral hygiene score. Statistically there was a significance(p=0.001) between experimental and control group.

Section III : Compare the effectiveness of neem extract in promoting oral hygiene between experimental and control group.

Table 4.5: Comparison of pre-test and post-test oral hygiene score

Group	Test	Oral hygiene score		Mean difference	Student paired t-test
		Mean	SD		
Experiment	pre-test	8.47	3.37	6.77	t=11.57 p=0.001
	post-test	1.70	1.46		
Control	pre-test	8.83	2.62	0.86	t=1.59 p=0.12
	Post-test	7.97	2.32		

* significant at P≤0.05 , ** highly significant at P≤0.01 , *** very high significant at P≤0.001.

The mean difference of oral hygiene score between pre test and post test was 6.77 in experimental group and in control group its about 0.86. This shows that there was a statistical significance(p=0.001) between experiment and control group.

Table4. 6: Comparison of oral hygiene score among experimental and control group

Test	Group	Oral hygiene score		Mean difference	Student independent t-test
		Mean	SD		
Pre-test	Experiment	8.47	3.37	0.37	t=0.46 p=0.64
	Control	8.83	2.69		
Post-test	Experiment	1.70	1.44	6.27	t=6.75 p=0.001
	Control	7.97	2.33		

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

The mean oral hygiene score of experimental and control group in pre test was 0.37 and in post test its about 6.27. This shows that there was a statistical significance between pre test and post test oral hygiene score.

SECTION IV : Effectiveness of pre test and post test level of oral hygiene between experimental and control group among unconscious patients

Table 4.7: Effectiveness of neem extract in promoting oral hygiene among unconscious patients

Group	Test	Max score	Mean oral hygiene score	Mean Difference in oral hygiene score with 95% Confidence interval	Percentage of oral hygiene score with 95% Confidence interval
Experiment	Pre test	16	8.47	6.77 (5.57 – 7.96)	42.3% (34.8% –49.8%)
	Post test	16	1.70		
Control	Pre test	16	8.83	0.87 (0.24 – 1.97)	5.4% (1.5% –12.3%)
	Post test	16	7.97		

After oral care with neem extract, the oral hygiene score of experimental group was reduced upto 42.3%. with routine care, the oral hygiene score was reduced upto 5.4%. The differences between pre-test and post-test score was analysed using percentage with 95% CI and mean difference with 95% CI.

SECTION V : Association of post test score with selected demographic and clinical variables of unconscious patients.

Table 4. 8 : Association between the oral hygiene reduction score and demographic variables(experimental group)

Demographic variables		Level of oral hygiene reduction score				Total	Chi square test
		Below average (≤6.77)		Above average (>6.77)			
		f	In %	f	In %		
Age	20-29 years	1	12.5	7	87.5	8	$\chi2$=10.33 p=0.05*
	30-39 years	0	0.0	2	100.0	2	
	40-49 years	5	62.5	3	37.5	8	
	50-59 years	4	66.7	2	33.3	6	
	60-70years	5	83.3	1	16.7	6	
Gender	Male	2	57.1	9	42.9	21	$\chi2$=1.42 p=0.23
	Female	3	33.3	6	66.7	9	
Religion	Hindu	0	41.7	4	58.3	24	$\chi2$=3.46 p=0.17
	Muslim	4	80.0	1	20.0	5	
	Christian	1	100.0	0	0.0	1	
Occupation	Government	1	50.0	1	50.0	2	$\chi2$=2.50 p=0.47
	Private	1	61.1	7	38.9	18	
	Business	1	33.3	2	66.7	3	
	Unemployed	2	28.6	5	71.4	7	
Educational status	No formal education	5	83.3	1	16.7	6	$\chi2$=7.93 p=0.05*
	Primary education	8	61.5	5	38.5	13	
	Higher secondary	1	16.7	6	83.3	7	
	Graduate	1	25.0	3	75.0	4	
Diet	Vegetarian			1	100.0	1	$\chi2$=1.04 p=0.31
	Mixed diet	5	51.7	4	48.3	29	
Marital status	Married	2	46.2	14	53.8	26	$\chi2$=1.15 p=0.28
	Single	3	75.0	1	25.0	4	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

The above table shows that younger age group clients with higher education in experimental group have significant improvement in oral hygiene when compared to others.

Table 4.9:Association between the oral hygiene reduction score and clinical variables(experiment)

Demographic variables		Level of oral hygiene reduction score				Total	Chi square test
		Below average (≤6.77)		Above average (>6.77)			
		f	In %	f	In %		
Cause of illness	Road traffic accident	12	63.2	7	36.8	19	$\chi 2=4.81$ p=0.09
	Infection			3	100.0	3	
	Systemic illness	3	37.5	5	62.5	8	
Length of hospital stay	< 5 days	2	25.0	6	75.0	8	$\chi 2=11.2$ p=0.01**
	5-10 days	2	22.3	7	77.7	9	
	11-15 days	3	75.0	1	25.0	4	
	> 15 days	8	88.9	1	11.1	9	
Duration of illness	> 1 days	3	60.0	2	40.0	5	$\chi 2=1.53$ p=0.67
	2-3 days	1	25.0	3	75.0	4	
	4-5 days	2	66.7	1	33.3	3	
	> 5 days	9	50.0	9	50.0	18	
Ventilation status	Ventilated	13	68.4	6	31.6	19	$\chi 2=7.03$ p=0.01**
	Non Ventilated	2	18.2	9	81.8	11	
Mode of ventilation	Nil	6	54.5	5	45.5	11	$\chi 2=0.15$ p=0.92
	Tracheostomy	2	50.0	2	50.0	4	
	Endotraceal intubation	7	46.7	8	53.3	15	
GCS	3-5/15	7	50.0	7	50.0	16	$\chi 2=3.6$ p=0.16
	6-8/15	5	38.5	8	61.5	14	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

The above table shows that the clients in experimental group who are not on mechanical ventilation and who stayed for shorter duration (5-10 days) in the hospital shows significant improvement in oral hygiene.

Table 10: Association between the oral hygiene reduction score and demographic variables(control)

Demographic Variables		Level of oral hygiene reduction score				Total	Chi square test
		Below average(≤0.87)		Above average(>0.87)			
		f	In %	f	In %		
Age	18-29 years	2	66.7	1	33.3	3	$\chi2$=2.26 p=0.68
	30-39 years	2	40.0	3	60.0	5	
	40-49 years	3	33.3	6	66.7	9	
	50-59 years	6	60.0	4	40.0	10	
	>60 years	2	66.7	1	33.3	3	
Gender	Male	9	64.2	5	35.8	14	$\chi2$=2.14 p=0.14
	Female	6	37.5	10	62.2	16	
Religion	Hindu	11	52.4	10	47.6	21	$\chi2$=2.84 p=0.24
	Muslim	1	20.0	4	80.0	5	
	Christian	3	75.0%	1	25.0	4	
Occupation	Government	1	25.0	3	75.0	4	$\chi2$=4.88 p=0.10
	Private	3	30.0	7	70.0	10	
	Business	6	66.7	3	33.3	9	
	Unemployed	5	71.4	2	28.6	7	
Education status	No formal education	5	83.3	1	16.7	6	$\chi2$=3.34 p=0.34
	Primary education	3	42.9	4	57.1	7	
	Higher secondary	5	41.6	7	58.4	12	
	Graduate	2	40.0	3	60.0	5	
Diet	Vegetarian	1	100.0	0	0.0	1	$\chi2$=1.04 p=0.31
	Mixed diet	14	48.3	15	51.7	29	
Marital status	Married	13	48.1	14	51.9	27	$\chi2$=0.37 p=0.54
	Single	2	66.7	1	33.3	3	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

The above table shows none of the demographic variables in control group were significant in promotion of oral hygiene.

Table 11: Association between the oral hygiene reduction score and clinical variables(control)

Clinical variables		Level of oral hygiene reduction score				Total	Chi Square test
		Below average(≤0.87)		Above average(>0.87)			
		f	In %	f	In %		
Cause of illnes	Road traffic accident	8	57.1	6	42.9	14	$\chi2$=0.78 p=0.68
	Infection	3	37.5	5	62.5	8	
	Systemic illness	4	50.0	4	50.0	8	
Length of Hospital stay	< 5 days	2	50.0	2	50.0	4	$\chi2$=6.50 p=0.09
	5-10 days	4	57.1	3	42.9	7	
	11-15 days	2	20.0	8	80.0	10	
	> 15 days	7	77.8	2	22.2	9	
Duration of illness	> 1 days	1	50.0	1	50.0	2	$\chi2$=1.84 p=0.61
	2-3 days	5	71.4	2	28.6	7	
	4-5 days	1	33.3	2	66.7	3	
	> 5 days	8	44.4	10	55.6	18	
Venilation status	Ventilated	10	52.6	9	47.4	19	$\chi2$=0.14 p=0.70
	Non Ventilated	5	45.5	6	54.5	11	
Mode of ventilation	Nil	5	45.5	6	54.5	11	$\chi2$=3.45 p=0.18
	Tracheostomy	5	83.3	1	16.7	6	
	Endotracheal intubation	5	38.5	8	61.5	13	
GCS	3-5/15	4	44.4	5	55.6	9	$\chi2$=0.17 p=0.92
	6-8/15	9	52.9	8	47.1	17	
	9-11/15	2	50.0	2	50.0	4	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

The above table shows none of the clinical variables in control group were significant.

CHAPTER – V

SUMMARY OF RESULTS

This chapter deals with the summary of the analysed data . it is categorized into five divisions such as findings of demographic variables, findings of clinical variables, pre test result, post test result and results which proves the effectiveness of the study.

5.1 Major findings of the study

A) Finding of demographic variables

- with regards to *age,*26.7% of unconscious clients in experimental group were in the age group of 20-29 years and 33.3% of the clients in control group were in the age group of 50-59 years.

- In the view of *gender* 70.0% of the unconscious clients in experimental group were male and 53.3% of them in control group were female.

- With regards to *religion* 80% of the clients in experimental group and 70.0% of the clients in control group were Hindu

- With regards to *occupation* 60.0% of the clients in experimental group and 33% of the clients in control group were employed in private limited.

- In the view of *educational status* 43.4% of the clients were educated upto primary level in experimental group and 40.4% of the clients in control group were educated upto higher secondary.

- Based on *dietary pattern* 96.7% of the clients in both the group were taking mixed diet.

B) Findings of clinical variables

- The *cause of illness* for 63.3% of the unconscious clients in experimental group and 43.6% of the clients in control group met with Road traffic accidents.

- With regards to *length of hospital stay* 30.0% of the clients in experimental group stayed in hospital for more than 15 days and 33.3% of the clients in control group stayed for 11-15 days.

- Based on their *mode of ventilation,* 50.0% of the unconscious clients in experimental group and 43.3% of the clients in control group were on endo tracheal intubation.

- In the view of *level of consciousness*, 46.7% of the unconscious clients in experimental group were in between the GCS score of 3-5/15 and 56.7% of the clients in control group were in between the GCS score of 6-8/15.

C) Pre test level of oral hygiene score among unconscious patients

In pre-test, among experimental group, none of the clients have normal oral hygiene score, 13.3% of them have mild score, 63.3% of them have moderate score and 23.3% of the clients have severe score. Among control group, none of the clients have normal oral hygiene score, 10.0% of them have mild score, 70.0% of them were have moderate score and 20.0% of the clients showed severe score in the level of oral hygiene. Statistically there was no significant difference between experiment and control group

D) Post test level of oral hygiene score among unconscious patients

In post test, among experimental group, 20% of the clients have normal oral hygiene score, 73.3% of the clients have mild score, 63.3% of

them have moderate score and 6.3% of them have severe oral hygiene score. Among control group, none of the clients have normal oral hygiene score, 23.3% of the clients have mild score, 66.7% of them have moderate score and 3.0% of them have severe oral hygiene score. Statistically there was a significance(p=0.001) between experimental and control group.

E) Effectiveness of neem extract in promoting oral hygiene among unconscious patients

After oral care with neem extract, the oral hygiene score of experimental group was reduced upto 42.3%. with routine care, the oral hygiene score of control group was reduced upto 5.4%. The differences between pre-test and post-test score was analysed using percentage with 95% CI.

Hence, neem extract is effective in improving oral hygiene of unconscious patients and it was statistically significant (p=0.001).

CHAPTER –VI

DISCUSSION

This chapter deals with the discussion of the results of the data analyzed based on the objectives of the study. The purpose of the study is to determine the effectiveness of neem extract in promoting oral hygiene among unconscious patients admitted in Rajiv Gandhi Government General Hospital, Chennai-03.

The findings of the study will be discussed based on the objectives.

1. To assess the oral hygiene among unconscious patients both in control group and experimental group.
2. To assess the effectiveness of neem extract in promoting oral hygiene in experimental group.
3. To compare the effectiveness of neem extract in promoting oral hygiene between experimental group and control group.
4. To find the association of post test score in both control group and experimental group with selected demographic variables.

Objective-1: To assess the oral hygiene among unconscious patients both in control group and experimental group.

In pre-test, among experimental group, none of the clients have normal oral hygiene score, 13.3% of them have mild score, 63.3% of them have moderate score and 23.3% of the clients have severe oral hygiene score. Among control group, none of the clients have normal oral hygiene score, 10.0% of them have mild score, 70.0% of them were have moderate score and 20.0% of the clients showed severe score in the level of oral hygiene. Statistically there was no significant difference between experiment and control group

The study result is similar with this study result, ***Bellissimo-Rodriges F, et(2005),*** conducted a study in china to assess the effectiveness of oral rinse with neem solution in preventing nosocomial respiratory tract infections for intensive care unit patients. After oral rinse with neem extract, the oral hygiene of experimental group was reduced to mild oral hygiene score(77.3%). With placebo mouth wash, the oral hygiene score was reduced only to moderate level(89.6%). There was a statistical difference between two groups.

Objective-2: To assess the effectiveness of neem extract in promoting oral hygiene in experimental group.

In post test, among experimental group, 20% of the clients have normal oral hygiene score, 73.3% of the clients have mild score, 63.3% of them have moderate score and 6.3% of them have severe oral hygiene score. Among control group, none of the clients have normal oral hygiene score, 23.3% of the clients have mild score, 66.7% of them have moderate score and 3.0% of them have severe oral hygiene score. Statistically there was a significance($p=0.001$) between experimental and control group.

The study result is consistent with this study, ***Becerik S et al(2004)*** conducted a study on antimicrobial effect of neem mouth wash in untreated gingivitis in Brazil. The aim of this study was to examine the effectiveness of neem mouth wash . neem mouth wash group rinsed with neem extract while placebo group rinsed with placebo mouth wash rinse. In neem group the total bacteria count was significantly reduced in posterior teeth($p<0.05$), while no significant decreased was observed in the placebo group($p>0.05$).

Objective-3: To compare the effectiveness of neem extract in promoting oral hygiene between experimental group and control group.

The mean difference of oral hygiene score between pre test and post test was 6.77 in experimental group and in control group its about 0.86. This shows that there was a statistical significance($p=0.001$) between

experiment and control group. In promotion of oral hygiene among unconscious patients.

The study results is similar with this study, ***Hossainian et al(2011)*** conducted a study on the effect of dry neem powder on prevention of plaque and gingival inflammation. In pre test the difference between experimental and control group was only 0.37 and in the post test te difference was 6.27. Since there is a large difference in pre test and post test. The result was statistically significant.

Objective-4 : To find the association of post test score in both control group and experimental group with selected demographic variables.

The post test score was significant to the demographic variables like age and educational status in experimental group .i,e younger age group people and higher educated people have less oral hygiene score, which reveals that they have good improvement in oral hygiene. Other demographic variables were not statistically significant. In clinical variables, the patients who stayed in less number of days in hospital and who are not on ventilator shows a significant reduction in oral hygiene score in the post test among experimental group. None of the variables were significant in control group. Therefore statistically the results suggest that there was association between the demographic variables and oral health after the usage of neem extract.

My study coincides with this study, ***Watson et al (2000)*** done study on effect of a twice daily neem oil rinse on the oral health of geriatric population in Assam. The subjects, following baseline measurements, were required to rinse twice daily for 30 seconds with either 15 ml of neem oil or a placebo and instructed to continue their normal oral hygiene routine. The data were statistically analyzed. When active and control groups were conducted. Significant difference were observed ($p<0.001$). The active group in geriatric population had a 12.27% a reduction and control group had 12.76% reduction in the gingival and plaque indexes.. It was concluded that although neem oil proved effective in reducing inflammation and plaque scores, but still the association score was not significant in geriatric population.

CHAPTER – VII
CONCLUSION AND RECOMMENDATION

This chapter deals with the conclusion and recommendation of the study.The crucial focus of the study was to evaluate the effectiveness of neem extract in promoting oral hygiene among unconscious patients admitted in Rajiv Gandhi Government General Hospital, Chennai.

The design adopted for the study was Experimental study design and the tool used for this study is oral health assessment tool which also contains demographic and clinical variables. The main study was conducted with the sample size of 60 among unconscious patients admitted in Rajiv Gandhi Government General Hospital, Chennai. Simple random sampling technique was used. Data collection was done and the data analysis done using descriptive and inferential statistics and the obtained results were presented using tables and figures.

7.1 Implications of the study

The investigator has drawn the following implications from the studies which are of vital concern in the field of nursing practice, nursing education, nursing administration and nursing research.

Implications for Nursing practice

- The study results will help the nursing personnel to understand the importance of oral health among unconscious patients.
- Nurses can motivate the patients to follow the proper oral care to prevent oral complications.
- Nurses can emphasize on the use of neem mouthwash to prevent the plaque in the teeth and improve the comfort of the patients.

Implication for Nursing education

Nurse educators should teach the students and include in syllabus about

- Importance of oral care among unconscious patients.

- Develop different tools to assess the oral health.
- Scoring tools to assess the oral health.
- Impart health education measures and component of health education.
- Lifestyle medication needed to prevent or control disease progress and disability status.

Implications for Nursing administration

- Nursing administrators should organize to educate the public to create awareness on the complications of poor oral health hygiene.
- Organize in service education programme for nursing personnel to update their knowledge.
- Encourage research activities for nurses in these areas.

Implications for Nursing research

- The study will be valuable reference material for future researchers.
- The findings of the study would help to expand scientific body of professional knowledge upon which further researchers can be conducted.
- Study can be conducted in a large scale level in consideration of other contributing variables.

7.2 Limitations

- The study was confined to a small samples in a single setting which limits the study.
- Few were hesistated to involve in this study because of the bitter taste of the neem.

7.3 Recommendations

- A similar study can be replicated on a large scale basis.
- Study can be conducted on various aspects such as oral health, performance of daily living activities.
- Study can be done for longer duration.
- A Study can be conducted to assess the structured teaching programme on various therapeutic modalities.

- A study can be conducted to promote the oral hygiene by using other forms of neem like dry neem powder.
- A study can be conducted to compare the neem extract mouth wash and other commercial mouthwash solutions.
- Effectiveness of different therapeutic measures can be compared.

Unhealthy oral state of unconscious patients leads to complications to some degree. As the disease progresses the problem related to oral health also increases which in turn affect the comfort to the life of the patients both physically and mentally. So considering the natural ecology and normal flora that live in the mouth. We can switch to a natural neem extract , which is easily prepared, cost effective and keeps healthy oral cavity. The study was concluded that mouthwash with neem extract improve the oral health of unconscious patients and prevent oral complications and promotes comfort for the patients.

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A. Certificate of approval from Institutional Ethics Committee.

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI-3

EC Reg No.ECR/270/Inst./TN/2013
Telephone No. 044 25305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To
Ms. KARTHIGA PRIYADHARSHINI.A
M.Sc., (Nursing)
College of Nursing
Madras Medical College,
Chennai – 600 003.

Dear Ms. KARTHIGA PRIYADHARSHINI.A,

The Institutional Ethics Committee has considered your request and approved your study titled **A STUDY TO ASSESS THE EFFECTIVENESS OF NEEM EXTRACT IN PROMOTING ORAL HYGIENE AMONG UNCONSCIOUS PATIENTS ADMITTED IN RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI. No.36102014.**

The following members of Ethics Committee were present in the meeting held on 21.10.2014 conducted at Madras Medical College, Chennai-3.

1. Dr.C.Rajendran, M.D.,	: Chairperson
2. Dr.R.Vimala, M.D., Dean, MMC, Ch-3	: Deputy Chairperson
3. Prof.B.Kalaiselvi, M.D., Vice-Principal, MMC, Ch-3	: Member Secretary
4. Prof.R.Nandhini, M.D., Inst.of Pharmacology, MMC	: Member
5. Prof.K.Ramadevi, Director i/c, Inst.of Biochemistry, MMC	: Member
6. Prof.Saraswathy, M.D., Director, Pathology, MMC, Ch-3	: Member
7. Prof.S.G.Sivachidambaram, M.D., Director i/c, Inst.of Internal Medicine, MMC	: Member
8. Dr.Raghumani, M.S., Professor of Surgery, MMC	: Member
9. Thiru S.Rameshkumar, Administrative Officer	: Lay Person
10.Thiru S.Govindasamy, B.A., B.L.,	: Lawyer
11.Tmt.Arnold Saulina, M.A., MSW.,	: Social Scientist

We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.

Member Secretary, Ethics Committee

B. Content validity

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that a tool prepared by **Ms.Karthiga Priyadharshini .A** , studying M.Sc.Nursing II year, College of Nursing, Madras Medical College, undertaking a Research study on **"A STUDY TO ASSESS THE EFFECTIVENESS OF NEEM EXTRACT IN PROMOTING ORAL HYGIENE AMONG UNCONSCIOUS PATIENTS ADMITTED IN RAJIV GANDHI GOVERRNMENT GENERAL HOSPITAL, CHENNAI-03",** has been validated by me and is found to be valid upto date and she can proceed with this tool to conduct the main study.

SIGNATURE WITH SEAL

Dr. K. SRINIVASAGALU, M.D.
Director & Professor
Institute of Internal Medicine
MMC & RGGGH, Chennai-600 003.

Name : DR. K. SRINIVASAGALU, M.D.,

Designation : DIRECTOR & PROFESSOR

Date : 16-07-2015

Place : CHENNAI

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that a tool prepared by **Ms.Karthiga Priyadharshini .A** , studying M.Sc.Nursing II year, College of Nursing, Madras Medical College, undertaking a Research study on **"A STUDY TO ASSESS THE EFFECTIVENESS OF NEEM EXTRACT IN PROMOTING ORAL HYGIENE AMONG UNCONSCIOUS PATIENTS ADMITTED IN RAJIV GANDHI GOVERRNMENT GENERAL HOSPITAL, CHENNAI-03",** has been validated by me and is found to be valid upto date and she can proceed with this tool to conduct the main study.

PRINCIPAL
MADHA COLLEGE OF NURSING
MADHA NAGAR, KUNDRATHUR,
CHENNAI - 600 069
PHONE : 24780736

SIGNATURE WITH SEAL

Name : Dr. Tamilarasi. B

Designation : Principal

Date : 15.07.2015

Place : Chennai

MADHA COLLEGE OF NURSING
15 JUL 2015
CHENNAI - 600 069

C. Permission letter from concern department

PERMISSION LETTER

From

Karthiga Priyadharshini . A,
M.Sc.,(N) II Year,
College Of Nursing,
Madras Medical College,
Chennai-O3.

To

The Professor and Head Of The Department,
Institute Of Neurology,
Rajiv Gandhi Government General Hospital,
Chennai-03.

Through

The proper channel.

Respected Sir /Madam,

Sub: Permission for conducting research study in Neurology department at Rajiv Gandhi Government General Hospital – requested –regarding

I Ms Karthiga Priyadharshini. A M.Sc (N) II year student ,College Of Nursing ,Madras Medical college ,Chennai-03, in partial fulfillment of M.Sc., Nursing course , I have a plan to conduct research study on topic mentioned below in Institute of Neurology, Rajiv Gandhi Government General Hospital ,Chennai -600 003.The study period is from 06-07-2015 to 31-08-2015 . I assure that I will not interfere with the routine activity of the department.

Forwarded
01/07/15

The topic is **" A STUDY TO ASSESS THE EFFECTIVENESS OF NEEM EXTRACT IN PROMOTING ORAL HYGIENE AMONG UNCONSCIOUS PATIENTS ADMITTED IN RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03"**.

Kindly consider my request and permit me to conduct the study.

Thanking you

Yours sincerely,

Date : 01.07.2015

Place : CHENNAI – 03

Permission Granted
2/7/15
DIRECTOR
INSTITUTE OF NEUROSURGERY
MADRAS MEDICAL COLLEGE
GOVT. GENERAL HOSPITAL
CHENNAI-600 003

D. STUDY TOOL

Section-A : Demographic and illness related data

1. Name of the patient :

2. In patient number :

3. Age
   a. 18-29 years
   b. 30-39 years
   c. 40-49 years
   d. 50-59 years
   e. 60-70 years
   f. >70 years

4. Gender
   a. Male
   b. Female

5. Religion
   a. Hindu
   b. Muslim
   c. Christian
   d. Others

6. Occupation
   a. Government
   b. Private
   c. Business
   d. Unemployed

7. Educational status
   a. uneducated
   b. Primary education
   c. Higher secondary
   d. Graduate

8. Diet pattern
   a. Vegetarian
   b. Mixed diet

9. Marital status
    a. Married
    b. Single
    c. Divorce

10. Cause of illness
    a. Road traffic accident
    b. Infection
    c. Systemic illness
    d. Idiopathic

11. Length of hospital stay
    a. < 5 days
    b. 5-10 days
    c. 11-15 days
    d. > 15 days

12. Duration of illness
    a. > 1 days
    b. 2-3 days
    c. 4-5 days
    d. > 5 days

13. Patient is ----------
    a. Ventilated
    b. Non ventilated

14. If the patient is mechanically ventilated , then what is the approach of ventilation
    a. Tracheostomy
    b. Endotracheal intubation

15. GCS (Glascow Coma Scale) score of the client
    a. 3-5/15
    b. 6-8/15

SECTION – B

ORAL HEALTH ASSESSMENT TOOL

S.No	Category	Score – 0 Healthy	Score – 1 Changes	Score – 2 Unhealthy	Total score on day – 1 (before intervention)	Total score on day – 7 (after intervention)
1	LIPS	Smooth, pink, moist	Dry, chapped, or red at corners	Swelling or lump, white/red/ulcerated patch; bleeding/ ulcerated at corners		
2	TONGUE	Normal, moist, pink	Patchy, fissured, red, coated	Patch that is red and/or white, ulcerated, swollen.		
3	GUMS AND TISSUES	Pink, moist, Smooth, no bleeding	Dry, shiny, rough, red, swollen around 1 to 6 teeth, one ulcer or sore spot under denture	Swollen, bleeding around 7 teeth or more, loose teeth, ulcers and/or white patches, generalized redness and/or tenderness		
4	SALIVA	Moist tissues, watery and free flowing saliva	Dry, sticky tissues, little saliva present, resident thinks they have dry mouth	Tissues parched and red, very little or no saliva present; saliva is thick, ropey, resident complains of dry mouth		

5	NATURAL TEETH YES / NO	No decayed or broken teeth/ roots	1 to 3 decayed or broken teeth/roots	4 or more decayed or broken teeth/ roots, or very worn down teeth, or less than 4 teeth with no denture		
6	DENTURES YES / NO	No broken areas/teeth, dentures worn regularly and name is on	1 broken area/tooth, or dentures only worn for 1 to 2 hours daily, or no name on denture(s)	More than 1 broken area/tooth, denture missing or not worn due to poor fit, or worn only with denture adhesive		
7	ORAL CLEANLINESS	Clean and no food particles or tartar on teeth or dentures	Food particles/ tartar/ debris in 1 or 2 areas of the mouth or on small area of dentures; occasional bad breath	Food particles, tartar, debris in most areas of the mouth or on most areas of denture(s), or severe halitosis (bad breath)		
8	DENTAL PAIN	No behavioural, verbal or physical signs of pain	Verbal and/or behavioural signs of pain such as pulling of face, chewing lips, not eating, aggression	Physical signs such as swelling of cheek or gum, broken teeth, ulcers, 'gum boil', as well as verbal and or behavioural signs		

Interpretation of score :

0 - Normal (oral hygiene is good)

1-5 - Mild(oral hygiene is fair)

6-10 - Moderate(oral hygiene is poor)

11-16 - Severe(oral hygiene is very po

E. Informed consent

INFORMED CONSENT

Title of the study : "A STUDY TO ASSESS THE EFFECTIVENESS OF NEEM EXTRACT IN PROMOTING ORAL HYGIENE AMONG UNCONSCIOUS PATIENTS ADMITTED IN RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-3"

Investigator : Karthiga priyadharshini. A

Name of Participant :

Age/sex :

Date :

Name of the institution: Rajiv Gandhi Government General Hospital, Chennai-3

Documentation of the informed consent: (legal representative can sign if the participant is minor, unconscious or incompetent).

- I _____have read/it has been read for me, the information in this form. I was free to ask any questions and they have been answered. I am over 20 yrs of age and exercising my free power of choice, hereby give my consent to be included as a participant in the study.
- I have read and understood this consent form and the information provided to me.
- I have had the consent document explained in detail to me.
- I have been explained about the nature of my study.
- My rights and responsibilities have been explained to me by the investigator.
- I agree to cooperate with the investigator

- I have not participated in any research study at any time.
- I am aware of the fact that I can opt out of the study at any time without having to give any reason
- I hereby give permission to the investigators to release the information obtained from me as a result of participation in this study to the regulatory authorities, government agencies and Institutional ethics committee.
- I understand that they are publically presented; my identity will be kept confidential.
- I am aware that I have any question during this study; I should contact the concerned investigator.

Signature of Investigator

Date

Signature of attender

Date

ஆராய்ச்சி ஒப்புதல் படிவம்

ஆராய்ச்சி தலைப்பு : வேம்பு சாறு பயன்படுத்தி சுயநினைவற்ற நோயாளியின் வாய் பராமரிப்பை மதிப்பிடும் திறனாய்வு

பெயர் :

வயது :

தேதி :

உள் நோயாளி எண் :

பாலினம் :

ஆராய்ச்சி சேர்க்கை எண் :

இந்த ஆராய்ச்சியின் விவரங்களும் அதன் நோக்கங்களும் முழுமையாக எனக்கு தெளிவாக விளக்கப்பட்டது.

எனக்கு விளக்கப்பட்ட விஷயங்களை நான் புரிந்துக் கொண்டு நான் எனது சம்மதத்தை தெரிவிக்கிறேன்.

இந்த ஆராய்ச்சியில் பிறரின் நிர்பந்தனையின்றி சொந்த விருப்பத்தின்பேரில் தான் பங்கு பெறுகின்றேன் மற்றும் நான் இந்த ஆராய்ச்சியிலிருந்து எந்நேரமும் பின்வாங்கலாம் என்பதையும், அதனால் எந்தவித பாதிப்பும் ஏற்படாது என்பதையும் நான் புரிந்துக் கொண்டேன்.

இந்த ஆராய்ச்சியின் தகவல்களை வெளியிட சம்மதிக்கிறேன். அப்படி வெளியிடும்போது என் அடையாளம் வெளிவராது என்பதை அறிவேன்.

நான் என் சுயநினைவுடனும் மற்றும் முழு சுதந்திரத்திடனும் இந்த ஆய்வில் பங்குபெற சம்மதிக்கிறேன்.

நான் இந்த ஆராய்ச்சிக்கு என்னுடைய முழு ஒப்புதலை அளிக்கிறேன்.

எனக்கு இந்த ஒப்புதல் கடிதத்தின் நகல் கொடுக்கப்பட்டது.

ஆராய்ச்சியாளர் கையொப்பம்

தேதி:

உறவினர்/பாதுகாப்பாளர் கையொப்பம்

தேதி:

ஆராய்ச்சி தகவல் தாள்

ஆராய்ச்சி தலைப்பு : வேம்பு சாறு பயன்படுத்தி சுயநினைவற்ற நோயாளியின் வாய் பராமரிப்பை மதிப்பிடும் திறனாய்வு

ஆய்வாளர் பெயர் : கார்த்திகா பிரியதர்சினி. அ

பங்கேற்பாளர் பெயர் :

தேதி :

வயது :

பாலினம் :

ஆராய்ச்சி சேர்க்கை எண் :

நான் இராஜீவ் காந்தி அரசு பொது மருத்துவ மனையில் திவிர சிகிச்சை பிரிவில் உள்ள நோயாளிகளிடையே திறனாய்வு மேற்கொள்ளப்போகிறேன்.

சுயநினைவற்ற நோயாளிகளுக்கு வேம்பு சாற்றால் வாய் பராமரிப்பு அளிக்க போகிறேன்.

இந்த செயல்முறையின் மூலம் சுயநினைவற்ற நோயாளிகளின் வாய் சீராகவும் நோய்தொற்று உண்டாகாமலும் பாதுகாக்கலாம்.

நோயாளியின் பராமரிப்பாளரின்/உறவினரின் சொந்த விருப்பத்தின்பேரில் ஆராய்ச்சியில் இணைக்கப்படுவர். விருப்பமில்லையென்றால் எந்நேரமும் விலகிக் கொள்ளலாம். இதனால் ஆராய்ச்சிக்கு எந்தவித பாதிப்பும் ஏற்படாது.

முடிவுகளை அல்லது கருத்துகளை வெளியிடும்போது வெளியிடும்போது தங்களின் பெயரையோ அல்லது அடையாளங்களையோ வெளியிடமாட்டோம் என்பதை தெரிவித்துக் கொள்கிறோம்.

ஆராய்ச்சியாளர் கையொப்பம்
தேதி:

உறவினர்/பாதுகாப்பாளர் கையொப்பம்
தேதி:

F. DATA CODING SHEET

G. Certificate of English editing

CERTIFICATE OF ENGLISH EDITING

To whom so ever it may concern. This is to certify that the dissertation work, "A study to assess the effectiveness of neem extract in promoting oral hygiene among unconscious patients admitted in Rajiv Gandhi Government General Hospital,Chennai-03", done by Ms.Karthiga Priyadharshini.A, II year M.Sc (N) student, College of Nursing, Madras Medical College, Chennai-03 is edited for English language appropriateness.

Signature N. Vidhyavathi.

Designation P.G. Assistant

Seal

N. VIDHYAVATHI M A., M.Ed.,
P G Assistant in English
HINDU HIGHER SECONDARY SCHOOL
AMBUR - 635 802.

H. Study procedure

Procedure of oral care with neem extract

Introduction

Oral hygiene means brushing the client's teeth or cleaning the dentures according to the client's usual routine. Oral hygiene is provided to maintain the integrity of the client's teeth, gums, mucus membrane and lips.

Articles

- Small bowl
- Face towel
- Gloves
- Gauze pieces
- Artery forceps
- Dissecting forceps
- Neem extract mouth wash solution
- Kidney tray

Preparation of neem extract mouth wash solution

1. Boil 250 ml of water for 10 minutes.
2. Add 10 fresh neem leaves in the boiling water and allow to boil it for two minutes (Adding the neem leaves at the end will minimize the bitter taste of the neem, So that it can be used for oral care).
3. Stain the neem extract.
4. 10 ml of neem extract is diluted with 10 ml of sterile water and can be used for oral care.

Steps of the procedure

- Wash hands.
- Prepare the solution for the mouth wash.
- Place the kidney tray close to the cheek.
- Take a gauze piece, wrap it around the forceps, covering the lips completely.

- Moisten the gauze piece and dip it in the neem extract solution, swab each teeth gently but firmly, taking to clean all sides of teeth.
- Clean the inner and chewing surfaces of the teeth.
- With the tongue depressor clean the tongue, using the gauze covered artery forceps.
- Thorough cleaning of the teeth and tongue is ensured by repeating each stroke and on each area.
- When the teeth and tongue are cleaned well, stop the procedure, wipe the lips and face with the towel.

After care

- Remove the kidney tray and towel.
- Make the client comfortable.
- Tidy up the unit
- Replace the articles
- Wash the hands
- Records if any abnormality observed.