CHAPTER 2

THEORETICAL BACKGROUND

2.1 Basic Consept of Congenital Heart Disease Anatomy and Physiology

2.1.1 Anatomy and Physiology of Heart



Image: 2.1.1 (On access via internet on Tuesday, May 26, 2015)

According Syaifuddin, (2010) the book is written: the heart is an organ consisting of muscles. Cardiac muscle is a privileged tissue because when viewed from the shape and the same structure with the nerve muscles latitude, but the way it works like a smooth muscle that is beyond our will.

2.1.1.1 Heart shape

Heart shape resembles the heart of a banana, the top is blunt (the base of the heart) and is also called the base of the cordis. On the bottom is a little pointed so-called chock full of cordis.

2.1.1.2 Location

In the front chest cavity (anterior mediastinal cavity), lower left of the mid-chest cavity, above the diagfragma and the base is left behind between the ribs V and VI two fingers below the mamae papilla, where the palpable pulsation is called the iktus cordis.

2.1.1.3 Size

The size of the heart is as big as the right hand and weighs about 250-300 grams.

2.1.1.4 Layers

The heart layer consists of:

a. Endocardium

The endocardium is an inner lining of the inner heart composed of endothelial tissue or mucous membranes that line the surface of the heart cavity.

b. Myocardium

Myocardium is the core layer of the heart that consists of the heart muscle, this heart muscle forms muscle bundalans are:

- 1) Atria muscle bundle, which is on the left or right and the base of the cord that forms the porch or the auricle cordis.
- 2) The ventricular muscle bundle, which forms the heart chamber starting from the ventricular atrio ring to the heart's absorption.
- 3) Atrio ventricular muscle bund, which is a dividing wall between the porch and the heart chambers.

c. Pericardium

The outer layer of the heart, which is the membrane covering, consists of two layers of the parietal and visceral layers that meet the heart's base forming a heart sac.

2.1.1.5 Cardiac Movement

The heart can move that is expands and buds caused because of the stimulation that comes from the autonomic nervous system. This stimulation is received by the heart at the nerve nerve found in the right atrium near the entry of the vena cava called the sino atrial node (sinus knop knot keith flak). From the side of the stimulus will be forwarded atrial wall and also gotten septum kordis by ventricular atrio node or bid node through wenkebach file. The stimulus will then be passed to the apical part of the cord and through its purebloods propagated throughout the ventricular wall thus the heart contracts. In its work the heart has three periods:

- a. Period of contraction (sistole period). A condition where the ventricular portion is in closed condition. The bicus and tricuspid valves are closed in the valvula seminularis of the aorta and valvula semilunaris the pulmonary artery is exposed, so that blood from the right ventricle flows into the pulmonary artery to enter the left and right lungs, while the blood from the left ventricle flows into the body and then circulates throughout the body.
- b. Dilatation period (diastole period). A state where the heart is floating. The bikus and tricuspid pouches open, allowing blood from the right atrium to enter the right ventricle. Furthermore, the existing blood of the left and right lungs through the pulmonary vein enters the sinister and the blood of the whole body through the vena cava into the right sodium.

c. Rest period. That is the time between the period of constriction and dilation where the heart stops approximately 1 / 10th of a second. At rest the heart will bud as much as 70/80 times / minute. In each heart contraction will transfer blood to the aorta as much as 60-70 cc.

If we work then the heart will contract faster so that more blood is channeled throughout the body. The work of the heart can be detected by examining the course of blood in the arteries, because the arterial wall will develop if it flows into the bloodstream. This blood wave causes his pulse in the arteries. In accordance with the heart buds are called pulse or pulse. Both the bad and regular or not the pulse rate depends on the flower heart deflated.

2.1.1.6 Heart Cycle

The heart cycle is an event occurring in the heart during blood circulation. The heart movement consists of two types: constriction (sistole) and constricting (diastolic) constriction of the 2 atrials occurring simultaneously called the atrial systole and its tumor is called atriat diastole. Length of ventricular contraction \pm 0.3 second and relaxation stage for 0.5 second. The constriction of the two atrial atria is short. While ventricular constriction is longer and stronger. Left ventricular thrust should be stronger because it should push the blood throughout the body to maintain systemic blood pressure. Although the right ventricle also pumps the same blood but its task only drains blood around the lungs when the pressure is lower.

2.1.1.7 Heart Sound

During the movement of the heart, can be heard two kinds of sound caused by the valves that close. The first sound is caused by closing the ventricular atrio valve, and the second sound by closing the aortic valve and the pulmonary artery after constriction of the ventricle. The first sound is long, the second short and sharp. In normal circumstances the heart does not make the sound louder, but if the blood flow is fast or if there are abnormalities in the valve then there is a noise.

2.1.1.8 Heart Debit

Heart debacle (apex pounding) is a left ventricular blow against the anterior wall that occurs during ventricular controversy. This debacle is palpable and is often seen in the fifth intercostal space approximately 4cm from the sternal line.

2.1.1.9 Properties of Cardiac muscle

Cardiac muscle has distinctive features. The ability to contract the heart muscle during sistole or diastole does not depend on nerve stimulation. The conductivity (conductivity) of the passage through each cardiac muscle fiber is very subtle and very clear in the beam. The rhythm and strength of the wave that the heart muscle automatically possesses by not dependent on nerve stimulation.

2.1.1.10 Artery Pulse

The pulse is a palpable surge in the arteries when the blood is pumped out of the heart. This pulse can be palpated in the radial artery and dorsal artery pedis which is a pressure wave that is diverted from the aorta to the arteries that propagate faster. Heart rate in a healthy state is affected by work, food, emotion, way of life and age.

2.1.1.11 Heart Pump Power

In a resting heart condition beating 70 times / minute. During many movements, the heart rate can be reached150 times / min with a pumping power of 20-25 liters / min. Every minute the exact amount of blood volume is altogether passed from the vein to the heart. If the venous blood vessel is unbalanced and the ventricles fail to compensate by the pumping power of the heart, the veins near the heart become swollen with

blood so the pressure in the vein rises for a long time, it may become edema.

2.1.1.12 Heart Valves

Inside the heart are the valves that are very important in the circulation of blood and the movement of the human heart.

- a. Valvula bikuspidalis, there is between the right atrium with the right ventricle consisting of 3 valves.
- b. Valvula bikuspidalis, located between the atrium sinistra with the left ventricle consisting of 2 valves.
- c. Valvula semilunaris pulmonary artery, located between the right ventricle with the pulmonary artery, where blood flows into the lungs.
- d. Valvula semilunaris aorta, located between the left ventricle with the aorta where blood flows towards the whole body. (Syaifuddin, 2010)

2.1.2 Definition

Congenital Heart Disease is a disease with abnormalities in the heart structure or function of the heart circulation brought from birth that occurs due to interference or failure of cardiac structural development in the early stages of fetal development. (Andra Saferi Wijaya and Yessie Mariza Putri, 2013)

Congenital Heart Disease (CHD) is a disorder of the structure of the heart that is present from birth. The disease is caused by a disturbance in cardiac development that occurs at 3-8 weeks gestation. (Syamsudin, 2011)

Congenital Heart Disease (CHD) is a heart disease that has been brought on since born, because it happens when the baby is still in the womb. On end of pregnancy 7 weeks, heart formation is complete; so abnormalities of heart formation occur early in pregnancy. Causes of CHD often unexplained, although several factors are considered potentially the cause (Rahayoe, 2010).

Congenital Heart Disease Congenital Heart Disease or congenital heart disease is a set of cardiac structural malformations or large blood vessels that have been there since birth. Complex congenital heart disease is mainly found in infants and children. If not operated, most will die when the baby. When Heart Disease congenital found in adults, it indicates that the patient is able to pass through natural selection, or has early surgery at an early age. (Shamima, L.S.,2008)

Congenital heart disease (CHD) is a structural abnormality and function of heart circulation that may appear at birth or in later life.CHD is the most common congenital disorder, the main cause disability, an important cause of childhood morbidity and mortality in the world as a whole (Batrawy et al., 2015).

Finally, the authors conclude congenital heart disease is a disease that has cardiac structure disorders since birth. This congenital heart disease.

2.2.2 CHD Classification

According to Park, M. K.(2008). There are various ways of congenital heart disease classification. A very much simple classification is a Classification based on the presence of cyanosis and pulmonary vascularization:

- 2.2.2.1 Non-Cyanotic CHD With Pulmonary Vascularization Increases There is a defect in the ventricle septum, atrium or duct that remains open to the shunt (leak) of blood from the left to right because the heart pressure on the left is higher than the right, including:
 - a. Ventricular septal defect (VSD)

DSV occurs when the ventricle bulk is not completely formed. As a result the blood from the left ventricle flows into the right chamber in the systole.

b. Atrial septal defect

Atrial septal abnormality is caused by a hole in the foramen ovale or in the atrial septum. Pressure on the foramen oval or atrial septum, pressure on the right side of the heart increases.

c. The Duct of Atereosus Persistent

DAP occurs when the duct does not close when the baby is born. The cause of DAP varies, can be due to rubella infection in the mother and prematurity

- 2.2.2.2 Non-Cyanotic CHD With Normal Pulmonary Vascularization.
 - a. Aortic Stenosis.

In instruktura abnormalities occur above or below the aortic valve. The valve itself may be exposed or retracted or completely deposited in the bloodstream

b. Stenosis pulmonal

Abnormalities in pulmonic stenosis, there is a stricture in the valve, normal but the peak together.

c. Coarctation of the Aorta

Abnormalities in coarcation of the aorta, the aorta berkontriksi in several ways. Contricion may be proximal or distal to the ductus arteriosus.

2.2.2.3 Cyanotic CHD with reduced pulmonary vascularization

Tetralogy of Fallot (TOF) is a cardiac abnormality with cyanosis disorder characterized by a combination of 4 abnormalities including ventricular septal defect (VSD), right ventricular outflow obstruction (pulmonary stenosis), aortic overriding, and right ventricular hypertrophy. According to Kirklin, pure tetralogy of fallot is not only a complex of the above-mentioned complexes but must meet the following conditions: VSD (ventricular ventricular defect) must be large, must be at least as big as aortic aperture, high-grade pulmonary stenosis, such that the pressure on the right ventricle equal to or greater than the pressure on the left ventricle

2.2.2.4 Cyanostic CHD With Pulmonary Vascularization Increase

a. Transposition of Large Arteries

When large blood vessels undergo aortic transposition, the anatomical and aortic artery will be affected. The child will not live unless there is a persistent ariosus duct or ventricular septal defect or atrial, which causes a mixture of arterial bloodvenous.

2.2.3 Etiology

In most cases, the cause of this CHD is unknown Park, M. K.(2008). Several factors are believed to cause this CHD in general we can classify into two major groups, namely genetic and environmental. In addition, congenital heart disease can also be caused by prenatal factors. Here are some of the causes of congenital heart disease because of Prenatal Factors:

2.2.3.1 Prenatal Factors:

Mother suffering from infectious disease, Mother alcoholism, mother age more than 40 years, Mother suffering from Diabetes Mellitus (DM) disease that require insulin.

- 2.2.3.2 Genetic factors, the important thing we note is the family history of heart disease, such as: Children born previously suffered from congenital heart disease, Father / Mother suffering from congenital heart disease, Born with other congenital abnormalities.
- 2.2.3.3 Environmental factors, some things to note are:

Inadequate environmental exposures, such as inhaling cigarette smoke, Rubella, this viral infection in first trimester pregnancy, will cause congenital heart disease, Diabetes, babies born from a mother who has uncontrolled diabetes have a risk of about 3-5% to experience the disease congenital heart, Alcohol, an alcoholic mother having an incidence of 25-30% to get babies with congenital heart disease, Ectasy and other drugs, such as diazepam, corticosteroid, phenothiazine, and cocaine will increase the incidence of congenital heart disease.

2.2.4 Signs and symptoms

Signs and symptoms of Congenital Heart Disease vary greatly depending on the type and weight of the disorder. Congenital Heart Disease may be recognized during pregnancy or shortly after birth. While mild CHD often do not show symptoms, and the diagnosis is based on physical examination and special tests for other reasons. (Bonu, J. 2015)

- 2.2.4.1 CHD symptoms and signs that may be seen in infants or children include:
 - a. Breathe fast
 - b. Cyanosis (a bluish tint on the skin, lips, and fingernails)
 - c. Get tired quickly
 - d. Poor blood circulation and
 - e. Decreased appetite.

Normal growth and development depends on the heart's workload and oxygen-rich blood flow throughout the body. Babies with CHD from birth may have cyanosis or fatigue easily during feeding.

- 2.2.4.2 As a result, their growth is not as appropriate as it should be:
 - a. Sometimes there are signs of heart failure
 - b. Machinery of persistent murmurs (systolic, then settled, most noticeably on the edge of the left upper sternum)
 - c. Large pulse pressure (water hammer pulses) / Nadi bulging and jumping, wide pulse pressure (greater than 25 mm Hg)
 - d. Takhicardia (apical pulse more than 170), hyperemic fingertips
 - e. Risk of endocarditis and pulmonary vascular obstruction.
 - f. Recurrent airway infections, easily tired

2.2.5 Pathophysiology

According to Andra Saferi Wijaya and Yessie Mariza Puteri (2013: 158) In normal circumstances the blood will flow from the high pressure area to the low pressure area. The area of high pressure is the left heart while the low pressure area is the right heart. The pulmonary circulatory system has a low resistance while systemic circulation has high resistance. When there is a relationship between high-pressure heart cavities with low-pressure heart cavities there will be blood flow from the high-pressure heart cavity to the low-pressure heart. As an example of a defect in the ventricle bulkhead, there will be blood flow from the left ventricle to the right ventricle.

This incident is called Pirau (Shunt) left to right. In contrast to pulmonary artery obstruction and ventricular septal defect the right heart cavity pressure will be higher than the left heart cavity pressure so that the blood from the poor right ventricle of oxygen will flow from the defect into the oxygen-rich left ventricle, a condition called the Shunt (Shunt) right to left which can result in a lack of oxygen levels in the systemic circulation. Oxygen levels are too low will cause cyanosis.

2.2.5.1 Congenital Heart Abnormalities in general may cause the following:

- a. Increased cardiac work, with symptoms: cardio megali, hypertrophy,tachycardia.
- b. Low cardiac output, with symptoms: impaired growth, intolerance to activity.
- c. Pulmonary hypertension, with symptoms: Dyspnea, takhipnea.
- d.Decreased arterial oxygen saturation, with symptoms: polycythemia, acidosis, cyanosis.



(Arif Muttaqin,2009)

2.2.6. Diagnostic Examination (CHD)

(PPNI Komisariat RSUD Salatiga, 2011)

- 2.2.6.1 Thorac's Photo: The left atrium and ventricle significantly enlarge (cardiomegaly), vascular features
- 2.2.6.2 echocardiography: The left atrial tooth ratio of the aorta is more than 1.3: 1 in term infants or more than 1.0 in preterm infants (due to increased left atrial volume as a result of left to right shunting)
- 2.2.6.3 Color Doppler Examination: used to evaluate blood flow and direction.
- 2.2.6.4 Electrocardiography (EKG): varies according to severity, in small PDA no abnormality, left ventricular hypertrophy in larger PDA
- 2.2.6.5 Cardiac catheterization: only undertaken to further evaluate dubious ECHO or Doppler results or if there is suspicion of additional defects

2.2.6 Management

Acording (Andra Saferi Wijaya dan Yessie Mariza Putri, 2013: 159 160)

2.2.6.1 Pharmacological

In outline management In Patients suffering from Congenital Heart Disease can be done with 2 Ways Namely With Surgery and Cardiac Catheterization.

a. Operative Methods: After general anesthesia, the doctor will make an incision in the chest, through the breastbone or ribs until the heart can be seen. Then the function of the heart is replaced by a device that works to pump blood throughout the body called Heart lungbypass which also replaces lung function for oxygen exchange after which the heart can be stopped and opened to fix the existing abnormalities, such as if there is a hole in the heart septum normally closed, the hole will be closed with a special tool attached to the heart septum.

b. Cardiac catheterization: catheterization procedure is generally performed by inserting a flexible kettle or flexible hose inside it equipped with an umbrella that can be developed to cover the heart defect, the ketetr is inserted through the back or vein vessels of the thigh or arm. This procedure is performed in general anesthesia so that the child / patient does not get sick.

The success of this catheterization procedure for CHD handling is reported to be more than 90% but it is still inferred that not all CHD types can be intervened by this method. In cases of too large cardiac septum defects and certain cardiac structural abnormalities such as heart that lies outside the chest cavity (ectopic heart) and severe fallot tetralogy still require open operative.

2.2.7.2 Non-Pharmacological

While Non-Pharmacologically Can Be Given Additional Milk Formula with high calories and supplements for breast milk is needed in infants suffering from CHD. Especially in premature infants and babies who are tired while breastfeeding. In Patients / Children Facing or suspected suffering CHD action can be done, such as :

 Placing the patient, especially the neonate in a warm environment, can be done by swaddle or placing it on an incubator, gives Oxygen c. Provides sufficient fluid and overcomes electrolyte and acidbase disorders.

2.2.Basic Concep of Nursing Care of Congenital Heart Disease

According to NANDA Nic-Noc (2016) the theoretical review of nursing congenital heart disease is as follows:

- 2.2.1 Assessment
 - 2.2.1.1 Anamnesis.

In the history, the section studied is a major complaint, current disease history, and past medical history.

2.2.1.2 pregnancy history

history of the occurrence of maternal infection during the first trimester. Other causes of infection are rubella, influenza or chicken fox. Prenatal history such as mother with diabetes mellitus with dependence on maternal obedience insulin keeps pregnancy well, especially including maintaining mother's nutrition, and not drug addiction and alcohol, not smoking

2.2.1.3 birth history

the birth process or naturally or the presence of factor factors that prolong labor, the use of tools such as vacuum to help birth or mother should be done by SC.

2.2.1.4 family health history

history of heredity by noticing the presence of other family members who also have heart abnormalities to assess the existence of genetic factors that support

2.2.1.5 Age

Keep in mind at what age the symptoms begin to arise. In children with KJB symptoms are not always accompanied by specific signs, because children can perform activities normally. Sometimes symptoms appear after adolescence or adulthood.

2.2.1.6 Growth and development

Some children who suffer from KJB can grow and develop normally. In some specific cases, such as VSD, ASD, and TF, the child's physical growth is impaired, especially his weight. The child looks thin and painless, mainly due to respiratory tract infections. As for its development, which often experience interference is the motor aspect.

2.2.1.7 Pattern of activity

Children who suffer from TF often can not perform their daily activities normally. When doing activities that require a lot of energy, such as running, moving, walking long distances, eating / drinking hurriedly, crying, or suddenly sitting squats, children may experience cyanosis attacks. This is intended to facilitate the flow of blood keotak. Sometimes children seem passive and weak, so they are less able to carry out daily activities and need help.

2.2.1.8 Vital signs (temperature, pulse, respiration, and consciousness)

The temperature of children with KJB is renal / normal for nosigns of infections. The pulse in infancy is normally faster than in childhood. In children who have difficulty breathing / shortness of breath is often found signs of respiratory muscle retraction, nostril breathing, and rapid breathing, while the baby is often characterized by drinking / sucking that often stop. This shortness of breath often arises when doing long and intensive exercise.

According to the Glascow Coma Scale (GCS) awareness assessment is included in the compos mentis category. In a worsening state, such as when a child has heart failure, consciousness may decrease even to a coma.

2.2.1.9 Cyanosis

Especially in the case of TF. It should be distinguished between peripheral cyanosis and central cyanosis. Peripheral cyanosis occurs due to vasoconstriction of blood vessels, especially in the peripheral parts which can be seen at the extremities of the extremities. While in central cyanosis, bluish color can be seen in mucous membranes, such as tongue, lips, and conjunctiva. Central cyanosis can arise during activities, such as crying or eating hastily. In severe diagnosis, without any activity, pale blueness is already visible. Cyanosis is not always present in congenital heart disease. This depends on the location of the disorder. For example, on VSD or ASD the cyanosis sign is not visible.

2.2.2 Physical Examination

Physical examination performed similar to the physical assessment conducted on patients suffering from heart disease in general. Specifically the data that can be found from the results of physical assessment of congenital heart disease are:

- 2.2.2.1Nursing history: physiological response to defects (cyanosis, restricted activity).
- 2.2.2.20bservation of signs of heart failure, rapid breath, shortness of breath, retractions, additional heart sounds (machine murmur), leg injury, hepatomegaly.
- 2.2.2.3 Observation of chronic hypoxia: clubbing finger.
- 2.2.2.4 Observation of hyperemia at the fingertips.

- 2.2.2.5 Observation of diet, weight gain patterns.
- 2.2.2.6 Newborns are small and weigh less.
- 2.2.2.7Observe whether the child looks pale, sweat pouring,hyperemic fingertips.
- 2.2.2.8 Observation of chest diameter increases, often seen left breast bump.
- 2.2.2.9 Marking signs are shortness of breath and retraction of the jugulum, intracapal and epigastric regions.
- 2.2.2.10 in a skinny child is a hyperdinarnik heart impulse.
- 2.2.3 Diaxnostic Examination
 - 2.2.3.1 Ultra Sono Chest graph (USG) used to determine the heart size, pulmonary vascularization form, sera to determine the state of the thymus, trachea, and osephagus
 - 2.2.3.2 Electro Cardiography (ESG) is useful to know the existence of arrhythmia or hypertrophy
 - 2.2.3.3 Echo Cardiography is useful for knowing hemodynamics and heart anatomy
 - 2.2.3.4 Catheterization and angiography for anatomic heart disorders performed by surgery
 - 2.2.3.5 Laboratory examination, usually blood tests performed for serum electrolytes, Hb, packet cell volume (PCV) and sugar levels.
 - 2.2.3.6 Program Terapy

Treatment is shown for two things:

The type and severity of the disease. If there is cyanosis, physical and mental optimization is required for the preparation of surgery. Observation of vital signs and supportive supplements is necessary even if the child does not have cyanosis. Overcoming the disease / complications that are usually done by surgery.

2.2.4 Nursing Diagnosis and Interventions

$2.2.5.1 \ {\rm Disturbance \ of \ gas \ exchange \ b.d \ pulmonary \ congestion}$

Goal :

Within 3×24 hours there is no overcrowding or there is a decrease in shortness of breath response.

Criteria result:

Subjectively: The client states decreased breathlessness. Objectively: Get Vital Signs within normal limits (RR 16 to $20 \times / \text{min}$). no use of breathing apparatus, blood gas analysis within normal limits.

Intervention :

- a. Give extra O2 6 liters / minute.
 - Rational: To increase the concentration of O2 in the gas exchange process.
- b. Monitor saturation (oximetry) Ph, BE, HCO3 (with BGA).

Rational: To know the level of oxygenation in the network as an adequate impact of gas exchange process.

c. Prevent atelectasis by practicing effective coughing and deep breathing.

Rational: Severe congestion worsens the process of gas exchange resulting in hypoxia

- d. Collaboration of RL 500 cc / h and digoxin.
 - Rational: Increases the contractility of the heart muscle so as to reduce the incidence of edema and can prevent gas exchange disruption.
- e. Give Furosemide injections

Rational: Helps prevent liquid luminescence by inhibiting ADH

2.2.5.2 Activity intolerance r / t imbalance between oxygen

consumption by the body and oxygen supply throughout the body.Reduce the increase in pulmonary resistance: Goal :

The daily activities of the client are fulfilled and the increased ability to move.

Criteria Result:

The client shows the ability to move without severe symptoms, especially in bed mobilization.

Intervention :

a. Record the heart's frequency; rhythm; and changes in TD during and after activity.

Rational: The client's response to activity may indicate a decrease in myocardial oxygen.

b. Increase rest, limit activity, and provide no heavy leisure activities

Rational: Reduce myocardial work / oxygen consumption

- c. Abdominal pressure, eg: straining during defecation. Rational: tachycardia, as well as an increase in TD.
- d. Keep the client in bed rest while acute illness.Rational: To reduce the burden of the heart.
- e. Maintain the addition of O2 as needed. Rational: To increase tissue oxygenation.

2.2.4.3 Changes in nutrients are less than body needs b.d fatigue at the time of eating and increased caloric needs.

Goal:

Within 3×24 hours there is an increase in nutritional fulfillment.

Criteria Result :

Clients are subjectively motivated to accomplish nutrition as

recommended, increased intake on the portion of food provided.

Intervention:

- a. Explain the benefits of eating when associated with current client conditions.
 - Rational: With the understanding of the client will be more cooperative follow the rules.
- b.Encourage clients to eat food provided at the hospital.

Rational: To avoid foods that can actually interfere with the client's healing process.

c. Involve the patient's family in the fulfillment of additional nutrients that do not conflict with the disease.

Rational: Clients sometimes have an appetite that has been accustomed since at home. With the help of the family in the fulfillment of nutrients with no conflict with dietary patterns will increase the fulfillment of nutrients.

- d. Perform and teach mouth care before and after meals as well as before and after oral intervention /examination.
 Rational: Good oral hygiene will increase the client's appetite.
- e. Give motivation and psychological support. Rational: Improve psychologically.

2.2.5.5 Risk of infection b.d declining health status.

The child will not show any signs of infection Goal :

Within 3×24 hours declining health status can reduce **Intervention :**

a. Avoid contact with infected individualsRational: maintaining a healthy environment

b. Give adequate rest

Rational: provide a sense of comfort to the client c. Provide optimal nutritional needs

Rational: meet the nutritional needs of clients