**TRIBHUVAN UNIVERSITY**

**INSTITUTE OF MEDICINE**

**POKHARA NURSING CAMPUS**

**RAMGHAT-12, POKHARA**



**LESSON PLAN ON**

**CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)**

**AND ASTHMA**

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| **Submitted To** | **Submitted By** |
| Respected Madam | Babita Shah |
| Shrijana Poudel | Roll No:- 05 |
| Lecturer | BNS 2nd Year |
| TU IOM | Pokhara Nursing Campus |
| Pokhara Nursing Campus | 17th Batch |

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| --- |
| Subject : Geriatric Nursing  Topic : Chronic Obstructive Pulmonary Disease (COPD)  And Asthma  Unit : 06  Date : 2080/10/  Level of learner student : BNS 1st Year  Time :  Duration : 1 hour  No. of learners : 36  Venue : Pokhara Nursing Campus (BNS 1st Year class room)  Name of supervisor : Respected Madam Shrijana Poudel  Educational methods : Interactive lecture  Learning resources : Power-point, poster, whiteboard |

**General Objectives:**

At the end of the classroom session, BNS 1st year students will be able to explain about the chronic obstructive pulmonary disease (COPD) and asthma.

**Lesson plan:**

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| **SN** | **Specific objective** | **Content** | **Time** | **T/L methods** | **T/L media** | **Evaluation** |
|  | At the end of this session BNS 1st year students will be able to: | -Greeting  -Attendance  -Introduction   * Self * Topic   -Objectives  -Pre-test | 3mins | Brainstorming | Power point (picture) |  |
| 1) | Define COPD | Definition of COPD | 2mins | Interactive lecture | Power point | What is COPD? |
| 2) | List the causes of COPD | Causes of COPD | 3mins | Interactive lecture | Poster | What are the causes of COPD? |
| 3) | List the signs and symptoms of COPD | signs and symptoms of COPD | 5mins | Interactive lecture | Power point | What are the signs and symptoms of COPD? |
| 4) | State the diagnostic evaluation of COPD | diagnostic evaluation of COPD | 3mins | Interactive lecture | Power point | State the diagnostic evaluation of COPD? |
| 5) | Explain the management of COPD | management of COPD | 5mins | Interactive lecture | Power point | What are the management of COPD? |
| 6) | Explain the nursing management of COPD | nursing management of COPD | 5mins | Interactive lecture | Power point | What are the nursing management of COPD? |
| 7) | Enlist the complication of COPD | complication of COPD | 3mins | Interactive lecture | Power point | State the complication of COPD? |
| 8) | Define asthma | Definition of asthma | 2mins | Interactive lecture | Power point | What is asthma? |
| 9) | List the triggering factors of asthma | Triggers factor of asthma | 3mins | Interactive lecture | Power point | What are the triggering factors of asthma? |
| 10) | List the sign and symptoms of asthma | Signs and symptoms of asthma | 3mins | Interactive lecture | Power point | What are the signs and symptoms of asthma? |
| 11) | Explain the pathophysiology of asthma | Pathophysiology of asthma | 5mins | Interactive lecture | Power point | What is the pathophysiology of asthma? |
| 12) | State the diagnostic evaluation of asthma | Diagnostic evaluation of asthma | 3mins | Interactive lecture | Power point | State the diagnostic evaluation of asthma? |
| 13) | Explain the management of asthma | Management of the asthma | 5mins | Interactive lecture | Power point | What are the management of asthma? |
| 14) | Explain the nursing management of asthma | Nursing management of asthma | 5mins | Interactive lecture | Power point | What are the nursing management of asthma? |
| 15) | Enlist the complication of asthma | Complication of asthma | 2mins | Interactive lecture | Power point | State the complication of asthma? |
| 16) |  | -post test  -summary  -home assignment  -plan for next class  -references | 3mins | Questioning and answering |  |  |

**CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)**

**DEFINITION**

Chronic obstructive pulmonary disease (COPD) refers to a group of diseases that cause chronic obstruction of lungs airflow that interferes with normal breathing and it is not fully reversible. It includes emphysema and chronic bronchitis**.**

**RISK FACTORS**

* Cigarette smoking and other irritants
* Alpha -1 antitrypsin deficiency
* People with asthma who smoke
* Occupational exposure to dusts and chemicals
* Age
* Air pollution
* Autoimmunity

**SIGNS AND SYMPTOMS**

1. PRIMARY SYMPTOMS (GOLD): HALLMARK OF COPD

* Chronic cough
* Dyspnea on exertion
* Sputum production that may be clear, white, yellow, or greenish

1. OTHER SIGNS AND SYMPTOMS

* Nail clubbing
* Pursed lip breathing
* Uses of accessory muscles
* Wheezing
* Blueness of the lips and dinger nails bed (cyanosis)
* Frequent respiratory infections

**DIAGNOSIS/INVESTIGATION**

* Pulmonary Function Tests
* Chest X-Ray
* CT Scan
* Arterial Blood Gas Analysis

**Managements**

**Medical managements:**

1. Cessation of smoking
2. Medicine:

* Bronchodilators
* Inhaled steroids
* Combination inhalers
* Oral steroids
* Phosphodiesterase-4 inhibitors
* Theophylline
* Antibiotics

1. Oxygen therapy

**Surgical managements:**

* Bullectomy
* Lungs Volume Reduction Surgery
* Lungs Transplant

**NURSING INTERVENTIONS**

1. Regular monitoring the client respiratory rate pattern result and sign of hypoxia or hypercapnia.
2. Administer low flow oxygen therapy (1-31/min).
3. Keep the patients in high flowers position.
4. Administer bronchodilator as per prescriptions.
5. Maintain adequate hydration by drinking 8-10 glasses of fluids per day.
6. Advice the client to eat small and frequent diet.
7. Avoid gas forming food.
8. Avoid too hot and too cold foods and fluids.
9. Perform chest physiotherapy in regular basis.
10. Encourage for purse lips breathing.
11. Provide quiet and calm environments.

**COMPLICATIONS**

1. Respiratory infection
2. High blood pressure
3. Heart problems
4. Lung’s cancer
5. Depression

**PREVENTION**

1. Stop smoking
2. Avoid occupational pollutants and air pollution
3. Vaccination
4. Identify the family history

**ASTHMA**

**DEFINITION**

Asthma is a chronic inflammatory disorder of the airways. The chronic inflammation causes an increase in the airway hyper-responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness, and cough, particularly at night or early in morning.

**TRIGGER FACTORS**

1. Pollen
2. Bugs in the home
3. Chemicals fumes
4. Cold air
5. Fungus spores
6. Dust
7. Smoke
8. Strong orders
9. Pollutions
10. Angers
11. Stress
12. Pets
13. Exercises

**SIGNS AND SYMPTOMS**

1. Dyspnea
2. Wheezing and a cough
3. Chest tightness
4. Restlessness, anxiety, and prolonged expiratory phase
5. Pallor and cyanosis
6. Tachycardia

**PATHOPHYSIOLOGY OF ASTHMA**

Inhalation of allergens (causative factors)

TH2 reaction against environmental antigens

TH2 cells produce cytokines (IL-4, IL-5, IL-13)

IL-4 stimulates IgE production

IL-5 activates eosinophils

IL-13 stimulates mucus production

Activation of epithelial cells

Chemokines are produced that promote recruitment of more TH2 cells

And eosinophils as well as other leukocytes

Amplifies the inflammatory reaction

Structural changes in bronchial wall referred to as “airway

Re-modeling”

Hypertrophy of bronchial smooth muscle and deposition of sub epithelial collagen

**DIAGNOSTIC TEST**

1. History talking and physical examination
2. Pulmonary function test
3. Methacholine challenge test
4. Chest X-ray

**TREATMENT**

1. Inhaled corticosteroids.
2. Leukotriene modifiers.
3. Long-acting beta agonists (LABAs)
4. Long-acting muscarinic antagonists (LAMAs)
5. Combination inhalers.
6. Theophylline.

**NURSING MANAGEMENTS**

1. **Maintain the head of the bed elevated and position the client depending on respiratory effort.**
2. **Encourage the client to use breathing exercises.**
3. **Promote weight reduction for the client experiencing obesity**
4. **Encourage a proper diet that benefits both weight and allergen avoidance.**
5. **Educate about environmental control and allergen avoidance.**
6. **Limit the number of indoor pets that can cause allergies.**
7. **Avoid smoking and secondhand smoke.**
8. **Educate regarding allergen immunotherapy.**

**PREVENTIONS**

* 1. Follow the asthma action plan
  2. Get vaccination for influenza and pneumonia
  3. Identify and avoid asthma triggers
  4. Monitor for breathing
  5. Identify and treat attacks early
  6. Take medication as prescribed
  7. Pay attention to increasing quick relief inhaler use.

**COMPLICATIONS**

1. Pneumonia
2. Atelectasis
3. Respiratory failure
4. Status asthmaticus

**SUMMARY**

Chronic obstructive pulmonary disease, or COPD, refers to a group of diseases that cause chronic obstruction of lungs airflow that interferes with normal breathing and it is not fully reversible. It includes emphysema and chronic bronchitis**.** Risk factors of COPD are Cigarette smoking and other irritants, Alpha -1 antitrypsin deficiency, People with asthma who smoke. Signs and symptoms of COPD are chronic cough, Dyspnea on exertion, Sputum production that may be clear, white, yellow, or greenish. Complication of COPD are Respiratory infection, High blood pressure, Heart problems, Lung’s cancer, Depression. Asthma is a chronic inflammatory disorder of the airways. The chronic inflammation causes an increase in the airway hyper-responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness, and cough particularly at night or early in morning. Triggers factors are Pollen, Bugs in the home, Chemicals fumes, Cold air, etc. Prevention of asthma are vaccination for influenza and pneumonia, Identify and avoid asthma triggers, monitor for breathing, Identify and treat attacks early, Take medication as prescribed, Pay attention to increasing quick relief inhaler use.

**References:**

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**Home assignment:**

1. Define chronic obstructive pulmonary disease and explain its nursing management.
2. List the triggering factors of asthma and explain its nursing management.

Q. Which one is not the cause of COPD?

1. Smoking
2. Alpha-1 antitrypsin deficiency
3. Air pollution
4. Alcohol

Q. COPD includes……and…….