Mt Kenya University

School of Education

Department of Early Childhood Studies

Course Code: BEC 211

Course Title: Health education Practices and Maternal Child Health

Instructional Module for BECS Distance Learners

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Scaling the Heights of Education

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INTRODUCTION

Welcome to this course on Health Education Practices and Maternal child Health. It is advisable that you spend at least two hours every day studying using this module. You are expected to sit for a Continuous Assessment Test (CAT) and an assignment that will total 30 marks. The end of semester exam will be marked out of 70 marks. You are expected to submit your assignments in time.

Wishing you the all the best.

COURSE DESCRIPTION

In this course, we shall strive to understand the concepts of health education and maternal child health in the light of early childhood development. We shall define health and health education; explore maternal child health and care services specifically ante natal and post natal care; growth monitoring and promotion strategies as well as indicators of good health in young children. We shall establish the link between good health and schooling. First Aid care and the concept of Primary Health Care (PHC) will be discussed. We shall examine environmental health; environmental conservation practices as well as hygiene practices in relation to children's health. Finally we shall explore the medical model of health vis a vis the public health module.

COURSE OBJECTIVES

At the end of the course, you should be able to:

- define health education and related concepts;
- identify various health education theories;
- explain the importance of maternal child health care services;
- outline the various activities taken in pre and post natal health care clinics;
- highlight indicators of good health and poor health in young children;
- describe skills used in growth monitoring and promotion;
- relate good health and schooling;
- explain the concept of Primary Health Care (PHC);
- discuss environmental health in the light of child health;
- analyse different strategies of environmental conservation;
- discuss First Aid in relation to the pre- school;
- compare traditional methods of child rearing with modern methods;
- Contrast the medical model of health with the public model of health.

1.1 Lecture One: Introduction to Health Education

This is an introductory lesson where 8 key concepts are defined to provide you with a foundation of the course

1.2 Objectives of the lecture

By the end of this lecture, you should be able to:

- Define health
- Define health education
- Describe a child's health needs
- Describe characteristics of a healthy child
- Discuss theories related to health education

Definition of Key Terms

Health

According to World Health Organization (WHO) (1948), health, is a state of complete well being (physical, mental, social, emotional and spiritual) not merely the absence of disease or infirmity. The implication is that health is holistic. A child's healthy development depends upon the ability of the care-giver to meet certain basic needs which include physical, mental social and emotional. Health is a basic need as enshrined in various conventions such as the Universal declaration of human rights convention of the Rights of the child, UN 1998, the Kenyan constitution (Republic of Kenya, 2010).

Health Education

Education is a learning process where an individual acquires knowledge, skills values and positive attitudes. Health Education is a process to help people focus on behavior or practices that promise the best possible state of themselves. It is a

sum of all experiences which influence habits attitudes and knowledge individually or at community level.

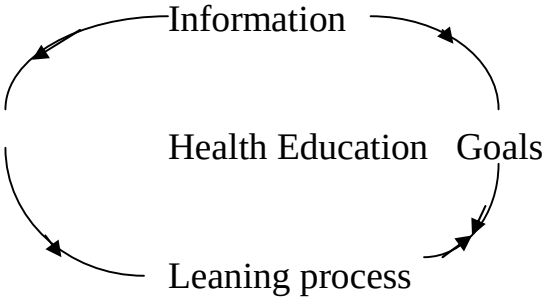
Health Education can also be viewed as a process by which an individual or a community realize their health needs and match them with necessary health related behavior.It is an activity aimed at restoring, maintaining or enhancing the health of individuals and communities by creating an understanding of the human body and its working as well as the national or local policies and environmental processes which may be detrimental to health.

There are three components of health education:

(i) Information: This includes what is known about health.

(ii) Goals: Ultimate health goals are viewed in terms of desirable individual and community behavior patterns.

(iii) Learning: This is achieved by means of various methodologies within the education process.



The components of health education

1.2 Child Health Needs

For the healthy development of a child the caregiver has to meet the physical, mental, social and psychological/emotional needs of the child.

1. **Physical Health Needs**

These needs include the provision of:

(i) Food and water. Children need to be fed well with an adequate balanced diet to facilitate healthy physical growth. Infants should be breastfed exclusively for the first six months of life. Water is essential for fluid requirements in the body and to assist in the elimination of waste products in the body.

(ii) Shelter. The living conditions are a crucial determinant of the physical development of a child. Good shelter requires adequate space, good ventilation, proper sanitation facilities, good lighting and a clean environment.

(iii) Clothing. The child's body requires protection from cold weather; the child requires warm clothes associated with disease such as pneumonia and flus. A child should be dressed lightly during warm weather to protect him/her from heat rashes.

(iv) Play. Play is the natural way through which a child grows and develops physically. Motor skills, muscle coordination and muscular movement are developed as children engage in play activities.

(v) Immunizations. The objective of immunization is to produce in the child a degree of resistance to a disease equal to that which follows natural infection. The programme of immunization starts from conception when the mother is vaccinated against tetanus. After birth, the child is vaccinated

against the six killer disease polio, tuberculosis, diphtheria, whooping cough and tetanus. Breastfeeding also provides the child with natural immunity.

(vi) Sleep and rest. Caregivers should provide adequate time during the day for children to rest. This is due to the fact that during sleep growth hormones are released in the body thus stimulating the child's growth.

2. **Mental Health Needs**

Good mental health allows a child to think clearly, develop socially and learn new skills. Basics for a child's good mental health consist of:-

- Unconditional love from family
- Self-confidence and high self-esteem
- Opportunity to play
- Encouraging teachers and supportive caretakers
- Safe and secure surrounding
- Appropriate guidance and discipline

(i) Unconditional love: children need to know that the caregivers love does not depend on his/her accomplishments. Mistakes and/or defeats should be expected and accepted. This way a child's confidence grows.

(ii) Nurture a child's confidence and self-esteem: A child's confidence and self-esteem can be nurtured by praising the children for their accomplishments. Assure the child by smiling and talking to them and by being actively interested in their activities.

(iii) Opportunity to play. Play time helps the child to be creative, learn problem solving skills and self control.

(iv) Encouraging teachers and supportive caretakers. Parents/caregivers and teachers can be great playmates joining the fun and playing with the child

gives the adult a great opportunity to share ideas and spend time together with the child in a relaxed setting.

(v) Safe and secure surrounding. A child needs a safe and secure environment free from hazards that can be detrimental to not only physical health of the child but also to the child's mental health. A child's mental health cannot develop in such environments as homes where parents are always in conflict, schools where teachers are overbearing thus instilling fear in the child.

3. **Emotional Health Needs**

The emotional well being of a child is dependent on both the psychological and physical environment the child is growing in. Physical environments such as poor housing conditions and a hostile physical environment (e.g. slums) can cause stress and frustrations to a child. The physical environment should be predictable and stimulating to facilitate a child's emotional growth.

Maternal stress occasioned by family disruptions such as separation divorce and fights, child abuse, frequent moving of houses, death of close significant other can be stressful to children.

Children who are loved and accepted learn their own value as human beings and develop a positive self-concept and are confident. They are also able to give love and affection to others.

Caregivers should be patient and attentive to children. A child needs to be treated with dignity and respect. Their ideas and comments ought to be given due consideration. Caregivers and teachers need to exercise consistent use of authority.

Emotionally health children exhibit positive emotions such as joy, contentment, love, humour, hope and excitement while emotionally unhealthy children portray negative emotions such as sorrow, jealously, anger, resentment, sadness, fear, hate, aggression, guilt and despair.

4. **Social Health Needs**

A socially healthy child is able to relate well with others.

Appropriate guidance and discipline: Children need the opportunity to explore and develop new skills and independence. At the same time, they need to learn that certain behaviours are unacceptable and that they are responsible for the consequences of their actions. As a member of the family, a child needs to learn the rules of the family unit. Caregivers should offer guidance and discipline that is fair and consistent. They will take these social skills to school and eventually to the workplace.

In this regard caregivers should:

- Be firm, but kind and realistic.
- Set a good example. A caregiver cannot expect self-control and self-discipline from a child if one does not practice that behavior.
- Criticize the behaviour but not the child
- Avoid nagging, threats and bribery: Give reasons as to why you are disciplining the child and what the potential consequences of their actions might be.

Playing with other children allows the child to discover their strengths and weaknesses develop a sense of belonging and learn how to get along with others. Caregivers need to allow children to just play for fun. Winning is not as important

as being involved and enjoying the activity. One of the most important question to ask is “did you have fun?” not “did you win?”. Social skills such as turn-taking are learnt through play.

Caregivers should also provide opportunities for children to be with other children and make new friends. School also provides such an opportunity and the teacher should encourage informal interactions between the pupils.

A child with good health has the following characteristics:-

- Has an abundance of vitality: the child is active and is able to play and manipulate the environment independently. The child is curious, creative and happy.
- Has bright clear eyes. The child’s eyes sparkle and has no difficulties seeing or when reading.
- Lustrous hair: A healthy child has a physically upright posture. He/she walks and runs without difficulty. The child can jump, hop, skip and climb without difficult.
- Clear skin. A child with good health has a smooth shiny and supple skin that has no scars and no signs of skin infections.
- Good teeth. A healthy child has a complete set of teeth both in upper and lower jaws.
- Healthy appetite. A child with good health has a healthy appetite. The child is able to feed himself at the appropriate age without being forced to eat.
- Freedom from illness: a healthy child does not appear sickly. His/her body is strong and the child is active and playful.
- Free from disabilities: a healthy child has no uncorrectable disabilities.

- Has a wholesome outlook on life. A healthy child has a positive attitude, is relaxed and interacts well with peers and adults. The child is socially appealing and is able to make friends without any difficulty.
- Gains progressively in weight and height. A healthy child grows well and gains in height and weight.

1.3 Indicators of Poor/Bad Health in Young Children

- Muscles look wasted. Due to lack of proper intake of energy foods, their body uses its own fat stores, the fatty deposits in the subcutaneous tissue under the skin. As these are metabolized the child becomes thin and in severe malnutrition, the muscle looks wasted.
- Problem with gross and fine motor development. A child with poor health has problems with small and large muscle coordination which affects the way they walk. They have difficulties with walking, jumping, hoping, skipping and climbing.
- Has little or no vitality. A child with poor health is lethargic. He/she is reluctant to explore and manipulate the environment independently.
- Has sunken eyes. The child has dull eyes and has difficulties seeing or reading.
- Has signs of Kwashiorkor and Marasmus. This is due to much slow intake of both energy and protein.
- Are underweight. An unhealthy child is underweight because energy intake are lower than in a healthy child.
- Have low intelligence. Unhealthy children are most likely to suffer neurological immaturity are more susceptible to developing learning disabilities.

- Dry chapped ashy skin. A child with poor health has a dry cracked skin that appears ashy. The child may have cracked lips and skin that bleeds easily.
- Broken and underdeveloped teeth. He/she is likely to have few teeth in either upper and lower jaw. This affects his/her feeding thus aggravating the ill health.
- Susceptibility to illness. An unhealthy child is ever sickly thus does not get involved in play.
- Has sparse thin, brown looking hair. A child with poor health has a few tufts of this, brown looking hair that breaks easily when combed out.
- Is irritable and cries often. A child with poor health tends to shy away from peers. He/she is not able to interact with peers and has a negative attitude to life. The child is not socially appealing and is never relaxed.
- Has little or no appetite. An unhealthy child has a poor appetite. The child is unable to feed himself at the appropriate age and in most cases the child is forced to eat.

1.4 HEALTH EDUCATION THEORIES AND MODELS

There are many theories and models in health education. For the purpose of this course only three will be discussed

(i) Health belief model

(ii) Social learning theory

(iii) Diffusion theory

1. The Health belief Model

The health belief model (HBM) emphasizes beliefs. It explains that a belief is something one accepts as the truth regardless of whether it is actually true. Whether or not a particular belief happens to be valid in the eyes of others has little to do with its effect on the holder's behaviour. Each belief consists of two components, the cognitive and affective. The cognitive element is what one knows and what might happen as a result. The affective component is how deeply one cares about the consequence of beliefs. Cues constitute another major component of the HBM, they serve to mobilize relevant beliefs into consciousness and thus bear upon particular health decisions.

It is accepted that beliefs can explain certain behavior. There are several categories of beliefs. With perceived serious beliefs, the more serious one perceives a disease to be, the more likely it is that one would respond to its recommended control measures. In the perceived susceptibility belief, it is accepted that individual perceptions of personal susceptibility to specific illness or accident differ.

The nature and intensity of these perceptive affect willingness to take preventive action. The perceived benefits belief is such that the expected perceived benefits from recommended health action influence how people accept such action. In the perceived barrier belief, the difficulty one perceives in undertaking recommended health action may influence its adoption.

The Health Belief Model offers the following general guidelines that apply to a wide variety of situations in health education.

- Provide learners with a realistic appraisal of the risks associated with poor health behaviour.
- Help learners face the reality of their susceptibility to various health threats.

- Help learners develop confidence in the effectiveness of recommended health practices.
- Help learners correct any exaggerated views they may have of the risks and difficulties regarding the recommended behaviour.
- Provide frequent reminders of the need and opportunity for specific health actions.
- Encourage learners to place high value on their health.
- Help people recognize their own power to change lives.

2. Social Learning Theory

Social learning Theory (SLT) is an influential approach in psychology and general learning. It is focused on people rather than ideas or objects. Social learning theory deals with behaviour such as eating or exercise habits. It provides a framework for self regulation of behaviour. In the process, it resolves the conflict between internal and external factors as determinants of behaviour. There are three positive determinants of behaviour.

- Genetically based instincts
- Environmental influences
- The application of free will

People's behaviour is influenced by the dynamic interaction of personal characteristics, environment and previous behaviour. The Social Learning Theory concept of behaviour capability is closely related to that of self efficacy but refers more directly to the individual's opinion of personal ability. Both concepts are relevant to the task of the health education. Self efficacy is closely related to motivation as health educators seek to instill confidence in their clients as to their

ability to stop a bad health habit. The general implication is that people count, and they are more readily persuaded to adopt new behaviour patterns by other people's actions than by their ideas.

3. **Diffusion Learning Theory**

Health behaviour can be divided into two general types: compliance behaviour and innovations. Compliance behaviour is generally known and recognized by both the learner and society as important to health. Much personal health behaviour especially that related to secondary and tertiary prevention is compliance behaviour for existing health problems, for example, following prescribed medication and ceasing to smoke cigarettes. Compliance behaviour is mainly addressed by constraints such as legislation and law.

Innovations are behaviours, ideas or attitudes. When an innovation is introduced, people learn about it. Many try it and some adopt it. For example introduction of hand washing points in pre-school. This can be perceived as an innovative response to an acknowledged health problem. Not all children will use the hand washing points. The number of people who will adopt the innovation could be used to influence others beliefs and therefore initiate a change. In the diffusion of innovation, the distribution of adoption depends on factors such as characteristic of the target population, characteristics of the innovation and stages of adoption. These factors must be taken into account when introducing an innovation in the community.

1.5 Relationship between physical, social, emotions and mental health

These components of health are interdependent, that is they influence each other. Health theories and models focus on the balance among these components of health. Inadequacy of one of them affects the others. A child's physical well being affects and is affected by his emotional well-being as well as his/her mental wellness. For example a child who is sick cannot play, thus affecting his mental development, (learning), his/her social well being (interacting with peers) as well as his/her emotional well being (the child is not fulfilled is unhappy).

1.6 Summary

In this lecture, we have had an introduction to health education as a course. Health education is a learning process designed to help an individual focus on behaviour or practices that promise the best possible state of themselves

A child has four basic health needs: physical, mental, emotional and social. A healthy child will exhibit certain characteristics which include alertness, vitality a wholesome outlook to life and progressive gain in weight.

Health education is anchored on a number of theories and models such as social learning theory, diffusion theory and the health belief model.

1.7 Self assessment questions

a) Define health education
b) Describe the diffusion theory
c) Discuss the interrelatedness of the four health needs

1. Further reading

Ebrahim G. J. (1991*). Practical Mother and Child Health in Developing Countries: A Manual for the Community Health Nurse and Rural Health Staff*. London: Macmillan Education Ltd.

Loerinsohn,B.P.(1990). *Health Education Interventions in Developing Countries: A methodological Review of Published Articles*

Kabiru, M. and Njenga, A. (2010) Health Nutrition and Care, Nairobi: Focus Publishers

2.1 Lecture Two: MATERNAL AND CHILD HEALTH

In this lecture, we are going to discuss the importance of maternal and child health.

2.2 Lecture Objectives

By the end of this lecture, you should be able to:

- Define maternal health
- Explain the importance of maternal health
- Describe maternal and child health care services
- Discuss the strategies used to monitor a child's growth.
- Describe the strategies used to promote a child's growth
- Compare traditional methods of monitoring and promoting growth with modern methods.

MATERNAL AND CHILD HEALTH

In most developing countries, children and young adults under the age of 15 make up about 45% of the population. If to this figure is added the number of expectant and lactating mothers, then about 65% of the population need to be covered by maternal and child health services.

The aims of such a service are to ensure that:

- Every expectant mother maintains good health, is prepared both physically and psychologically to go through a normal delivery bear a healthy child.
- Every child grows up in health surroundings, receives proper nourishment and adequate protection from disease.
- Communicable diseases are controlled in vulnerable groups by taking adequate preventive measures and by health education.
- Sickness is detected and treated early, before it becomes serious or chronic.

- Simple statistical data on morbidity and mortality are maintained at regional and national levels.

2.3 Common Health Problems of Mothers and infants

During pregnancy, the main problems are

(i) Anaemia

(ii) Malnutrition

(iii) Hemorrhage

(iv) Infection,

(v) High blood pressure

(vi) Usages abortion

(vii) Obstructed labour

In most developing countries, especially among the rural and urban poor, the average mother during the child bearing years passes through a series of cycles of pregnancy, prolonged lactation and pregnancy without any rest in between successive pregnancy. All this time her diet is poor and supplies her with only marginal nutrition. During pregnancy the mother has to supply the raw materials, mainly in the form of proteins, iron and calcium, for the formation of the foetal tissues. During lactation the mother has to supply all the nutritional requirements of the baby in her breast milk. If her diet is poor and if she does not get a period of rest between successive childbirths her maternal stores will be exhausted.

Infants

The problems of children in early infancy are mainly low birth weight, anaemia and infections. All these can be prevented by proper antenatal care of mothers and education in child care.

Pre-schoolers

Among pre-school children the main causes of ill health are malnutrition, respiratory infections and diarrhea diseases. Often these coexist, one perpetuating the other. The preschool age mortality rate in developing countries is several times higher than in developed countries. Children die, not because of any one severe disease, but due to the accumulated effect of several factors.

Thus the child of a poorly nourished mother begins life with a low birth weight, passes through a series of attacks of malaria, becomes anaemic and increasingly subjected to malnutrition, until it takes only an attack of diarrhea or an upper respiratory infection to deal the final blow.

With effective maternal and child health services this sad situation can be alleviated.

2.4 Maternal Health

Maternal health refers to the health of women during pregnancy, childbirth and post partum period. While motherhood is often a positive and fulfilling experience, for too many women it is associated with suffering, ill health and even death.

Millenium Development Goals (MDGs) states the need to improve maternal health, set targets of reducing maternal mortality by 75% and achieving universal access to reproductive health by 2015. World Health Organization (2005) notes that so far progress in reducing maternal mortality in developing countries has been too slow to meet the targets.

In 2009 there were 2642020 still births globally with more than 8,200 deaths a day. Among the 133 million babies born alive each year, 2.8 million die in the first

week of life.Maternal health encompasses the health care dimensions of family planning prenatal and post-natal care in order to reduce maternal morbidity and mortality.

The MDGs reinforce decades of international commitment and national efforts to address the problems associated with reproductive health, safe motherhood and family planning.

Importance of Improving Maternal Health

Keeping mothers alive and healthy is good for women, their families and society. The implication of maternal mortality and complication it causes for the health of infants and older children are also serious. The risk of death for children under 5 years doubles if their mother die in childbirth.

The beneficial effects of reducing maternal mortality for society are equally clear. Investment in safe motherhood not only improve a woman's health and the health of her family but also increase labour supply, productive capacity and economic well being of communities.

The burden of women associated with frequent or too early pregnancies, poor material and reproductive health, pregnancy complications, and caring for sick children and the elderly, drains women's productive energy, jeopardizes their income earning capacity and contributes to poverty. Children whose mothers die or are disabled in child bearing have vastly diminished prospects of leading a productive life (World Bank, 1999).

Strengthening Maternal Health can also bring benefits to the overall health system, which can enhance access and use of a broad number of reproductive health care services and can improve economic productivity for society.

Health is a compelling human right and this dimension rationalizes the need to reduce death and illnesses associated with pregnancy and childbirth.

2.5 Maternal and Child Health Care Services

Maternal and child health services should be thought of as a channel for directing medical and health services to a special group of the population. It is a service encompassing the preventive aspects of pediatrics, obstetrics nutrition, health education and child development.

It is recommended that every country should adapt its maternal and child health service to the needs and resources of the community it serves and it has to be moulded to the local culture traditions and cannot be modeled on a set pattern copied from another country.

A three-pronged approach is needed for improving maternal and child health:-

(i) Effective community based health care for screening and surveillance, good routine care for the healthy, identification of those at high risk and their referral for more skilled care, and promotion of better family health and nutrition.

(ii) Adequate referral facilities at health centres and hospitals to provide back up and to take care of emergencies and complications.

(iii) An efficient system of transportation for transferring emergencies to facilities where more skilled care may be available.

The day-to-day activities in maternal and child health care may be summarized as the following:

(i) Health education to promote:-
   a) Adequate nutrition of pregnant and lactating mothers.
   b) Childcare
   c) Feeding of children

(ii) Health supervision. This can be achieved by regular attendance at clinics e.g. ante-natal clinics

(iii) Immunization

(iv) Early detection and treatment of sickness

Maternal and child health services can reach out to the people through the following:-

(i) Hospital and home-visiting of problem cases through :-
   - Antenatal clinics
   - Young child clinics/postnatal clinics
   - Outpatient department
   - Children's ward

(ii) Health centres and dispensaries through:-
   - Ante-natal clinics
   - Children's clinics/ postnatal clinics
   - Home visiting

(iii) Community projects through:-
   - Community centres
   - Day care centres
   - Mobile clinics

- Schools

Ante Natal care

The purpose of antenatal care is to ensure good health in the expectant mothers, to enable her to have a normal delivery and a healthy baby and to teach her the art of child care.

The health of the newborn baby is closely related to what happens to him/her in the womb, as the nutrition of the mother, her illnesses, drugs given to the mother and chemical substances in her environment can all influence the developing foetus.

The first three months of foetal life (first trimester) are critical. It is the period during which different organs and body parts are differentiated, any interference with this process may lead to congenital malformations. The effects of various drugs administered to the mother, or maternal infections like rubella (German measles), are most acutely felt during this period of foetal life. It is believed that amongst congenital malformations, 10% are due to genetic factors and traceable in the family history, another 10% are due to chromosomal aberrations and the vast majority (80%) are due to extraneous factors and are potentially preventable. Certain infective agents can affect the foetus directly if they are present in the mother's blood stream. In congenital syphilis the foetus is infected in uterus and may show signs of secondary syphilis in the neonatal period, malarial infection of the placenta is responsible for low birth weight of the baby, and infection of the mother with the cytomegalovirus can damage vital organs in the same manner as in rubella.

One of the main purpose of ante natal care is to ensure proper nutrition in the mother. Among majority of rural and urban poor pregnant women due to

superstition, the pregnant woman is forbidden a proper diet, for example, eggs are a taboo in many communities. In some, there is a belief that the pregnant woman should eat less so that she will have a smaller foetus and hence less trouble during delivery.

Lecturing to mothers on the value of good food only confuses them and therefore it is better to be precise and practical. One practical demonstration on the choice and preparation of food is better than several hours of lecturing. All foods demonstrated should be available locally and the mother should be advised on how to buy, what to buy and who to prepare the food.

Repeated, regular examination of the mother to ensure that her pregnancy is proceeding normally are essential. Ideally, a mother who has no complications should be examined monthly from her first attendance until the 28^{th} week, every two weeks between the 28^{th} and 36^{th} weeks and then every week. Where it is not possible due to shortage of staff and the travelling involved, a minimum of at least six examinations should be insisted upon, of which at least two should be in the last month.

During the first visit the history of the mothers general health and past pregnancies should be noted. If there is history of the following the mother is referred for skilled opinion.

- Tuberculosis
- Heart disease
- Diabetes
- Syphilis

- Gonorrhea
- Orthopedic conditions
- Gynecological operations
- Abdominal scars which indicate precious surgery

Mother is also asked on past obstetric history of any of the following:-

- Abortions and ectopics
- Hemorrhages in pregnancy
- Previous difficult labours including forceps delivery
- Previous post-partum hemorrhage
- Blood transfusion
- Still birth
- Preterm delivery or low birth weight

With regard to present pregnancy, the following should be noted:-

- Age of the Mother
- First day of last menstrual period and expected date of delivery
- Family history and health of other children
- General bodily ill-health (bleeding, discharge, swellings of ankles etc)

The mother is examined on:

- General condition such as presence of anaemia under-nutrition, breathlessness oedema.
- Weight. Any gain of over 2Kg in a month is significance and should be referred for skilled opinion. When accompanied by high blood pressure it indicates pre-eclampsia.

- Height. At the first visit, the height should be measured. Mothers who are under 150 cm may have a difficult labour.
- Blood pressure. This should be taken at each visit if it is over 130/80 mm Hg this may indicate the presence of disease.
- Urine. For albumin and sugar.
- Examination of the abdomen for the height of the foetus and position of foetus. Stagnation of foetal height indicates inadequate foetal growth and a cause must be sought.

Referral to hospital:

This occurs in the following risk factors:

- Height under 150 cm, weight less than 40kg, poor weight gain.
- Blood pressure over 130/80 mm Hg
- Swelling of feet and ankles
- Vaginal bleeding
- Anaemia
- Abnormal presentations at the time of birth e.g. hand or leg first
- Twins
- Disproportion
- Abdominal pain
- Elderly primigravida (over 30 years)
- Young primigravida (16 and under)
- Fifth pregnancy and above
- Previous history of neonatal death

Post natal care

At birth all babies have four vital needs.

(i) Maintenance of body heat. This is best maintained by wrapping the baby well and nursing him/her next to the mother.

(ii) Regular supply of nutrients. Putting the baby to the breast immediately after birth is a good practice. Regular suckling of the breast helps to encourage the secretion of milk in the breast.

(iii) Protection from infection. Exclusive breastfeeding is the most effective measure for protection against infection.

(iv) Emotional bonding. All babies have a great emotional need to establish a loving relationship with their mothers. Breastfeeding and nursing the baby in the same bed as the mother help in the bonding process. The early days are crucial and no separation of the baby from the mother should be allowed.

2.6 Breast-Feeding

Establishment of proper lactation is an important part of infant care in developing countries. A baby who is not breastfed has a very poor chance of survival.

Most rural and urban poor homes do not have the facilities for coping with hygienic methods of bottle feeding, the principles of sterilization are poorly understood and the fuel required for boiling the water is always scarce. Bottle feeding in these conditions invariably results in diarrhea. Furthermore, the cost of artificial feeding is beyond the budgets of most households so that the baby is offered diluted milk and suffers under nutrition.

Advantages of Breastfeeding

- Breast milk provides balanced nutrition for the infant. It is the natural food for baby.
- Breast milk contains several substances which help protect the baby against infections, especially those of the gut and the respiratory tract.
- Breast milk contains a large number of white cells, mainly macrophages and lymphocytes which help to protect the baby against bacterial and viral infections.
- The endocrinological response of the breastfed infant is different from the response of a baby fed on formula. Human milk contains several hormones and enzymes which influence gut function in a number of ways.
- Various growth factors present in human milk influence the growth and proliferation of cells in the gastro-intestinal tract.
- Act of breast feeding provides the close contact and intimacy necessary for mother infant bonding thus playing an important role in the emotional development of the infant.
- Active lactation in the mother suppresses ovulation and subsequent pregnancy is delayed.

Common difficulties in breastfeeding:-

- Flat nipples
- Engorged breasts
- Cracked or sore nipples
- Mastitis
- Mother thinking she has insufficient milk

2.7 Immunization

Immunization is a key activity in post-natal care. The objective of immunization is to produce in an individual a degree of resistance to a disease equal to that which follows natural infection. This is achieved by introducing into the body viruses, bacteria or their products which have been made non-virulent, whilst retaining their antigenic properties.

Immunisation is a cost effective way of preventing illness. Sometimes a person is given ready made antibodies. This is passive immunization. The passing of antibodies from the mother to the foetus is an example of passive immunization. A mother who is immunized against tetanus protects the infant against neonatal tetanus.

Advantages of Passive Immunization

The body does not have to wait to produce antibodies as in active immunization. This is important in emergencies such as snake bites.

Disadvantages

- Since the body has not made the antibodies and there are no antigens stimulating it to produce more, the antibodies are gone in a few weeks or months and body immunity becomes temporal and will not continue to fight further infection.
- The body does not gain the capacity to produce antibodies and incase of re-infection it is endangered.
- When a severe reaction of antibodies and antigens result the antibodies are rapidly destroyed and this can result in death.

World Health Organisation (WHO) held a conference in Kumasi, Ghana in 1974 and it was revealed that of the eighty million children born in the world then, five million died of the six immunizable diseases against TB, Polio, Tetanus, whooping cough, diphtheria and measles. It was resolved that individual countries expand immunization programmes for communicable diseases. Kenya accepted and adopted the resolution in 1978 and Kenya expanded program on immunization (KEPI) came into being.

KEPI programme operate on the following principles:-

(i) Integration of programmes in Maternal and Child Health and Family Planning services.

(ii) Training of both high level/low level managers of KEPI activities

(iii) Promotion of health education

(iv) To improve surveillance services on all immunization activity

(v) To facilitate cold chains: these are systems of keeping vaccines cold at the potent state (0-8^{o}c) from the manufacturer until they are administered.

However, its main mandate is to carry out immunization in Kenya. Below are the schedules of immunization:-

Time Given	**Name of Vaccine**	**Type**	**Dose/route**	**Location**	**Protects against**
Before birth	Anti-Tetanus	Toxoid	Multiple doses (2-3)	Upper arm	Neonatal Tetanus
At birth	BCG (Bacillus Chalmetle Guevin)	Live attenuated	0.05 ml injection	Left arm	Tuberculosis
1st	Polio vaccine	Live attenuated	2-4 days	Oral	Poliomyelitis
6 weeks	Triple antigen (DPT) Diptheria, Pertasis, Tetanus	Toxoid and dead organisms	By injecti0n	Thigh	Diphtheria Pertasis Tetanus
	Polio	Live attenuated	2-4 drops	Oral	Poliomyelitis
10 weeks	Triple Antigen DPT Polio	Ibid	Ibid	Ibid	Ibid
14 weeks	Ibid	Ibid	Ibid	Ibid	Ibid
After 9	Measles	Live	Injection	Deltoid	Measles

months		attenuated		Muscle	
18 months	Triple Antigen Polio	DPT, Toxoid and dead organism	By injection	Left arm	DPT
		live	2-4 drops	Oral	TB
Entry to school	BCG	Live	0.005 ml injection	Left arm	tuberculosis
	Oral Polio	Live attenuated	2-4 drops	Oral	Poliomyelitis
	Triple Antigen (DPT)	Toxoid and dead organisms	By injecti0n	Thigh	Diphtheria Pertasis Tetanus

Vaccines may cause slight fever or other mild reactions such as a rash or a small sore. This is normal and sometimes it is an indication that the vaccine is working. The mother should be advised to continue feeding the child and give lots of fluids. Breastfeeding should continue. However, if the fever persists, the child should be taken back to the health centre.

2.8 Summary

Maternal health refers to the health of women during pregnancy, child birth and postpartum (after birth). It is crucial that mothers are kept alive and healthy for the good of the family and society. Maternal and child health services are a service encompassing the preventive aspects of child's health, nutrition, health education and child development.

2.9 Self – Assessment Questions

a) Define maternal health
b) Describe the activities that take place in the ante natal clinic
c) Discuss the advantages of breast feeding
d) Explain the importance of immunization

Further Reading

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Lecture Three: GROWTH MONITORING AND PROMOTION STRATEGIES

In this lecture, we are going to discuss strategies used to monitor and promote a child's growth and development.

3.2 Objectives of the lecture

By the end of the lecture, you should be able to:

- Discuss the strategies used to monitor a child's growth
- Describe the strategies used to promote a child's growth
- Discuss the health status of a child
- Compare the traditional methods of monitoring growth with the modern methods

GROWTH MONITORING AND PROMOTION STRATEGIES

Throughout childhood, the infant grows in size and the different physiological systems of the body mature in function. At the same time, social and emotional development occurs and the individual acquires several different skills of which the most important is language function.

Growth implies an increase in size which may be due to an increase in the number of cells constituting the various organs or an increase in the size of individual cells. Growth occurs in a definite pattern. General body growth takes place in two cycles, each with a speed up and slow down phase. The first cycle of growth begins in embryonic life in the uterus: by the time the baby is born, he is already in the decelerating phase even though increments in growth are more than at any other time in his life. After the age of about two, growth is slow and regular until puberty is reached when the onset of a growth spirit signals the beginning of the second cycle. Several body organs follow on individual pattern. Thus the nervous

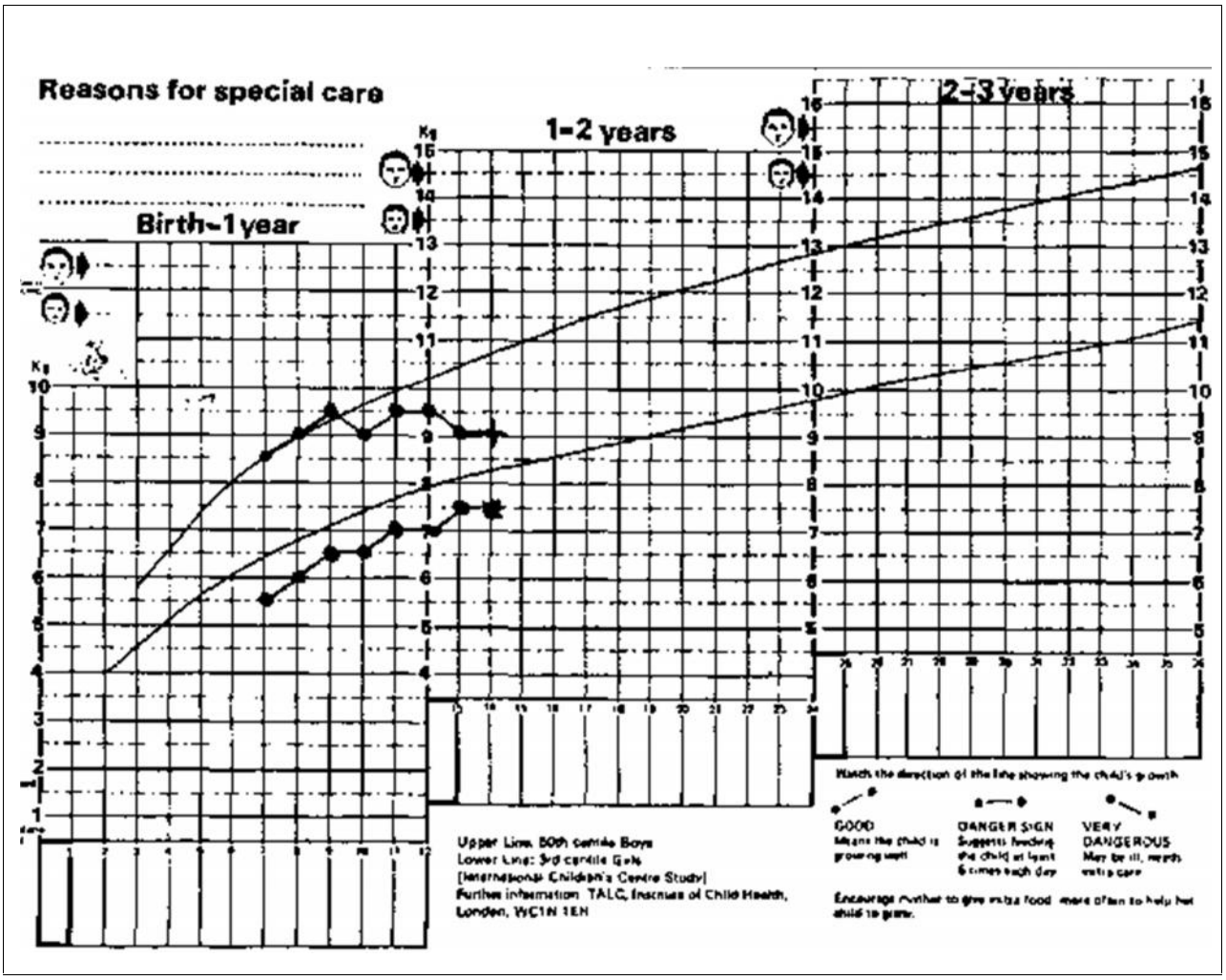
system grow maximally in early life being one fourth of adult size at birth, and more than doubling in size in the first two years of life, on the other hand, the gonads, the genitals and the mammary glands do not grow until puberty.

During any one cycle of growth, the various body parts do not grow symmetrically. In early life, because the nervous system is growing rapidly, the head is large in proportion to the rest of the body: later the extremities grow more rapidly that the trunk and both of them grow faster than the head. This gives the appearance of growth progressing from head downwards and is called the cephalocaudal pattern of growth. Factors influencing growth include both innate and environmental. They are genetic factors, nutrition, illnesses such as measles diarrhea, whooping cough, endocrines and health body organs.

Measurements of height and weight are the commonly employed parameters for assessing growth. Meticulous care should be observed when carrying out measurement by ascertaining weighing machine is accurate and the person carrying out the task is qualified and experienced.

Serial measurements are more useful than a single reading, in this way any deviation from the normal can be detected early and corrective measures can be applied. All reading obtained are more informative if plotted on a graph which has the average curve or percentile curves for comparison.

Weight chart cards also called Road-to-Health chat cards are commonly used. Below is an example of weight chart card.



It shows that the child's growth was satisfactory until the age of one year. After that a series of illnesses occurred, each causing a faltering of growth, with the child ending up being underweight. Note that at each visit, besides recording the weight of the child important health events such as immunization given, illnesses treated and so on are also recorded.

Health workers and care givers should take note of the following when weighting children records.

- Children with kwashiorkor or marasmus may have a deceiving weight owing to oedema fluid. Thus the child is at risk even if the actual weight is not very far below the normal curve.
- If a child is just a bit underweight he/she should receive special attention with specific diet instructions given to the mother and more frequent clinic visits. If the child stays in this condition for over three months without weight gain, or if there is tendency to lose weight or develop oedema, rehabilitation, admission into a nutrition ward, home visiting or/and extra food supplements should be initiated.
- Health workers and caregivers should be watchful of children with recent infections like measles, whooping cough, and severe respiratory tract infection or diarrhea diseases. These diseases interfere with the food intake and utilization because they decrease appetite absorption of nutrients and increase susceptibility to infection.
- Children who are recently weaned are also a special category. If the weaning food is not adequate and suitable they are likely to be malnourished.
- Other children are at risk of malnutrition due to growing in very difficult conditions. These include: orphaned children, single poor parents, child from slums, children from large poor families, from pastoralist communities from multiple births, where more than three siblings have died, children from extremely poor families or those who have had contact with people with open tuberculosis.

(i) Measuring a child's weight

This is another method to monitor a child's growth. The height is taken using a marked board. For children who are less than two years the length is

taken when the child is lying down. The measurements are then compared to standard measurements.

(ii) Head circumference

An infant has a relatively larger head than an adult. At birth the head is a quarter of the whole body length but in adults it is only an eighth. The head grows 12 cm in circumference in the first 12 months and 6 cm of this circumference is measured by taking the greatest distance around the forehead and the back of the head above the ears (maximal-front-occipital circumference)

Serial measurement of the circumference of the head in the first year of life is a useful method of assessing brain growth especially in the follow-up care of babies born with a low birth weight.

In a healthy child, centres of ossification (site bone begins to form in a specific bone or part of) in the skeleton appear at predictable times. In certain clinical states bone age is estimated and compared with the chronological age to assess growth retardation. In the same way dentition may be employed for comparison with body growth.

(iii) Arm Circumference

Commonly referred to as Mid-Upper Arm circumference (MUAC) is the circumference of the left upper arm, measured at the midpoint between the tip of the shoulder and the tip of the elbow. MUAC is a good predictor of mortality and is used for the assessment of growth and nutritional status. MUAC is less affected than weight and height based indices by the localized accumulation of fluid e.g in children with oedema. It is also relatively independent of height and body shape.

(iv) Chest circumference

A tape at the nipple line measures the chest circumference. In well-nourished children the circumference is about the same as that of the head at the age of 6 months. In a malnourshised child the head circumference may be larger pointing to reduction of fat and muscles on the chest.

Below is the standard measurements of weight, height and arm circumference.

Age	**Weight**	**Height**	**Arm circumference**
½ year	3.5 kg	50 cm	increase fairly rapidly
1 year	7 kg	60 cm	
2 years	10 kg	75 cm	16.0 cm
3 years	12 kg	87 cm	remains fairly constant increases
4 years	14 kg	96 cm	1 cm by 5 years
5 years	18 kg	109 cm	17.0 cm

3.3 PROMOTION OF GROWTH

As body growth progresses, the child also passes through various stages of intellectual and social development, learns motor skills of which the most important are walking and bladder control, and acquires language function.Promotion of growth involves advising mothers on how to provide a balanced diet and health care for their babies. This ensures that the babies grow and develop properly.

Strategies of growth promotion include:

(i) Availing the child for immunization.

Immunization protects the child from common infectious diseases of childhood. Certain immunizations are readily accepted, others are not, either because of the pain of injection or the systematic reactions as in the case of the triple antigen. Some may not be accepted because of lack of knowledge e.g. oral polio. In any case it is always important to gain the mother's confidence and inform her about possible side effects.

(ii) Early diagnosis and management of common childhood illnesses

Common illness such as respiratory infections, diarrhea diseases, malaria, anaemia, skin, and eye infections should be diagnosed quickly so that the disease process is checked early. Serious complications can arise if the child is not given early treatment.

(iii) <u>Providing proper nutrition</u>

A balanced diet is key to a child's growth promotion. A child should be breastfed exclusively during the first six months of life. Then the child should be weaned. The period of weaning is one of the most critical periods of a child's life. This is the period of transition during which a child whose main food was milk changes over to adult food. If this transition is well planned and progresses smoothly, there should be no setbacks, but in a large number of children the onset of malnutrition takes place during this period.

To wean a child does not mean to stop breastfeeding but to become accustomed to new foods.

<u>Dangers of the Weaning Period</u>

Nutritional disturbance is one of the greatest dangers of the weaning period. Weaning foods should be introduced in small amounts at first and as the child becomes accustomed to each type of food, the quantity should be

gradually increased. Some mothers realize this and it is a common practice in various communities to make additions to the child diet, usually in the form of porridge. Mothers think that the baby may not be able to digest thick porridge and it is therefore usually made thin and watery. As a result it has poor nutritive value.

Also, at about this time, the child is exposed to a variety of infections. The immunity derived from the mother is now at a low level, and the child has to acquire his own immunity. Diseases such as measles, whooping cough and Malaria infect the child and if the child's diet is poor, a child can lose upto 5 percent of original weight.

A recurring nuisance during the weaning stage is a weanling diarrhea. The entirely breast fed child has a source of food which is clean and easily digested. When additions to the diet are made, the food may not be properly prepared or may contain germs.

Abrupt weaning occasioned perhaps by an unplanned pregnancy, thus introducing the child not so nutritious diet may lead to malnutrition. Because of the abruptness of the weaning process, a child who had hitherto been on a nutritious diet of mothers milk has to change overnight to gruels which the child does not take well and which, even in the best circumstances cannot support the demand of growth.

Whenever weaning is abrupt there is associated psychological trauma.

Food supplements are required for those children who show obvious clinical signs of nutritional deficiency.

(iv) Providing safe, healthy and pleasant shelter is another strategy of growth promotion. This requires that a house be adequately ventilated and smoke free to prevent respiratory infections. Poor housing conditions may encourage infections and spread of diseases in the following ways:

- Diseases transmitted by the droplet method especially tuberculosis spread much faster in overcrowded homes with poor ventilation.
- Some vector-borne diseases can be partially controlled by simple precautions around the house e.g. Malaria may be controlled through screening permanent house.
- Houses should be well light to avoid accidents.

(v) Provision of appropriate clothing is the other strategy of growth promotion. Children should be dressed according to the weather. They should be provided footwear, however, children who are not yet walking do not need to wear shoes as it is better not to restrict the small bones of their feet. Poorly designed footwear can seriously damage the growing feet of young children leading to deformities. Children's clothes should be selected and made of good quality fabric. Children require comfort and body protection from cold and excessive heat. Cotton fabric is very suitable for children because it is soft and comfortable, very absorbent, cool in hot weather, easy to wash. It can also be given a frame resistant finish (especially for night wear). Wool for jumpers is also good. Polyester blended with wool is suitable for skirts and trousers. Nylon when closely woven is suitable for rainy seasons for the preschooler.

Children's clothes need to be comfortable and allow freedom of movement. They should be washed and kept in a hygienic condition. The clothes should be simple and inexpensive. The following are characteristics of children's clothes.

- Warm soft and light in weight
- Easy to wash and can dry quickly
- Easy to put on and take off e.g. with fastening, made of zips and popper rather than buttons and ties.

- Elasticated waist bands instead of fitting waistbands
- Non irritant
- Absorbent
- Frame resistant
- Should not be tight especially around the neck and feet
- Neck line need to be plain (Ribbons, ties, collars or lace may rub against a small baby's delicate neck)
- For crawling toddlers, trousers knees can be reinforced with patches

Chidren's foot wear should be designed with the following characteristics:

- Shoes should be strong, sturdy, hard-wearing and have good quality.
- They should be water proof
- The insteps should be well supported
- The seams should not be hard and rough or rub the feet during wear
- Shoes should hold the child's feet firmly and should have adjustable fastenings such as buckles and laces (for post nursery children).

(vi) Stimulating Environment

Play for children help physical mental and social development and promote healthy growth.

The Health Status of a Child

The health state of a child can be described within a 3 stage process.

1. **<u>Primary Preventive Stage/healthy stage</u>**

During this stage the child is healthy and may not need medical treatment. However, preventive practices should be provided so that the child can maintain healthy living. These preventive methods include:

(i) Maintaining A Child's Personal Hygiene

Child's infection from diseases can be reduced if care givers practice high standard hygiene.

Personal hygiene include:-

Cleaning child's body: Children need to be washed regularly if possible once a day. This is because children are frequently in touch with dirt during play. Special attention in terms of cleanliness should be given to:

Eyes

Clean the eyes with clean water and soap. Mild soap should be used. Each eye should be cleaned with a separate piece of cotton wool. This is to avoid infection. If there is a foreign body, use a lot of water in the eye. If a child's eye is painful and red and oozing a doctor should be seen.

Ears

Clean with a clean cloth. Do not put objects in the ear. Some children are vulnerable to ear infection. Take the child to an ENT specialist.

Hands

Hands pick up infection from touching objects which may carry diseases e.g. soil feaces e.t.c. Dirty hands lead to infection such as diarrehoea. Hands should be washed with water and soap before eating and after visiting the toilet.

Nails

Finger nails should be cut short to avoid harboring vermin underneath. Dirty nails cause infection to skin.

Feet

Feet pick a lot of dirt especially for a child without shoes. Some of this dirt may have germs that cause diseases. Child's feet should be cleaned with

soap and water. Clean well between all the toes. Cut toe nails short, cover feet with socks or light shoes. Shoes prevent cuts, bruises and jiggers.

Mouth and Teeth

Food remains stick to gums and bring about rotting of teeth and infection. Teeth may start falling off. Teeth should be cleaned using brush and a pea sized paste. An improvised tooth brush and saline water can also be used. Make sure that the child does not swallow the toothpaste.

Head and hair

A shaven head is easier to clean. Wash hair once a week.

Food Cleanliness

Children's food should be prepared in a clean environment and kept clean using clean utensils. Care givers preparing food for children should be healthy and practice high standards of hygiene. They should possess a certificate of good health from the Ministry of Health.

Pre-school should have properly constructed kitchen, with enough clean water for washing, cleaning and drinking.

- Eating area should be clean. Tables are ideal as they learn table manners.
- Caregivers should ensure food for children is clean through:
  - Eat food as soon as it is cooked.
  - Use safe water/boil it.
  - Washing hands with soap and water before eating and after visiting the toilet.
  - Keeping food covered to avoid contamination.
  - Cooking food well to kill germs/worms in food.
  - Preparing children's food with clean utensils/
  - Raw foods like fruits should be washed with clean water/saline water.

Home and school Environment Hygiene

In many Kenyan communities such as rural and urban slums the environment has a lot of dirt from open sewage, uncollected garbage, animal sheds.

These expose the children to a lot of infections. The environment in which children are playing should be kept clean by:-

- Removal of sharp objects or broken glasses – nails and thorns
- Keep the play area free from feaces – animals/human.
- Toilets should be made available to all members of the community.
- Long grass that can hide vermin should be cleared and compound kept clean and beautiful by planting flowers.
- Dangerous items like falling stones from buildings should be kept out of reach of children. The area should be condoned off by putting up a barrier.
- Stagnant water around should be drained.
- Tins and other materials that can hold water should be removed from the compound.

2. **The sub-clinical/pre-clinical/pre-symptomatic**

   At this stage the child is said to be starting the route to infection and is likely to suffer from a disease. Symptoms of sickness begin to show e.g. coughing, running nose, crying, not eating well.

   Preventive measures are also called secondary prevention.

   They include measures such as:-

   i. Screening – examining urine and feaces. Growth monitoring is crucial at this stage.

ii. Contacting tracing – contact people who have been having contact with children.

iii. Prompt an effective treatment if the child had contact with persons with TB.

iv. Surveillance - keeping regular records of the number of cases of a disease like, measles/meningitis to see if a control program is working e.g. if there is a breakout of a disease measures have to be put in place to see if the disease is under control.

3. **<u>Clinical Stage</u>**

Symptoms of disease are seen closely and are recognizable.

At this stage, the child is at health centre or hospital and has been diagnosed by medical personnel and diseases determined. Prevention at this stage is tertiary.It includes professional measure such as diagnosis treatment, management (attending to patients) to ensure smooth progress of treatment.

3. 4 Summary

There are various methods used to assess a child's growth and development, which include: weight charts, measuring head, arm and chest circumference. Strategies to promote growth and development include availing the child for immunisation, early diagnosis and management of common childhood diseases and provision of proper nutrition as well as good shelter and proper clothes. A child health status consists of three stages: primary preventive stage;sub clinical and the clinical stage

3. 5 Self Assessment Questions

a) Describe four strategies used to monitor a child's growth and development
b) Compare and contrast the traditional methods of assessing a child's growth and development with modern methods.
c) Discuss the dangers of weaning period.
d) Discuss the preventive measures to be taken during the sub clinical stage of a child's health status.

3. Further reading

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4.1 Lecture Four: Primary Health Care (PHC)

In this lecture, we are going to discuss primary health care.

4.2 Lecture 4objectives

By the end of this lecture, you should be able to:

- Define primary healthcare
- Explain the principles of primary healthcare
- Discuss the elements of Primary Health Care
- Describe the Bamako Initiative
- Discuss the role of the family and community in primary healthcare

PRIMARY HEALTH CARE

Primary health care often abbreviated as PHC has been defined as “essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that individuals and the country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination.” In other words, PHC is an approach to health beyond the traditional health care system that focuses on health equity-producing social policy.

This ideal model of health care was adopted in the declaration of the international conference on Primary Health Care held in Alma Ata in Kazakhstan in 1978 (known as the “Alma Ata Declaration”), and became a core concept of the World

Health Organizational's goal of health for all. The Alma Ata conference mobilized a "Primary Health Care Movement" of professionals and institutions, government's and civil society organizations, researchers and grassroot organizations that undertook to tackle the politically, socially and economically unacceptable health inequalities in all countries.

During the Alma Ata conference, the stakeholders felt that their impact as doctors in their individual country's health care programmes was not as much as expected. Reasons given include:-

- Health care provision was left only to health personnel who were too few to meet the health care demands of their countries.
- Health facilities were too few for the population.
- Health facilities were located too far away from population
- Health facilities were too expensive for the majority of the population
- There was too much emphasis on curative medicines than preventive measures.
- People were not empowered to be in charge of their own health needs.

The concept of primary health care has emerged as the means of promoting health and preventing diseases. The essential components of primary health care include:-

- Promotion of good nutrition
- Provision of adequate supply of water
- Provision of basic sanitation
- Maternal and child care including family planning
- Immunization against the major infectious diseases
- Prevention and control of locally endemic diseases
- Education concerning the prevalent health problems and their control

- Appropriate treatment for common illnesses and injuries

It is worth noting that by far the biggest need is for health education. An unhygienic way of life is the main factor that maintains diseases in the community. Such unhygienic habits may be in relation to food, disposal of waste, housing or even in the wrong concept of diseases. When the individual standard of hygiene is poor, the sum total of it which is public hygiene will also be poor.

4.3 Goals and Principles of Public Health Care

The ultimate goal of primary health care is better health for all. WHO has identified five key elements to achieving that goal.

(i) Reducing exclusion and social disparities in health (universal coverage reforms).
(ii) Organizing health services around people's needs and expectations (service delivery reforms).
(iii) Integrating health into all sectors (public policy reforms).
(iv) Pursuing collaborative models of policy dialogue (leadership reform).
(v) Increasing stakeholder participation.

PRINCIPLES OF PRIMARY HEALTH CARE

Principles of Primary Health Care (PHC) as identified in the Alma Ata Declaration were expected to be formulated in national policies in order to launch and sustain PHC as part of a comprehensive health system and in coordination with other sectors. These principles are usually summarized as the 7As of Primary Health Care. They include:

1. Available Equitable distribution of health care. According to this principle, primary care and other services are expected to meet the main health problems in a community and must be provided equally to all individuals

irrespective of their gender, age, caste, color, location (urban/rural and social class.

2. All participating. All people in the community are expected to participate in order to make the fullest use of local national and other available resources. Health care services needs to use a multi-sectional approach which is the recognition that health cannot be improved by intervention within just the formal health sector. Other sectors are equally important in promoting the health and self-reliance of communities. These include, at least, agriculture (e.g. food security) education, communication (e.g. concerning prevailing health problems and the methods of preventing and controlling them), housing, public works (e.g. ensuring adequate supply of safe water and basic sanitation).
3. Appropriate: Use of appropriate technology. Medical technology should be provided that is feasible and up to date.
4. Accessible: Health services ought to be within reach of majority of the population.
5. Adequate: comprehensive health care relies on adequate numbers and distribution of trained physicians, nurses allied health professionals, community health workers and others working as a health team and supported at the local and referral levels. Health care should be enough for all.
6. Acceptable: Health care service including medical technology should be culturally acceptable to the community.
7. Affordable: Health care should be provided at a low cost so that most people can afford it.

4.4 Elements of Primary Health Care

Each letter of the word ELEMENTS stands for one component of Primary Health Care:-

E: Education – this includes programmes carried out by health personnel, community health workers, education officers and other stake holders.

L: Local disease control – this includes campaigns and control of various diseases that are hygienic and environment related.

E: Expanded immunization programme which includes education and campaigns by health personnel to create awareness to parents and community on the importance of immunizing children. It also includes actual immunization of children.

M: Maternal and child health service provision

E: Essential drug provision

N: Nutrition and food supply

T: Treatment at the earliest possible time

S: Safe water supply and sanitation.

In recent years there has been the addition of:-

-HIV/AIDS services

-Community based rehabilitation of street people

-Income generating activities

-Dental and oral health

-Mental health

Approaches to Primary Health Care (PHC)

Different primary health care approaches have evolved in different contexts to account for differences in availability of resources and local priority health problems. These approaches include:

GOBI – FFF

One selective PHC approach is referred to collectively under the acronym "GOBI-FFF". These are strategies that are being adopted to improve maternal and child health as part of primary care, especially in low income countries burdened with high infant and child mortality. They include:

- Growth monitoring – to prevent most child malnutrition before it begins.
- Oral rehydration therapy – to combat dehydration associated with diarrhea and vomiting.
- Breastfeeding
- Immunization
- Female education
- Food supplementation e.g. iron and folic acid fortification to prevent iron deficiencies in pregnant women.

4.5 THE BAMAKO INITIATIVE

The Bamako initiative was a formal statement adopted by African health ministers in 1987 in Bamako, Mali, to implement strategies designed to increase the availability of essential drugs and other healthcare services for sub-saharan Africa.

The Bamako initiative is a joint World Health Organization WHO/United Nations Children's Fund (UNICEF) initiative aimed at solving the problems in the financing of primary health care in sub-saharan Africa. It is a strategy aimed at

dealing with the severe economic crisis facing sub-saharan Africa, the negative effects of adjustment programme, on health and the reluctance of donors to continue to fund recurrent costs of primary health care programmes. UNICEF vision was how primary health care could be revitalized by generating funds in communities through the sale of drugs.

The African health ministers' resolution called for the acceleration of primary health care by:

- Defining and implementing self-financing mechanisms at district level.
- Encouraging social mobilization
- Ensuring a regular supply of drugs

Positive experience with resolving drug funds was cited as a reason for the implementation of community financing mechanisms that rely on revenue out of the sale of drugs.

The Bamako initiative proposed decentralizing health decision making to local levels and establishing realistic national drug policies to enhance the provision of essential drugs for Sub-saharan Africa.

The initiative was based on the realization that despite accepting in principle the core tenets of comprehensive primary health care, most sub Saharan countries were burdened by a lack of resources and practical implementation strategies. In particular, many health facilities lacked the resources and supplies to function effectively. As a result, health workers were sometimes merely prescribing drugs to be bought from unsupervised pharmacies, while many patients had lost confidence in the inefficient and under-resourced public health facilities. All these developments threatened to reverse the gains of 1980s after the Alma Ata.

The Bamako initiative aimed to increase access to primary health care by raising the effectiveness, efficiency, financial viability, and equity of health services.

Bamako health centres implemented on integrated minimum health-care package in order to meet basic community health needs, focusing on access to drugs and regular contact between health care providers and communities.

Based on the concept that communities should participate directly in the management and funding of essential drug supplies, village committees were expected to engage in all aspects of health provision. The purpose of community financing was to capture a fraction of the funds households were already spending in the informal sector and combine them with government and donor funding to revitalize health services and improve their quality. The most effective interventions were priced below private sector charges and cross-subsidized through higher mark up and higher co-payment on lower priority interventions. Immunization and oral rehydration therapy were supplied free of charge. Local criteria for excepting the poor were established by the communities.

A number of common support structures were organized around Bamako's core agenda (providing a basic package of integrated services through revitalized health centres that employ user fees and community co-management of funds) including the supply of essential drugs, training and super-vision and monitoring.

"Going to scale" was a critical step in the implementation process. The pace of expansion varied depending on the availability of internal and external resources, local capacity, the need to work at the speed of community needs and pressure from donors. Most of the sub-saharan countries that adopted the Bamako initiative employed some form of phased scaling up, and several countries – most notably Benin, Mali and Rwanda – achieved significance results.

Health committees representing communities were able to hold monitoring sessions during which coverage targets, inputs and expenditures were set,

reviewed, analyzed and compared. It is estimated that the initiative improved the access, availability, affordability and use of health services in large parts of Africa especially among children and women in the poorest fifth of the populace.

Limitations of the Bamako Initiative

The Bamako initiative was not without its limitations. The application of user fees to poor households and the principles of cost recovery drew strong criticism. Even in those countries where Bamako has been a success, poor people viewed price as a barrier. The challenges that Benin, Guinea and Mali still face, along with other African countries that adopted the Bamako initiative, is to protect the poorest and ensure that costs do not prevent access to essential primary health care services for poor and marginalized communities.

4.6 Strategies for Families and Communities Participation in Primary Health Care

Role of Health personnel

(i) Organize health programmes

This includes seminars and workshops for the community. At such forum they can create awareness on community's health needs. Communities are empowered to know that they are in charge of their own health. Communities are educated on:-

- Importance of ante and post natal clinics
- The essential role of a balanced diet and how to prepare it using locally available foods
- People are educated on food production, preservation and storage
- How to make water safe for drinking

- Environmental sanitation
- Personal hygiene
- Common diseases and how to prevent them
- Prevention and management of STIs including HIV and AIDS
- Providing counseling services

Role of Community Health Worker (CHW)

The community health worker's role in the implementation of the Bamako initiative. To effectively handle drugs at the community pharmacy the CHWs were required to follow the following guidelines:

- Receive the drugs
- Be sure the kit is properly sealed and not damaged in any way
- Open the kit and check every item using the provided checklist (packing slip)
- Note down any broken containers or packets
- Enter the drugs in record book or record cards
- Report any inconsistencies or damage to the committee chairman in writing and copy to be given to the supervisor in charge of the health centre.

The Community Health Workers are expected to manage the community pharmacies with acceptable level of professionalism. Other activities for the Community Health Workers include:-

- Storing Drugs:

  Community Health Workers are expected to keep drugs in an orderly manner for easier and quick access. Drugs should be stored on shelves in alphabetical order and should be labeled. The oldest stock or those with

shortest time to expiring date be kept front. Any drug past the expiring ought to be destroyed.

- Security of Drugs

  Make sure the roof is not leaking and the windows not broken, dampness will affect the drugs. Drugs should not be put in direct sunlight and food should not be kept in the pharmacy as it attracts pests like rats and cockroaches.

- Stock Taking

  The Community Health Worker should check the stock every week and report to the committee any losses or other problems.

The Community Pharmacy

Essential drugs programmes (EDP) are managed at community pharmacy usually facilitated by an NGO or community. The community will be responsible for setting aside appropriate space for a small store with the correct conditions of cleanliness, storage and security. Community Health Workers manage and give drugs to children and mothers at the community pharmacy. The community health committee is responsible for the overall supervision and management of the community pharmacy including accounting for the drugs and money from sales and purchase of additional drugs.

In Kenya drugs are supplied by EDP at all levels. The communities pay through cost sharing where the financial resources collected are distributed to the health care system. Twenty five per cent of resources remain in the district to support PHC programme while 75% is reimbursed to the government for reallocation.

Bamako initiative kits of drugs are designed initially to allow one community level health worker to treat around 50 families for 3 months. The kits are labeled for

individual village health committees on receipt of orders originating from the District Health Management team or nongovernmental organizations (NGO). The community kits will then be sent either to the nearest health centre for the community to pick up or directly to the community pharmacy.

In the Community drugs are supplied under close supervision in order to monitor the performance in diagnosis and treatment. Community Health Workers (CHW) are trained in the diagnosis and treatment of common diseases and through supervision, they are constantly monitored for their accuracy in handling health issues in the community.

(ii) How Communities are involved in PHC

- In the Bamako initiative expanded drugs programme the community is sensitized on the awareness of the rational use of drugs through continuous public health educational network. The money from the sale of drugs is managed by the village health committees.
- Communinity can also be mobilized to protect water sources and provide safe drinking water.
- Community may participate in cleanup activities such as cutting grass, collecting refuse, unblocking drains, planting trees and flowers and filling holes.
- Communities should also ensure all children in their area are fully immunized and reporting families that fail to immunize their children for various reasons .e.g. religion, traditions etc
- Communities should also ensure that children suffering from disabilities are referred to hospitals or other relevant institutions for specialized care.

(iii) Families Participation

- Ensures pregnant mothers attend pre-natal clinics
- Parents take children for immunization, G.M.P and health check ups
- Ensuring children sleep under treated mosquito nets
- Keeping all the children's records safely
- Attending all activities relating to primary health care such as education day and cleanup activities.

(iv) Role of Early Childhood Development teachers

- Encourage parents whose children are under their care to provide them with a balanced diet, treat when sick, identifying disabilities and helping in seeking early intervention.
- Encourage parents to participate in growth, monitoring and promotion activities.
- Discussing with parents the health records of their children
- Liasing with other stakeholders to advance primary health care in their localities.

4.7 Summary

Primary healthcare is the essential healthcare based on practical, scientifically sound and socially acceptable methods and technology provided to communities. It is based on the various principles and consists of a number of elements. The Bamako initiative provided a practical framework to African countries on provision of primary healthcare to families and communities

4.8 Self Assessment Questions

a) Describe four elements of Primary Health Care
b) Explain four principles of Primary Health Care

c) Evaluate the Bamako Initiative

d) Discuss the role of the pre-school teacher in promoting primary healthcare

Further Reading

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5.1 Lecture Five: Good health and schooling

In this lecture, we are going to relate schooling and good health

5.2 Lecture objectives

By the end of the lecture, you should be able to:

- Relate good schooling and health
- Discuss health factors that affect schooling

Good Health and Schooling

Studies have shown a clear association between learning and health. School age is probably the most important phase of childhood. It is the period during which the child enters society's training system from which he/she will emerge as a contributing member of the community according to his/her capabilities.

A good school and high quality pedagogy cannot produce the intended educational outcomes when children are too sick, too weak, or too distracted to learn. When there are many such children enrolled in school, the education sector performs inefficiently. Optimal returns on investment are not achieved, and progress towards a wide range of development goal is forestalled.

If significant numbers of children no longer participants in the formal school system because their health and nutrition status have rendered satisfactory academic progress an unattainable goal, the result is development and dreams dangerously deferred.

Several factors influence a child's Active Learning Capacity (ALC) a child's propensity and ability to interact with and take optimal advantage of the full complement of resources offered by any formal or informal learning environment. They include: nutrition status, health status, social and overall quality of the home and school environment.

Malnutrition and infection are widespread in most developing countries. Among the most common conditions are protein-energy malnutrition (PEM), micronutrient deficiency disorders, helminthic (worm) infections and upper respiratory illness. These conditions often combine to create negative synergies, thus for example, PEM and infection frequently co-exist and multiply the ill effects that each would cause if present alone.

The endemic nature of malnutrition and infection is also at the root of additional health problems that impede learning among school aged children. Poor vision and auditory impairment, for example, are conditions that directly relate to infections, and micro-nutrient deficiencies.

Prevalence data, therefore, suggest that programmes designed to improve the quality of pre-primary and primary schooling in developing countries must also include efforts to improve the health and nutrition status of the learners. Targeted health and nutrition interventions can offer important educational benefits.

(i) <u>Protein Energy Malnutrition (PEM)</u>

PEM is one of the most widespread nutritional deficiencies. The condition is worsened by a child's parasite load caused by poor diet, PEM, is almost always linked to conditions of extreme poverty and the additional accompanying threats to the child's normal growth and development that such an environment poses.

A complex disorder, PEM is also often associated with different levels and types of nutritional deficiencies such as iron and vitamin A as well as

infectious disease. Additionally, there is a causal relationship between PEM and impaired intellectual competence.

Studies by Sigman and others (cited in Pollitt, 1990) found that in Kenya 30% of Kenya's school population was stunted and underweight. The study also found out that Kenyan children who were better nourished had higher composite scores on a test of verbal comprehension and the Raven Progressive Matrices. Furthermore, better nourished girls were more attentive during classroom observation than their malnourished female counterparts. For the children as a group, the best predictors of cognitive scores were duration of schooling, food intake, physical stature (nutrition history) and social economic status. Worth noting is that regardless of the social and economic resources of the family, children who had more adequate diets scored higher on the cognitive battery than those with less adequate intake.

The good news is that children with a history of under nutrition in infancy and early childhood are capable of successful school performance when interventions include nutritional rehabilitation and cognitive stimulation.

(ii) <u>Micronutrient Deficiency Disorders</u>

This refers to deficiency of iodine, iron and vitamin A. The consequences of iodine deficiency include reduced intelligence, psycho motion retardation, mental and neurologic damage and cretinism. Among the specific aptitudes that appear to be most vulnerable to iodine deficiency are visual perception organization, visual motor coordination and speed of information processing. Children living in iodine deficient areas have also been shown

to have impaired hearing. Annual oral supplementation is an effective and low cost treatment in populations where fortification of salt or other products is not feasible.

Iron deficiency anemia is also common in developing countries. Studies show that pre-schoolers with iron deficiency were also handicapped in terms of their ability to engage in higher cognitive processes such as conceptual learning. Studies also indicate that the preschoolers attention deficits were reversed once iron treatment was implemented. Latham et al (1999) study in Kenya showed that school aged children deficient in iron stores exhibited reduced levels of alertness, attention and concentration which influenced their learning. The children also portrayed less motivation to persist in intellectually challenging tasks as well as lower levels of overall intellectual performance. They also exhibited irritability and a low level of engagement with and interest in their immediate environment. This does not only affect school achievement but also social development.

Vitamin A deficiency in its most extreme manifestation causes blindness. Depleted stores of vitamin A are also associated with acute respiratory infection, the severity of measles and diarrhea. Vitamin A deficiency also contributes to night blindness and limited peripheral vision. Evidence also exists linking vitamin A deficiency to brain growth which continues through age seven to ten. Prevalence among school aged children is estimated to be 85 million. In most developing countries acute respiratory infections, a condition related to Vitamin A deficiency, is the leading cause of school absenteeism. Oral supplementation every four to six months is an effective treatment for vitamin A deficiency.

(iii) **Helminthic (worm) infection**

Among school aged population, helminthic infection generates very high levels of morbidity despite relatively limited consequences for mortality. Large parasite burdens, particularly severe hookworm infection, are associated with impaired cognitive function as well as such education outcome measures as absenteeism, under enrollment and attrition. Thus helminthic infection appears to constitute a very real barrier to children's progress in school. Roundworms, hookworms and whip worm can be treated with a single dose of an anthelminthic yearly, although in the case of hookworm this must be supplemented with sulphate to prevent morbidity. Mass treatment of children in their schools is viewed as a powerful tool for improving health. It has the potential to reduce infection while simultaneously serving as a focal point for health education and the delivery of other interventions to improve health particularly iodine and vitamin A.

(iv) Temporary Hunger

In the school setting temporary hunger commonly occurs when children come to school without having eaten breakfast. The result is that the child is more easily distracted by irrelevant stimuli which ultimately influence school performance and learning. This is the rationale most often presented to justify the provision of school breakfast and lunch programs. Researchers in Jamaica found out that the provision of school breakfast to primary school learners had a significant effect on attendance and arithmetic scores.

In conclusion, there is a significant relationship between schooling and good health. A healthy child is likely to acquire skills, knowledge and desirable

attitudes that will ultimately be useful as a contributing member of his/her community.

5.3 Summary

Studies have shown there is a clear association between learning and health. A good school and quality pedagogy cannot produce the intended educational outcomes when children are too sick, too weak or too distracted to learn. Protein Energy Malnutrition (PEM), Micronutrient Deficiency Disorders, Helminthic (worm) infection and temporary hunger are the most common disorders that affect learning in most developing countries.

5.4 Self assessment questions

a) Explain the relationship between good schooling and health

b) i) Discuss the following nutritional disorders

- Protein Energy Malnutrition (PEM)
- Micronutrient Deficiency

ii) Explain how as a pre-school teacher you can intervene or children with the above disorders.

Further reading

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6.1 Lecture Six: Environmental Health

In this lecture, we are going to discuss environmental health and various hygiene practices

6.2 Lecture objectives

By the end of the lecture, you should be able to:

- Define the term environment
- Describe the different types of environment
- Discuss strategies for refuse disposal.

The Environment

The environment is an important part of the overall picture of human life and behavior. Within the environment are many influences - biological, physical, social and economic – all of which have a bearing on how people live and behave. In turn, the way people live and behave can determine the diseases from which they may suffer and how effectively the health services work. All the environmental influences interact with each other.

The *biological environment* is made up of all living things:

- People
- Vegetation such as trees, grass and crops
- Animals including stock and predators
- Insects such as mosquitoes and houseflies
- Infective organisms; viruses bacteria, amoebae and worms

The *physical environment* is made up of all geographical, physical and chemical features:

- Land, mountains, valleys and plains
- Soil
- Water
- Climate
- Altitude
- Chemicals and toxic substances

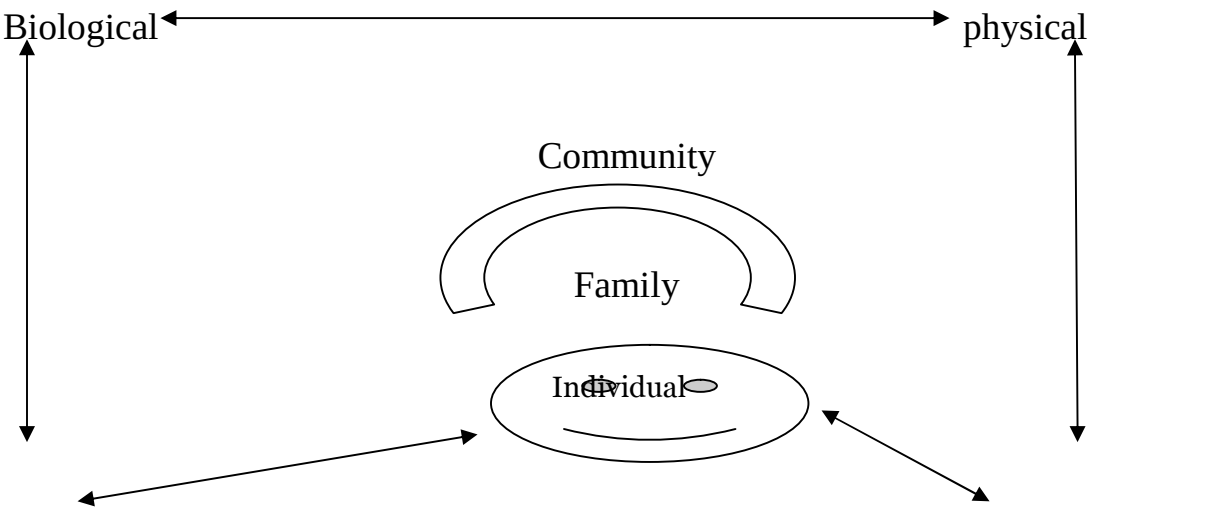
The *cultural and social environment* is made up of all the customs, beliefs and organizations in society:

- Family and kinship
- Customs and beliefs
- Religious
- Leadership and power structure

The economic and political environment is made up of work, money and government.

- Local community organization
- Rural and urban economies
- Political organization
- Development policies

The multiple interactions between people and their environment is called ecology. The figure below illustrates the many ecological interactions which make a community healthy or unhealthy.



All people are affected by their environment. However, they may be able to change it if they want. The environment can be changed to make it healthier, however, sometimes environmental changes make things worse and introduce health problems. Humans have leant to adjust to and control their immediate environment by means of clothing, fire and shelter, but human are altering the environment, sometimes quite rapidly by population growth, immigration, urbanization, industrialization, agricultural technology, road networks and so on. Some changes improve the environment while others destroy it. These damaging effects are called environmental degradation.

Man is the reservation host for many diseases and unsatisfactory disposal of waste, leads to an increase in feacal – oral transmission and spread of disease. Inadequate housing leading to overcrowding, lack of ventilation and dampness favours the transmission of airborne diseases. Poor setting of houses, closeness to where animals are kept and inadequate disposal of rubbish encourages mosquitoes, flies and rats and increases the transmission of vector-borne diseases. The use of

agricultural chemicals and the waste products of industry may also pollute water, food and air leading to respiratory diseases among others.

The control of these factors in the physical environment is called environmental sanitation or hygiene. People should be educated on environmental hygiene practices. These hygiene practices include:

(i) Food hygiene

Food is one of the basic human needs. It is necessary for survival, growth, physical ability and good health. Foods used for human consumption are mainly derived from animals and plants.

Food hygiene is concerned with all measure necessary for ensuring the safety, wholesomeness and soundness of food at all stages of production, preparation, marketing and distribution.

Food-borne illnesses are caused by ingestion of foods which contain pathogenic micro-organisms (such as bacteria), parasites (such as worms) chemicals (such as mercury).

6.3 FOOD SPOILAGE

Food spoilage is decay or decomposition of food which makes it undesirable for consumption. Spoilage of food may be due to growth and activity of micro-organisms, actions of enzymes, chemical reactions or physical change.

(i) Micro-organisms spoilage

Bacteria, moulds and yeast are the main cause of food spoilage. Bacteria play a major role in the spoilage of meat, poultry, dairy and fish products. Moulds and yeast cause spoilage of fruits. The evidence of bacteria growth is easily visible as in the case of slime formation on meat or fish, a cotton-like network of mouldy growth on cereals, cloudy appearance or curd formation in juices or an odour in spoilt proteins.

(ii) Chemical reactions

Foods sometimes deteriorate because of chemical changes not associated with bacterial growth or enzymes. Examples of such spoilage are oxidation of fats and fatty foods and caramelisation of sugar.

(iii) Enzyme reactions

Enzymes naturally present in the tissue of plants and animals continue to act after harvesting or slaughter. They bring about undesirable changes in food during storage. This destruction of plants and animal cells by their own enzymes causes food spoilage.

(iv) Physical change

Physical changes may spoil certain types of foods. Examples of such changes are excessive loss of moisture in fruits and vegetables. Rodents destroy cereals and contaminate them with urine, droppings and hair. Insect destroy cereals and legumes thus reducing their nutritional value. Rough handling can cause breakage in cereals and bruises in fruits. Such damaged foods are prone to other infections and conditions.

Food may also be contaminated by toxic agents such as poisonous chemicals such as pesticides, additives, heavy metals (such as lead, mercury, arsenic) and veterinary drugs. The commonest form of food contamination however, is from feaces by means of fingers, flies, dirty containers among others.

Food may also be contaminated from infections of the skin, especially the fingers of food handlers, their coughs and sneezes. It is therefore crucial that the person handling food should observe the highest standards of hygiene.

Food Preservation

Food preservation can broadly be defined as a method of treating food to prolong the length of time for which it retains its quality and appeal. The principle of food preservation is to destroy or inhibit the elements responsible for causing spoilage. The main methods of food preservation include:

(i) Chilling

Chilling or refrigerating is a process where the temperature of food is lowered and kept at a low temperature but above freezing point. It is a short term preservation method often used for milk, fruits and vegetables.

(ii) Freezing

This method involves the reduction of temperature generally to -18^{o} C or below. In such a state, the water in food is crystallized and the food remains frozen. Freezing is used for long term preservation of foods. The low temperature reduces microbial growth as the large percentage of water present in the food is converted into ice and hence is unavailable to micro-organisms. Freezing is best for milk, meat and meat products, products, pork, bacon, cooked cereals, and ice- creams.

(iii) Blanching

This is a process whereby vegetables and some fruits are heated at between 80ºc and 100ºc for 2-10 minutes prior to freezing, drying and canning. This is done by immersion in hot water or use of steam. The primary aim is to inactivate the enzymes. It also expels tissue gases, washes the food thus reducing microbial load) and softens the food. Blanching is best for fruits and vegetables.

(iv) Canning

The canning of foods consists of placing prepared food in cans, exhausting the air from the cans, sealing the cans, sterilizing the cans and cooling the cans. (sterilization is a heat treatment usually over 100ºc designed to kill micro-organisms and spores. Milk, vegetables, fruits, jams and sauces are canned for preservation.

(v) Drying

Dehydration is the removal of most of the water in certain foods, thus leaving them in an apparent dry state. This lack of moisture then slows or stops microbial growth, enzyme action and chemicals reaction. Milk, fruits, vegetables, nuts and meat are example of foods and fruits that can be dried.

(vi) Smoking

Foods are smoked by burning wood to produce smoke which is directed on the food. The products of smoke have antimicrobial substances, and smoking also has a drying effect on the surface of food. Fish and meat are example of foods that can be smoked.

(vii) Using Salt and Sugar Solution

Salts helps to keep moisture away by the process of osmosis and also kills bacteria. Examples include meat

6.4 REFUSE DISPOSAL

For a healthy environment, refuse must be disposed effectively. Indiscriminate disposal of refuse can result in production of bad smells, attraction of harmful insects and vermin such as flies, cockroaches and rats. Poor waste disposal methods promote the spread of diseases, including causing other problems such as fires, pollution and blocking of sewage pipes. There are many different types of refuse that can endanger the health of children within the housing environment. They include:

(i) Domestic refuse

This type of refuse include bits of food left over, peels of skins, husks and shells of potatoes maize and coconuts and other food waste. Other household waste include: waste paper, worn out clothes and shoes, broken vessels and utensils.

(ii) State refuse

These are mainly paper and food dropped by the public and commercial refuse around markets, hotels and other public places as well as abandoned wrecks of cars.

(iii) Industrial refuse

Houses build near industries can experience exposure to various industrial waste, which can be poisonous and dangerous to the children's environment.

Refuse Disposal

- Domestic refuse such as peels can be fed to animals, while husks and shells can be used as fuel for cooking.
- Compositing. This is putting waste in a 8 ft by 5 ft deep hole. Wet and dry refuse are heaped in alternate layers and then covered with grass or soil. Fermentation decomposes the refuse. It should be turned after 30 days, then 60 days. After 90 days the refuse is ripe for use as manure.
- Burning. Simple open air burning is not very effective as rubbish can be blown away. Improvement can be made by burning in a trench made of simple mud bricks or a bin incinerator made of a drum.
- Controlled tipping. This is putting refuse in depressions or large holes, preferably at least ¼ mile from homesteads. After each day refuse has been deposited, it should be covered with a firm layer of earth and the refuse left to decompose.

Healthy Environment

For a healthy environment the following should be observed:

- Hygiene around the house
- Food hygiene
- Control of vectors

(i) Hygiene in and around the house

Shelter is a basic need for young children. Health of children depends largely to the type and condition of house. House with leaking roofs and walls can cause discomfort and can hamper insects which are dangerous to the health of child.

- Many houses in slums are made of iron sheets. They can be very cold at night and can cause cold and chest infections in children. Housing may affect health in a number of ways:-
  - dampness
  - Lack of light
  - Poor ventilation/poor generation
  - Overcrowding contributes to spread of air borne infections.
- Earthen floor and walls and screened windows permits the entry and breeding of bedbugs, fleas and mosquitoes.
- Cooking fires on the floor are hazards to small children.
- A rural home should be built with strong materials, adequate space and proper ventilation. Inadequate space hinders children to play and can lead to unhealthy social interaction. The house should be built on a good site, dry ground, well protected from floods.
- There should be separate accommodation for animal and humans.
- House should be kept dry at all times. Moist conditions should be avoided in the house because they encourage fungus and bacteria.
- There should be separate rooms for food storage and preservation to prevent food contamination.
- Walls of the room for food should be plastered to keep off rats and insects.

- In the home compound there should be good pit latrine on a reasonable distance from the house. It should be clean and pit covered to prevent flies.
- Business around the house should be cleared for they can habour snakes, rats, and other harmful insects.

Reasons for Refuse Disposal

(i) Refuse does not appeal to the eye,
(ii) It makes a place untidy,
(iii) Produces bad smell after sometimes,
(iv) Attracts flies and vermin especially cockroaches and rats,
(v) Can encourage spread of fire,
(vi) Spread diseases such as cholera, dysentery and plaque through rats,
(vii) Can cause accidents.

- There should be adequate supply of clean water preferably tapped water from a reliable water source.
- Indiscriminate disposal of waste can result to produce of bad smells attraction of insect like cockroaches and flies. This endangers health of children within the housing environment.
- House built near industries can expose children to various industrial waste of which some are poisonous and dangerous.

6.5 CONTROL OF VECTORS

Vectors: These are insects found or other organisms that transmit a pathogenic fungus, virus, bacterium e.t.c. Examples are:

1. **Housefly**

- Houseflies breed and feed on decaying matter such as vegetables, refuse, human feaces carrying bacteria from decaying matter onto human hands and skin especially exposed sores and eyes.
- It can be controlled through cleanliness, spraying, proper disposal of decaying matter, covering all food, clean utensils and keeping food vessels clean.
- Covering dustbin, keeping public places clean, keeping cowshed, chicken coops and kennels clean.

2. **Mosquito**

Mosquites transmit malaria which is one of the killer diseases in Kenya. Malaria can be prevented by:

- Draining stagnant water including that which is in cans and broken bottles, as stagnant water encourage breeding of mosquitoes.
- Clearing bushes around the home and schools
- Keeping the house environment dry and free from objects littering around.

3. **Bilharzias Snails**

They breed in ponds, swamps and slow moving streams and rivers. They can be controlled by:

- Clearing all the vegetation around water edges to deny them shade and food.
- Clearing water channels for water to flow faster making snail breeding more difficult.
- Encourage children to avoid bathing and swimming in stagnant water.
- Apply chemicals to kill bilharzias snails.

4. **Rodents**

Rats and mice live and multiply where there is low standard of sanitation and where human feaces is easily accessible. Their control involves:

- Proper storage of food and food left overs
- Use of pets and traps
- Sealing open rodent holes
- Clearing all bushes and long grass
- Using proper storage collections and dispose of all types of rubbish.

5. **Fleas, Bedbugs and ticks**

They breed in unwashed clothing, joints of roughly made beds, cracks and floors. Some fleas thrive in some animals' fur and pets. Their control involves:-

- Depriving them shelter
- Reducing contact with animals
- Keep pets clean
- Using chemicals
- Using soap and water to clean house and children's clothes

6.6 Summary

Man is the reservation host for many diseases and unsatisfactory disposal of waste, inadequate housing , inadequate disposal of rubbish, the use of agricultural chemicals and the waste products of industry lead to unhealthy environment which impact negatively on a child's health..The control of these factors in the physical environment is called environmental sanitation or hygiene.

6.8 Self-Assessment Questions

a) Distinguish between biological environment and physical environments

b) Discuss the ecological interactions which make a community healthy or unhealthy
c) Explain why it is necessary to dispose refuse properly in the pre-school environment
d) Describe four methods that can be used to dispose domestic refuse.

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7.1 Lecture Seven Water Sanitation and Environmental Conservation

In this lecture we are going to discuss the various strategies used to make water safe for cooking, drinking and bathing. We will also discuss the varied strategies of environmental conservation.

Lecture Objectives

By the end of the lecture, you should be able to:

- Discuss the strategies used to make water safe for drinking
- Discuss the methods used to conserve the environment

Water Sanitation

Water is extremely important in our lives because:-

(i) 70% of our body is made up of water. As such our bodies require water to remain healthy.

(ii) It is important for digestion as it assists enzymes to function properly during digestion.

(iii) It helps to remove waste products from our bodies through urine, feaces and sweating.

(iv) It cools our bodies.

Sources of Water

Rain, rivers, ponds, streams, lakes, dams, wells, boreholes

Water hygiene

Water for cooking, drinking and bathing should be clean because dirty water may cause hygiene related diseases e.g. diarrhea, cholera and typhoids.

Methods of Making Water Safe for Drinking

(i) Boiling over 100°C

- It kills all germs. After boiling, leave water to cool in dustless environment, preferably cover the container
- Store cooled water in clean containers that have lids/corks.

(ii) Using Chemicals

These include chlorine and other chemicals which kill germs. They also make sediments of water to set at the bottom of the container.

Water Borne Diseases

They are caused by drinking dirty water.

Water related diseases are:

Bilharzia snails: snails that live and breed in stagnant water.

Malaria: caused by mosquitoes that breed in stagnant water

Trachoma: caused by failure to wash eyes regularly

Scabies: caused by failure to bath regularly

Water borne diseases: These are diarrhea, cholera, typhoid, dysentery, amoebasis.

7.3 Water Pollution

Clean water can be polluted by:-

(i) Washing of clothes, bodies, utensils in water sources.

(ii) Washing chemical containers near or in water sources

(iii) Building homes very near water source

(iv) Not using latrines

(v) Digging boreholes near the toilets

(vi) Animals drinking directly or near water source

(vii) Ploughing/digging along rivers/stream banks

How to Prevent Water Pollution

(i) Building latrines to avoid passing waste near/in water sources

(ii) Digging trenches and terraces to prevent surface water run off

(iii) Planting trees and creeping plants to prevent surface water from run off

(iv) Providing a firm guard from where people fetch water

(v) Protecting all water sources by covering them and fencing them

(vi) Provide a place for watering animals a distance away from the water source

(vii) Not washing/bathing from water sources e.g. rivers, streams, lakes etc

(viii) Avoid digging/ploughing along river banks

7.4 Environmental Conservation

This is viewed as the setting aside of natural resources to prevent damage to the environment caused by contact with human beings or by certain human act e.g. mining, hunting, fishing and logging e.t.c.

Environmentalists advocate sustainable management of resources and the protection. Policy changes are necessary to protect the environment. Environments' are also concerned with dumping wastes into disadvantaged community, air and water pollution, exposure of organic life to toxins as well as weak infrastructure.

Methods of Environmental Conservation

(i) Education or advocacy – education about health

(ii) Use of low waste technology – recycling

(iii) Use of less hazardous substances

(iv) Planting of trees

(v) Use of Environmental friendly farming – rearing fish

(vi) Onsite treatment

(vii) Building of gabions

(viii) Use manure instead of fertilizer

7.5 Summary

Safe drinking water is crucial for the health of the child. Water is used for drinking cooking and bathing, consequently, water sources should be kept free from pollution to avoid water borne diseases. Conserving the environment allows for protection of natural resources for coming generations. Health educationists should therefore educate people on best practices on environmental conservation

7.6 Self-assessment questions

a) Explain why it is critical to conserve the environment
b) Describe four methods of conserving the environment
c) Describe five ways of protecting water sources

Further Reading

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8.1 Lecture Nine: Child Rearing Practices

In this lecture, we are going to discuss factors that influence child rearing practices.

8.2 Lecture objectives

By the end of the lecture, you should be able to:

- Describe factors that impact on child rearing
- Compare traditional practices of child rearing with modern practices

Child Rearing Practices

All societies value children because they are the future of society. They transmit the culture's traditions and values of a community. Parents value children because they give them status in society and they provide emotional and maternal support especially in old age. Since children are so valuable, societies over the years have developed elaborate child rearing practices to ensure their children survive and grow properly. This guarantees that the children become productive members of a community.

Child rearing practices in Traditional society

- Children were brought up in an extended family. The extended family provided for the child.
- Physical needs and emotional needs were provided by the extended family. No child ever lacked food or any other facility because his parents were poor.
- The role of women was clearly defined. The woman's' primary role was to care for the child and family. The child was breastfed for 6 months exclusively.

Even after weaning the child, the mother was expected to continue with breastfeeding the child. In some communities child was breastfed for upto 2-3 years. This was to give the baby adequate time to grow properly and to be close to the mother. Mothers were working around the homestead.

Some child rearing practices are regarded as harmful e.g.

- Denying the mother certain foods e.g. eggs, chicken and parts of goat meat. However, most communities ensured mothers and young children had enough food to eat.
- Community ensured that the mother was not overburdened with work. She was helped in tilling her land and other household chores.
- It was also taboo for a lactating mother to have sex in some communities. This was to give the baby adequate time to be with the mother.
- In some communities the local medicine man ensured that the child was treated for some harmful diseases and also protected against perceived threats.

Modern Child Rearing Practices

Social economic changes have had both negative and positive influence on child rearing practices.

- Formal education in women has positively influenced child rearing practices. Women who have certain level of education are able to provide better care for their children because formal education equips the mother with knowledge, skills and attitudes in relation to childcare. Research has shown that mothers with formal education have their children immunized – take them for GMP, treated when sick and they provide proper personal hygiene and sanitation.
  Their children tend to be better cared for, better nourished and are healthier.

- Mothers engaging in economic activities. Many women are either in self-employment or in paid employment. By having their own income women are financially empowered to make decisions relating to the well being of their children. They use their money to provide for the needs of their children. This has impacted positively on children's health and nutritional status.
- Migration from rural area to urban areas. Positively, this phenomenon can influence better health and better nutritional status for the child if the family is able to access quality health centres, schooling and better shelter for the child.
- **NB** Rural urban migration may negatively influence a child's growth and development if the family migrates to urban slums. This is because in slums, the child is not able to access quality health centres, schooling and social interactions.
- Media has a positive influence on children's growth and development. A lot of information creates awareness about better child rearing practice.
- Government funding

  Government has contributed to better health for children through:-

  - Free education
  - Feeding programmes
  - Increased number of health centres. This has led to better health services for most children.
  - Employment of house helps/child minders. This allows the mother to work. However house help may be a minor and may abuse the child or not take good care of the child.

Institutions that support mothers in childcare

Day care centres

Support mothers in caring for their children. They enroll children from 2-6 years. Most of these institutions have a full day programme.

The health care services provided are:

1) Custodial Care: children are under the care of trained teachers who ensure their safety.
2) Feeding: children are given a balanced diet in most of these centres thus mothers are not worried about what the child will eat.
3) Stimulation: the centres have a variety of toys and other play materials for the child to use. Play is integral in child's and development especially in mental and social development.

Home Based Care Centres

Children are cared for by adult caregivers who provide early stimulation, toilet training and feeding selves. These enroll children of below 3 years.

Pre-School

These also support mothers in child care. Children are enrolled from between 3-6 years. Some pre-schools have full day or half days.

Services provided:

1) Custodial care for children – children are safe
2) Feeding
3) Early stimulation
4) Train children in self-care and social skills – respect, good manners, honesty.
5) Introduced to reading, writing and basic arithmetic.

Lower primary 1-2-3

Support mothers in child care

1. Early stimulation
2. Training in self care
3. Social skills

Learning in lower primary is formal. Learn how to read, write and do arithmetic.

8.3 Traditional Rearing Practice

Children in the traditional African context played the following roles.

(i) They were viewed as a sign of prestige.

(ii) They were a source of cheap labour

(iii) Girls were a source of wealth

(iv) Children were source of security

Traditional Rearing Practices

Child rearing is the means by which society raises the next generation to adulthood and self-sufficiency. Child-rearing in the traditional African Society was communal. It was shared among the extended family. For example uncles, aunts, grandparents. It was a responsibility of all adults in the community such as the entire clan. Boys and girls had fairly separate upbringing, each was taught duties and obligations specific to the sex. For example girls were expected to carry water, help in cooking, care for their siblings. In some communities, girls looked after animals. Boys were expected to work in the field, heading and construction of homesteads.

As children grew up within the family, they went through the process of formation. These enabled them to become socially integrated into the lineage and into age groups. As the children were integrated in the society they acquired morals and social norms. Children were informally instructed. This was through the use of

oral literature like stories, riddles, proverbs, songs and wise saying. Beliefs and philosophies were transmitted to children through singing, chanting and talking drums. Children were expected to treat adults with a lot of respect. For example children were expected to stop and help the aged to carry luggage. Children were not expected to participate in discussions involving adults.

Disciplining of children was common and a communal affair. Every grown-up was expected to instruct and instill discipline. Methods of disciplining children included caning; withdraw of favours, ridicule and oral literature.

Children went through recognizable rites of passage that marked each step on their way to adulthood. For example birth, naming and initiation ceremonies. In these ceremonies important communal virtues and values were passed to children. They also learnt to support each other and to co-operate. In these ceremonies, leadership qualities were identified among the children.

Feeding children was highly valued. Children were fed communally i.e, in evey home a child visited, he/she was fed. Breastfeeding was highly regarded for example in case of maternal death, the child was handed over to another lactating mother to be breastfed. Breastfeeding continued upto the age of more than three years. In addition breastfeeding was considered as a way of family planning.

Child security was valued and it was enforced at family level and at community level. For example girls at adolescent stage were not allowed to visit men's hut even that of their own father. This was to protect children from sexual abuse and other vices.

8.4 Negative Child Rearing Practices

Food taboos and beliefs

- Some taboos and beliefs were harmful to children's health and nutritional status. In some communities, for example, children were not allowed to eat eggs, chicken and parts of goat meat. This deprived children of proteins which they needed for their fast growing bodies.
- **Cultural practices**

  There were some cultural practices which were harmful to children's health. In some communities for example, they removed the epiglottis and false teeth. This was a very painful and traumatic experience for children. The instruments used for the operation were never-sterilized, so they could have introduced infection to the children. The removal of teeth may have interfered with the development of the teeth.
- **Treatment of illness**

  In some communities, illness like headaches and stomachs were treated by cutting the face and stomach respectively, squeezing out blood and putting herbs. This was a very painful and traumatic experience for young children. It also left them with permanent body marks.

- **Abrupt weaning**

  Weaning was very abrupt in some traditional societies. As soon as the child was two years, the mother stopped breastfeeding him. In some cases the child who insisted in breastfeeding was taken to some relatives far away from the mother. In other cases, the mother applied bitter herbs or pepper on the breast. When the child attempted to breastfeed, his tongue was burnt.

  This made the child to stop breastfeeding completely. All this was very traumatic for a young child. It could result in the child feeling neglected. The child could also develop emotional disorders.

8.5 Summary

Child rearing is the means by which society raises the next generation to adulthood and self-sufficiency. Modern living has impacted heavily on traditional child rearing practices. Factors such as formal education, advancement in technology, formal employment of mothers have influenced child rearing practices.

8.6 Self-assessment questions

a) Discuss modern factors that have negatively influenced child rearing
b) Describe five traditional child rearing practices that have been affected by modernity.
c) Evaluate modern methods of child rearing

Further reading

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9.1 Lecture nine: First Aid

In this lecture, we are going to discuss the basic first aid skills that a pre-school teacher should acquire.

9.2 Lecture objectives

By the end of the lecture, you should be able to:

- Define First Aid
- Describe the principles of first aid
- Discuss various accidents likely to occur at a pre-school
- Discuss first aid for the various accidents in pre-school**.**

First Aid

First aid is the provision of initial care for an illness or injury. It is usually performed by non-expert, but trained personnel to a sick or injured person until definitive medical treatment can be accessed. Certain self-limiting illnesses or minor injuries may not require further medical care past the first aid intervention. It generally consists of a series of simple and in some cases, potentially life-saving techniques that an individual can be trained to perform with minimal equipment.

While first aid can also be performed on all animals, the term generally refers to care of human patients.

The key aims of first aid can be summarized in three key points:

- **Preserve life**: the overriding aim of all medical care, including first aid, is to save lives

- **Prevent further harm**: also sometimes called **prevent the condition from worsening**, or **danger of further injury**, this covers both external factors, such as moving a patient away from any cause of harm, and applying first aid techniques to prevent worsening of the condition, such as applying pressure to stop a bleed becoming dangerous.
- **Promote recovery**: first aid also involves trying to start the recovery process from the illness or injury, and in some cases might involve completing a treatment, such as in the case of applying a plaster to a small wound

First aid training also involves the prevention of initial injury and responder safety, and the treatment phases.

9.3 Key skills

Certain skills are considered essential to the provision of first aid and are taught universally. Particularly the "ABC"s of first aid, which focus on critical life-saving intervention, must be rendered before treatment of less serious injuries. ABC stands for *Airway*, *Breathing*, and *Circulation*. The same mnemonic is used by all emergency health professionals. Attention must first be brought to the airway to ensure it is clear. Obstruction (choking) is a life-threatening emergency. Following evaluation of the airway, a first aid attendant would determine adequacy of breathing and provide rescue breathing if necessary. Assessment of circulation is now not usually carried out for patients who are not breathing, with first aiders now trained to go straight to chest compressions (and thus providing artificial circulation) but pulse checks may be done on less serious patients.

9.4 Principles of First Aid

1. **Don't panic**. Panic clouds thinking and causes mistakes.
2. **First, do no harm**. This doesn't mean do nothing. It means make sure that if you're going to do something you're confident it won't make matters worse. If you're not sure about the risk or harm of a particular intervention, don't do it. So don't move a trauma victim, especially an unconscious one, unless not moving them puts them at great risk (and by the way, cars rarely explode). Don't remove an embedded object (like a knife or nail) as you may precipitate more harm (e.g., increased bleeding). And if there's nothing you can think to do yourself, you can always call for help. In fact, if you're alone and your only means to do that is to leave the victim, then leave the victim.
3. **CPR can be life-sustaining**. But most people do it wrong. First, studies suggest no survival advantage when bystanders deliver breaths to victims compared to when they only do chest compressions. Second, most people don't compress deeply enough or perform compressions quickly enough. You really need to indent the chest and should aim for 100 compressions per minute. That's more than 1 compression per second. If you're doing it right, CPR should wear you out. Also, know that CPR doesn't reverse ventricular fibrillation, the most common cause of unconsciousness in a patient suffering from a heart attack. Either electricity (meaning defibrillation) or medication is required for that. But CPR is a bridge that keeps vital organs oxygenated until paramedics arrive. Which is why...
4. **Time counts**. The technology we now have to treat two of the most common and devastating medical problems, heart attacks and strokes, has evolved to

an amazing degree, but patients often do poorly because they don't gain access to that technology in time. The risk of dying from a heart attack, for example, is greatest in the first 30 minutes after symptoms begin. By the time most people even admit to themselves the chest pain they're feeling could be related to their heart, they've usually passed that critical juncture. If you or someone you know has risk factors for heart disease and starts experiencing chest pain, *resist the urge to write it off*. Get to the nearest emergency room as quickly as you can. If someone develops focal weakness of their face, legs, or arms, or difficulty with speech or smiling, they may be having a stroke, which represents a true emergency. Current protocols for treatment depend on the length of time symptoms have been present. The shorter that time, the more likely the best therapies can be applied.

5. **Don't use hydrogen peroxide on cuts or open wounds**. It's more irritating to tissue than it is helpful. Soap and water and some kind of bandage are best.
6. **When someone passes out** but continues breathing and has a good pulse, the two most useful pieces of information to help doctors figure out what happened are: 1) the pulse rate, and 2) the length of time it takes for consciousness to return.
7. **High blood pressure is rarely acutely dangerous**. First, high blood pressure is a *normal and appropriate* response to exercise, stress, fear, and pain.. But the damage high blood pressure does to the human body takes place over *years to decades*. There is such a thing as a hypertensive emergency, when the blood pressure is higher than around 200/120, but it's quite rare to see readings that high, and even then, in the absence of symptoms (headache, visual disturbances, nausea, confusion) it's considered

a hypertensive *urgency*, meaning you have 24 hours to get the pressure down before you get into trouble.

8. **If a person can talk or cough, their airway is open**. Meaning they're not choking.."
9. **Most seizures are not emergencies**. The greatest danger posed to someone having a seizure is injury from unrestrained forceful muscular contractions. Don't attempt to move a seizing person's tongue. Don't worry—they won't swallow it. Move any objects on which they may hurt themselves away from the area (including glasses from their head) and time the seizure. A true seizure is often followed by a period of confusion called "post-ictal confusion." Your reassurance during this period that they're okay is appropriate.
10. **Drowning doesn't look like what you think it does**. For one thing, drowning people are physiologically incapable of crying out for help. In fact, someone actually drowning is barely moving.

9.5 COMMON ACCIDENTS IN THE PRE SCHOOL

Preschool teachers, parents and care givers should have basic first aid skills to enable them assist children in cases of accidents at home and at schools. Since children are playful, are most likely to encounter an accident. Children can fall or hurt themselves and sometimes the health centre is far from the home or school. This means that caregivers should be able to provide some First Aid to the child. This will enable the child to reach treatment without experiencing a lot of harm to the affected part of the body. First aid should be administered to casualties in the order of 4Bs as shown below.

- Breathing

- Bleeding
- Broken bones
- Burns

Breathing

Breathing should be given in the case of the following conditions:

1. Smothering: This takes place when air is prevented from getting into the passage.This will usually occur in cases of suffocating, drowning or when the child is chocked with a polythene bag.
2. Choking: This occurs when the air is blocked along the passage for example by food, gases, tongue, vomitus and others.
3. Disease affecting the brain: for example stroke, epilepsy, convulsions, meningitis and others.
4. External pressure: for example strangulation/throttling in cases of crash accidents.

If breathing has to be given to the child if any of the four cases have been identified, it should be done through mouth-to-mouth, mouth to nose or mouth to nose and mouth. This ensures that the child is supplied with oxygen through the mouth or the nose. This process of giving oxygen to another person is called resuscitation of Kiss of life.

Procedures for carrying of Resuscitation

- Open the air passage or the airways by tilting the head backward and lifting the lower jaw well forward.
- Start resuscitation by first giving the first four inhalations in quick successions and then slowly build the normal rate breathing.

- Position the casualty on the recovery position to attain normal air circulation (regular breathing).

Resuscitating a Patient

- Keep the head well back (except for children) and mouth open.
- Pinch closed the soft part of the nose.
- Take a deep breath, open your mouth wide and seal your lips around the casualty's mouth.
- Blow air into the casualty's mouth slowly until you see the person's chest rise.
- Breath like this once every 5 seconds.
- You can give mouth to nose if this more convenient.

Bleeding

Usually when a child is hurt it is possible for him/her to undergo serious bleeding depending on the level of the severity of the injury. Bleeding should be controlled so that the child does not lose a lot of blood, which may result to death. Caregiver's ability to control bleeding in children can save the child's life. Giving first aid to bleeding casualties can therefore help to prevent:-

- Unconsciousness
- Blood loss
- Infection
- Severe pain
- Shock
- Death which could result from excessive bleeding, infection and shock
- Anemia

Bleeding may be internal or external as explained in the discussions below.

External Bleeding

This can be bleeding from a wound through the skin as a result of a cut or an injury. It may involve the arteries, which gives red bright blood cells or may involve the veins, which will be dark red blood cells. Bleeding may be stopped through:

- Direct or indirect pressure
- Bandaging and using pads.

Indirect pressure is applied to those parts of the body where the arteries are close to the bones. These include parts of the body like the wrist, the ear area, upper thigh, neck and the upper arm. Carrying out the following activities to the casualty can then control bleeding.

- Direct or indirect pressure on arteries and veins as described above.
- Elevation of the body part affected by the injury to reduce the speed of flow of the blood.
- Ensure the head is on the lower side so that it receives adequate supply of blood.

Specific Activities for Controlling Bleeding

- If the cut is small, wash the dirt away with clean water and soap then squeeze the cut area to allow clotting to take place.

- Check the cut to ensure that bleeding has stopped. If necessary cover it with a small bandage.
- If it's a small cut leave it open to dry.
- If a cut results in heavy bleeding, press hard on to the bleeding area to reduce the bleeding.
- If the cut is on an arm of leg, elevate the limp upwards.
- Cover with a clean pad and apply a bandage.
- If bleeding has not been stopped, add another pad and bandage. Do not remove the previous bandage.
- Check frequently that the fingers and toes remain warm. If they are getting cold, loosen the bandage to let the blood circulate.
- Refer to the health centre for stitches and immunization against tetanus, keeping the limbs raised.
- If a child has a cut with a broken bone sticking out, these activities can help him/her:
    1. Ask someone to help you support the broken arm or leg.
    2. Place clean gauze or cloth over the cut and bone.
    3. Build up pudding around the bone or make a ring and gently bandage the pad in place.
    4. Keep the injured part still when transporting the casualty.
- If a child has a cut with an object sticking out, the caregiver can assist in the following ways:-
    1. Pinch the cut around the object (don't press on the cut).
    2. Place clean gauze, or cloth and loosely over the cut and object.
    3. Build up padding around the object or use a ring and bandage the pad in place (do not pull the object out).

4. Keep injured part raised.
5. If you suspect a broken bone keep the limb still.
6. Ensure the toes or fingers remain warm.
7. Refer the casualty to a health center.

Internal Bleeding

Bleeding may occur inside the body when the blood will leak from inside the body through natural openings. Sometimes this blood can stay inside the body, causing pain. The following are signs of internal bleeding:-

- Blood coming out of the nose.
- Blood coming out of the ear.
- Presence of blood in stool.
- Presence of blood in the urine.
- Presence of blood in the vomit.
- Blood coming out from woman's birth canal after an injury or during pregnancy.
- Signs of shock.

How to Control Bleeding

The caregiver can perform a few activities when the child develops bleeding in the house or at preschool when playing. The way in which we are able to handle the bleeding of the child is very helpful in reducing blood lose to stop further sickness. The main parts of the body, which are prone to bleeding, are the nose and the ear. The activities to control bleeding in children are explained below:-

Nose bleeding:

- Ask the child to sit down, lean forward and avoid swallowing the blood.
- Get the child to pinch the soft part of the nose with finders and thumb and breathe through the mouth for then minutes.
- Ask the child not to sniff or blow the nose for a few hours.
- If blood does not stop within 30 minutes refer the child to a health center.

Bleeding from the ear

- Ask the child to sit or lie down and to tilt the head so that blood flows out of the ear and not inside.
- Bandage the ear lightly. Do not poke the bandage inside the ear.
- If the bleeding is from a scratch on the outside of the ear, there is no need for referral. If bleeding is from inside, refer the child to a health facility.

Other activities for managing bleeding beside nose and ear bleeding include:-

1. If a child is passing blood in their stool, urine, vomit or cough refer him/her to a health center.
2. If a pregnant woman is passing blood from the birth canal, contact the midwife or a specialist doctor (gynecologist) and refer the woman to the health center immediately.
3. Other cases needing referral include:

- Extreme pain
- Shock – child becomes pale, weak, cold, clammy and shivers
- A child becomes drowsy or unconscious
- Bleeding is heavy or continues for more than 10-15 minutes even after pressing hard.

A child who has lost a lot of blood will usually show signs of the following characteristics:

- Feels dizzy
- Experiences lethargy (weakness)
- May faint
- Losses natural skin colour
- Has fast breathing
- Sweats but the skin is cool
- Heart beats fast but shallowly
- Feels thirsty/has a dry mouth
- Develops anxiety, is restless, yawns and signs
- Blurred visions

It is good for a caregiver not to give a child anything to eat or drink as they may require surgery at the health facility.

Shocks

Sometimes when there is excess loss of blood and other fluids for example through severe vomiting or large burns and serious injury it is possible for the child to develop shock. The causes of shock in children and adults are:-

- Electrical injuries
- Severe pain and burns
- Some allergic reactions (for example bee sting)
- Fear
- Hunger
- Good and bad news
- Ugly scenes for example badly mutilated bodies of dead people

How to manage shock in children

- Give first aid for anything that may be causing shock.
- Help the person lie down, and keep the person's head low.
- Raise and support the legs as high as you can (unless injuries prevent this).
- Keep the person warm and comfortable.
- Do not give the casualty anything to eat or drink.
- Assist the casualty to get immediate medical attention.

Fainting, Unconsciousness and Coma

Fainting is a temporary loss of consciousness recovery occurs automatically. Unconsciousness is the state in which one is unable to respond to external stimuli. Unconsciousness can be caused by severe bleeding, shock, electrical injuries, fists, drowning, chocking, suffocation, poisoning, fever and broken bones. A person who is completely unconscious can be said to be in a coma.

In case a child is in a coma, the following activities can be done to assist the child.

- Help the child to sit down, to lean forward and to put his/her head between the knees..
- Make sure there is plenty of fresh air around the child and keep away people from crowding the child.

If a child has fainted the following can be done to him/her

- Lay the child down and raise his/her legs
- Loosen any tight clothing around the neck to ensure adequate supply of blood and good circulation.

- Make sure there is plenty of fresh air.
- Ask the child to wake up and help him/her to sit up slowly.
- Explain what has happened and check for injuries.

If the child is unconscious we can help him/her as follows:

- Open his/her mouth and check that there is nothing blocking the airways. Clear the airways if blocked by keeping the person's head well back and sweeping around with two fingers in the mouth.
- Tilt the head backward and jilt the jaw forward to help the child breath properly
- Check for breathing and resuscitate if necessary.
- If the child is breathing, place in recovery position.
- Treat the cause of unconsciousness.

Broken bones

The signs of broken bones during injury or an accident as are follows:-

- The bone may be sticking out of an open fracture
- When the child experiences a lot of pain on an attempt to move the injure part
- When the casualty has a lot of pain on pressing the injured part
- When the child cannot move the injured part at all
- When there is a swelling, or deformity at the place where pain is felt by the injured child
- When there is a bend of the limp where pain is felt.

How to Manage Broken Bones

- Immobilize the bone with a temporary splint or sling and carefully transport the person to the health center.
- If it's an open fracture protect the wound (as discussed in the earlier section before transporting)
- If it's a closed fracture:
  - Splint by bandaging the broken bone to the body
  - Bandaging the broken bone to something hard. e.g. piece of wood, pillow, or rolled up paper
  - Splint above and below, not over, the broken bone
  - Do this very gently, making sure to use lots of padding around the broken area.

Burns

Burns are damage occasioned to the body by dry heat whereas scald damage caused to the body by wet heat for example steam, acid, hot fluids and others.

The role of first aid to a casualty of burns and scalds is to reduce pain and prevent infection. To reduce pain and infection, the following activities can be done by the caregiver before treatment in a health facility:

- Use cold water to cool the place e.g. dipping in cold water, running water or placing wet linen on the burnt place.
- Remove any constrictive materials for example rings watch, bungles, before swelling begins.
- Carefully cut away clothing that has been soaked in boiling fluid or chemicals. Take care of yourself.
- Cover burnt area completely with a clean dressing.

If the clothes and hair of a child are on fire:-

- Put the flames out with water (if available) or
- By tightly wrapping the child in a blanket, rug, or other heavy non-flammable fabric.
- Then lay the child on the ground to put any remaining flames out.

If a child has a large burn the size of his/her hand do the activities described above and

- Give the person frequent sips of water or other drinks for dehydration

Prepare for referral and transportation of the casualty t o a health center

9.6 Summary

First Aid saves lives consequently the preschool teacher should have certain basic skills in first aid to be able to intervene for children when they are involved in accidents in the preschool.

9.7 Self-assessment questions

a) Explain the basics of First Aid

b) Discuss the principles of First Aid

C i) Identify four accidents that are likely to occur in a pre-school

ii) Describe the First Aid you, as a pre-school teacher, would administer to the accidents in c (i)

Further Reading

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10.1Lecture Ten: Medical Model of Treatment Versus Public Health Model

10.2 Lecture Objectives

By the end of the lecture, you should be able to:

- Describe the medical model of health
- Describe the public model of health

Medical Model

The medical model of health is based on knowledge about the physical and biological causes of disease. It sees health as the absence of disease. It developed with the growth of the medical profession and tends to take a curative approach. Doctors tend to favour this model. Sociologists favour the social model (public model) of health, which focuses on the social distribution of health and illness between different groups (eg death rates vary between social classes). The social model is interested in the environmental and social causes of ill health. It tends to take a preventive approach. In recent years, doctors have begun to acknowledge the importance of social influences on health, such as stress factors and lifestyle, and it is now recognised that good health is more than merely an absence of disease. The World Health Organisation defines it as 'a state of complete physical, mental and social wellbeing'.

Sociologists are interested both in how health and illness are socially caused and in how they are socially constructed. An example of the social causes of ill health is

poor living conditions, while an example of the social construction of health is that different cultures have different ideas about what it means to be healthy or ill.

Sociologists use the term illness to describe the individual's subjective experience of 'feeling unwell' . The term sickness refers to a social status which is defined professionally, for instance, by a doctor who issues a sick note, while disease is a term to describe a biological malfunction.

Evidence has always been at the core of medical model as expressed in hippocrate oath (first do no harm). The assumption is that the doctor has specific knowledge and evidence that an intervention causes greater benefits than harm. Evidence is derived from practice. This practice is determined by guidelines with legal consequences for not doing so. Patients are more concerned with what works than how it works.

The relationship between a doctor and patient is complex. Patients initially seek a doctor because they believe this may be useful. This can sometimes be seen as conferring power to the doctor. However, getting better is an active process involving communication between the doctor and the patient. The doctor's task is to advice on the most effective treatment. Patient's task is to decide and act on the advice.

Public Health Model

The philosophy behind the public health is that the primary obstacles to engagement are ideological and the primary task in overcoming this obstacle is communication. The primary mission of institutions charged with protecting the

public health is to contain outbreaks and prevent epidemics associated with infectious diseases. (go out in the field and intervene with health related issues).

The various pathogens (germs) are isolated and studied in order to determine the most effective means of containment and prevention.

- Vaccination programs are effective tools in public health. Through vaccines people are able to live with the disease and fatality minimized.
- Effective public health systems monitor the well being of its citizens. Identifying problems, identifying communities that are vulnerable and establishes best practices to address health problems e.g. people along swampy areas are susceptible to malaria and public health department intervene to minimize fatality. Education is a useful tool for public health personnel. Its always best to prevent than to cure. This explains why funding agencies direct most of the funds to education programs.

10.3 Summary

The medical model of health is more of curative medicines while the public model more on prevention of diseases. Immunization, health education are some of the strategies used by the proponents of public health.

10.4 Self Assessment questions

a) Differentiate between the public model of health and the medical model of health

Further reading

Hapangama A. (2008) *Medical Model for Developing countries*. Sri lanka

Sharma S.L. (1967) *medical models and the professional identity of the psychologist*

Educ Med Salud (1992) *Analysis of the models of health service delivery*