

Incentive spirometry essay sample



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Short Description of Lesson In this lesson session, all students will be learn about Incentive Spirometry theory and practical. The basic knowledge about Incentive Spirometry such as indications, contraindications and the procedure of intensive spirometry will be given. The preparation of the patient before the incentive spirometry procedure will be further explain to the student. The simulation on the proper using of incentive spirometry will be shows at the end of this session. The redemonstration of Incentive Spirometry will be done by student. Classroom layout and grouping of students Classroom Layout : The theory session was conducted and delivered at the classroom. The room environment conditions is suitable such as silent and in a good air conditioners. All table and chair are organized. The white board and all stationary are prepared Grouping of Students:

This lesson will be given to the students of Semester Two Year On, Diploma In Nursing. State Curriculum Standards This Incentive Spirometry included in syllabus under Respiratory topic Semester 2, Diploma In Nursing.

Instructional Objectives Learning Outcomes :

By the end of the session, the student will be able to:

Understanding what the Incentive Spirometry are.

State the reason for use of Incentive Spirometry.

Demonstrate the proper way to use an incentive spirometry.

Assess on their own level of knowledge, regarding incentive spirometry use.

Redemonstrate the Incentive spirometry procedure.

Materials, Resources and Technology Materials & Technology: Laptop

Liquid-crystal display (LCD)

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white board

whiteboard marker pen

white board eraser

pen and paper

Hand out and note.

Resources:

BIBLIOGRAPHY | 17417 Restrepo RD, Wettstein R & Wittnebel L. (2011).

Incentive Spirometry Guidelines Hand Book. America: National Guidelines

Clearing House. Rahimah Ghazali. (2011). Critical Care Nursing Book : Open

University Malaysia. AARC Clinical Practice Guidelines, Incentive Spirometry;

Respiratory Care 1991; 36: 1402-1405. Donald F. Egan (Editor), Scanlan CL,

Realey A, Earl L; Lung Expansion Therapy. In Egan's. Fundamentals of

Respiratory Care, Eighth Edition, Mosby; June 2, 2003 Douce FH; Incentive

Spirometry and Other Aids to Lung Inflation. In: Barnes TA, Ed. Core

Textbook of Respiratory Care Practice. 2nd edition. St. Louis: Mosby-Year

Book; 1994.

Practical session:

Incentive Spirometry Device

Incentive spirometry chart

Student's present level of performance and skills Students already have

basic knowledge of anatomy and physiology of respiratory system. Deep

breathing exercise and coughing exercise procedure. Sign and Symptom of

hypoxia. Instructional Procedures Introduction of Incentive Spirometry 1.

Incentive spirometry, also known as Sustained Maximal Inspiration (SMI), is a technique used to encourage a patient to take a maximal inspiration using a

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device to measure flow or volume. 2. A maximal inspiration sustained over three seconds may increase the transpulmonary pressure thereby improving inspiratory volumes and inspiratory muscle performance. Content

Definition of Incentive Spirometry

The purpose of Incentive Spirometry

Inspiration and Expiration Mechanism

Indications of Incentive Spirometry

Contraindications of Incentive Spirometry

Patient preparation for Incentive Spirometry Procedure

To withhold or not to withhold patient's medication.

Conclusion

Deep breathing is vital for general wellbeing. After abdominal surgery, the breathing pattern can change and result in various pulmonary complications. Incentive spirometry is beneficial for patients affected in this way as it promotes deep breaths, which will aid their recovery. Nurses play an important role in teaching patients how to use an incentive spirometer and the underlying principles. Activities

Role play activity

Picture and diagram show activity

Techniques

Methods of Microteaching :

Power Point Slide Show use LCD

Question and Answer Session (Questionnaire)

Demonstrations and student's practice on procedure

of Incentive Spirometry.

2) Instructional Strategies / Instructional Methods

1) Ask some questions such as :

Have you ever used an incentive spirometry?

Have you do the procedure of an incentive spirometry before? Students feedback (Yes/No)

If yes, where this procedure is most commonly seen?

This procedure is commonly use in Incentive Care Unit and at respiratory care unit in Kuala Lumpur but sometimes it is use at medical and surgical ward.

2) Teacher-Centre Approaches

Lecture

Information deliver to the students about Incentive Spirometry, and the procedure of Incentive Spirometry. Demonstration

Procedure of an Incentive Spirometry

Equipment

Incentive Spirometry Device

Incentive spirometry chart

Procedure

Greet patient

Explain procedure to patient

Attach mouthpiece to one end of wide-bore tubing and attach other end of tubing to the spirometer. Record the patient's data.

Position patient for best effort, as allowed by condition (i. e., sit up straight and brace if indicated). Conduct a deep breathing exercises.

Place the mouthpiece in the mouth.

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Inhale on the mouthpiece.

Remind patient for any complications from the procedure.

Documentation.

Supplemental Activities:

Extensions and Remediation Take the patient's data

Deep breathing exercise.

The students will perform the Incentive Spirometry procedure. Chart the achievement level of the patient after the Incentive Spirometry procedure.

Assessment Ask the student to re-demonstrate the procedure of Incentive

Spirometry Ask some question to know the level of knowledge of this procedure. Student Product The chart and documentation of patient particular from the procedure of Incentive Spirometry - done by the students.

Lesson Notes

Teacher Activities

(Estimate Time Allocated) Contents Audio-visual / Teaching Aids Set

induction (2 minutes) Assalamualaikum and a very good day to all of you. Let I introduce myself. My name Noorhaliza Bt Ali and you can call me Haliza.

Today, I want to talk and explain about the Incentive Spirometry. I also will show the demonstration in using Incentive Spirometry in the proper way.

Have you ever used an incentive spirometry and have you do the procedure of an incentive spirometry before? Students feedback (Yes/No)

If yes, where this procedure is most commonly seen?

At Malacca General Hospital, this procedure is commonly use in Incentive

Care Unit and In Malaysia, it has been so important at respiratory care unit in Kuala Lumpur but sometimes it is use at medical and surgical ward.

Well.. let me introduce to all of you the Incentive Spirometry is commonly use in Malacca General Hospital. Body : Theory -

Show ABG (arterial line set, trolley procedure of arterial line set, ABG injection set, procedure to reading sample use the ABG machine, ABG result, definitions, theories, questioning) - (15 minutes) Skill- demonstration and return demonstration

(30 minute).

Introduction

Can I ask you? (ask one of the student). What the different between

Incentive Spirometry and Incentive Spirometer? Actually,

Incentive Spirometry is a technique used to encourage the patient to take a maximal inspiration using a device to measure flow or volume. It is also known as Sustained Maximal Inspiration (SMI) but the incentive spirometer is used to measure and record volumes of inspired and expired air, total lung capacity, and tidal volume. The graph produce is called a spirogram.

Body Content:

Definition of Incentive Spirometry:

Spirometry is a diagnostic pulmonary function test. Relatively easy to perform, for both the patient and the clinician, Spirometry testing is noninvasive. The spirometry tests measure lung volumes. A flexible plastic tube is connected to a large and small air column. The large column has a piston or ball that moves up each time you breathe in. This column measures

how much air you breathe in. Your effort is marked in units of millilitres. A smaller column measures your effort as “ good,” “ better,” or “ best.”

The importance of Incentive spirometry are to open your airways and make it easier for you to breathe, to prevent the build-up of fluid and mucus in your lungs, to prevent a collapse of one or both of your lungs, to prevent serious lung infections like Pneumonia, can improve your breathing after you've had surgery or pneumonia, to manage the symptoms of lung disease such as COPD and to keep your airways open and lungs active if you're on bed rest.

The Purpose of Incentive Spirometry can be for the lung test and for the exercise. For the lung test, Spirometry is the preferred test in some diagnosis for example in Asthma patients. Firstly, the Incentive Spirometry can clearer identification of airflow obstruction, secondly, less dependent on effort, third it is useful where history & examination leave doubt about diagnosis but it is dependent on level of training of operator and last but not least, if spirometry shows obstruction - patient will need inhaled treatment - what? Will depend on diagnosis. For Exercises, a maximal inspiration sustained over three seconds may increase the transpulmonary pressure thereby improving inspiratory volumes & inspiratory muscle performance

Inspiration and Expiration Mechanism.

In the inspiration mechanism, rib cage moves up and out, the diaphragm contracts and moves down and the pressure in the lungs decreases and air will comes rushing in. For the expiration mechanism, the rib cage moves down and in, the diaphragm relax and moves up, the pressure in the lungs increases, and air pushed out.

The Indications of Incentive Spirometry are preoperative screening of patients at risk for post-operative complications to obtain baseline flow or volume, respiratory therapy that includes daily sessions of incentive spirometry plus deep breathing exercises, directed coughing, early ambulation, and optimal analgesia may lower the incidence of postoperative pulmonary complications, presence of pulmonary atelectasis or conditions predisposing to the development of pulmonary atelectasis when used with:

Upper-abdominal or thoracic surgery

Lower-abdominal surgery Prolonged bed rest Surgery in patients with chronic obstructive pulmonary disease (COPD) Lack of pain control

The other indications of using an Incentive Spirometry are presence of thoracic or abdominal binders, restrictive lung defect associated with a dysfunctional diaphragm or involving the respiratory musculature, patients with inspiratory capacity < 2.5 L, patients with neuromuscular disease, patients with spinal cord injury, Incentive spirometry may prevent atelectasis associated with the acute chest syndrome in patients with sickle cell disease and in patients undergoing coronary artery bypass graft Incentive spirometry and positive airway pressure therapy may improve pulmonary function and 6-minute walk distance and reduce the incidence of postoperative complications.

The contraindications patients in using of Incentive spirometry when patients who cannot be instructed or supervised to assure appropriate use of the device, patients in whom cooperation is absent or patients unable to understand or demonstrate proper use of the device, very young patients

and others with developmental delays, patients who are confused or delirious, patients who are heavily sedated or comatose and Incentive spirometry is contraindicated in patients unable to deep breathe effectively due to pain, diaphragmatic dysfunction, or opiate analgesia. The contraindications also to the patients unable to generate adequate inspiration with a vital capacity <10 mL/kg or an inspiratory capacity $<33\%$ of predicted normal.

Before starting the procedure, the patient must avoid smoking and take alcohol for 24 hours, vigorous exercises for 30 minute and wearing a tight clothing. Medical staff must ensure patient take their meal for last 2 hour and this procedure cannot be proceed if physician are query in the dosage, route and when the patient's use the inhaler. Check medical history patient before start the procedure such as if the patient have MI/CVA? Spontaneous Pneumothorax?

Aneurysm?

Uncontrolled HPT / Angina?

Ear Infection?

Pregnancy?

Patient preparation:

Record patient's :

Name,

Registered number (RN No.),

Identification Number (I/C)

Age

Height

Weight

Gender

Race

Time and date the procedure is done.

2. Explain the purpose of the incentive spirometry procedure to the patient.

3. Note if the patient is currently unwell or has had a recent exacerbation 4.

Position patient to the prop-up position or Fowler's / Semi Fowler's. If the

patient can move, sit the patient in a chair with arm. 5. Demonstrate first to

the patient of the correct technique or procedure to do incentive spirometry

test. 6. Allow the patient practice attempts.

To withhold or not to withhold medications.

If u are doing reversibility testing :

No short acting bronchodilators for 4 hours,

No long acting bronchodilators for 12 hours,

No sustained release oral bronchodilators for 24 hours,

For routine monitoring of COPD patients, take all medications as usual such as Tablet Theophylline.

Conclusion

Deep breathing is vital for general wellbeing. After abdominal surgery, the breathing pattern can change and result in various pulmonary complications.

Incentive spirometry is beneficial for patients affected in this way as it

promotes deep breaths, which will aid their recovery. Nurses play an

important role in teaching patients how to use an incentive spirometer and

the underlying principles.

Mini Closure

So, I hope after my explanation in incentive spirometry will encourage all of you to do this procedure for the right indications of patient. Remember the importance of Incentive Spirometry and don't confuse between spirometry and spirometer. Skill - demonstration and return demonstration (30 minute)

1. Greet patient.

" Assalamualaikum and hello. My name is Haliza, a nurse will conduct you to do an Incentive spirometry exercise". 2. Explain the procedure to the patient. " Have the doctor explain about this test before?" waiting for patient's answer...(yes/no). " Incentive spirometry is a lung function test and lung exercises that we will ask you to inhale slowly and deep by your mouth". " Incentive spirometry help to protect you by expanding your lung capacity and loosen any secretion if you have". 3. Attach mouthpiece to one end of wide-bore tubing and attach other end of tubing to the spirometer " The incentive spirometry have a mouthpiece, a main chamber with a piston, and the label marker to show your progress". 4. Record the patient's data

" What is your name?"

" How old are you?."

" Are you remember how much your weight and your height?" (If patient not remember, bring patient for the measurement of her/his weight and height).

" Are you have any medical problem?"

" Are you drink alcohol?"

" Are you smoker?"

" Are you have any surgical history and do you on any medication now?" 5.

Position patient

“ Please sit up straight at on edge of the bed or chair and make sure your both feet are not cross”. 6. Conduct a deep breathing exercises.

“ We will start first with deep breathing exercise for 3 times. Take deep breathe in and exhale, okay, repeat again, okay good.. and one more but for the last one please exhale fully”. 7. Place the mouthpiece in the mouth.

“ Place your mouthpiece in your mouth and seal your lips tightly around it. Make sure no leaking of air around the lip. 8. Inhale on the mouthpiece

“ Breathe in slowly and deep in as possible. This way will raise the piston in the main chamber. Hold your breath for at least 5 seconds allowing piston to fall back to 0. You will repeat this procedure for 10 times for each practice session”. 9. Remind patient for any complications from the procedure.

Reference:

AARC Clinical Practice Guidelines, Incentive Spirometry; Respiratory Care 1991; 36: 1402-1405.

Donald F. Egan (Editor), Scanlan CL, Realey A, Earl L; Lung Expansion Therapy. In Egan’s Fundamentals of Respiratory Care, Eighth Edition, Mosby; June 2, 2003 Douce FH; Incentive Spirometry and Other Aids to Lung Inflation. In: Barnes TA, Ed. Core Textbook of Respiratory Care Practice. 2nd edition. St. Louis: Mosby-Year Book; 1994. CLINICAL TEACHING EVALUATION - LEARNER’S ASSESSMENT (UNGRADED) No. Teacher’s Performance Poor (1) Satisfactory