

**TRIBHUWAN UNIVERSITY
INSTITUTE OF MEDICINE
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Lesson Plan on accidents and injuries

Submitted in partial fulfillment

For Yearly Evaluation of

Child health nursing

Bachelor of Nursing in Science

SUBMITTED TO:

Respected madam

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BNS First Year

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8.4 HEALTH PROBLEMS OF SCHOOL AGE CHILDREN

DENTAL PROBLEMS

1. MALOCCLUSION

Malocclusion means the malposition and faulty contact of mandibular and maxillary teeth due to improper relationship between upper and lower dental arches. It results in incorrect mastication, cosmetic disfigurement of face and early loss of tooth.

CAUSES:

- Genetics: this is associated with congenital malocclusion of teeth.
- Acquired: due to thumb sucking, tongue thrusting habits, dental injury and teeth extraction

Diagnosis is made on the base of presentation

MANAGEMENT:

- Treatment depends upon the extent of malocclusion.
- Early detection and application of braces is effective.
- Remove child's baby teeth to help make space for permanent teeth.
- Jaw surgery: to correct the bite problem when the bones are involved.
- Mouth appliances: fixed (braces) or removal (retainers) applications to realign teeth.
- Encourage the child for regular brushing and flushing.
- Avoid gum, sticky foods, peanuts, popcorn and ice while wearing mouth appliance.

2. DENTAL CARRIES:

It is also known as tooth decay or a cavity. It is an infection of the tooth caused by bacteria, that caused demineralization and destruction of hard tissues of the teeth (enamel, dentin and cementum).

CAUSES

- Bacteria- streptococci (common)
- Food rich in carbohydrate
- Poor oral hygiene
- Inadequate dental care
- Sleeping with bottle in the mouth
- Use of pacifier
- Faulty salivary gland function
- Too much sugar in the diet
- Wiring teeth for a long time (orthodontic treatment)
- Malnutrition
- Sleeping with bottle in mouth
- During pregnancy due to hormonal cause

PATHOPHYSIOLOGY

Bacteria

Produced as extracellular polysaccharide and form a plaque over the teeth

Demineralization of enamel

Destruction of dentin with cavity formation

Inflammation and abscess formation

CLINICAL MANIFESTATION:

- Appearance of a chalky white spot on the surface of the tooth, indicating an area of demineralization of enamel formation of micro cavity (earliest sign).
- Appearance of brown lesion continues to demineralize; it can turn brown but will eventually turn into a cavitation (cavity). Once a cavity forms, the loss tooth structure cannot be regenerated.

- Presence of dark brown and shiny lesion: suggests dental caries were once present but demineralization process has stopped, leaving a stain. Active decay is lighter in color and dull in appearance.
- Pain: the affected areas of the tooth change color and become soft to the touch. Once the decay passes through enamel, the dentinal tubules, which have passages to the nerve of the tooth, become exposed, resulting in pain that can be transient, temporarily worsening with exposure to the heat, cold, or sweet foods and drinks.

DIAGNOSIS:

- Primary diagnosis involves inspection of all visible tooth surfaces using a good light source, dental mirror and explorer.
- Dental radiographs (x-rays) may show dental caries before it is otherwise visible, in particular caries between the teeth. Large dental caries is often apparent to the naked eyes, but smaller lesions can be difficult to identify.

PREVENTION:

1. Oral hygiene:

- Personal hygiene including proper brushing and flossing daily.
- Professional hygiene care consists of regular dental examinations and professional prophylaxis (cleaning). Sometimes, complete plaque removal is difficult and a dentist or dental hygienist may be needed.

2. Dietary modification:

- Dietary modification also helps to reduce the burden of dental caries so, minimizing snacking is recommended, since snacking creates a continuous supply of nutrition for acid-creating bacteria in the mouth.
- Brushing the teeth after meals is recommended. For children, the American Dental Association and the European Academy of Pediatric Dentistry recommend limiting the frequency of consumption of drinks with sugar and not giving baby bottles to the infants during sleep.
- Mother is advised to avoid sharing utensils and cups with their infants to prevent transferring bacteria from the mother's mouth.

3. Others measures

- The use of dental sealants is a means of prevention. A sealant is a thin plastic like coating applied to the chewing surfaces of the molars to prevent food from being trapped inside pits and fissures.
- Calcium as found in food such as milk and green vegetables, is often recommended to protect against dental carries.
- Fluoride helps to prevent decay of a tooth by binding to the hydroxyapatite crystals in enamel.

MANAGEMENT/ TREATMENT

- No treatment
- Inactive lesion: no treatment but regular checkup
- Analgesic during pain, during tooth extraction or pulpectomy
- Antibiotics to treat infection
- An amalgam used as a restorative material in a tooth.
- Localized dental infection can be managed by extraction, pulpectomy or root canal treatment.

SKIN DISORDER

skin diseases are common in children and about 30% of pediatric outpatient department (OPD) attendance is accounted by these conditions. Skin disorders are associated manifestations of many systemic and hereditary diseases. Detailed history and careful examination help to diagnose the conditions and associated problems.

Primary skin lesions are termed as macules, papules, nodules, vesicles, pustules, wheals, patches, bullae, plaques, etc. The secondary skin lesions include scales, crusts, ulcers, erosions, fissures, atrophy and lichenification.

The most common problem involving skin and its appendages is the burn injury, which needs emergency and specialized care.

A vast majority of skin problems can be grouped as follows:

1. Infective
 - Bacterial infection or pyoderma: Impetigo, folliculitis, cellulitis, furunculosis, erysipelas.
 - Fungal: Candidiasis, dermatophytosis.

- Parasitic: Scabies, pediculosis.
 - Viral: Warts, molluscum contagiosum.
2. Allergic skin condition: Atopic dermatitis, urticaria, skin rash.
 3. Pigmentary: Albinism, vitiligo
 4. Vascular lesions:
 - Hemangioma
 - ✓ Port-wine stain or mark (nevus flammeus)
 - ✓ Capillary hemangioma (strawberry mark)
 - ✓ Cavernous hemangioma.
 - Telangiectatic angioma (spider nevus).
 5. Inherited disorders: Ichthyosis, psoriasis.
 6. Miscellaneous disorder: Napkin dermatitis, (intertrigo), miliaria (prickly heat), seborrhea, acne, erythema nodosum, pemphigus, erythema multiforme, etc

SCABIES:

Scabies is a highly contagious skin disorder commonly found among the school age children caused by parasite *Sarcoptes scabiei*. *Sarcoptes scabiei* is an itch mite transmitted through direct human contact or direct skin to skin contact.

After direct contact the female scabies (mites) burrows into the stratum corneum layer of the skin and lays her eggs caused inflammatory response along with itching. About 4-6 weeks following initial contact, disease is manifested as skin lesion, irritation, inflammation, itching along with formation of burrows, vesicles and pustules.

RISK FACTORS: Cases and carriers

INCUBATION PERIOD: 4-6 weeks

COMMON AREA OF INFECTION:

- Common areas of infection are groin, penis, nipples and skin between the fingers. Similarly in case of infants, it can be spread all over the body mostly in flexor and extensor surfaces.

CLINICAL FEATURES:

- Nocturnal purities (severe itching particularly at night)
- Skin lesions in the form of burrow a gray on white tortuous thread like line between the fingers.
- Itchy papules distributed in inter- digital spaces, cubital, popliteal and inguinal regions. Infant may also have skin lesions on head and neck.
- Eruption of skin (due to itch).
- Vesicles on the palm and soles are characteristics.
- Formations of pustules.

DIAGNOSIS:

Skin scrapping and examination under microscope to detect the mites.

MANAGEMENT:

1. THERAPEUTIC MANAGEMENT:

- Topical scabicial agents such as 25% benzyl benzoate diluted in calamine or water and applies below neck to toes.
- Best treatment: 5% permethrin topical cream for children more than 2 months of age. The single applications cure more than 90% of cases. But for children less than 2 months of age, sulfur and crotamiton cream is best.
- For infected scabies: give antibiotics.
- Administer antihistamine if itching continues for 2-3 weeks after scabicial therapy.

2. NURSING MANAGEMENT:

- Instruct the families to apply scabicide agents and emphasis the importance of correct methods of application.
- All the member of the families must be treated simultaneously.
- Clothing and bedding should also be disinfected.

- Explain the parents that rash and itch will be eliminated at 2-3 weeks after replacement of skin layer i.e. stratum corneum.
- Give health teaching on maintenance of personal and environmental hygiene to minimize the communicability of disease.

BOILS (FOLICULITIS)

- Boils is a superficial infection or inflammation of hair follicles also known as folliculitis caused by bacteria (staphylococcus aureus).

TYPES:

Folliculitis are of two types. They are

- i) Furuncles: furuncles are acute inflammation arising deep in one or more hair follicles and spreading into the surrounding dermis. These are larger lesions with more redness and swelling at a single follicle. It is deeper form of folliculitis.
- ii) Carbuncle: carbuncle is more extensive lesion with wide spread inflammation of severe follicles. it can occur anywhere in the body but are more common areas such as back, neck, axilla, buttocks.

RISK FACTORS:

- Immunocompromised patients
- Long term use of corticosteroid and antibiotic therapy
- Prolonged contact with contaminated water
- Use of occlusive emollient products
- A moist environment
- Poor hygiene
- Maceration

CAUSES:

- Staphylococcus aureus (most common)
- Herpes virus

- Fungi (yeast)
- Inflammation form in grown hair

CLINICAL FEATURES:

- Start as small, red, raised, painful pimple
- Involves skin, subcutaneous tissue as the infection progresses: tenderness, pain and cellulitis of the area
- Gradually, the center becomes yellow and pointing in few days
- Later there may be pus discharge
- Sometime furuncles may extend and become deep abscess of the skin and subcutaneous tissue (carbuncle)

DIAGNOSTIC EVALUATION:

- Detailed history on presence of risk factors
- Physical examination of signs and symptoms
- Culture of the wound

THERAPEUTIC MANAGEMENT:

- Maintain infection site clean and apply topical antiseptic ointment.
- In severe and multiple lesions: Provide systemic antibiotic therapy, cloxacillin, flucloxacillin to prevent spread of infection and recurrence.
- In localized pus: incision and drainage of the pus followed by irrigation of the wound with antibiotics.

Nursing Management:

1. Assessment: History of presence of risk factors and physical examination.
2. Nursing interventions
 - Soak and wash lesions with mild soap solution to remove the central site of bacterial growth before applying topical antibiotics.
 - Administer medications which may include systemic or topical antibiotics.
 - Apply warm, moist compresses for 20 minutes for 3 times a day to increase vascularization and help with resolution of the furuncle or carbuncle
 - Monitor effectiveness of treatment.

- Counsel parents about application of topical agents and observe the signs of adverse drug reactions.
- Instruct the children not to squeeze a boil; the protective wall of induration that localizes the infection should not rupture or be destroyed.
- Maintain infection site clean and apply topical antiseptic ointment
- Clean the wound and cover with dressing.
- Avoid using of medicated soap to clean skin without consulting specialist.
- Provide counseling to the child against scratching or shaving the affected areas.

Summary:

Post test

Fill in the blanks:

- Scabies is caused by parasite -----
- Dental carries is also known as -----

Write true or false:

- Incubation period of scabies is 4-6 weeks -----
- Dental carries is an infection of the tooth caused by virus -----

Assignment:

- Describe the management of scabies.
(Date of submission:2080/11/30)

