



بسم الله الرحمن الرحيم

كلية نبتة
NAPATA COLLEGE

**Assessment of Nurses' Knowledge, Attitude and Practice of Oral
Hygiene for Intensive Care Unit Patients in Khartoum State at
Governmental Hospital, 2020_2021**

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*This dissertation is being submitted in partial fulfillment of the
requirements for the degree of*

BDS

2021

Dedication

To our dear parents for love, care and support

*To our dear brothers and sisters, who stood beside us in all our life
events*

To my friends and colleagues for their support and encouragement

Acknowledgement

First and foremost we would like to thank our almighty Allah for given us the power to complete this work.

We deeply indebted to our supervisor Dr. Amar Nooreldeen, for his kind supervision, encouragement , inspirational instruction and guidance.

We are thankful to the participant nurses who agreed to participate in the study and dedicated their time to collect this data, finally our thanks to our colleagues at NAPATA COLLEGES batch one.

Abstract

Oral care is a vital procedure for critically ill patients in the intensive care unit (ICU). Oral care may affect the clinical result as well as the wellness of intensive care patients. Adequate knowledge about oral nursing care guideline is important for nurses to deliver appropriate oral care.

A descriptive cross sectional hospital based study was conducted aimed to assess knowledge, attitude and practice of intensive care nurses regarding oral care in critically ill patients in seven governmental Hospitals, Khartoum State, Sudan,(2020-2021). The sample size consisted of 95 nurses in ICUs. Data were collected using interview questionnaire; data was analyzed using Statistical Package for Social Sciences (SPSS). The results revealed that (65.3%) of nurses with 1-3 years of experience. (63.2%) of participants responded with correct answers regarding definition of dental plaque, only 4.2% knew that gingivitis is a gum disease. 24.2% said gingivitis is due to plaque. (64.2%) of participants knew that periodontitis is an Inflammation of tooth supporting structure, 24.2% said plaque is the cause of periodontitis. (57.9%) of participants practice mouth care twice per a day .,

The study concluded that nurses' knowledge regarding oral care for critically ill patients in intensive care unit was inadequate , while their practice and attitude is fair.

ملخص الدراسة

تعتبر العناية بالفم إجراءً حيويًا للمرضى ذوي الحالات الحرجة في وحدة العناية المركزة (ICU). قد تؤثر العناية بالفم على النتيجة السريرية وكذلك على صحة مرضى العناية المركزة. المعرفة الكافية حول إرشادات رعاية تريض الفم مهمة للممرضات لتقديم العناية المناسبة بالفم. أجريت هذه الدراسة الوصفية بهدف تقييم معرفة وممارسة منسوبي التمريض في العناية المكثفة فيما يتعلق بالعناية بالفم للمرضى ذوي الحالات الحرجة في سبعة مستشفيات حكومية ، ولاية الخرطوم-السودان (2021-2020). حجم العينة يتكون من (95) من منسوبي التمريض في قسم العناية المكثفة. وقد أظهرت نتائج الدراسة أن ظهرت النتائج أن (65.3%) من الممرضين لديهم خبرة 1-3 سنوات. (63.2%) من المشاركين أجابوا بإجابات صحيحة فيما يتعلق بتعريف الترسبات السننية ، فقط 4.2% عرفوا أن التهاب اللثة هو أحد أمراض اللثة. (24.2%) قالوا أن التهاب اللثة ناتج عن البلاك. (64.2%) من المشاركين يعرفون أن التهاب دواعم السن هو التهاب في البنية الداعمة للأسنان ، بينما قال (24.2%) إن البلاك هو سبب التهاب دواعم السن. (57.9%) من المشاركين يمارسون العناية بالفم مرتين في اليوم. خلصت الدراسة إلى أن معرفة منسوبي التمريض فيما يتعلق بالعناية بالفم للمرضى ذوي الحالات الحرجة في وحدة العناية المركزة لم تكن كافية ، في حين أن ممارساتهم وسلوكهم كانت متوسطة.

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Abbreviations

Abbreviation	Full word
CCU	Coronary Care Unit
CDC	Centers for Disease Control and Prevention
DBP	Diastolic Blood Pressure
HAP	Hospital-Acquired Pneumonia
ICU	Intensive Care Unit
MAP	Mean Arterial Pressure
SBP	Systolic Blood Pressure
SPSS	Statistical Package for Social Sciences
VAP	ventilator-Associated Pneumonia
WHO	World Health Organization

Chapter One

1.1 Background

Quality of life and personal dignity have been reported to be affected by oral health. This impact appears to be more severe in medically compromised or hospitalized patients (1&2) . Poor oral health or dysfunctions have a negative effect on nutritional status (3&4) and profound negative effects on general health.

“Patients in the Intensive Care Units (ICU) have very specific care needs, demanding the highest standard of professional care” (5) .

“Optimally, total health care requires the combined efforts of the medical and dental professions” (6) .

Oral hygiene, although a technical challenge to perform for intubated patients, is critical to perform for the overall health, safety, and comfort of the patient.

To render good oral care, the nurse must incorporate knowledge of the patient’s clinical condition, oral health status, threats and barriers to oral health, and provide comprehensive oral care aimed at minimizing oral health problems that impact the patient’s well-being Within the ICU setting, multiple factors demand the staff’s attention. Technical requirements related to equipment, invasive lines and procedures, medication administration and titrations all require the vigilance and proficiency of the bedside nurse . “Common aspects of bedside care, such as oral hygiene, may be performed with ineffective products, a perceived lack of time, or a general reluctance on part of the staff” (7& 8) .

Many barriers to providing effective oral health in ICU patients have been reported including low priority of oral care, fear of causing pain or

injury to the patients, the perception that oral care does not provide significant health benefits, patients' resistive behaviors, inadequate nurse staffing, fear dislodging or displacing the tube, inducing bacteremia and lack of oral health related supplies (9) .

1-2 Justification

“When oral cleansing and care are insufficient, progressive accumulation of dental plaque and resultant formation of biofilms can lead to degradation in overall gingival tissue health and the development of periodontal disease” (10& 11).

“Patient they may be intubated, have nasogastric tube in place, be heavily sedated, or febrile, all of which may lead to dehydration and breathing through the mouth”(12).

“These, in turn, cause a change in oral flora and bacterial overgrowth, with the consequent loss of salivary effectiveness.

Growth of potentially pathogenic bacteria in dental plaque provides a nidus of infection for microorganisms that can cause ventilator associated pneumonia (VAP)” (13).

“Poor oral health among intensive care unit (ICU) patients has been identified as a source of increasing bacterial virulence of oropharyngeal secretions and subsequent development of nosocomial pneumonias” (14&11) .

1-3 Objectives

1-3-1 General objective

To assess the nursing knowledge, attitude and practice about oral disease in the ICU patients.

1-3-2 Specific objectives

To determination the instruments and materials used to perform oral hygiene to patient in the ICU.

To determination the frequency of mouth care per day

Chapter Two

Literature Review

2.1 Introduction

Oral health is essential to good health and quality of life, and is defined by the World Health Organization (2018) as “a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual’s capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing”.

Maintaining patients’ oral hygiene is an essential nursing duty and is considered a fundamental aspect of care (Department of Health, 2010)(15). Evidence suggests that oral health deteriorates while people are in hospital (Terezakis et al, 2011) (16), and it is generally acknowledged that mouth care in hospitals and care homes needs to be improved (Binks et al, 2017) (17). Barriers to providing effective oral care include:

- Lack of staff training;
- Lack of mouth care assessment tools, policies and equipment.

In response to concerns, in 2015 Health Education England launched Mouth Care Matters to improve oral care for adults in care homes and hospitals

2.2 Mouth Care Matters

The Mouth Care Matters initiative states that staff need to have:

- Knowledge of good mouth care and how oral health is linked to general health and wellbeing

- Skills on how to assess and carry out mouth care
- Tools, such as toothbrushes and denture pots, to carry out mouth care effectively
- Support from doctors and dental practitioners where necessary (Ibrahim et al, 2015) (18)

2.3 Reasons for poor oral hygiene

There are many reasons people may have poor oral hygiene, including:

- Inability to carry out oral care, for example due to stroke, arthritis, arm injury, head injury, surgery.
- Lack of knowledge or motivation.
- Lack of access to dental services.
- Lack of money to afford oral care equipment.
- Medicines, such as anti-cholinergic drugs and oxygen therapy, that cause a dry mouth or an unpleasant taste.
- Poor diet or reduced fluid intake.
- Nil by mouth due to surgery or dysphagia.
- Xerostomia – sensation of a dry mouth – which frequently affects older people.
- Surgery, radiotherapy and/or trauma to the head and neck.

2.4 Benefits of mouth care to patients can:

- Promote self-esteem and comfort (Wilson, 2011) (19).

- Improve appetite and enjoyment of food and drink – poor nutrition associated with oral problems can slow recovery and increase length of hospital stay
- Prevent halitosis.
- Reduce the risk of hospital-acquired pneumonia.

2.5 General Guidelines

Oral hygiene should be performed before breakfast, after each meal, and at bedtime.

Oral hygiene is especially important for patients receiving oxygen therapy, patients who have nasogastric tubes, and patients who are NPO. Their oral mucosa dries out much faster than normal due to their mouth-breathing.

You should provide for patient privacy during the procedure, as this is an extremely personal procedure for most patients.

Oral care for the unconscious patient should be performed at least every four hours. Lipstick, chap stick, or vaseline may be applied to the lips to keep them from drying out.

2.6 Nursing Records

Nursing observations for the patient's mouth should be recorded in the clinical record, noting such factors as:

- Bleeding.
- Swelling of gums.
- Unusual mouth odor.
- Effect of brushing the teeth. Note if there is bleeding when you brush the patient's gums and teeth.

2.7 Conscious Patients with Dentures

General considerations.

Many patients are sensitive or embarrassed about wearing dentures, therefore, the patient's privacy should be respected when the dentures are cleaned.

Dentures must be handled carefully, they are fragile and expensive, and the patient is handicapped without them.

If the dentures are left out of the mouth for any period of time, place them in a covered opaque container with the patient's name on the container.

Dentures must be kept in water to preserve their fit and general quality, the color may change if they become dry.

You may avoid breaking the dentures while cleaning them by holding them over a basin of water with a washcloth folded in the bottom.

Dentures are brushed in the same way as natural teeth; be sure to rinse them well.

The denture cup should be labeled with the patient's name and room number.

Never use hot water to rinse the dentures as it could warp them; use cool or lukewarm water.

The patient's gums and soft tissues should be cared for at least twice per day while the dentures are out of the mouth; a soft-bristled toothbrush, swab, or gauze-covered tongue blade dipped in mouthwash should be used to cleanse the gums, tongue, and soft tissues.

2.8 Patients With Mouth Complications

The following problems are common in patients receiving chemotherapy and radiation therapy:

- Bleeding.

- Observe the patient's mouth frequently for the amount of bleeding present and the specific areas.
- Do not floss the patient's teeth; use a Water-pik.

Brush the teeth and clean the mouth using one of the following methods:

1 Brush the teeth carefully with a very soft toothbrush.

2 Wrap a tongue blade with a gauze sponge saturated with a prescribed solution, carefully swab the teeth and mouth. Do not use lemon/glycerine swabs or commercial mouthwash because they contain alcohol, which causes burning.

2.8.1 Infection

Observe the patient's mouth for appearance, integrity, and general condition.

Wear clean gloves during the procedure.

Obtain a culture, if ordered.

Do not floss the teeth if the mouth is irritated or painful.

Assist the patient with brushing the teeth and cleaning the mouth, using a soft toothbrush or a gauze-padded tongue blade.

Rinse the mouth with water and the prescribed solution, if ordered.

Ulcerations, to include stomatitis.

- Basic procedure for the patient with an infection should be followed.
- If the patient's mouth is extremely painful, rinsing the mouth with a local anesthetic, as prescribed by a physician, may be necessary.
- Mouthwash and other solutions which contain alcohol should not be used for the patient with ulcerations as they are frequently very painful

2.8.2 Unconscious Patients.

Oral care should be performed at least every four hours.

Oral suctioning may be required for the unconscious patient to prevent aspiration.

A soft toothbrush or gauze-padded tongue blade may be used to clean the teeth and mouth.

The patient should be positioned in the lateral position with the head turned toward the side to provide for drainage and to prevent aspiration.

2.9 How often should oral care be carried out?

Teeth should be brushed at least twice a day with a fluoride toothpaste (Public Health England, 2017 (20), National Institute for Health and Care Excellence, 2016) (21). They should always be brushed last thing at night.

In hospital and care homes frequency can be determined using an oral assessment tool and depends on individual need. Patients receiving oxygen therapy, nil by mouth or those who are vomiting will require frequent mouth care. Nurses should prompt and support patients to carry out oral care and undertake oral care for those who cannot maintain a clean mouth for themselves .

2.10 Oral assessment

A pen torch and tongue depressor can make it easier to see inside the oral cavity. The assessment will:

- Provide baseline information about the condition of the patient's oral cavity.
- Help monitor progress of oral care/treatments.

- Identify whether the patient has a denture or appliance to prevent it being lost while in hospital.

Oral assessment will help to identify issues such as:

- Dry mouth and lips
- Coated tongue
- Broken teeth/stumps
- Thick tenacious secretions
- Dry, sore lips
- Ulcers
- Plaque and dental caries
- Candidiasis (oral thrush)

The patient should be referred to a dental professional if there are concerns about excessive plaque, ill-fitting dentures or multiple/long-standing ulcers.

2.11 The procedure for oral hygiene

2.11.1 Equipment

- Pen torch
- Receiver
- Tissues
- Tongue depressor
- Non-sterile disposable gloves and plastic apron

- Toothbrush – this is the most effective means of removing plaque and debris. A pediatric soft toothbrush can be used for patients who have a sore mouth
- Toothpaste
- Assessment and recording tools.

In 2012 the Medicines and Health care products Regulatory Agency issued an alert advising that foam swabs *should not* be used with patients as the foam heads can become detached (22). Many organizations have subsequently banned them on patient safety grounds. They are not as effective as a toothbrush at removing dental plaque and should not be used as a replacement for toothbrushes.

2.11.2 Procedure

1. Explain the procedure to the patient and gain their consent to carry it out.
2. Screen the patient to ensure privacy during the procedure. Oral hygiene should take place in the bathroom, where possible.
3. Wash and dry your hands.
4. Assemble equipment.
5. Ask the patient to sit in an upright position or help them to do this. If the patient is unable to sit up, the procedure should be undertaken with the patient's head turned to the side to prevent choking and suction equipment should be available.
6. Wash and dry hands again, and put on non-sterile gloves and a plastic apron.

7. Select an appropriate toothbrush and wet the head. Apply a pea-sized amount of toothpaste to a gloved finger and rub it into the toothbrush – this will prevent a large amount of toothpaste from dropping into the patient’s mouth. Non-foaming toothpaste should be used for patients with dysphagia (swallowing problems).
8. Use a gentle, rotating movement to clean the inner, outer and biting surfaces of the teeth . You can also gently brush the surface of the tongue and the gums. Brushing should take approximately two minutes, or 30 seconds per quarter of the mouth.
9. Allow the patient to spit out excess toothpaste. They should not rinse their mouth with water as this dilutes the fluoride in the toothpaste, which protects teeth from decay.
10. Offer the patient tissues to wipe their mouth.
11. Apply moisturizer to the patient’s lips if required. Dry-mouth gel can be used to alleviate oral dryness.
12. Check the patient is comfortable.
13. Clean the toothbrush and allow it to air dry.
14. Remove gloves and apron, and dispose of equipment according to local policy.
15. Wash and dry your hands.
16. Document care given and any observations of the patient’s mouth.

2.12 Procedure for denture care

Good denture hygiene is essential as food and debris can collect under dentures. Denture care reduces the risk of developing problems such as oral thrush.

Loss of dentures is a major problem in hospital and affects patients' ability to eat and communicate, and may also affect their psychological well being (Binks et al, 2017) (17). Obtaining new dentures is expensive and inconvenient for patients.

Mouth Care Matters identifies three key principles for denture care:

- Dentures should be cleaned at least once daily and, ideally, after meals with a denture brush or toothbrush and soap over a bowl filled with water.
- They should be removed at night and stored in water, in a labelled denture pot.
- An incident report form must be completed by wards for every denture that is lost.

2.12.1 Equipment

- Small torch.
- Plastic cup.
- Mouthwash.
- Denture cleaner.
- Denture brush.
- Non-sterile disposable gloves and apron.
- Denture pot.
- Tissues.

2.12.2 Procedure

1. Explain the procedure to the patient and gain their consent to carry it out.
2. Wash and dry your hands.
3. Assemble equipment.
4. Fill a disposable bowl with water.
5. Wash and dry your hands again, and put on the non-sterile gloves and apron.
6. Ask the patient to remove the denture from their oral cavity and place it in the bowl of water.
7. Allow the patient to rinse their mouth with water. A soft toothbrush may also be used to gently brush the gums.
8. If the patient needs help to remove the denture, slide a gloved finger by the side of it to help break the seal between the mouth and the denture.
9. Carry out an oral assessment using a pen torch if required.
10. Clean the denture using a denture brush or soft toothbrush and denture cleaner. Toothpaste should not be used as this can be abrasive.
11. Check the denture for damage, such as cracks or sharp edges.
12. Rinse the denture with cold water before repositioning it in patient's mouth or storing it in water in a denture pot. Advise the patient to leave the denture out at night to allow the oral tissue to recover.
13. Always use a dedicated denture container, carefully labeled with the patient's details according to local policy.

14. Check the patient is comfortable.
15. Clean the denture brush and allow it to air dry.
16. Remove your gloves and apron, and dispose of the equipment according to local policy.
17. Wash and dry your hands.
18. Document the care and any observations of the oral cavity.
19. If the patient has a partial denture it is important that they also clean their remaining teeth. Separate tooth brushes should be used for dentures and teeth.

2.13 Basic Principles of Mouth Care

2.13.1 Purposes

- Provide oral care of the teeth, gums, and mouth.
- Remove offensive odors and food debris.
- Promote patient comfort and a feeling of well-being.
- Preserve the integrity and hydration of the oral mucosa and lips.
- Alleviate pain and discomfort, thereby enhancing oral intake.

2.13.2 General Guidelines

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The patient should be positioned in the lateral position with the head turned toward the side to provide for drainage and to prevent aspiration.

Chapter three

Methodology

3.1 Study design

Descriptive cross- sectional hospital based study.

3.2 Study Area

Khartoum state at seven governmental hospitals

3.3 Study setting

The study was conducted in ICUs in seven governmental hospitals in Khartoum state

3.4 Study population

Nurses who work in intensive care units

3.4.1 Inclusion Criteria

- Nurses who work in intensive care units in governmental hospitals in Khartoum state.
- Nurses agree to participate in the study in governmental hospitals in Khartoum state.
- Nurses available during study period in governmental hospitals in Khartoum state.

3.4.2 Exclusion Criteria

- Nurses did not who work in intensive care units in governmental hospitals in Khartoum state.
- Nurses refused to participate in the study in governmental hospitals in Khartoum state.

-Nurses not available during the study in governmental hospitals in Khartoum state.

3.5 Sample Size and sampling technique

95 nurse (convenience)

3.6. Tool of data collection

Data was collected using structure self- administered questionnaire modified by the researcher based on literature review consist of 26 Questions. It divided in three section:

Section1: includes demographic data (e g.Sex, Shift pattern and Experience per years)

Section 2: includes questions related to study nurses knowledge about oral care

Section 3: : includes questions related to nurses Attitude & Practice

3.7. Data analysis

Data was analyze using Statistic Package for Social Sciences SPSS version 21.

3.8 Ethical Consideration

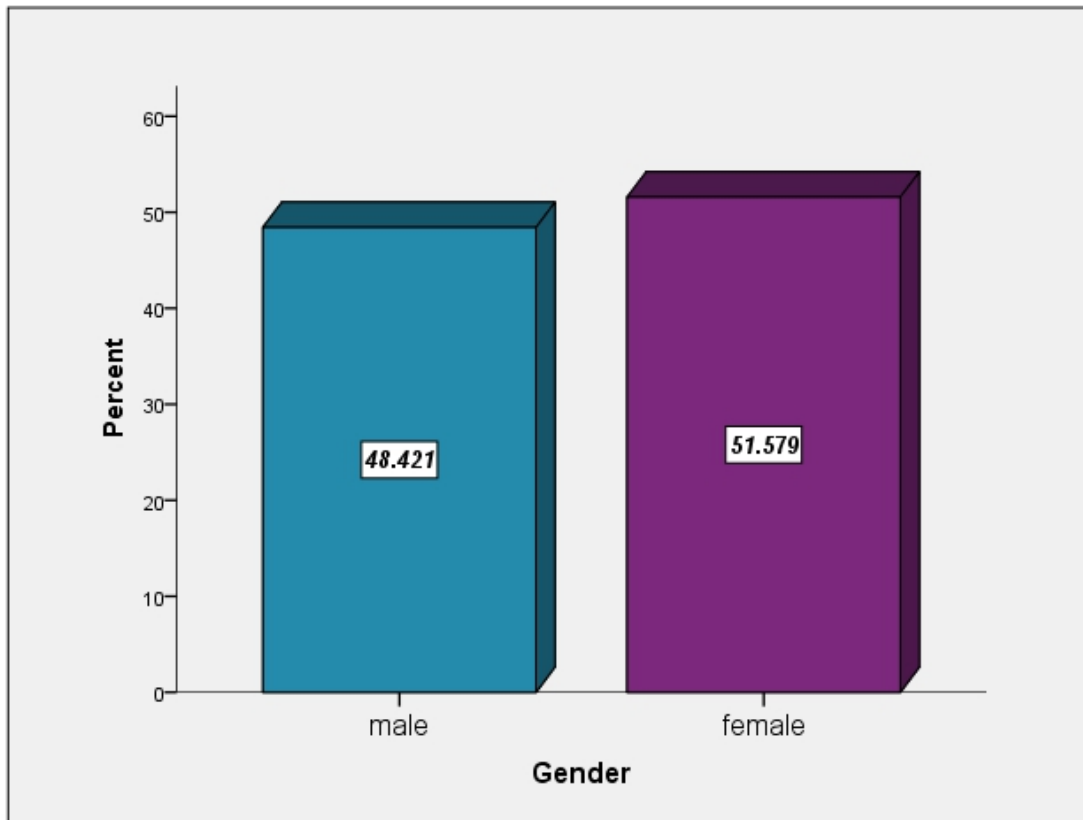
- Ethical clearance was obtained from Scientific Research Committee of Napata College of Dentistry.
- Permission was obtained from targeted Hospitals.
- Verbal consent obtained from all participants after explaining the purpose of this study to them, they have right to withdraw at any time without any deprivation.

- Participant has right to benefit from the researcher knowledge and skills.

Chapter four

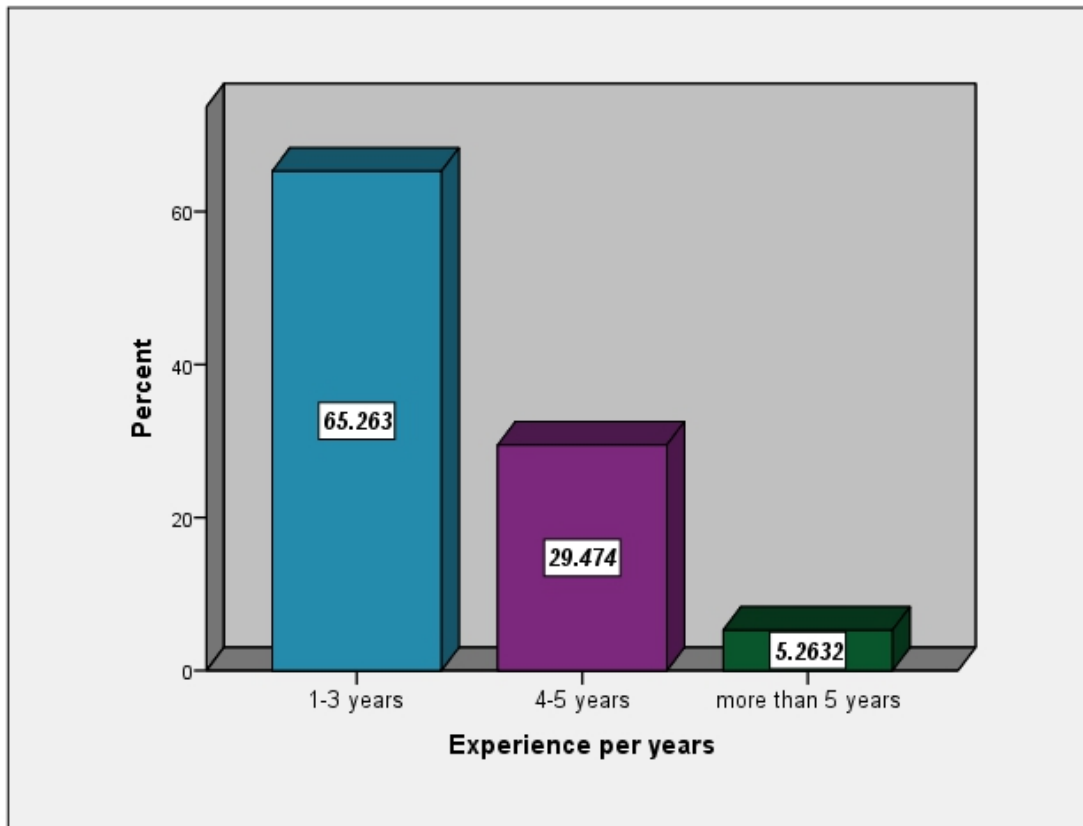
Results

Figure (4-1) Distribution of nurses by gender



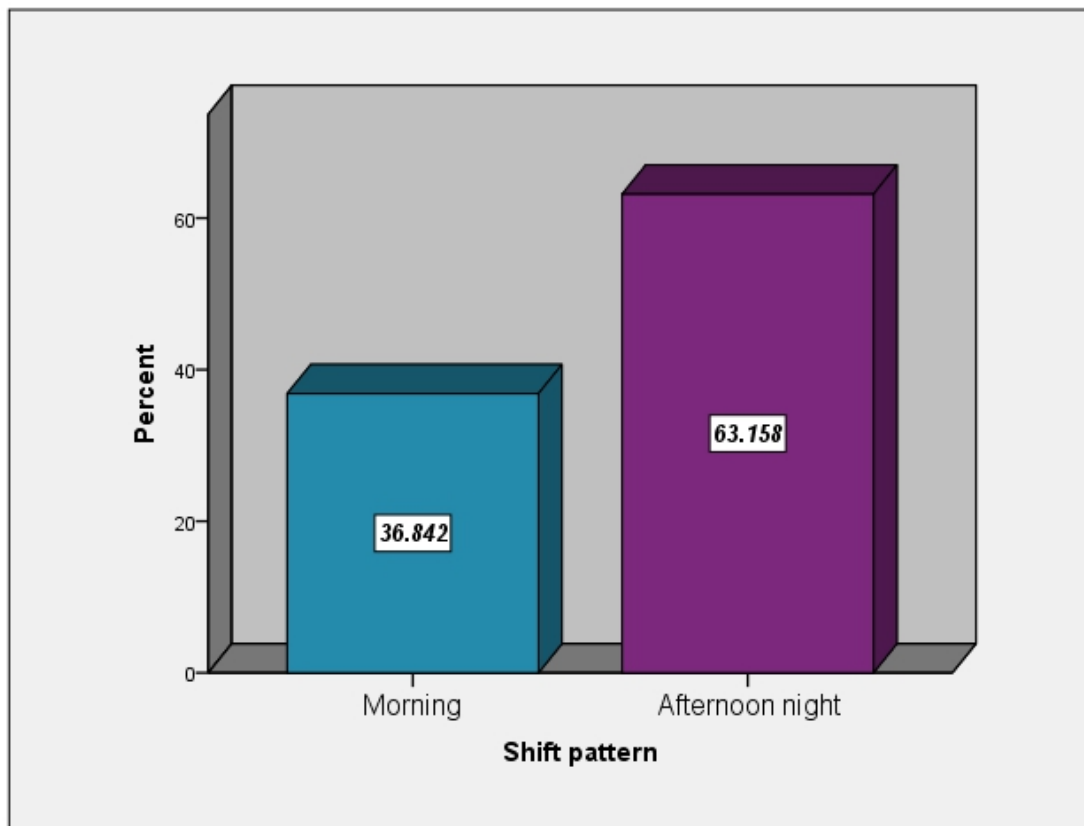
More than half (51.6%) of nurses were females, 48.4% were males.

Figure (4-2) Distribution of nurses by experience years



Near two third (65.3%) of nurses with 1-3 years of experience, 29.4% with 4-5 years of experience and only 5.3% with more than 5 years of experience.

Figure (4-3) Distribution of nurses by shift pattern



Less than two third (63.2%) of nurses from afternoon and night shifts, (36.8%) from morning shift.

Table (4-1) Nurses knowledge regarding dental plaque

	Frequency	Percent
Bacteria adhere to oral tissues	60	63.2
calculus	18	18.9
stains	12	12.6
I don't know	5	5.3
Total	95	100.0

Majority (63.2%) of participants responded with correct answers regarding definition of dental plaque (bacteria adhere to oral tissues), (18.9%) mentioned calculus, (12.6%) mentioned stains, and (5.3%) mentioned don't know.

Table (4-2) Nurses knowledge about gingivitis

	Frequency	Percent
Gum disease	4	4.2
Burning sensation	50	52.6
Gum inflammation	34	35.8
I don't know	7	7.4
Total	95	100.0

More than half (52.6%) of participants said that gingivitis is burning sensation, (35.5%) mentioned that it is gum inflammation, (7.4%) mentioned don't know, and only (4.2%) knew that it is a gum disease.

Table (4-3) Nurses knowledge about cause of gingivitis

	Frequency	Percent
Plaque	23	24.2
Smoking	37	38.9
Teeth grinding	29	30.5
I don't know	6	6.3
Total	95	100.0

More than one third (38.9%) of participants mentioned that gingivitis is caused by smoking, (30.5%) mentioned it is due to teeth grinding, (24.2%) mentioned it is due to plaque and (6.3%) mentioned don't know.

Table (4-4) Nurses knowledge about Periodontitis

	Frequency	Percent
Pain in the gum	9	9.5
Stains	23	24.2
Inflammation of tooth supporting structure	61	64.2
I don't know	2	2.1
Total	95	100.0

majority (64.2%) of participants knew that periodontitis is an Inflammation of tooth supporting structure, (24.2%) mentioned it is stains, (9.5%) mentioned it is pain of the gum and (2.1%) mentioned don't know.

Table (4-5) Nurses knowledge about cause of Periodontitis

	Frequency	Percent
Plaque	23	24.2
Dental caries	36	37.9
Fluorosis	27	28.4
I don't know	9	9.5
Total	95	100.0

More than one third (37.9%) of participants mentioned that dental caries is the cause of periodontitis, (28.4%) mentioned it is fluorosis, (24.2%) mentioned it is plaque, and (9.5%) mentioned don't know.

Table (4-6) Nurses knowledge about dental caries

	Frequency	Percent
Stains	5	5.3
Pain of the tooth	42	44.2
Tooth destruction due to bacteria	40	42.1
I don't know	8	8.4
Total	95	100.0

Less than half (44.2%) of participants mentioned that it is pain of tooth, (42.1%) mentioned it is tooth destruction due to bacteria, (5.3%) mentioned it is stains, and (8.4%) mentioned don't know.

Table (4-7) Nurses practice about frequency of mouth care

	Frequency	Percent
Not at all	5	5.3
Once per day	27	28.4
Twice	55	57.9
Three times and more	8	8.4
Total	95	100.0

Majority (57.9%) of participants responded with correct answers regarding frequencies of mouth care per a day (twice), (28.4%) mentioned once per day, (8.4%) mentioned it is three times per a day, and (5.3%) mentioned not at all.

Table (4-8) Nurses practice about time of mouth care (n=90)

	Frequency	Percent
Less than 1 min	15	16.7
Between 1 - 5 min	50	55.6
Between 5 - 10 min	25	27.8
Total	90	100.0

Majority (55.6%) of participants mentioned that it takes 1-5 minutes for cleaning mouth, (27.8%) mentioned it is 5-10 minutes, and (16.7%) mentioned it is less than one minute.

Table (4-9) Nurses practice regarding the tools that are used for mouth care (n=90)

	Frequency	Percent
Tooth brush	12	13.3
Electric tooth brush	19	21.1
Foam swab	20	22.2
Gauze + tongue depressor	39	43.3
Total	90	100.0

most (43.3%) of participants mentioned uses gauze + tongue depressor, (22.2%) mentioned used foam swab, (21.1%) mentioned used electric tooth brush, and (13.3%) uses tooth brush.

Table (4-10) Nurses practice regarding part of mouth for care (n=90)

	Frequency	Percent
Brushing of teeth	14	15.6
Brushing of gum	23	25.6
Brushing of tongue	13	14.4
ALL	40	44.4
Total	90	100.0

Most (44.4%) of participants practice brushing for all parts of mouth, (25.6%) brushing the gum, (15.6%) brushing the teeth, and (14.4%) brushing the tongue.

Table (4-11) Participants attitude towards oral care (n=90)

Items	Always	Sometimes	Never
Wash hand	55 (61.1%)	29 (32.2)	6 (6.7%)
Raise bed to it is highest horizontal level lower side rail.	59 (65.6)	29 (32.2)	2 (2.2%)
Remove dentures or partial plates if present.	54 (60%)	34 (37.8%)	2 (2.2%)
Place towel under patients head and emesis basin under chin.	47 (52.2%)	35 (38.9%)	8 (8.9%)
If patients is uncooperative or having difficulty keeping mouth open, insert an oral air way.	42 (46.7%)	46 (51.1%)	2 (2.2%)
For patients without teeth, use a gauze moistened in water or normal saline to clean oral cavity	44 (48.9%)	37 (41.1%)	9 (10%)
Suctioning secretions as they accumulate .If necessary.	37 (41.1%)	39 (43.3%)	14 (15.6%)
Apply thin layer of water-soluble gelly to lips.	43 (47.8%)	37 (41.1%)	10 (11.1%)
Clean equipment and return to it is proper place.	38 (42.2%)	47 (52.2%)	5 (5.6%)

Chapter five

Discussion

5.1 Discussion

Oral care forms an important part of the patient care in a hospital set up. This specially holds true in critical care units (CCU), where patients are unable to self-provide oral care and hence, depend on care givers to anticipate needs and are at greater risk for worsening oral health if staff performs inadequate oral care. The condition of mouth is one of the best indices of quality of nursing care. The poor oral health among intensive care unit (ICU) patients acts as a source of increasing bacterial virulence of oro-pharyngeal secretions and subsequent development of nosocomial pneumonias.

The ongoing study revealed that more than half of nurses were females and majority of them (65.3%) with few years of experience (1-3) This indicated that most of nurses with long and good experience migrated to different Arabic countries searching for better incomes.

Regarding nurses knowledge, Majority (63.2%) of participants responded with correct answers regarding definition of dental plaque (bacteria adhere to oral tissues), only 4.2% knew that gingivitis is a gum disease, only 24.2% knew that plaque is the cause of gingivitis.

More than one third (37.9%) of participants said that dental caries is the cause of periodontitis, 28.4% said it is fluorosis, 24.2% said plaque.

Less than half (44.2%) of participants said that it is pain of tooth, 42.1% tooth destruction due to bacteria, 5.3% stains.

Participant nurses showed a good practice regarding oral care were Majority (57.9%) of them practice mouth care per a day (twice), In hospital frequency can be determined using an oral assessment tool and depends on individual need. Patients receiving oxygen therapy, or those who are vomiting will require frequent mouth care. Nurses should prompt and support patients to carry out oral care and undertake oral care for those who cannot maintain a clean mouth for themselves (21).

(55.6%) of participants said that it takes 1-5 minutes for cleaning mouth, most (43.3%) of participants mentioned that they use gauze + tongue depressor for cleaning, and (44.4%) of participants practice brushing for all parts of mouth.

Participant nurses showed a positive attitude towards oral care of patients in ICU especially for hand washing (61.1%), and Raise bed to it is highest horizontal level lower side rail (65.6%).

5.2 Conclusion

Based on results the study concluded that nurses knowledge regarding oral care for critically ill patients in intensive care unit was inadequate, while their practice and attitude was fair

5.3 Recommendations

Based on conclusion the study recommended the following:

- Providing evidence-based education on the oral care skills for improving patient outcomes.
- Development of standardized oral assessment technique and tools for nurses to improve quality of care.
- Assessment of nurses' attitudes and beliefs about the importance and benefits of oral hygiene in the ICU.
- Establishing of evidence based project to develop oral care protocol.
- Conducting of further studies about importance of oral care for critically ill patients.

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Assessment of Nurses' Knowledge, Attitude and Practice of Oral hygiene for Intensive Care Unit Patients

Gender

Male	
Female	

Shift pattern

Morning	
Afternoon night	

Experience per years

1-3	
4-5	
More than 5	

Knowledge

What is dental plaque (غشاء بكتيري حول الاسنان)	Bacteria adhere to oral tissues	
	Calculus stains	
	I don't know	

What is gingivitis (التهاب اللثة)	Gum disease	
	Burning sensation	
	Gum inflammation	
	I don't know	
What causes gingivitis	plaque	
	Smoking	
	Teeth grinding	
	I don't know	
What is periodontitis (التهاب الأنسجة المحيطة بالسن)	Pain in the gum	
	Stains	
	Inflammation of tooth supporting structure	
	I don't know	
What causes periodontitis	Plaque	
	Dental caries	
	Fluorosis	
	I don't know	
What is dental caries	Stains	
	Pain of the tooth	
	Tooth destruction due to bacteria	
	I don't know	

Attitude & Practice

1. Frequency of MOUTH CARE per day	<table border="1"> <tbody> <tr> <td data-bbox="842 264 1098 309">Not at all</td> <td data-bbox="1098 264 1359 309"></td> </tr> <tr> <td data-bbox="842 309 1098 353">Once per day</td> <td data-bbox="1098 309 1359 353"></td> </tr> <tr> <td data-bbox="842 353 1098 398">Twice</td> <td data-bbox="1098 353 1359 398"></td> </tr> <tr> <td data-bbox="842 398 1098 488">three times and more</td> <td data-bbox="1098 398 1359 488"></td> </tr> </tbody> </table>	Not at all		Once per day		Twice		three times and more	
Not at all									
Once per day									
Twice									
three times and more									
2) How long it last	<table border="1"> <tbody> <tr> <td data-bbox="842 515 1098 560">Less than 1 min</td> <td data-bbox="1098 515 1359 560"></td> </tr> <tr> <td data-bbox="842 560 1098 649">Between 1 - 5 min</td> <td data-bbox="1098 560 1359 649"></td> </tr> <tr> <td data-bbox="842 649 1098 734">Between 5 - 10 min</td> <td data-bbox="1098 649 1359 734"></td> </tr> </tbody> </table>	Less than 1 min		Between 1 - 5 min		Between 5 - 10 min			
Less than 1 min									
Between 1 - 5 min									
Between 5 - 10 min									
3) Tools	<table border="1"> <tbody> <tr> <td data-bbox="842 761 1098 806">tooth brush</td> <td data-bbox="1098 761 1359 806"></td> </tr> <tr> <td data-bbox="842 806 1098 896">Electric tooth brush</td> <td data-bbox="1098 806 1359 896"></td> </tr> <tr> <td data-bbox="842 896 1098 940">Foam swab</td> <td data-bbox="1098 896 1359 940"></td> </tr> <tr> <td data-bbox="842 940 1098 1030">Gauze + tongue depressor</td> <td data-bbox="1098 940 1359 1030"></td> </tr> </tbody> </table>	tooth brush		Electric tooth brush		Foam swab		Gauze + tongue depressor	
tooth brush									
Electric tooth brush									
Foam swab									
Gauze + tongue depressor									
4) Which part of the mouth	<table border="1"> <tbody> <tr> <td data-bbox="842 1057 1098 1146">Brushing of teeth</td> <td data-bbox="1098 1057 1359 1146"></td> </tr> <tr> <td data-bbox="842 1146 1098 1236">Brushing of gum</td> <td data-bbox="1098 1146 1359 1236"></td> </tr> <tr> <td data-bbox="842 1236 1098 1326">Brushing of tongue</td> <td data-bbox="1098 1236 1359 1326"></td> </tr> <tr> <td data-bbox="842 1326 1098 1366">All</td> <td data-bbox="1098 1326 1359 1366"></td> </tr> </tbody> </table>	Brushing of teeth		Brushing of gum		Brushing of tongue		All	
Brushing of teeth									
Brushing of gum									
Brushing of tongue									
All									

Items	Always	Sometimes	Never
Wash hand			
Raise bed to it is highest horizontal level lower side rail.			
Remove dentures or partial plates if present.			
Place towel under patients head and emesis basin under chin.			
If patients is uncooperative or having difficulty keeping mouth open, insert an oral air way.			
For patients without teeth, use a gauze moistened in water or normal saline to clean oral cavity			
Suctioning secretions as they accumulate .If necessary.			
Apply thin layer of water-soluble gelly to lips.			
Clean equipment and return to it is proper place.			
Wash hands.			

THANK YOU