Course Description

DEH2300L | Pharmacology and Pain Control Laboratory | 1.00 credit

This course is designed to prepare the dental hygiene student for the safe and effective administration of local anesthesia. Students will learn about the psychology of pain management, pharmacology of anesthetic agents, emergency precautions, and are view of anatomy and physiology as they relate to the administration of anesthetic agents. This course will include online and clinical instruction. Co-requisite: DEH2300

Course Competencies

Competency 1: The student will demonstrate knowledge and comprehension of the use of pain modalities in patient care by:

1. Discussing concepts of dental pain
2. Comparing and contrasting indications and contraindication for the selection of drug therapy for dental pain
3. Relating consideration factors in the selection of a pain control method
4. Describing non-drug pain and anxiety reduction methods

Competency 2: The student will demonstrate knowledge and comprehension of local anesthetics by:

1. Describing the mechanism of action of amide, and ester local anesthetics as well as the pharmacokinetics, pharmacologic effects and adverse effects of each local anesthetic
2. Listing the composition of local anesthetic solution and functions of each component
3. Listing drug interactions with epinephrine and their potential outcome
4. Describing the use of vasoconstrictors in the medically compromised population
5. Relating the dental uses of topical anesthetic and dental choice of anesthetic
6. Describing the adverse effects and toxicity of local anesthetics
7. Listing the common local injection sites for local anesthesia

Competency 3: The student will demonstrate knowledge and comprehension of general anesthetics and sedatives by:

1. Defining and describing the stages and planes of general anesthesia
2. Describing several adverse reactions with general anesthetic administration
3. Describing inhaled, injectable, and volatile anesthetics including their effects and administration, mechanism of action, pharmacologic effects and dental implications
4. Discussing the properties, indications, contraindications, method of administration and adverse effects of nitrous oxide sedation
5. Relating the mechanism of action, pharmacologic effects, adverse effects, drug interactions and uses for the minimal, moderate and deep sedatives

Competency 4: The student will demonstrate knowledge and comprehension of narcotic and nonnarcotic analgesics by:

1. Describing drug legislation including schedules and their relation to prescribing controlled drugs
2. Defining and differentiating narcotic and non-narcotic analgesics
3. Describing the mechanisms of action, pharmacologic effects, adverse reactions, drug interactions, pharmacokinetics, and uses for the salicylates, non-steroidal anti-inflammatory agents, and acetaminophen
4. Describing the mechanism of action, pharmacokinetics, pharmacologic effects, adverse reactions and drug interactions for the narcotic agonists, mixed narcotics, and the narcotic antagonist
5. Describing the use of narcotic and non-narcotic analgesics as they relate to dental pain

Competency 5: The student will demonstrate knowledge and application and comprehension of application of local anesthesia by:

1. Describing the techniques for obtaining local anesthesia for all areas of the dentition

2. Describing the signs and symptoms of reactions to local anesthetic agents and emergency protocol to manage these reactions
3. Identifying common complications encountered in the administrations of local anesthesia
4. Identifying the anatomical landmarks on a patient for all injections
5. Identifying which nerves, teeth, and soft tissue structures are anesthetized for all injections
6. Differentiating between pain perception and pain reaction
7. Documenting local anesthetic administration appropriately in the dental record
8. Recognizing the signs and symptoms of local and systemic complications and the medical management associated with the administration of local anesthetic agents

Learning Outcomes:
- Communicate effectively using listening, speaking, reading, and writing skills
- Use quantitative analytical skills to evaluate and process numerical data
- Formulate strategies to locate, evaluate, and apply information