**RNSG 2573**

**Health Care Concepts 3**

**Concept –** CELLULAR REGULATION

**Concept Definition**

The process by which cells replicate, proliferate, and grow.

**Exemplars**

*Breast Tumors/Cancer*

*Colon Cancer*

*Leukemia*

*Lymphoma (Hodgkin’s, Non-Hodgkin’s)*

*Lung Cancer*

*Prostate Cancer*

*Skin Cancer*

**Objectives**

1. Describe what the concept of Cellular Regulation means (including definition, antecedents, and attributes).

2. Describe alterations in cellular regulation to the development of cancer.

3. Identify commonly occurring alterations in cellular regulation and their related treatments (*breast cancer, colon cancer, lymphoma, leukemia, lung cancer, prostate cancer, skin cancer*).

4. Demonstrate use of the nursing process in providing culturally sensitive care across the life span with collaborative interventions for individuals with alterations in cellular regulation (*breast cancer, colon cancer, lymphoma, leukemia, lung cancer, prostate cancer, skin cancer*).

5. Explore the evidence base for nursing care of cancer patients in regard to symptom management.

6. Discuss oncological complications/emergencies associated various treatment modalities.

**Concept Analysis Diagram**

Note: Diagram is on separate page.

Explanation of Cellular Regulation Diagram:

Cellular Regulation is the process by which cells replicate, proliferate, and grow. In order for Cellular Regulation to occur the following antecedents should be present: normal DNA, manufacture of proteins, healthy life-style: balance of sleep/exercise/nutrition; non-smoker, normal weight, and no exposure to known carcinogens. The attributes, which measure whether Cellular Regulation exists include: controlled proliferation/growth of cells (normal cell cycle or mitosis and programmed apoptosis) and tissues; normal genetic cellular functioning.

Sub-concepts are components of Cellular Regulation and include: pathology; activations of oncogenes, alterations in apoptosis, inactivation of suppressor genes, and loss of contact inhibition; and initiation, promotion, progression, benign neoplasm, malignant neoplasm/cancer. Interrelated concepts can affect change in Cellular Regulation or vice versa. These concepts include: comfort, tissue integrity, coping, grief, immunity, patient education, interpersonal relationships, and evidenced base practice. Positive consequences of Cellular Regulation may include stable weight for self, resistance to infection, and normal activity/energy level for age. Negative consequences of Cellular Regulation may include a mass (benign or malignant), unexplained weight loss, cough that does not go away/frequent, pain, abnormal bleeding, bowel changes and an abnormal blood count.

When nursing care is required the focus is placed on improving the antecedents in order to optimize the attributes and ultimately produce positive consequences.

**Assignments**

**Prior to class:**

1. Review definitions of inter-rated concepts on concept analysis diagram
2. Review concept analysis diagram
3. Review the following content from previous courses

* Review structure and physiologic process of the cell related to cellular regulation
* Review factors affecting cellular regulation
* View Cellular Regulation Part 1 Introduction powerpoint
* Review interrelated concepts of: comfort, interpersonal relationships, immunity, patient education, evidenced base practice.

1. Review the following Nursing Diagnoses and associated interventions

* Activity intolerance r/t side effects of treatment, weakness from cancer
* Chronic pain r/t metastatic cancer
* Constipation r/t side effects of medication, altered nutrition, decreased activity
* Imbalanced nutrition: less than body requirements r/t loss of appetite, difficulty swallowing, side effects of chemotherapy, obstruction by tumor.
* Impaired skin integrity r/t immunological deficit, immobility, radiation treatments, abnormal cell growth in skin, and treatment of skin cancer.
* Ineffective health maintenance r/t deficient knowledge regarding self-care with cancer
* Disturbed body image

1. Assigned readings/Viewings

* Giddens, J.F. (2013). *Concepts for nursing practice*, St. Louis. MO: Mosby Elsevier
  + Chapter 10: Cellular Regulation
* Lewis, S.L., Dirksen, S.R., Heitkemper, M.M., Bucher, L. & Bucher, L. (2014). *Medical-Surgical Nursing* (9th ed). St. Louis: Mosby Elsevier.
  + Chapter 16: Cancer
  + Chapter 24: pgs 432-435
  + Chapter 28: pgs 535-541
  + Chapter 31: pgs 664-673
* Chapter 43: pgs 985-994
* Chapter 52: pgs 1243-1258
* Chapter 55: pgs 1314-1321
* McKinney, E.S., James, S.R., Murray, S.S., Nelson, K.A. & Ashwill, J.W. (2013). *Maternal Child Nursing (4th ed),* St. Louis: Mosby Elsevier.
  + Chapter 48: The Child with Cancer

Internet

* Oncology Nursing Society

<http://www.ons.org>

* American Cancer Society

<http://www.acs.org>

* National Coalition for Cancer Survivorship

<http://canceradvocacy.org>

* National Comprehensive Cancer Network, Evidence Based Guidelines

<http://www.nccn.org>

* Breast Cancer – Symptoms and Treatment:

<http://www.youtube.com/watch?v=VsviAPGfPUo>

* Colon Cancer Alliance

<http://www.ccalliance.org>

* Leukemia & Lymphoma Society

<http://www.lls.org>

* Testicular Cancer Foundation – Awareness, Education, Support:

<http://singlejingles.org/>

* Prostate Cancer Foundation:

<http://www.pcf.org/site/c.leJRIROrEpH/b.5699537/k.BEF4/Home.htm>

* Prostate Cancer Tutorial:

<http://www.nlm.nih.gov/medlineplus/tutorials/whatisprostatecancer/htm/index.htm>

* Skin Cancer: Sun Safety – Spotting Skin Cancer:

<http://www.youtube.com/watch?v=fDwigwLwd5>

**Content Outline:**

Concept: Cellular Regulation

1. Introduction and overview of cancer including cancer development (biology, classification, and diagnosis).
2. Collaboration and complications covering
   1. Treatment modalities
   2. Oncological emergencies
   3. Complications of treatment modalities
3. Exemplars :
   1. Etiology
   2. Risk factors
   3. Pathophysiology
   4. Specific diagnostic studies and treatments of:
      1. breast cancer
      2. colon cancer
      3. leukemia
      4. lymphoma
      5. prostate cancer
      6. skin cancer

**CONCEPT ANALYSIS DIAGRAM –** CELLULAR REGULATION

**Nursing Care**

* Directed toward what contributes to a normal concept and is thereby related to all factors involved in or with the concept. Not always needed to have a normal outcome.

Attributes

* Defining characteristics of the concept
* What must occur for the concept to exist

Antecedents

* What precedes the concept for it to exist
* Events or incidents that must happen before the concept

Consequences

* Untoward events or outcomes that occur due to malfunction within the concept
* Positive events or outcomes that occur due to proper functioning within the concept

Interrelated Concept

* Concepts which can affect change in the other
* Concepts which work together to ensure a normal process
* Concepts which if depleted or impaired can cause a negative consequence in the other

Sub- Concept

* Critical components of major concept

Grief

Coping

Tissue Integrity

**Nursing Care**

**Attributes**

Controlled Proliferation/Growth of Cells

(Normal Cell Cycle or Mitosis and programmed apoptosis) & Tissues; Normal Genetic, Cellular Functioning

Comfort

Immunity

Patient Education

**Interrelated Concepts**

**Antecedents**

Normal DNA, Manufacture of Proteins

Healthy Life-Style: Balance of Sleep/Exercise, Nutrition, Non-Smoker, Normal Weight, No Exposure to Known Carcinogens

**Negative**

Interpersonal relationships

**Cellular Regulation**

The Process by Which Cells Replicate, Proliferate, and Grow.

Evidenced Base Practice

**Consequences**

**(Outcomes)**

Mass (Benign or Malignant

Unexplained Weight Loss

Cough that Does Not Go Away/Frequent Infections

Pain

Abnormal Bleeding

Bowel Changes

Abnormal CBC

Normal Activity/Energy Level for Age

Initiation

Promotion

Progression

Benign Neoplasm

Malignant Neoplasm/Cancer

Activations of Oncogenes, Alterations in Apoptosis, Inactivation of Suppressor Genes, Loss of Contact Inhibition

Stable Weight for Self

**Sub -Concepts**

Pathology: Undetected Signaling Error Incomplete/Ineffective Cell Repair

Acquired/Inherited Gene Mutations

**Positive**

Seldom ill or Resistant to Infection