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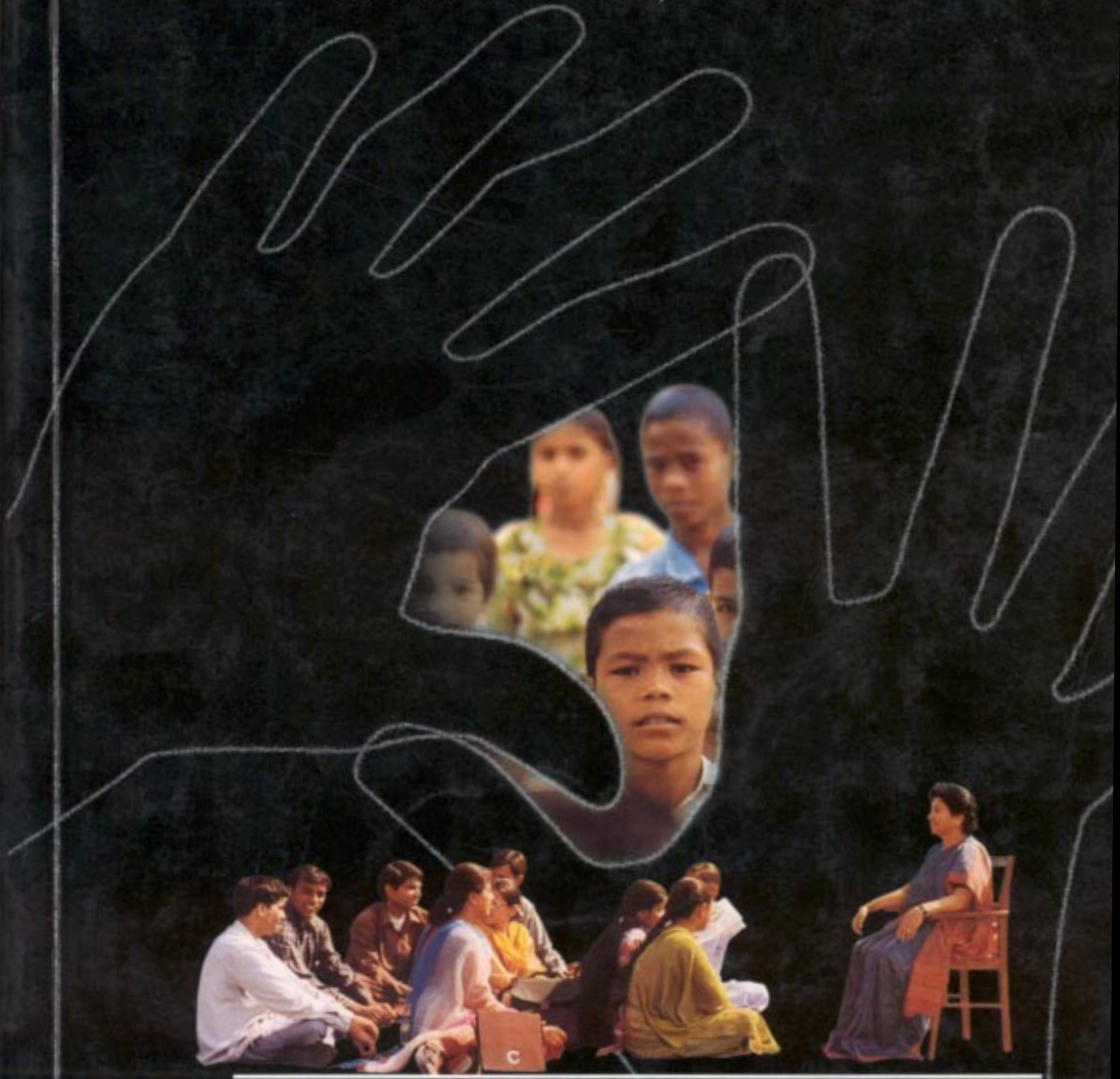
Population and Adolescence Education - A Training Package

For Resource Persons & Secondary School Teachers



Population and Development Cell
Central Board of Secondary Education
17-B, I.P. Estate, New Delhi-110 002

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POPULATION AND ADOLESCENCE EDUCATION

A TRAINING PACKAGE

(For Resource Persons and Secondary School Teachers)

Population and Development Education Cell
Central Board of Secondary Education
17-B, I.P. Estate, New Delhi - 110 002

This Training Package has been visualised and developed

by Prof DS Muley, Consultant, PDE Cell, CBSE

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FORWORD

Developmental and environmental implications of the phenomenal growth in India's population are commonly discussed in schools these days. Many of the population issues have also found a place in the school curricula. But, in recent years an important concern has emerged, more noticeably relating to the large number of adolescents and their special needs. A quick look at the curriculum both at the school and teacher education levels reveals that special needs and problems of adolescents, especially those relating to puberty, the process of growing up, sex and sexuality have not received adequate attention of educationists in general and curriculum developers in particular. And even where some little content has been incorporated in the curricula, our teachers are not found to be adequately prepared for the task.

In order to meet these emerging needs the CBSE, in cooperation with the Union Ministry of Human Resource Development (MHRD) and the United Nations Population Fund (UNFPA), has launched a project on Population and Development Education. The project focuses on an integrated approach, synthesising related aspects of population, development, environment and reproductive health. Initially, states with comparatively poor demographic and social indicators, namely Bihar, Haryana, Madhya Pradesh, Rajasthan, and Uttar Pradesh will receive attention.

The present publication entitled Population and Adolescence Education - A Training Package is the basic training material on the basis of which training programmes for Master Trainers and secondary school teachers will be organised under the project. The trained teachers will, in turn, create awareness and develop skills among our secondary school students, both boys and girls.

The Training Package has, in all, eight modules. The first six modules cover the basic content of population and reproductive health education. Module VII presents a brief content analysis of NCERT textbooks to give us an idea as to how much has already been incorporated. Module VIII contains nine activities through which, in addition to knowledge, skill and attitude development can be attempted. Content included in the Content Sheets of Modules I to VI is primarily re-packaged material, most of which has been drawn from reports and documents of the various UN agencies such as UNESCO, UNDP, WHO, UNFPA and World Bank, and also from publications brought out by national networks such as NCERT, NACO and MHRD.

Though all contributions are gratefully acknowledged, I would mention, in particular, the work done by Prof DS Muley, Consultant, PDE Cell, CBSE and NCTE, who visualised, developed and repackaged the entire Training Package. In this task he was ably supported by Mr SP Chawla, Project Coordinator, PDE Cell, CBSE.

I hope the teachers and educators will find the Training Package useful in their own area of academic activities. I also hope the Training Package will be found to be useful by other agencies including NGOs, who are engaged in a similar task of imparting knowledge and skills to different target groups in the area of population and reproductive health education. Comments and suggestions for improvement are most welcome.

BP KHANDELWAL
Chairman
CBSE

ACKNOWLEDGEMENTS

The Central Board of Secondary Education (CBSE) would like to thank the following organisations:

(i) Rama-Eesh Charitable Trust, New Delhi, for allowing us to adapt its content material entitled "Reproductive Health, Population and Environment Education for Sustainable Development", the development of which was supported by UNESCO (PROAP), Bangkok

(ii) United Nations Population Fund (UNFPA)

(iii) World Health Organization (WHO)

(iv) United Nations Educational, Scientific and Cultural Organisation (UNESCO)

(v) United Nations Development Programme (UNDP)

(vi) Family Planning Association of India, Mumbai

(vii) Department of Youth Affairs & Sports, Ministry of Human Resource Development, Government of India, New Delhi

(viii) National Council of Educational Research and Training (NCERT), New Delhi

(ix) National AIDS Control Organisation (NACO), New Delhi

Express gratitude to Dr (Mrs) K Sadhu for helping us in developing Module VII.

Gratefully acknowledge the valuable comments and suggestions of participants of the Review Group Meeting held at CBSE from November 15-17, 1999.

ABBREVIATIONS

AIDS ---------- Acquired Immunodeficiency Syndrome
BEd. ---------- Bachelor of Education
CBR ---------- Crude Birth Rate
CPR. ---------- Contraceptive Prevalence Rate
CDR ---------- Crude Death Rate
CFC ---------- Chloro-Fluoro-Carbon
DIET ---------- District Institute of Education and Training
e_0 ---------- Life Expectancy at Birth
GNP ---------- Gross National Product
GDP ---------- Gross Domestic Product
GDI ---------- Gender related Development Index
GEM ---------- Gender Empowerment Measure
HTV ---------- Human Immunodeficiency Virus
HDR ---------- Human Development Report
HDI ---------- Human Development Index
ICPD 1994 ---------- International Conference on Population & Development 1994
IMR ---------- Infant Mortality Rate
IPPF ---------- International Planned Parenthood Federation
LBW ---------- Low Birth Weight
MMR ---------- Maternal Mortality Rate
MHRD ---------- Ministry of Human Resource Development
NCERT ---------- National Council of Educational Research & Training
NCTE ---------- National Council for Teacher Education
NRR ---------- Net Reproduction Rate
NACO ---------- National AIDS Control Organisation
PPP ---------- Purchasing Power Parity
RH ---------- Reproductive Health
STD ---------- Sexually Transmitted Diseases
SPM ---------- Suspended Particulate Matter
TFR ---------- Total Fertility Rate
TB ---------- Tuberculosis
UN ---------- United Nations
UNDP ---------- United Nations Development Programme
UNESCO(PROAP) United Nations Educational, Scientific and Cultural Organisation (Principal Regional Office for Asia and the Pacific)
UNFPA ---------- United Nations Population Fund
UNAIDS ---------- Joint United Nations Programme on HIV/AIDS
USA ---------- United States of America
UNEP ---------- United Nations Environment Programme
U5MR ---------- Under 5 Child Mortality Rate
WHO ---------- World Health Organization

INTRODUCTION

The Training Package entitled *Population and Adolescence Education* is intended to be used by Resource Persons, Master Trainers and school teachers. It can also be used by Teacher Educators. Under the CBSE project the Package will first be used for training Master Trainers, who will, in turn, use the same Package for training health educators/counsellors and secondary school teachers drawn from CBSE-affiliated schools of five states, namely Bihar, Haryana, Madhya Pradesh, Rajasthan and Uttar Pradesh. The trained secondary school teachers will, then, organise co-curricular/school-based activities for their students in their respective schools.

The Training Package consists of eight modules and five appendices. Modules I to VI cover the major content areas of population education. Module - I discusses the concept of population education, its brief history, its interfaces with family life education and sex education, and its reconceptualisation in the light of the ICPD, POA 1994. Module - II explains the key demographic terms and concepts, including population change, major factors influencing fertility behaviour, effects of rapid urbanisation on the quality of life of the people, and concern for the elderly. Module - III deals with the interrelationship between population, environment, sustainable development and health issues. It also discusses the concept of 'Carrying Capacity of Environment' and the contribution of over-consumption and over-population to environmental degradation. Module - IV explains inter-linkages between population, gender issues and quality of life. The focus is women's health and safe motherhood, and its impact on child health and survival. Module -V contains content on needs and problems of adolescents especially relating to the process of growing up, sex and sexuality. It further describes the meaning and importance of reproductive health. Module -VI provides basic information on HIV/AIDS and STD. It lays stress on the prevention of HIV/AIDS, and the development of assertive skill and responsible sexual behaviour. Module - VII contains the content analysis of NCERT textbooks for classes IX-X from the standpoint of population and reproductive health education. It identifies gaps and inadequacy in the treatment of population education elements in NCERT textbooks. The purpose of this Module is to give trainees an opportunity to have a quick look at the secondary school curriculum and identify meaningful linkages between population and reproductive health education content and the subject they teach in their respective schools. Providing an exhaustive content analysis of all the school textbooks was not the purpose here. This, in any case, will be done when we develop curriculum material as part of our advocacy programme for curriculum planners and developers.

Each Module (I - VII) is accompanied at the end by a set of transparencies to help Resource Persons, Master Trainers and Teacher Educators to cover the core content of each Module through an interactive mode. If at any level there is some difficulty in using the transparencies, it is suggested that some of these transparencies, if not all, are magnified manifold for use as charts.

Module - VIII contains outlines and guidelines for nine activities to enable trainees to effectively communicate with adolescents on matters relating to reproductive health, sex and sexuality. The activities included in Module VIII are intended to develop, among trainees, skills to use certain techniques such as question box, role play and value clarification, to influence attitudes and values of teachers and adolescents. These are a set of simple activities which can be organised with basic minimum infrastructural facilities. They can be organised in a classroom or

outside as part of the curriculum or as co-curricular activities. The activities included in Module – VIII are:

- Introductory (Reproductive Health Needs of Adolescents)
- Appropriate Behaviours
- Question Box
- Role Play (Ways to Assert Oneself)
- Value Clarification
- Risky and Safe Behaviour
- Case Studies
- Utilising Peer Educators
- Quiz Contest

There are five Appendices. Appendix (i) contains Programme Schedule for the Training of Master Trainers/ secondary school teachers. The four-day training is for 20-hour duration. It has three major components, namely interactive sessions on content, demonstration sessions by resource persons and practice sessions by trainees. At the end of the Programme Schedule, weightage given to each of the three major components is shown in terms of hours and percentage. The first component, that is interactive sessions on content, receives about one-third of the total time allocated for the training programme. The second and the third components together get more than 50 per cent of the total time, as there is an emphasis being laid on developing communication skills of the trainees. The training programme schedule is only suggestive. Organisers, Resource Persons and trainees may suitably change its details according to their needs and requirements.

Appendix (ii) contains guidelines for Co-curricular/School-based Activities of students. It is expected that the trained secondary school teachers and health educators/counsellors will provide at least 10 hours of exposure to secondary school students during one academic year. The schedule and guidelines provide the basic minimum of students' exposure in which awareness building and skill and attitude development can be attempted. The trained teachers may like to select activities from Module -VIII, specific to their local situation. For organising 10 hours of exposure for students, the trained teachers may use two options: one, to organise and spread the activities over a period of time, for example one or couple of activities every fortnight or month for a group of students; two, to organise most of the activities in one go within a week or a fortnight, for example to observe 'Population and Reproductive Health Education Week' during July (July 11 being the 'World Population Day') or AIDS Week during December (December 1 being the "World AIDS Day"). In addition, activities given in Module -VIII can also be organised in classrooms as part of the school curriculum.

Appendix (iii) contains Pre-Post Test items for assessing the knowledge and awareness of trainees. The Test consists of 30 items.

Appendix (iv) contains simple tools to evaluate the training programme. It consists of five items.

Appendix (v) contains the list of participants who reviewed the Training Package in a workshop held at CBSE, New Delhi, from November 15-17, 1999.

Accent on a Co-curricular Approach

Though the overall strategy is to use a combination of curricular and co-curricular approaches, there is an accent on co-curricular approach to create an enabling environment for bringing about desirable changes in the secondary school curriculum. The time-honoured strategy for institutionalising any concern in the school system is to integrate it into the school curriculum. However, in this case the cultural sensitivity about the subject matter and the inadequacy in teacher preparation compel us to set about our task in a slightly different way. It is visualised that adequate teacher preparation and the presence of reproductive and sexual health education related activities in a large number of schools on a sustained basis over a period of time will immensely facilitate the incorporation of sensitive issues in the secondary school curriculum. Moreover, the availability of parents' and teachers' support to the programme will be an added advantage in this direction. In passing, it may be mentioned that under the project initial steps are being taken to develop curriculum material which will form the basis of our advocacy among curriculum planners and developers, textbook authors and such other target groups.

It is hoped that in addition to strengthening the process of integration of population and reproductive health issues in the secondary school curriculum, this Training Package will help in creating awareness among students, and develop among them assertive skills, healthy attitudes and responsible sexual behaviour. We are aware that development of skills and responsible behaviour is a long drawn process. What is required is a supportive environment both within the school and the community with reinforcement from parents, teachers and peer groups. It is important to emphasise that in all the activities the accent should be on the active participation of students. It is through the participatory mode that we can stimulate thinking and interaction among young students, thereby influencing their attitudes and behaviour.

DS MULEY
Consultant

CONTENTS

Module-I

MODULE-I

POPULATION EDUCATION: CONCEPT AND CONTENT

CORE LEARNINGS

The material for this module/session has been designed to enable a trainee to:

1. explain in brief the concept of population education and its expanding content in the light of the International Conference on Population and Development 1994.

CONTENT OUTLINE

1. Population Education: Concept, Need, Historical Background;
2. Reconceptualisation of Population Education;
3. Population Education and Sex Education/Family Life Education;

TIME: 20 MINUTES

For this session the procedure to be followed and the content to be covered are given. The emphasis is on the participatory and interactive mode. It is not necessary that every detail given in the content is to be told in the session. The main aim should be to achieve the objectives in terms of core learnings.

PROCEDURE

1. After announcing that in this session you are going to discuss population education, its concept and content, ask the trainees:

   Does your school curriculum contain population education content?

   If some trainees say yes, ask them to identify population education content that has been incorporated in their syllabuses and books.

2. **Ask: Do we really need population education? Why?**

   Explain the need for population education.

3. Read out one definition of population education before the trainees, and then ask:

   What meaning do you draw from the definition?

4. **Ask: Has any trainee seen the recommendations of the UNDP International Conference on Population and Development Programme of Action 1994?**

Explain how these recommendations have reconceptualised population education to include in its content sustainable development, population and environment, gender equality, maternal and child health, reproductive health (specially among adolescents and young population), and HIV/AIDS education. Thus, population education content today should include suitable content on education in human sexuality, family life education and AIDS education as well.

CONTENT SHEET

Population education emerged as an educational response to population and development issues confronting the society, nation and the world. It aims at making the learners aware of the interrelationships between population, development, resources, environment and quality of life of the people, inculcating in them positive attitude and responsible behaviour towards population and development issues. The population education programmes, as being implemented in about 90 countries of the world for the last over two decades, present a varied picture in terms of concept, content and clientele. They are known by different names such as population education, family life education, sexuality education and adolescence education depending upon their special emphasis.

Need for Population Education

Realising the negative effect of rapid population growth on development, many developing countries have launched family planning programmes. The success of family planning programmes in some countries has been significant in terms of reducing the rate of population growth.

There are two main reasons inter alia for the hidden momentum of population growth in the developing countries. These are (i) the socio-cultural and religious values of the people which influence their fertility behaviour, and (ii) the large young population of these countries. Population change is both a biological as well as a socio-cultural phenomenon. The whole process of reproduction leading to the birth of a child is biological. But the decisions behind the birth of a child and size of the family are governed by socio-cultural values, traditions and customs. For example, in most of the developing countries people place a high value on the birth of a child. Similarly, there are many other pro-natal values which influence the fertility behaviour of the people. In general, socio-cultural values change slowly over time through a variety of factors; but one of the most important factors is education. Any coercion in changing the values of the people can backlash and foil all the efforts. There are a number of studies which show a direct relationship between education of the people and their fertility behaviour. For example, a study shows that the rural women with five or more years of education, bore, on an average, just over half as many children as those with no schooling. Urban women with 10 or more years of education bore less than 45 per cent as many children as their counterparts with no schooling. (Also see Module IV.)

In India, while evaluating the impact of population education programme on school students and teachers, the International Institute for Population Sciences, Mumbai, found that school students and teachers who were exposed to population education content and training showed greater awareness about and more positive attitudes towards population issues than those students and teachers who were not exposed to such content and training.

In her inaugural address at the first Conference of Asian Forum of Parliamentarians for Population and Development held in Delhi from February 17-20,1984, Mrs Indira Gandhi, the then Prime Minister of India, made a specific reference to the importance of education in inculcating attitudinal and behavioural changes in the people to accept family planning. This should be accompanied by organisational arrangements for contraceptive advice and medical services. She said:

Young people must be in the vanguard of the movement to restrict population growth and to promote sustained development. In schools and colleges and through non-formal education they must be made conscious of the dynamics of population growth and its implications for their own further well-being and that of the nation. Properly planned population education programmes need to be introduced at various levels so that when people marry, they are fully aware of their responsibility to themselves, to future generations and to society. Every occasion and festival, be it religious or otherwise, where people get together, affords excellent opportunity to reach out to them to explain the importance of these programmes.

We must, therefore, educate children at an early age, much before they mature, on the implications of population change. There is also the need to impart education in human sexuality, HIV/AIDS and drug abuse. From the beginning it must be instilled in their minds that the ideal of happiness and prosperity lies in limiting the size of the family. If the child understands the processes and consequences of population growth for himself, the society, the nation and the world by the time he leaves the secondary school, he may be in a position to make the right decisions and is likely to be more receptive to the message of the family planning at a later time. In fact, one of the hidden objectives of population education is to create demand for family planning services.

Although there is no empirical evidence to show that population education will bring about the desired changes in the fertility behaviour of the future parents, a number of studies have shown that there is greater awareness among students and teachers and a positive change in their attitudes towards population issues. If we believe in a non-coercive and non-propagandist way of changing behaviour, probably education is the major means to help the individuals in making rational decisions for themselves and the society.

Historical Background

Population education has a relatively short history. The first attempt to voice the need for population education was made, perhaps, by Alva Myrdal in 1941. In her book *Nation and Family* she tried to convince the USA that a conscious population policy was essential to realise the social policy. She emphasised the role of education in the development of new population policy. The March 1962 issue of *Teachers College Record,* Columbia University, carried an article by Warren S Thomson entitled 'The Population Explosion', and another article 'Population-Gap in the Curriculum' by Philip M Hauser. Both these articles drew attention to the need for including population content in the school curriculum. In 1964, a project to prepare instructional materials related to population education was undertaken at Teachers College, Columbia University, under the leadership of Prof Sloan Wayland. The output of this project was two documents - 'Teaching Population Dynamics', and 'Critical Stage of Reproduction'. These were designed as proto-type materials for the pre-service training of secondary school teachers.

The first Director-General of UNESCO, Sir Julian Huxley, in his Annual Report for 1948, emphasised that overpopulation could drastically affect the future civilisation and its rate of advance. He was particularly concerned by the undernourishment of much of the world's population and with the problems of erosion and depletion of natural resources. He wrote, "population must be balanced against resources or civilisations will perish". He suggested that UNESCO's task must include educating the peoples of the world to realise the gravity of the problems involved.

The workshop on Population and Family Education, sponsored by the UNESCO Regional Office for Education in Asia held at Bangkok in September-October 1970, was a landmark in the history of population education. Educators from 13 member states in Asia addressed themselves to the task of preparing a statement of objectives for population education, suggesting strategies for organising programmes, outlining content for incorporation into school curricula in the social sciences and the natural sciences, and preparing a set of draft sample instructional materials in mathematics, science and social studies. A noteworthy outcome of the workshop was that in course of time several of the participants played key roles in developing population education programmes in their own countries.

After initial resistance, the programme of population education picked up quite fast in the seventies. Five countries in Asia launched national programmes in population education after the 1970 Regional Workshop, with financial support from the United Nations Fund for Population Activities (UNFPA) and technical assistance from UNESCO.

India was, perhaps, the first country to have taken up the task of introducing population education. The Family Planning Association of India presented a memorandum to the Government of Maharashtra, urging that population education be introduced into the educational system of the state. During the same period a 'White Paper' on educational reconstruction was published by the Maharashtra government in April 1968. The proposal was based on the conviction that one of the important ways in which the educational system can be made a 'powerful instrument of the national development' was by providing a basic understanding of the dynamics of population growth and how it affected the daily lives of the people and national welfare.

The first National Seminar on Population Education held in 1969 in Bombay (now Mumbai) set the pace for the introduction of population education in the school system. Since 1980, population education has been launched as a national programme under the banner of the National Population Education Programme (NPEP) by the Ministry of Education with the financial support of UNFPA and technical assistance of UNESCO.

By 1998, 30 states and union territories were implementing the programme. The NPEP executed by the NCERT completed three cycles and entered a new phase in 1998. During its first cycle, it had sought to institutionalise population education in the formal school and teacher training systems. The programme was expanded to non-formal education, adult education and universities during the Seventh Five Year Plan (1986-90).

The population education programme is now being implemented in many countries at various levels of education in primary and secondary schools, pre-service and in-service teacher training, vocational and technical schools, higher education and non-formal and adult education.

Meaning of Population Education

Since the population education programme was initiated to supplement the family planning programme, it is sometimes understood, both within and outside the educational system, as another name for sex education and/or family planning education. This misconception has been one of the hurdles in starting population education programmes in some countries. Cultural variations have determined differences in the concept and scope of population education programmes in different geographical regions. Sex education is still considered unacceptable in many countries of Asia, although some other countries such as the Republic of Korea and the Philippines have included family planning and sexuality as a part of population education curriculum in schools. In Fiji, sex education is a major component of family life education. Some Latin American countries place major emphasis on sex education because of the need felt for the individual to understand himself or herself as a sexual being, which is a prerequisite to the development of responsible parenthood.

Family Life Education and Population Education

Family Life Education is an education designed to promote happy family life. It seeks to prepare young people for a successful married life and responsible parenthood. With these purposes of family life education, the contents that are generally included in it are the concept of family structure, types and functions of family, family discords and their resolution, adolescence and related needs and problems, information about human sexuality, preparation for marriage, and responsible parenthood. The focus is on family. In population education the centre of study is population and its related issues. Some of the elements of Family Life Education fall in the area of population education, and therefore, these interfaces lead to an impression that both educations are identical.

Sex Education and Population Education

Sex education is also at times treated as synonymous with population education. Sex education is aimed at imparting education in human sexuality, human reproduction, responsible and healthy sexual behaviour and related ethical and moral issues.

With the fast spread of HIV/AIDS, AIDS education has been made an integral part of population education. As such, inclusion of selected content and information on human sexuality forms part of population education.

Conceptualisation of population education is rather a question of emphasis, rooted in complex and historical differences. The situation is not expected to remain static. There are already signs of change in the concept and scope of population education in some countries. Although some countries do not openly accept any kind of sex education or family planning education in schools, they do realise the need for including some content related to these areas in the population education curriculum. A number of surveys recently conducted in some countries in Asia vouch to this change in the perception of and acceptance to include sex education related contents in the framework of population education.

The concept and scope of population education also differs with the target group. Although opinions may differ with regard to the nature and content of population education for the children, there is little difference of opinion so far as the population education programme for adolescent youth and adults is concerned. The information on sex and family life is of immediate relevance to this group.

Given the cultural and religious diversities and different target groups, it may be difficult to give one definition of population education which can be universally accepted. Definitions also differ in the specific behavioural outcomes which they specify, such as acceptance of a small family norm while others adopt a non-directive approach.

In spite of the difficulties in the perception of population education, many individuals and many conferences have tried to give a definition of population education. For those who are interested in definitions, three are given below:

Population education is "an educational programme which provides for a study of the population situation in the family, country, nation and the world with the purpose of development in the students of rational and responsible attitude and behaviour towards that situation."[1]

"Population Education is an educational process to develop among learners an understanding of the interrelationships between population and sustainable development, causes and consequences of population changes, and criticality of essential conditions of population stabilisation. It inculcates among them rational attitude and responsible behaviour towards population and development issues in individual and social contexts, so that they can make informed decisions."[2]

"It is generally agreed that population education is the process of helping people understand the nature, causes and implications of population processes as they affect, and are affected by, individuals, families, communities and nations. It focuses on family and individual decisions influencing population change at the micro level, as well as on broad demographic changes."[3]

1. *UNESCO, Regional Office for Education in Asia, Population and Family Education,* Report of an Asian Regional Workshop, *Bangkok, 7 September-7 October, 1970, Bangkok, 1971.*
2. *NCERT,* Population Education: A Reconceptualised Framework, *New Delhi, NCERT, 1996.*
3. Reconceptualisation of Population Education, *Technical Paper, Number* 2, *UNFPA, New York, 1993.*

As one might notice, in these three definitions there is no mention of the needs of adolescents, reproductive health and skill development, which are now being emphasised in the light of the ICPD 1994. Though these aspects are subsumed in these definitions, it is felt that there is a need to formulate a new definition highlighting the new emphasis in population education, especially the development of life skills.

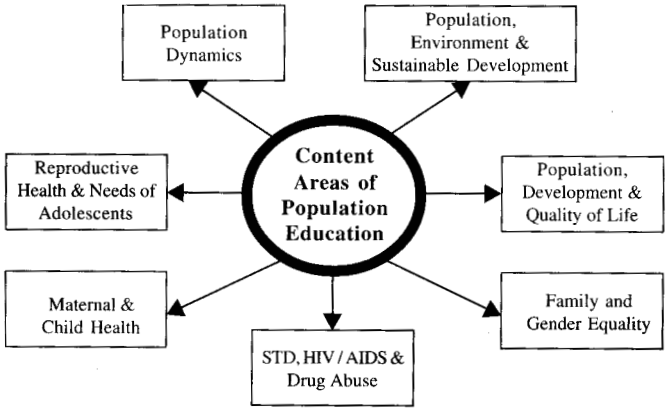
RECONCEPTUALISATION

Prompted by the need to reconceptualise and synthesise various aspects of population education, the UNESCO Regional Seminar held in Bangkok initiated the exercise way back in 1984. The process of reconceptualisation continued for about a decade with important inputs from different international conferences, including the UN Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992 known as the *Earth Summit*, the Istanbul Declaration zand Plan of Action (April 1993); the (ICPD) held in Cairo in 1994; and the Fourth World Conference on Women held in Beijing in 1995. The major focus in the reconceptualisation has been to register a paradigm shift from a purely demographic or population control approach to a broader interdisciplinary approach for sustainable development encompassing related issues of environment, resources, poverty and reproductive health.

The 1994 (ICPD) has given a broad mandate on development issues than previous population conferences, reflecting the growing awareness that population, poverty, patterns of production and consumption, and the environment are so closely interconnected that none of them can be considered in isolation. The Programme of Action recommends a set of important population and development objectives, both quantitative and qualitative. Among these objectives and goals are: sustained development, education, especially for girls; gender equity and equality; infant, child and maternal mortality reduction; and the provision of universal access to reproductive health services, including family planning and sexual health.

In this context it is important to mention that the National Council of Educational Research and Training (NCERI) had organised a National Seminar on Adolescence Education in mid-April 1993. The National Seminar on Adolescence Education had recommended that sex education and education for preventing HIV/AIDS and drug abuse should form part of the population education programme for secondary school students and teachers.

The content areas of population education, namely (i) Population dynamics, (ii) Population, Environment and sustainable development, (iii) Population, development and quality of life, (iv) Family and gender equality, (v) Maternal and child health, (vi) Reproductive health and needs of adolescents, and (vii) STD, HIV/AIDS and drug abuse, reflect the overall consensus and recommendations of the major national and international conferences and seminars.



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4. UNFPA, *Reconceptualisation of Population Education,* Technical Paper No 2, New York, UNFPA, 1993
5. UNDP, *ICPD Programme of Action (1994),* New York, United Nations, 1995

MODULE – I

Population Education: Concept and Content

Does your subject contain Poped content?

Population Education Content in Secondary and Senior Secondary Education Curriculum

Subject	Population Education Content
Geography	Population Growth: Implications for Environment
Science	Human Reproductive System, HIV/AIDS

Do we need Population Education?

Need and Purpose of Population Education

i) Heighten awareness of Population and Reproductive Health issues

ii) Develop necessary skills and positive attitudes

Historical Background

USA	**:**	**Alva Myrdal's *Nation and Family,* Teachers College, Columbia University**
UNESCO	**:**	**Bangkok Workshop on Population and Family Education. Asian countries launching national programmes with UNESCO's and UNFPA's assistance**
India	**:**	**Maharashtra government's White Paper, April 1968 National Seminar on Population Education in 1969 National Seminar on Adolescence Education, 1993**
Cairo	**:**	**ICPD, 1994**

Definition of Population Education

"...an educational programme which provides for a study of the population situation in the family, country, nation and the world with the purpose of development in the students of rational and responsible attitude and behaviour towards that situation."

(Report of an Asian Regional Workshop, UNESCO, Bangkok, 1971)

"...population education is the process of helping people understand the nature, causes and implications of population processes as they affect, and are affected by, individuals, families, communities and nations."

(Reconceptualisation of Population Education, Technical Paper Number 2, UNFPA, NY 1993)

How will you explain interrelationship between the following?

i) Population Education and Sex Education

ii) Population Education and Family Life Education

Have you seen the recommendations of the ICPD, Programme of Action, 1994?

Content Areas of Population Education

i)	Population Dynamics	ii)	Population, Environment and Sustainable Development
iii)	Population, Development and Quality of Life	iv)	The Family and Gender Equality
v)	Maternal and Child Health	vi)	Reproductive Health and Adolescents
vii)	STD, HIV/AIDS and Drug Abuse		

Module-II

MODULE – II

THE POPULATION CONCERN

CORE LEARNINGS

The material for this module/session has been designed to enable a trainee to:

1. explain population change in terms of the increase and decrease in fertility and mortality.
2. discuss the factors influencing fertility behaviour.
3. explain the effects of rapid urbanisation on the quality of life of the people.
4. describe the needs of the elderly.

CONTENT OUTLINE

1. Population situation in India and the world.
2. Population change: Fertility, mortality and migration.
3. Factors influencing fertility behaviour.
4. Urbanisation: Impact on the quality of life of the people.
5. Ageing of the population.

TIME: 75 MINUTES

For this session the procedure to be followed and the content to be covered are given. The emphasis is on the participatory and interactive mode. It is not necessary that every detail given in the content is to be told in the session. The main aim should be to achieve the objectives in terms of core learnings.

PROCEDURE

1. After announcing that in this session you are going to discuss the population concern, including population dynamics, ask the trainees to go through the list of Common Terms and Their Meanings given at the end to become familiar with them as these terms are used frequently in the content text. Give them 5-10 minutes for this. If there is any question or doubt, explain.

2. **Ask: Why are we so concerned about population growth? Is the problem very serious?**

   Let two or three trainees respond. Explain the nature of the population problem, especially in the context of India. Emphasise that while some states such as Kerala, Goa and Tamil Nadu have successfully regulated the growth in population, others, particularly Hindi speaking states such as Uttar Pradesh, Rajasthan, Madhya Pradesh and Bihar have not done well.

3. **Ask: What consequences of India's phenomenal growth in population do you notice?**

   In your statement the emphasis should be laid on the adverse impact on the quality of life of the people. You may highlight how the fast growth in population affects educational and health services, and at the individual family level a larger family size affects the availability of food and clothing, and purchasing power.

   Not more than 5-10 minutes be spent on this aspect.

4. **Ask: What components or factors determine the size of the population?**

   How do fertility (births) and mortality (deaths) change the size of the population?

   Ask the trainees to have a look at the four stages of the Demographic Transition Theory given in the Content Sheet. Emphasise that it is not necessary for every country/society to go through the four stages exactly the way it is stated. Ask them to apply these stages to the Indian population situation.

5. Ask the trainees to examine Table 2.4 and to note that in comparison with Sri Lanka and China, India has a higher CBR/TFR.

   Ask: Why does India still have a high TFR? What are the reasons?

   Factors influencing fertility are given in Content Sheet, take one by one and spend about 15-20 minutes discussing all the factors, which are age at marriage, traditional beliefs and values, status of women (including education of girls), urbanisation and economic level of the people.

   Tables 2.5 and 2.6 show the correlation between IMR and TFR, and table 2.7 shows the correlation between CPR and TFR. Use these tables to motivate the trainees to gain insight into these interrelationships.

   It is suggested that not more than 20-25 minutes should be spent on 'Factors influencing fertility behaviour'.

6. Ask the trainees to go through Table 2.8 and draw conclusions from column numbers 5 and 6, particularly with reference to census year 1991.

   Ask the trainees to identify problems that we face in big urban centres/cities.

   While discussing the fast increase in urban population, an important aspect should not be missed, which is that in developing countries such as India 60 per cent or more urban growth results from the excess of urban births over deaths.

7. **Ask: Do you have very old people (more than 65 years of age) in your family? Do they live with you? Can you identify one or two core issues relating to the elderly people?**

   A legislative bill is proposed to be introduced in the Himachal Pradesh Legislature to make it obligatory on the part of children to look after their parents when they become old.

   Hold a brief discussion on whether such a bill is justified and practical.

Content Sheet

Population Growth

World population is growing fast. Though the average family size in developing countries has decreased, the absolute numbers being added continue to increase. Continued rapid growth has brought human numbers into collision with the resources required to sustain them. Increasing numbers add to demands on land, air, and water resources, making it more difficult to support growing numbers of people. These demographic trends have spurred population policies and programmes in several countries aimed at slowing rapid population growth and balancing rural and urban population.

World: World population, which has already crossed 6 billion, is growing faster than ever before: three people every second, more than 250,000 every day. At the beginning of the decade the annual addition was 93 million; by the end it will approach 100 million. Approximately 95 per cent of the population growth is occurring in the developing countries. The average family size in developing countries has decreased: from 6.1 children per woman in the early 1960s to 2.9 in 1995. Population growth rates in developing countries have also declined: from more than 2.5 per cent a year in the early 1960s to about 1.7 per cent today. However, the absolute numbers being added continue to increase. These increases will move forward like a wave into the next century; more than half the developing world's population will be under 25.

Table 2.1

World Population Estimates & Projections: 1998 Revision

World population reached	Expected to reach
1 billion in 1804	6 billion in 1999 (12 years later)
2 billion in 1927 (123 years later)	7 billion in 2013 (14 years later)
3 billion in 1960 (33 years later)	8 billion in 2028 (15 years later)
4 billion in 1974 (14 years later)	
5 billion in 1987 (13 years later)	

Asia and the Pacific: Asia presently constitutes 59 per cent of the world population. Despite Asia's moderate growth rate, its numbers are still increasing rapidly because of the large base; over 60 per cent of the world's population increase takes place here. There is a growing division between the 'low-growth' countries of east Asia and the 'high-growth' countries of south Asia. China, Indonesia, the Republic of Korea and Thailand all have highly literate populations, effective family planning programmes and low population growth rates. On the other hand, rapid population growth in Pakistan, Bangladesh and the populous northern states of India is partly the result of women's low status, low general literacy and limited access to family planning. Sri Lanka is the exception, with high literacy and equal access to education for girls, and highly effective family planning programmes.

Table 2.2

The 20 Largest Countries According to Population Size (in millions)

1998			2050	
Rank	**Country**	**Population**	**Country**	**Population**
1	China	1,255	India	1,533
2	India	976	China	1,517
3	United States	274	Pakistan	357
4	Indonesia	207	United States	348
5	Brazil	165	Nigeria	339
6	Pakistan	148	Indonesia	318
7	Russia	147	Brazil	243
8	Japan	126	Bangladesh	218
9	Bangladesh	124	Ethiopia	213
10	Nigeria	122	Iran	170
11	Mexico	96	The Congo	165
12	Germany	82	Mexico	154
13	Vietnam	78	Philippines	131
14	Iran	73	Vietnam	130
15	Philippines	72	Egypt	115
16	Egypt	66	Russia	114
17	Turkey	64	Japan	110
18	Ethiopia	62	Turkey	98
19	Thailand	60	South Africa	91
20	France	59	Tanzania	89

Source: United Nations, World Population Prospects: *The 1996 Revision.*

India: In Asia, India is the second largest populous country, next to China. From a population of about 350 million at the time of Independence to about one billion in 2000 is certainly a distressing picture to cause concern. Today every sixth person on the globe is an Indian. The World Bank's projections are that India's population will exceed 1700 million by 2097. India's record in population control has been partly encouraging and partly dismal. The country has recorded a reduction in birth rate from 42 per thousand population in 1947 to 28 per thousand in 1997. At this rate we will need about 25 years to reach the replacement level of 21 births per thousand. A projection by the Registrar General, Census Commission, envisaged attainment of replacement level or TFR of 2.1 by 2026. Some states will achieve this level earlier, for example, Andhra Pradesh by 2002, and Maharashtra by 2009. But Madhya Pradesh will reach the replacement level by 2060 and Uttar Pradesh by about 2100. As against this Kerala already achieved this replacement level in 1988 and Tamil Nadu in 1993. The success of these few states such as Goa, Kerala and Tamil Nadu is due to their emphasis on social development, specially adequate healthcare, a reduction in infant mortality, and education - primarily education of the girl child. These states also ensured adequate family planning services.

Consequences

Increasing numbers require resources to sustain them. They add to demands on land, air and water resources. The additional population means provision for more educational and health facilities, food, shelter and employment. If the rate at which we add to the number of people is faster, it would be very difficult to support the growing numbers. In fact, the developing countries are already engaged in improving the quality of life of the majority of their poor people - the fast growth in population would mean an immense burden on these developmental efforts. Thus, the high rate of population growth is a matter of concern for India as well as for the world.

India's phenomenal growth in population poses many problems. We have been paying a heavy price for not giving enough attention to this important issue. When our country celebrates its 100 years of Independence in 2047, its population is likely to be about 1600 million and, probably, the largest population in the world, outstripping even China. We will have added over 600 million to the present population.

To feed this population, we will have to double our food grains production from about 200 million to about 400 million. We may produce this quantity of food grains as we are capable of doing it, but the costs will be too high. Shelter for all will pose another serious problem. It will need massive public and private investments. Similarly, clothing, healthcare and education will also need huge investments. This will put severe strain on our efforts to alleviate poverty, provide adequate water, power, transport and communication, and gainful employment to all. In nutshell, all our developmental efforts will come under severe pressure with the result that the gains of development will be eaten away by the burgeoning population. The country's services such as railways, road and transport, will always fall short of the requirements of the times.

To address the population problem, we need to understand its nature and causes.

Population Change

There are three basic components of population change - fertility (births), mortality (deaths) and migration - which determine the size and sex-age composition of the population of a country. Since local movement of the people does not affect the size and composition of the population of a country, and also since international migration in most cases is insignificant, we are taking into account fertility and mortality only.

The Demographic Transition Theory

It is interesting to know what the demographic transition theory is. It is the most widely accepted theory which explains population change over time. It explains how increase and decline in the birth rate and the death rate in a society affect population growth. There are four stages of the demographic transition. Every society goes through these stages, though there are variations seen in many countries. For your understanding an example of Finland has been taken to explain the four stages. Currently, India is passing through the third stage of demographic transition. We hope to enter the fourth stage after 25-30 years from now.

Stage I:	High birth rate, high death rate	:	little or no increase in population
	Finland in 1785-1790	:	Birth rate 38 per 1,000
		:	Death rate 32 per 1,000
	Rate of natural increase	:	(0.6 per cent)
Stage II:	High birth rate, falling death rate	:	high growth rate
	Finland in 1825-1830	:	Birth rate 38 per 1,000
		:	Death rate 24 per 1,000
	Rate of natural increase	:	(1.4 per cent)
Stage III:	Declining birth rate, relatively	:	
	low death rate	:	growth slows down
	Finland in 1910-1915	:	Birth rate 29 per 1,000
		:	Death rate 17 per 1,000
	Rate of natural increase	:	(1.2 per cent)
Stage IV:	Low birth rate, low death rate	:	very low population growth
	Finland in 1970-1976	:	Birth rate 13 per 1,000
		:	Death rate 10 per 1,000
	Rate of natural increase	:	(0.3 per cent)

Factors Influencing Fertility

We have seen that the change in population is caused by the difference between the birth rate and the death rate. The death rate in India has declined sharply due to improvement in medical and health services, sanitation and hygiene. But the birth rate has not declined that significantly. Therefore, the main cause of the high growth rate of population in India is the high birth rate. There is a need to reduce the birth rate in order to put a check on population growth.

Table 2.3

Birth Rate, Death Rate and Annual Growth Rate in India (1951-91)

Year	Birth Rate (per thousand)	Death Rate (per thousand)	Average Annual Growth Rate
1	**2**	**3**	**4**
1951	39.9	27.4	1.25
1961	41.7	22.8	1.96
1971	36.9	14.9	2.20
1981	33.9	12.5	2.22
1991	29.5	9.8	2.14

Source: *Col 1-3 from* Economic Survey 1998-99;
Col 4 from India 1999, *Publication Division, Ministry of Information & Broadcasting, Govt of India, 1999.*

The total fertility rate in India is high, specially in comparison with countries, such as China, Sri Lanka and Republic of Korea.

Table 2.4

TFR and CBR in Selected Countries

Countries	TFR (1995)	CBR (1995)
Bangladesh	3.2	26.9
China	1.9	17.3
India	3.2	26.3
Industrial Countries	1.7	12.6
Korea, Republic of	1.7	15.3
Pakistan	5.3	37.8
Sri Lanka	2.2	18.2

Source: Human Development Report, *1998*

Certain factors such as age at marriage, infant mortality rate, traditional values, and status of women have been found to be influencing fertility. These are discussed below.

Age at Marriage

In the entire South Asian region there is a universality of marriage. Those who are not married, are looked down upon by the society. There is a tradition of early marriage, specially for girls in many parts of India. The lower the age of marriage, the longer will be the childbearing period. Early marriage means there is a greater possibility of having more children. It has been observed that women who marry after the age of 20 have less number of children than those who marry at an early age. In 1992, 54 per cent of females married below the age of 18 years. In India, because of the practice of early marriage, a 20-year-old married woman may have two children with a likelihood of having another child in the following few years.

Early marriage is also one of the causes of high rates of maternal mortality (as well as morbidity) and infant mortality. A woman below 18 years of age is generally not physically mature for pregnancy and delivery. The mother's age, and the number and spacing of pregnancies are three central factors associated with pregnancy related problems. In European countries there are eight to 30 maternal deaths for every hundred thousand live births, whereas in most developing countries, including India, maternal mortality rates range from 300 to 800 per hundred thousand live births. Women under the age of 15 are five to seven times more likely to die during pregnancy or childbirth than are women in the 20-24 age group. Infant mortality follows the same pattern as that of maternal mortality.

Infant Mortality Rate

The higher the infant mortality rate, the greater is the desire among parents to have more children.

The Table below clearly shows that there is some co-relationship between IMR and TFR.

Table 2.5

IMR and TFR in Selected Countries

Countries	TFR (1995)	CBR (1995)
Bangladesh	81	3.1
China	38	1.8
India	71	3.1
Industrial Countries	6	1.6
Korea, Republic of	6	1.7
Pakistan	95	5.0
Sri Lanka	17	2.1

Source: Human Development Report, 1999

If IMR is high (as in Pakistan), TFR is also high. Similarly if IMR is low (as in the case of Republic of Korea) TFR is also low. This relationship can also be seen in case of some states of India as shown in Table 2.6. Uttar Pradesh has high IMR and TFR where as in Kerala and Tamil Nadu IMR and TFR are low.

Table 2.6

IMR and TFR in Some Selected States of India

State	High	
	IMR (1988-92)	TFR (1990-92)
Rajasthan	72.8	3.8
Madhya Pradesh	85.2	3.9
Uttar Pradesh	99.9	4.8
	Low	
Kerala	23.8	2.0
Tamil Nadu	31.9	1.9
Maharashtra	50.5	2.9

Source: India, Health & Family Welfare, *UPS, (Wall Chart) 1996)*

TRADITIONAL BELIEFS AND VALUES

Many of the values of a society regarding universal marriage, large family size, low status of women and preference for a son are drawn from a socio-cultural environment. Social and cultural constraints to the successful promotion of small family norm are pervasive. In the Indian tradition and culture the typical blessing for a new bride *ashta putra saubhagyavati bhav* (be the mother of eight sons) is quite well known. However, such influences are weakening as a result of education and modernity and also due to the efforts of the respective countries in this direction.

The tradition of large families is deep-rooted in developing societies. Many societies, due to poverty, attach economic value to children. In many countries, for example India, there is a strong preference for the male child, which often leads to large family size. It has been seen that despite a desire to have no more children, couples do not use any contraceptive or family planning methods for fear of social disapproval or non-availability of family planning services in acceptable form.

In countries with a high degree of economic development, CPR, that is contraceptive prevalence rate (the proportion of all women 15-49 years old, living in union and practising contraception) is generally above 60. The high level of contraceptive use is associated with a low TFR. As against this, countries which have a low contraceptive prevalence rate, have a high TFR. The Table below provides this point.

Table 2.7

CPR and TFR in Selected Countries

Countries	TFR (1995)	CBR (1995)
Bangladesh	49	3.1
China	83	1.8
India	41	3.1
Industrial Countries	70	1.6
Korea, Republic of	7	1.7
Pakistan	17	5.0
Sri Lanka	66	2.1

Source: Human Development Report, 1999

Status of Women

The fertility behaviour of a woman is largely determined by her social status, her educational attainment, economic position and decision-making power. The higher the socio-economic status of woman, the lower is her fertility and vice versa. In the Western society changes in women's status and their role have been accompanied by changes in the family size. Whereas in most countries where the fertility is high, women occupy a lower socio-economic position. Empowering women by providing them education and employment, and improving their role and status in society are important goals worth pursuing, but, in addition, such efforts help in reducing fertility as well.

Low literacy among girls is, without doubt, a major factor responsible for high fertility. Education brings about a change in the outlook and increases the level of understanding among people. Many studies have shown that the number of children born to a woman with higher level of education is much less than the number of children born to an illiterate mother. This is because educated mothers have a better understanding of the implications of a larger or smaller family in terms of health and nutrition levels of children and their education. If educated mothers are working, the desire for a small family is still stronger. Such women most readily take recourse to family planning methods. They are the women who also motivate their husbands to use appropriate family planning methods.

Sex Ratio

High or low sex ratio is closely related with the status of women in a country. In India sex ratio is defined as the number of females per thousand males. It has generally remained adverse to women. In the last census 1991, it was 927 females for 1000 males. Low sex ratio which is defined as lesser number of females to males, results from discrimination against the girl child and women in general throughout their lives. For instance, the quality of food which the mother gets during early months of the newly born child is generally low. Similarly, the attention to the girl child in case of her illness, is not at par with the attention a male child gets.

Sex Ratio in India

Census Year	Sex Ratio
1951	946
1961	941
1971	930
1981	934
1991	927

Sex Ratio in Some Selected Sates of India

State	High
Kerala	1,036
Himachal Pradesh	976
Tamil Nadu	974
	Low
Haryana	865
Uttar Pradesh	879
Bihar	911

Urbanisation and Economic Levels of the People

Urban centres provide a different life style for the people. The urban life style in comparison with the rural/ countryside life style promotes the small family norm. Extensive facilities for health and education, specially for women, exposure to mass media and access to information all put together help in the fertility reduction.

Poverty and high fertility seem to be mutually reinforcing in the developing countries. In poor families children start working and adding to the family income at a very young age. Therefore, such families tend to have more children. Whereas families with higher standard of living spend a sizeable part of their income on the health and education of their children. Children in such families are also dependent on their parents for a longer period. These factors force families to limit their size.

To sum up, while discussing various determinants of fertility it is important to remember that the factors mentioned above are inter-related. Some factors are predominant in most countries, while in a few other countries these factors do not apply.

Urbanisation[1]

Urbanisation, as a process, involves large shifts of people from rural to urban settings. Since 1950, the pace of urbanisation has accelerated enormously mainly due to unprecedented rates of population growth in India. It is estimated that "the World's urban population is growing by 60 million a year... Urbanisation is projected to continue well into the next century. By 2030, it is expected that nearly 5 billion (61 per cent) of the World's 8.1

1. *The material has been drawn from* 'Population Crisis Committee, Changing Urban Realities,' *Washington DC, Population Crisis Committee, 1998.*

billion people will live in cities." Megacities (with population of 5 million or above) are appearing on every continent. In the 1990 Population Crisis Committee study of the world's 100 largest metropolitan areas, the smallest - Pune in India - is home to 2.35 million people. The largest - Tokyo, Yokohama - is home of 28.7 million. The world's 'hypercities', those over 15 million people, are sprawling, congested urban agglomerations. They are of an order of magnitude unmatched by any cities in the past. At least some experts believe that some cities are simply too large to be efficient.

Table 2.8 gives the status of urbanisation in our country since 1901. It is obvious from the table that both in absolute terms as well as in percentage terms, urban population is increasing. The total number of town and urban areas are also increasing. However, in the last census 1991, the annual growth rate of urban population has slightly decreased as compared to 1981.

Table 2.8

Urbanisation in India

(Census Year	No. of Towns/ Urban Areas	Total Population in Millions	Urban Population in Millions	% age of Urban Population to Total Population	Annual Growth Rate of Urban Population (%)
1	2	3	4	5	6
1901	1827	238.4	25.8	10.8	—
1911	1815	252.1	25.9	10.3	0.03
1921	1949	251.3	28.1	11.2	0.79
1931	2072	278.9	33.5	12.0	1.75
1941	2250	318.7	44.1	13.9	2.77
1951	2843	361.1	62.4	17.3	3.47
1961	2364	439.2	78.9	18.0	2.34
1971	2590	548.2	109.1	20.0	3.21
1981	3378	683.3	159.4	23.3	3.83
1991	4768	846.3	217.6	25.7	3.09

Source: Final Population Total, Census of India 1991, Series I, *India Paper II of 1992.*

Table 2.9 shows the status of urbanisation in different states of India.

Table 2.9

Levels of Urbanisation in India
(Percentage of urban population to total population)

State	1961	Rank	1971	Rank	1981	Rank	1991	Rank
Andhra Pradesh	17.44	7	19.31	7	23.82	7	26.84	7
Assam	7.20	13	8.80	13	7.30	14	11.08	14
Bihar	8.43	12	10.00	12	12.47	12	13.17	13
Gujarat	25.77	3	28.08	3	31.10	3	34.40	2
Kerala	15.11	9	16.24	10	18.74	10	26.44	8
Madhya Pradesh	14.29	10	16.29	9	20.29	9	23.21	9
Tamil Nadu	26.69	2	30.26	2	32.95	2	34.21	3
Maharashtra	28.22	1	31.17	1	35.03	.1	38.73	1
Karnataka	22.33	6	24.31	5	28.89	4	30.91	4
Orissa	6.32	14	8.41	14	11.79	13	13.43	12
Punjab	23.06	5	23.73	6	27.68	5	29.72	5
Rajasthan	16.28	8	17.83	8	21.05	8	22.88	10
UttarPradesh	12.85	11	14.02	11	17.95	11	19.89	11
West Bengal	24.45	4	24.75	4	26.47	6	27.89	6

Source: *Census of India: 1971, 1981, and 1991. As quoted in RRM Rao (Ed.)* Indian Cities: Towards Next Millennium, *Rawat Publishers, Jaipur, 1999.*

Cities in Developing Countries

Cities in the world's poorest countries are fast filling up the ranks of the world's largest cities. This trend breaks the historical connection between city size and levels of economic development or political power. The major force behind urbanisation is no longer industrialisation. Some 58 of the world's 100 largest metropolitan areas are in developing countries. Nine of them are in China and another nine in India, despite the fact that almost 70 per cent of population in these countries is still rural.

Population pressures have aggravated the grinding poverty endemic to the rural areas of many developing countries. Plots of farmland, subdivided to accommodate many offspring, are often too small to support a family. More recently, environmental degradation resulting from over-cropping and overgrazing has also contributed to the migrant stream. These 'push factors' behind rural-urban migration are becoming as important in some areas as the traditional 'pull factors' such as opportunities for education and employment, and better access to health and recreational services.

In many developing countries 60 per cent or more urban growth results from the natural increase that is excess of urban births over deaths. Nearly 20-25 per cent is related to rural-urban migration. The remaining is due to the emergence of new towns.

Problems of Rapid Growth

The slums and shanty town of cities in the developing world are growing at twice the rate of cities as a whole. In parts of Latin America these communities are known locally as "callampas" or mushrooms because they seem to grow up almost overnight. Estimates in 1987 put the proportion of city population living in slums or squatter settlements above 30 per cent for many cities of the developing world. In some cases the bulk of the city's population lives in slums: 67 per cent for Calcutta, 60 per cent for Bogota and Kinshasa, and 42 per cent for Mexico City.

The housing problem in these cities is already acute. The World Bank estimates that the bottom quarter of urban populations in most African and low-income Asian cities cannot afford even a minimal level of permanent housing. Large portions of cities in developing countries are without municipal water, sewerage or solid waste disposal. Many settlements are built on inaccessible hillsides or depressions prone to flooding. Slums also proliferate around industrial zones, close to jobs, but where air and water pollution has reached dangerous levels and where major industrial accidents, like the poisonous gas leak in Bhopal, can put large residential populations at risk.

Urban migrants, including squatters, tend to upgrade their housing over time, with or without the help of governments. But the continued rapid pace of urban population growth ensures a constantly expanding fringe of newly arrived squatters. Investment in urban infrastructure never have time to catch up.

Many cities in the industrialised world likewise face the need to refurbish crumbling urban infrastructure. Air pollution, traffic congestion, noise and urban violence are similarly high in large cities around the globe. But the cities of the developing countries face the prospect that urban problems will worsen substantially through the coming decade and beyond as population growth outruns investments in new urban infrastructures. As one city politician from India told a US reporter recently: "with a lot of new resources, may be just may be, we can hold on to what we have. Beyond that, there's not much hope".

The Population Crises Committee in its study of 1998 has identified 10 indicators. Each indicator accounts for 10 points on the study's 10 point scale of urban livability. Individual city scores ranged from a high of 86 to a low of 19. The cities were further divided into four rankings: Very Good, Good, Fair, or Poor. From the Third World, only the city-state of Singapore is placed in the 'Very Good' category. All the nine cities of India are in the poor category. The ten indicators are (1) Public Safety - Murders per 100,000 people, (2) Food Costs - Per cent of income spent on food, (3) Living Space - Persons per room, (4) Housing Standards - Per cent of homes with water and electricity, (5) Communications - Telephones per 100 persons, (6) Education - Per cent of children in secondary schools, (7) Public Health - Infant deaths per 1,000 live births, (8) Peace and Quiet - Levels of ambient noise, (9) Traffic Flow - Miles per hour in rush hour, (10) Clean Air - Alternate pollution measures.

Population in Different Age Groups

Child Population

Child population in the age group of 0-9 years has some specific requirements. With the decline in fertility the number in this age group is also declining. As a consequence, the problems related with child population should also get reduced. However, looking at the size of this population, which is about 250 million, problems in the area of health, nutrition and school education are still enormous.

Adult Population

The population growth rate of the adult population in the age group 15-59 is higher than that of the total population. As a consequence, the absolute size entering into the working age group has been growing. Unless employment opportunities are developed at a pace faster than that of the population growth, the absolute number of the unemployed people would continue to increase.

Elderly People

The decline in fertility levels, reinforced by continued declines in mortality levels, is producing fundamental changes in the age structure of the population of most societies, most notably record increases in the proportion and number of elderly persons. In the more developed regions, approximately one person in every six is at least 60 years old, and this proportion will be close to one person in every four by the year 2025. The situation of developing countries that have experienced very rapid declines in their levels of fertility deserves particular attention.

Table 2.10

Ageing of Population

Census Year	60+Population (in millions)	Percentage of Total Population
1951	19.8	5.5
1991	56.7	6.8
2001 (Projected)	76.0	7.7
2016 (Projected)	113.0	8.9

Futurologists believe that in 50 years time there wil1 be 2.2 million people more than 100 years old.

In most societies, women, because they live longer than men, constitute the majority of the elderly population and, in many countries, elderly poor women are especially vulnerable. The increase of older age groups in national populations, both in absolute numbers and in relation to the working age population, has significant implications for a majority of countries, particularly with regard to the future viability of existing formal and informal modalities for assistance to elderly people. Countries are currently re-examining their policies in the light of the principle that elderly people constitute a valuable and important component of a society's human resources. They are also seeking to identify how best to assist elderly people with long-term support needs.

1999 was declared as "International Year of Older Persons".

There are three key issues. First, there is an absence of adequate awareness that senior citizens have a separate identity. Second, the specific needs of senior citizens are rarely addressed to the extent they deserve, the most important being the health needs. Third, there is a lack of definite data on ageing in the country.

A senior citizen is any person over 65 years of age. In India senior citizens constitute about 5 per cent of the entire population. These numbers are growing steadily. Better healthcare has resulted in people living longer worldwide. For instance, in Japan about 16 per cent of the population is 65 plus.

The elderly in France

As in the rest of Europe, France is faced with an ageing population. In 1990, for every pensioner, there were 2.3 working people. By 2005, it is estimated that this will fall to less than two workers, and their contribution to the state pension scheme will not be sufficient to maintain current levels of benefits.

Rent-a-family

Elderly Japanese isolated from their children can now rent a 'family' for lunch and a few hours conversation. They just dial a Tokyo number and ask for a daughter, a son-in-law, and two grandchildren, for example. Soon after, the 'family' arrives and greets the elderly person emotionally. Three hours with them costs $1,130 plus transport.

In the past, the joint family used to function as a buffer against the adverse effects of ageing, providing support and care for the aged. But with the growth of nuclear families, the elderly are left to fend for themselves. The young are going through their problems of coming to terms with the economic compulsions and their work. The social support is crumbling. In India, our tradition and culture venerate the elderly but this is not reflected in reality these days. There is a great need to inculcate respect for the elders and caring attitude towards them among young people. The homes for the aged are a positive development to provide succour and support to the aged, but they should not be perceived as a dumping ground by children who find it difficult to care for their aged parents.

Common Terms and Their Meanings

1. **Age-Sex Structure**

   A description of a population's composition by the number or proportion of males and females in each age category.

2. **Age-Sex Pyramid**

   A bar chart that shows the distribution of a population by age and sex. By convention, age (increasing upward) is marked on the vertical scale and the number of people (males to the left and females to the right) are marked on each side of the vertical scale.

3. **Census**

   Counting the number of people in a country is called the census of population of that country. The census is conducted periodically. For instance, in India it is conducted after every 10 years. It collects information regarding the number of persons, their age, sex, etc.

4. **Crude Birth Rate:** (CBR) $\frac{\text{Total number of live births in a year}}{\text{Mid-year population}} \times 1000$

5. **Crude Death Rate:** (CDR) $\frac{\text{Total number of deaths during a year}}{\text{Mid-year population}} \times 1000$

6. **Contraceptive Prevalence Rate (CPR)**

   The proportion of all women 15-9 years old living in union who practise contraception

7. **Dependency Ratio:** $\frac{\text{Dependent Population (under 15 and over 64 years old)}}{\text{Working Population (15-64 years old)}} \times 100$

8. **Growth Rate of Population**

   The rate (per cent) at which the number of people increased in a given period. It is expressed in terms of either the annual growth rate or the decadal growth rate.

9. **Infant Mortality Rate (IMR)**

   The rate of deaths of live-born infants under one year of age. The rate is given as per thousand live births in a year.

10. **Life Expectancy (at birth)**

    The average number of years a person may expect to live when born.

11. **Maternal Mortality Rate**

    The number of deaths of women due to pregnancy and childbirth complications per 100,000 live births in a given year.

12. **Morbidity**

    The frequency of disease and illness in a population.

13. **Net Reproduction Rate (NRR):**

    The average number of daughters that would be born to a woman (or group of women) if she passed through her lifetime. This rate takes into account the fact that some women will die before completing their childbearing years.

14. Replacement Level Fertility

The level of fertility at which a cohort (group of women, born during the same period) on the average, have only enough daughters to 'replace' themselves in the population. An NRR of 1.00 is equal to replacement level. TFR of 2.1 is considered to be the replacement level.

15. Senior Citizen - Any person over 65 years of age.

16. Sex Ratio:

The number of males per 100 females in a population

$$\frac{\text{Total number of males}}{\text{Total number of females}} \times 100$$

In case of India, it is as follows:

$$\frac{\text{Total number of females}}{\text{Total number of males}} \times 1000$$

17. Total Fertility Rate (TFR)

The average number of children that would be born alive to a woman (or group of women) during her lifetime, if she were to pass through her childbearing years.

18. Zero Population Growth

A population in equilibrium, with a growth rate of zero, achieved when births plus immigration equals deaths plus emigration.

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MODULE – II

The Population Concern

Why are we so concerned about population growth?

Is the population situation depressing?

Population Growth

World:

Table 2.1
World Population Estimates & Projections: 1998 Revision

World Population reached	It is expected to reach
1 billion in 1804	6 billion in 1999 (12 years later)
2 billion in 1927 (123 years later)	7 billion in 2013 (14 years later)
3 billion in 1960 (33 years later)	8 billion in 2028 (15 years later)
4 billion in 1974 (14 years later)	
5 billion in 1987 (13 years later)	

World:	**Though average family size decreasing, population in absolute number growing faster than ever before. More than 90% of the growth occurring in developing countries**
Asia:	**'Low Growth' countries of East Asia: China, Indonesia, Republic of Korea (South Korea), Thailand** **'High Growth' countries of South Asia: Pakistan, Bangladesh, India**
India:	**'Low Growth' states: Kerala, Goa, Tamil Nadu, Mizoram** **'High Growth' states: Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh**

What consequences of High Population Growth do you notice in India?

Educational services
Health services
Purchasing power of an individual family
General quality of life

What factors/components change the size of Population?

Fertility (births)

Mortality (deaths)

Migration (Inward and Outward)

Demographic Transition Theory

Four Stages

i) High birth rate, high death rate

ii) High birth rate, falling death rate

iii) Declining birth rate, relatively low death rate

iv) Low birth rate, low death rate

Why does India, especially the northern states, have high TFR?

Factors influencing fertility behaviour

i)	Age at marriage
ii)	Traditional beliefs and values
iii)	Status of women (Education of girls)
iv)	Economic level of the people
v)	Urbanisation

Table 2.4
TFR and CBR in Selected Countries

	Countries	TFR (1995)	CBR (1995)
1.	Bangladesh	3.2	26.9
2.	China	1.9	17.3
3.	India	3.2	26.3
4.	Industrial Countries	1.7	12.6
5.	Korea, Republic of	1.7	15.3
6.	Pakistan	5.3	37.8
7.	Sri Lanka	2.2	18.2

Source: *Human Development Report, 1998*

Table 2.5
IMR and TFR Selected Countries

	Countries	IMR (1995)	TFR (1995)
1.	Bangladesh	81	3.1
2.	China	38	1.8
3.	India	71	3.1
4.	Industrial Countries	6	1.6
5.	Korea, Republic of	6	1.7
6.	Pakistan	95	5.0
7.	Sri Lanka	17	2.1

Source: *Human Development Report, 1999*

Table 2.6
IMR and TFR in Some Selected States of India

State	IMR (1988-92)	TFR (1990-92)
	High	
Rajasthan	72.8	3.8
Madhya Pradesh	85.2	3.9
UttarPradesh	99.9	4.8
	Low	
Kerala	23.8	2.0
Goa	31.9	1.9
Maharashtra	50.5	2.9

Source: *India, Health & Family Welfare, IIPS, (Wall Chart) 1996*

Table 2.7
CPR and TFR in Selected Countries

	Countries	CPR (1990-98)	TFR (1997)
1.	Bangladesh	49	3.3
2.	China	83	1.9
3.	India	41	3.2
4.	Industrial Countries	70	1.7
5.	Korea, Republic of	79	1.7
6.	Pakistan	18	5.3
7.	Sri Lanka	66	2.2

Source: *Human Development Report, 1999*

Sex Ratio in India

Census Year	Sex Ratio
1951	946
1961	941
1971	930
1981	934
1991	927

Sex Ratio in Some Selected States of India

State	High
Kerala	1036
Himachal Pradesh	976
Tamil Nadu	974
	Low
Haryana	865
Uttar Pradesh	879
Bihar	911

Growing Number of Elderly People:

Their Needs and Problems

Module-III

MODULE – III

POPULATION, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

CORE LEARNINGS

The material for this module/session has been designed to enable a trainee to:

1. explain the meaning of 'carrying capacity of environment' and sustainable development.
2. discuss the contribution of over-consumption and over-population to environmental degradation.
3. describe the interrelationship between population, development, health and environmental issues.

CONTENT OUTLINE

1. Environment - Its Meaning, Environmental Problems and Concern.
2. Carrying capacity of the environment.
3. Sustainable development and population growth.
4. Over-consumption and over-population as factors influencing quality of the environment.
5. Interrelationship between population, development, health and environmental issues.

TIME: 60 MINUTES

For this session the procedure to be followed and content to be covered are given. The emphasis is on the participatory and interactive mode. It is not necessary that every detail given in the content is to be told in the session. The main aim should be to achieve the objectives in terms of core learnings.

PROCEDURE

1. After announcing that in this session you are going to discuss the interrelationship between population, environment and sustainable development.

   Ask: What does the term 'environment'mean?

   What objects and things do you include in the meaning of environment?

   Let a few trainees respond.

   Explain the meaning of environment as given in the Content Sheet.

2. **Ask: How do humans modify their natural environment?**

   Ask trainees to identify a few resources that have been affected by man's activities. Write them down on the blackboard. Take a few problems such as deforestation, wildlife extinction, soil erosion, water and air pollution, green house effect and ozone depletion. For brief discussion, spend about 20-30 minutes on these problems.

3. **Ask: How many of you know about the Brundtland Commission (1987) on environment and development?**

   What is the meaning of development?

   In the ultimate analysis, development means meeting the needs of the people.

   Explain the meaning of sustainable development and carrying capacity of the ecosystem.

4. While assessing the population impact on environment, write down the familiar formula

   $I = P \times C \times T$

   Explain the formula and hold a 15-20 minute discussion with trainees.

   Ask: Which is more responsible for the environmental degradation, over-consumption of the industrial countries or over-population of the developing countries?

   If one were to list the three factors in order of the quantum of their impact on environment, the first will be technology, second population growth and the third will be over-consumption. However, the three factors are to be seen in their totality rather than separately.

Content Sheet

Population dynamics are closely related to environmental issues. In line with the growing global awareness of the need for sustainable use of resources and more effective protection of the environment, relevant environmental concepts need to be incorporated into population education curricula. In particular, the key ways in which population and the environment relate to each other have to be spelt out. Just as key environmental concepts should be included in population education, so should relevant population concepts be dealt with in environmental education. This will require collaboration between population educators and environmental educators. Environmental education should emphasise the ways in which humanity depends on and has a profound impact on the environment. One way to get this message across is to explain what ecosystems are and how they function, and then to explain how various kinds of human interventions affect ecosystems.

Environment: Its Meaning

The term environment in the present context does not mean merely 'surrounding'. It includes all non-living and living objects, happenings and forces, both natural and man-made, which influence the life of an organism; the relationship of organism (including man) to the environment. The environment is a continuum extending from the medium (air or water) in which one lives to distant objects such as the sun or moon, and possibly even beyond. All aspects of this continuum influence an organism and vice versa.

The environment is a part and product of nature and is governed by natural laws and principles. Some natural occurrences can create, alter, destroy an environment. Humans, through their understanding, can modify the environment but cannot change natural laws. It should be realised that man's present concern for the environment has not arisen merely from a romantic love for nature. Instead, it has grown from a wise realisation and concern for the survival of humans and other organisms.

Therefore, it follows that (1) all life forms, including human beings, are related to one another either closely or remotely through common ancestry, and (2) probably every species of plant and animal which exists today, is the result of millions of years of biological evolution. Thus once a form of life is lost from the earth, it cannot be created again. These aspects have profound ethical implications in environmental education.

Environmentalists recognise change as a universal process, needed for the development and progress of humankind. But at the same time, they are conscious of scientific studies which suggest that too drastic a change, natural or man-made, is harmful. Present threats to the environment are the result of too rapid technological developments and injudicious use of resources.

Resources

Environmental resources are those which are present in our environment and which we use in our day-to-day life. These resources are renewable and non-renewable. Renewable resources are those which are automatically renewed through natural process and hence, they may be considered to be available indefinitely. Non-renewable resources are those which are present in limited quantities and hence, if these are consumed injudiciously, we may not find them again. Obviously the non-renewable resources are more prone to depletion. Hence, we have to be much more careful while exploiting these resources as these cannot be re-created if once exhausted.

In the last 150 years human influence on environment has increased drastically due to population growth, the ever increasing techno-scientific power, and their consequences. All human influence has not been favourable and

is leading to fast depletion and degradation of both renewable and non-renewable resources. On the contrary, human activities are posing serious threats not only to the survival of other organisms in the environment, but also to humankind itself.

Environmental Problems

When we live in the environment and use the environmental resources, knowingly or unknowingly we put pressure on the environment. This pressure may lead to environmental problems if it exceeds a certain limit. The limit is of natural repair or replacement. For example, we use groundwater. If we use it with prudence, it will continue to serve us indefinitely as nature has its inherent capacity to replenish. If we exploit this resource beyond its limit of replenishment, we may lose it forever. The same is true for any other environmental resource.

Deforestation

Forests represent a well organised and highly evolved community of plants and animals. They provide several products of daily use such as food, timber, fire-wood, wood pulp, forage and fiber, apart from being a vast storehouse of medicinal plants which are yet to be fully explored and exploited. They are potent sources of many industrial raw materials. The greatest significance of forests, however, lies in their critical role in maintaining ecological processes and life support systems. According to official records our country has an area of 633.4 lakh hectares notified as forests which represents 19.27 of the geographic area. The National Forest Policy of 1952 recommends that 33 per cent of the land area of the country should be under forests. Contrary to this guideline, however, forests have been under increasing assault since independence. Excessive exploitation of forests and overgrazing have seriously decimated our forest resources.

Forest and Woodland
(as % of land area)

	1995
All developing countries	26.0
Industrial countries	27.9
India	9.27

Deforestation has adversely affected wildlife and rainfall pattern.

Soil Erosion

Soil is the essential medium for the growth of plants. It takes hundreds of years for the top soil layer which supports plants to form. The management and improvement of soil fertility is vital for agricultural production and economic prosperity. But the pressure from growing human and cattle populations has seriously affected soil resources. The total cultivable land area in India is about 304 million hectares. Deforestation, overgrazing, unscientific agricultural practices and desertification have induced soil erosion.

Flooding

Deforestation, tampering with nature, uncontrolled grazing in the catchment areas and soil erosion, have led to large scale silting and raising of river beds in many parts of the country, subsequently causing floods. Loss of human lives and livestock, as well as economic losses and damages to property, are escalating steadily.

Excessive Ground Water Exploitation

Groundwater or aquifer is another major natural pool of fresh water that has been exploited by mankind for a long time. Groundwater is periodically recharged by the rain water that seeps through the soil. It represents an important decentralised source of water supply which is available round the year.

Groundwater exploitation for agriculture, industry and human consumption is rapidly increasing in many parts of the country to meet the demands of a growing population. Large-scale exploitation of groundwater through manually dug wells and tubewells has created severe problems in many parts of the country. In many areas, groundwater withdrawals have far exceeded the recharging capacity of the aquifer, resulting in lowering of the water level and drying of wells.

Threat to Wildlife

Rapid increase in human and cattle populations has promoted large-scale habitat destruction by bringing more land under the plough and implementing developmental projects. This eventually has adverse impact on wildlife. Today, the future of wild animals is, in general, alarming. Many endangered species are fighting a loosing battle for survival. Hunting and poaching are additional threats. The worst victims, no doubt, are the fur-bearing mammals, birds with ornamental feathers and reptiles (crocodiles, snakes, etc). The tiger, our national animal, is also facing extinction due to poaching for its skin and bones. Elephants are hunted for ivory and the rhinoceros is prized for its horn. About 350 species constitute the mammalian fauna of India, of which 81 are endangered. One example of wildlife extinction in recent times is that of the Indian cheetah. The other threatened species are the horned rhino and Sikkim stag, and among the birds, the mountain quail. Over a 100 species of wild animals need immediate protection as their populations have dwindled to dangerously low levels. Many plant species are also facing extinction.

USE OF CHEMICALS AND PESTICIDES

Fertilisers

The rapid pace of population growth demands increase in food production. Chemical fertilisers are the most essential input for modern agriculture. Fertiliser consumption has increased considerably. India ranks as one of the world's largest producer as well as consumer of nitrogen and phosphoric fertiliser.

Such a large input of chemical fertilisers will create diverse problems of environmental pollution which can be grouped into two categories:

1. Pollution caused during fertiliser production; and
2. Pollution resulting from the use of fertilisers.

Pesticides

Pesticides are a group of chemicals for controlling pests. The organochlorine compounds, which include insecticides such as aldrin, dieldrin, DDT (Dicloro Diphenyl Trichloroethene) and its derivatives, are causing great concern to environmentalists. DDT gets widely dispersed throughout the ecosystem. It is present in water bodies, soil and in plants, animals and human bodies. It is soluble in fat and hence, tends to accumulate in very large quantities in the liver of animals, thus occupying the successive levels in the food chain, for example human beings, animals, birds of prey, etc. This has adverse effect on health.

Water Pollution

Water is the most precious resource and required by all forms of life. Without water no living thing, plant, animal or man can survive. The availability of an adequate and usable supply of water underpins our whole economy. Water is also used for transportation and power generation, for waste disposal, recreation, agriculture and fisheries. Fresh water is essential both for the manufacturing and the service sectors as well as bathing, cooking and washing.

There has been a tremendous increase in demand for water due to population growth, urbanisation and industrialisation. A rational pragmatic strategy for the management and recycling of water is needed to cope with such galloping demands. The problem of water pollution consequent upon mismanagement of water has been a matter of great concern. Water pollution is the most important cause of public health problems, both in rural and urban areas. The frequent eruption of epidemics is caused by the pollution of drinking water. Waterborne diseases, such as cholera, typhoid, diarrhoea, dysentery, malaria, and intestinal worms claim a heavy toll every year. Inadequate hygiene, poor sanitation and discharge of industrial effluents as well as domestic wastes have resulted in the pollution of many of our water sources, including the major rivers of the country.

Air Pollution

Air pollution is one of the major problems caused by moving and point sources. Moving sources are represented by automobiles, ships, aircrafts and rockets. Industries and thermal power plants are examples of point sources of air pollution.

The burning of fossil fuels produces oxides of sulfur and nitrogen, carbon dioxide, carbon monoxide and a complex mixture of organic compounds along with particulate matter. The most important pollutants in the Indian environment are suspended particulate matter (SPM) and SO_2 (sulfur dioxide). The SPM levels in most of the urban areas are beyond the permissible level. In fact, an unpleasant pall of dust and smog have become almost an integral part of urban areas. Air pollution affects living organisms significantly. Apart from creating problems of poor visibility, air pollution causes respiratory diseases particularly in children and elderly persons. Several preventive measures are being taken to reduce air pollution such as availability of lead-free petrol.

Acid Rain

Acid rain, which has emerged as a great scourge in the industrial countries, is regarded as an imminent threat to India as well, where the emission of acidic gases is sharply increasing. In the last few decades, rain water has become acidic over large areas in Europe and North America. The term ‘Acid Rain’ is used to describe all precipitation rain, snow, sleet, dew which are more acidic than normal. Acid deposits are caused when sulfur and nitrogen oxide from coal and oil fired power plants, from industrial processes, such as metal smelting, and from motor vehicle exhausts, combine in the atmosphere with water vapours, sunlight and oxygen to form sulfuric and nitric acids. The cumulative effect of acid rain is the gradual degradation of soil and a decline in forest productivity.

Greenhouse Effect

Carbon dioxide is a natural constituent of the atmosphere. In spite of its relatively small proportion, carbon dioxide plays a very important and useful role in the biosphere until its ratio is disturbed. It lets the sun's rays through to the earth, but traps the heat that would otherwise be radiated back into space. This is what keeps the earth's atmosphere warm enough for the survival of different living organisms.

A great concern is growing because of the steadily increasing carbon dioxide concentration in the atmosphere. Its overall concentration has increased by nearly 25 per cent since the process of industrialisation started in the world. Most scientists are therefore in agreement that global warming is underway. This phenomenon is known as the 'Greenhouse Effect'. Besides carbon dioxide, other trace gases such as methane, nitrous oxide (laughing gas), the chloro-fluoro-carbon (CFCs) and ozone also produce the Greenhouse Effect and have an additive result.

Precise predictions are difficult, but significant studies indicate that due to a global increase in carbon dioxide, the temperature of the lower atmosphere is likely to increase by 1.5 °C to 4.5 °C by year 2030. This would lead to a rise in the global sea level because of two major reasons. First, the rise in atmospheric temperature will make the average temperature of the oceans warmer. Because of this heat transfer, the water of the earth will expand. Second, the rising temperature will result in the melting of polar ice caps, which will ultimately result in the rising of the sea level. This would have obvious implications to millions of people living on islands, and in coastal areas and delta regions of rivers. It would affect discharge of perennial rivers, disturbing irrigation and agriculture in vast inland areas.

Ozone Depletion

Ozone is a pale blue gas made up of three oxygen atoms and is a minor constituent of the earth's atmosphere. It is found everywhere between sea level and a height of 60 km in varying concentrations. In the air we breathe, ozone is a health hazard, a constituent of air pollution that has a caustic effect on human skin. However, in the stratosphere, ozone forms a delicate veil, filtering out radiation from sun's rays entering the earth atmosphere. In fact, the presence of an ozone layer in the stratosphere is vital for life on earth because it is the only natural shield against ultraviolet (UV) radiation.

It has recently been discovered that the protective ozone layer is getting progressively eroded due to the impact of increasing human interference with environment. The major cause for the depletion of the ozone layer is the worldwide emission of man-made compounds called chloro-fluoro-carbons (CFCs). CFCs are used in refrigerators, airconditioners, aerosols, sprays, for the cleaning of computer chips, and in the making of rubber foam and polystyrene containers required for food packaging. If the release of CFCs continue at the current rate, the ozone layer will be further depleted and living organisms, including human beings, will be exposed to higher levels of ultraviolet radiation. Scientists believe that increased doses of ultraviolet radiation will cause eye damage, skin cancer, and will accelerate the ageing process both in humans and domestic animals at all latitudes. The seriousness of ozone depletion is similar to the hazards of nuclear disasters. It is urgently necessary to prevent damage to the ozone layer.

Sustainable Development

The term 'sustainable development' was brought into common use by the World Commission on Environment and Development (the Brundtland Commission) in its seminal 1987 report 'Our Common Future'. The idea of sustaining the earth has a powerful argument for raising public awareness and focussing on the need for better environmental quality.

The Burndtland Commission's definition of the term - *"meeting the needs of the present generation without compromising the needs of future generations"* is strongly endorsed by this report. Meeting the needs of the poor in this generation is an essential aspect of sustainability for meeting the needs of subsequent generations. There is no difference between the goals of development policy and appropriate environmental protection. Both must be designed to improve welfare.

Making the concept of sustainability precise, however, has proved difficult. It is not plausible to argue that all natural resources should be preserved. Successful development will inevitably involve some amount of land clearing, oil drilling, river damming, and swamp draining. Some have argued that natural capital should be preserved in some aggregate sense, with losses in one area replenished elsewhere. This approach has helpfully focussed attention on the need to estimate the value of environmental resources and on the importance of protecting certain essential ecological systems.

This report supports efforts to asses values but goes further. Societies may choose to accumulate human capital (through education and technological advance) or man-made physical capital in exchange, for example, for running down their mineral reserves or converting one form of land use to another. What matters is the overall productivity of the accumulated capital - including its impact on human health and aesthetic pleasures, as well as on incomes. The net effect more than compensates for any loss from depletion of natural capital. In the past the benefits from human activities have often been exaggerated, and the costs of environmental loss have been ignored. These costs must be built into decision making, and all short-and-long term impacts must be carefully explored. This cannot be done without taking account of the uncertainties and irreversibility associated with some environmental processes, recognising that some environmental benefits come in intangible forms and that some impacts occur far into the future. Not all environmental resources can or should be assigned monetary values, but the balance between development and environment should be pursued as far as possible.

Basing developmental and environmental policies on a comparison of benefits and costs and on careful macroeconomic analysis will strengthen environmental protection and lead to rising and sustainable levels of welfare. When this report uses 'sustainable development' and 'environmental responsible development', it refers to this narrower definition.

Carrying Capacity of Environment

Carrying capacity may be defined as the number of persons sharing a given area, who can, for the foreseeable future sustain a given physical standard of living, utilising energy, resources (including land, air, water, minerals etc), technology, skills and organisation. This definition has no mention of quality or styles of life, although physical standards of living is deeply influenced by such factors. Indeed, as cultural values change, so does carrying capacity. It has to be admitted that, so far, carrying capacity studies have been applied essentially to the biophysical constraints, with only marginal attention paid to social, cultural and other less tangible variables.

The limits of human expansions are not absolute but exist only for particular sets of circumstances. They can be pushed forward by wise policies, discovery of new mineral deposits and their effective exploitation, by new technological developments, by improvements in health, by increasing the efficiency of agriculture and industry and by many other factors, including even collective will. On the other hand, they can be eroded by bad politics, national and community lethargy, by eating up the resource base, by over-grazing and over-cropping resulting in land deterioration, greater desertification and a capacity to support life diminishing.

Consider carrying capacity as a dynamic concept. It is useful in the clear assessment of national and regional potentialities, as revealing choices and alternative courses of action as well as bottlenecks and, indeed, in general as a guideline to development. It may indicate, for example, that for a particular country it may be possible to increase numbers, to alleviate poverty.

The primary concern is how many people can ultimately be supported by the global biological and ecological system, and at what level. Experience indicates that 'carrying capacity' is a dynamic concept whose parameters are constantly changing as discoveries are made", new technologies developed and put into practice, and techniques of resource management improved.

Assessing the Population Impact

The debate on population and environment has usually been conducted in anecdotal or dogmatic terms. But it is much more helpful to look at concrete data to see whether we can put figures to the population impact.

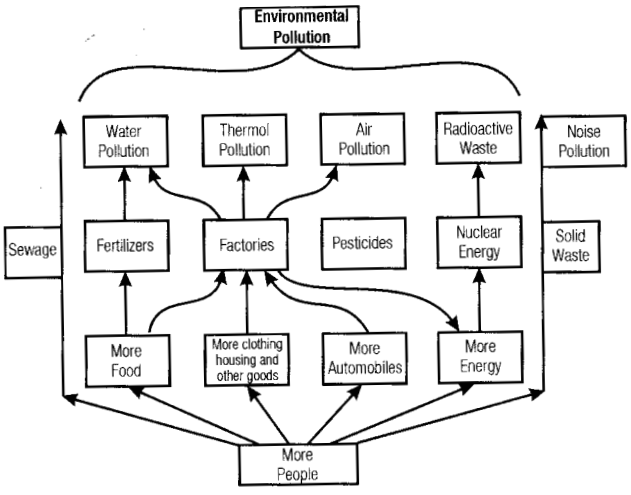
The direct impact on the environment is determined by the interaction of three factors: how many people there are; how much each person consumes; how many resources are used or waste emitted for each unit of consumption. The last factor is determined by the prevailing technology.

The impact can be determined by a formula. Impact = Population x Consumption per person x Technology effect or Impact per unit of Consumption. This is determined by the prevailing level of technology (eg, using a bicycle has less environmental impact than using a scooter or a car to travel the same distance).

Although this formula, **I = P x C x T,** is normally used simply to draw attention to the main elements involved, it can be used to calculate the relative share of the three elements in environmental damage.

This formula can help to illustrate the impact of each person's consumption on the environment. And if we take the annual rate of change in each factor, we can assess the relative responsibility of population growth for increasing resource use or pollution output.

In one of the studies conducted in the USA, it was found that population growth accounted for only 14 per cent of the combined increase, and consumption for only five per cent. Change in technology was responsible for 81 per cent of impact. But in developing countries such as India, population growth is responsible for 25-30 per cent of the impact on environment. That means it outweighs the impact of consumption increase. However, the quality of environment is largely governed by the nature of technology of production.



The 'Affluence Trap'

Man has been caught in the 'Affluence trap'! The affluent societies "face complex environmental problems arising largely from the consequences of applying science and technology without full regard to environmental consequences." They have to contend with "industrial pollution, high rates of resource use and the social and cultural problems of life in larger cities... Excessive high standards of living impose undue demands upon the environment.."[1]

The nutritional pattern production, processing, utilisation of food developed by the industrialised countries have increased ecological cost several fold (Gopalan 1980). The affluent depend generally on a plant-animal-man food chain. Out of an average annual per capita consumption of about one ton of food grains in the affluent countries only about 70 kg is consumed directly while the rest is used as animal food to get meat, milk and eggs. Daily protein intake is about 100 gm which is far in excess of physiological needs.[2]

The 'Poverty Trap'

Three-quarters of the world population live in the developing countries. In these countries underdevelopment contributes to unemployment and underemployment problems which lead to people's impoverishment. Undernutrition and infection, poor housing and clothing, and a low level of literacy are caused by poverty. Undernutrition and infection reduce productivity. Loss of productivity leads to poverty and its consequences. It is a vicious circle. Thus poverty is a trap in which people of the developing world have been trapped.

Irrespective of developmental efforts, the overall economic development and increase in GNP in the developing countries have not been accompanied by eradication of poverty for lack of social and distributive justice on the one hand, and due to rise in population, on the other.

Meeting Basic Human Needs

Many people in the developing regions of the world live below the 'poverty line'. Even if these people spend 90 per cent of their total income on food they will not be able to afford the least-cost balanced diet. 'Poverty line' has engulfed more than 30 per cent of the population in some of the developing countries.

High incidence of infant and child mortality, prevalence of infection and dietary deficiency among vulnerable sections of the population, that is - children and pregnant and lactating mothers - short life expectancy, low potency of the workforce, are all reflections of the precarious status of health in the developing world.

Population Control

In the ultimate analysis, one of the solutions of environmental problems lies in controlling population growth. With continuing population growth it will be impossible to provide adequate food, clean water, fuel, shelter for the world's new arrivals.

The goal of population control at present is zero population growth. It can be achieved in the following ways:

1. Equalising the birth rate with the death rate.
2. Restricting the fertility rate to 2.1.
3. Making the marriage age high.
4. Obtaining an age structure of the population where the age-groups are all about the same size.

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1. *UNEP document, UNEP/Enved 8, Item No. 39, paragraphs 38 and 39.*
2. *C Gopalan* "Nutritional Problems in Developing Countries" in World Nutrition and Nutrition Education, *UNESCO - Oxford, 1980, p 87.*

Common Terms and Their Meanings

1. **Biosphere**

   The portion and part of earth in which the organisms live and get support for life.

2. **Food Chain**

   It is an important chain of organisms through which energy is transferred. Each link in the chain feeds on and gets energy from the preceding one. In turn, this chain gets eaten by and provides food (energy) for the one following it. Our ecosystem consists of numerous food chains.

3. **Wildlife**

   A collective term - embracing several thousand different species of mammals, birds, reptiles, etc.

4. **Ultraviolet Radiation**

   Ultraviolet radiations are those which do not penetrate far into large organisms. So, the effects produced by ultraviolet radiations are 'surface effects' - such as sunburns. Despite their damaging effects, ultraviolet radiations are useful in biological research.

5. **Resource**

   Resource in wider sense is not just financial but also includes time, technology, human capacities, total biosphere, energy, organisations and institutions, etc - which support life.

6. **Renewable Resources**

   Natural resources that can be replaced. Example includes timber and other forest products. Resources which are capable of being used over and over again.

7. **Non-renewable Resources**

   Natural resources whose quantity is fixed and cannot be replaced. Examples include petroleum, iron ore and coal.

8. **Ecosystem**

   The organisms of a locality together with their functionally related environment considered as a unit. It is a system which comprises the physical environment and organisms which live therein.

9. **Population Stabilisation**

   This is a situation where population growth is stable and not much fluctuation in age-sex composition is noticed; the average number of one daughter will be born to a woman throughout her reproductive span (15-49 years).

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MODULE – III

Population, Environment and Sustainable Development

What does ‘Environment’ mean?

Nonliving and living objects,

happenings and forces,

both natural and man-made,

which influence the life of an organism

How does man modify its natural environment?

- Deforestation
- Water pollution
- Air pollution
- Greenhouse effect
- Ozone depletion

What is the meaning of ‘Development’?

Meeting the needs of the people

What is the meaning of ‘Sustainable Development’?

Brundtland Commission’s *Our Common Future*

“Meeting the needs of

the present generation

without compromising the needs

of future generations”

What is the meaning of 'Carrying Capacity of Environment'?

Number of people sharing a given area,

who can sustain a given physical standard of living,

utilising energy, resources (land, air, water, etc),

technology, skills and organisation

Formula to Determine the Impact on Environment

I (Impact) = P (Population) x

C (Consumption per person) x

T (Technology impact per unit of consumption)

The ‘Affluence Trap’

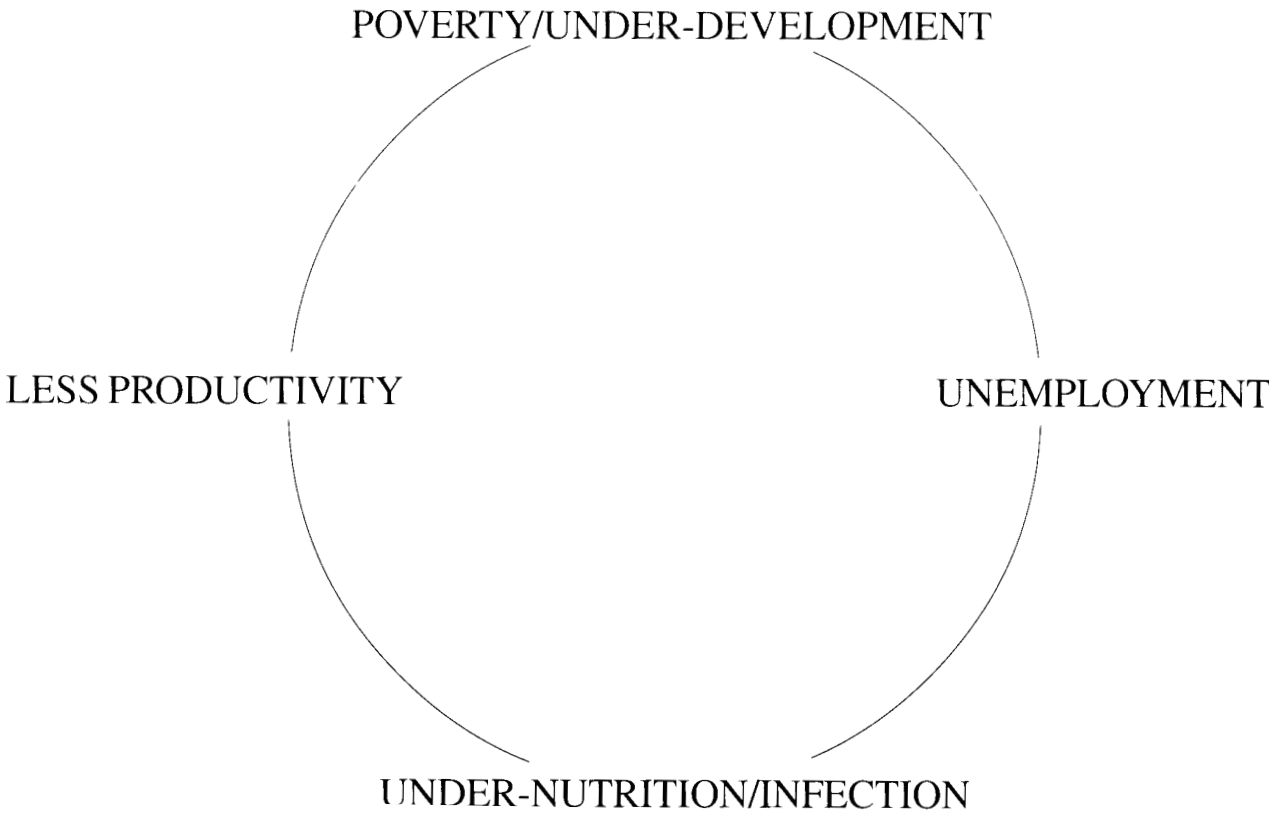
High consumption with serious environmental consequences

Plant-Animal-Man food chain

Out of 1000 kg (1 Ton) of food grains only 70 kg is consumed by man, rest as animal food to get meat, milk and egg

The 'Poverty Trap'

3/4th of World Population in Developing Countries



Module-IV

MODULE – IV

POPULATION, GENDER EQUALITY AND QUALITY OF LIFE

CORE LEARNINGS

The material for this module/session has been designed to enable a trainee to:

1. discuss how investment in human resource development, especially gender related development, ensures a better quality of life for all people.
2. identify instances of the discrimination against the girl child and woman in the family and society, and discuss the irrationality of these discriminations from the standpoint of the principle of gender equality.
3. discuss the great risk to women's health due to too early/too late, too many and too frequent pregnancies and childbirths.
4. evaluate the impact of women's health and safe motherhood on child health and survival.

CONTENT OUTLINE

1. Quality of life.
2. Human development.
3. Gender related development.
4. Factors affecting women's health, safe motherhood; child health and survival.

TIME: 40 MINUTES

For this session the procedure to be followed and the content to be covered are given. The emphasis is on the participatory and interactive mode. It is not necessary that every detail given in the content is to be told in the session. You are free to change the order of various points given under the procedure. The main aim should be to achieve the objectives in terms of core learnings.

PROCEDURE

1. After announcing that in this session you are going to discuss the interrelationship between issues relating to population, gender equality and quality of life, ask the trainees:

la. **When we say that the main objective of population education is to improve quality of life of the people, what do we have in mind? What is the meaning of 'quality of life'?**

Let a few trainees respond.

Explain in brief the meaning as given in the Content Sheet.

2. **Ask: At the national level we have the Ministry of Human Resource Development. What do we mean by the development of human resource?**

   After a brief discussion, explain the meaning of human development as defined in the *Human Development Report* of the UNDP. You may also like to mention that in the preparation of the yearly reports of the UNDP on human development Dr Mahbub ul Haq of Pakistan and Prof Amartya Sen (Noble Laureate) of India were actively associated.

4. **Ask: What shortcomings have been pointed out in the development in India by Prof Amartya Sen.**

   The trainees should be able to point out the inadequate investment in social sectors such as education and health.

   Explain the three key indicators of human development. To a large extent these indicators also determine the quality of life, the improvement of which is the main objective of population education.

5. Ask the trainees to quickly go through the table showing IMR and MMR of different countries including India. Highlight the importance of improving women's health as it influences the child survival rate.

   Ask the trainees to compare the data of Sri Lanka, China and India.

   Let two or three trainees respond.

6. **Ask: What factors affect women's health?**

   These factors are given in the Content Sheet. Take one by one with active participation from trainees.

7. Highlight the risk to women's health due to too early/too late, too many and too frequent pregnancies and child births.

8. **Ask the trainees to identify instances of the discrimination against the girl child and women.**

   List them on the blackboard. Examine and discuss the irrationality of these discriminations with the active participation of trainees.

Content Sheet

The overall objective of population and development policies and programmes is to raise the quality of life for all people. The ICPD (POA) 1994 recommends that investment in human resource development must be given priority in population and development strategies and budgets. The primary task of development is to eliminate poverty. Eradication of poverty contributes to slowing down population growth. Efforts to slow down population growth, to reduce poverty, and to achieve better quality of life are *mutually reinforcing.*

Quality of Life

Improvement in the quality of life of the people is the main objective of teaching population education. Population dynamics is one of the factors which affects quality of life and is affected by it.

The Meaning

'Quality of life' is a very complex concept and is perceived and interpreted differently by different people, depending upon their socio-cultural and religious backgrounds, personal preferences and the philosophy of life. Perceived qualities of life depend on culture and internalised values, and vary like other human requirements. For one society, collective religious practices or community life patterns may be primary, in others individually oriented work or recreative pursuits may rank higher. Some societies prize tradition and continuity as important aspects of social quality whilst others may place a high premium on innovation and modernity. The developing nations may need strong assertion and acceptance of their cultural and political identity as a prerequisite for their qualitative development. It is worth re-emphasising that some level of material standard is essential to the quality of life. At lower levels of standards of living most choices are formed in survival terms. It is only when we have material sufficiency that more individuals can exercise their qualitative preferences in more definite ways.

Various attempts have been made to define the quality of life ranging from individual subjective evaluations to large scale cross-national surveys. The quality of life is the sense of being pleased (happy) or satisfied with those life elements that are most important to a person. In addition, quality is the sense of being pleased with what one has. Although satisfaction, happiness, or pleasure is the central element in this definition, it should not be seen as a momentary state of happiness. May be it is best expressed as a sense of fullness or a completeness of life.

Defining Human Development

Human development is a process of enlarging people's choices. The most critical ones are to lead a long and healthy life, to be educated and to enjoy a decent standard of living. Additional choices include political freedom, guaranteed human rights and self respect.

Human development defined

Human development is a process of enlarging people's choices. In principle, these choices can be infinite and change over time. But at all levels of development, the three essential ones are for people to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living. If these choices are not available, many other opportunities remain inaccessible. But human development does not end there. Additional choices, highly valued by many people, range from political, economic and social freedom to opportunities for being creative and productive, and enjoying personal self respect and guaranteed human rights. Human development has two sides: the formation of human capabilities - such as improved health, knowledge and skills - and the use people make of their acquired capabilities - for leisure, productive purposes or being active in cultural, social and political affairs. If the scales of human development do not finely balance the two sides, considerable human frustration may result. According to this concept of human development, income is clearly only one option that people would like to have, albeit an important one. But it is not the sum total of their lives. Development must, therefore, be more than just the expansion of income and wealth. Its focus must be people.

Measuring Human Development - The Key Indicators

The measurement of human development should for the time being focus on the three essential elements of human life - *longevity, knowledge* and *decent living standards*. For the first component - longevity - life expectancy at birth is the indicator. The importance of life expectancy lies in the common belief that a long life is valuable in itself. Higher life expectancy is closely associated with adequate nutrition, especially of children, good health and improved healthcare. This association makes life expectancy an important indicator of human development, especially in view of the present lack of comprehensive information about people's health and nutritional status.

For the second key component, that is knowledge, literacy figures are only a crude reflection of access to education, particularly to the good quality education so necessary for productive life in modern society. As literacy is a person's first step in learning and knowledge building, so literacy figures are essential in any measurement of human development. In a more varied set of indicators, importance would also have to be attached to the outputs of higher levels of education, but for basic human development, literacy deserves the clearest emphasis.

The third key component of human development - command over resources needed for a decent living - is perhaps the most difficult to measure simply. It requires access to data on land, credit, income and other resources. But given the scarce data on many of these variables, we must for the time being make the best use of an income indicator. The most readily available income indicator - per capita income - has wide national coverage.

The Human Development Index

The construction of the human development index (HDI) starts with a deprivation measure. For life expectancy, the target is 78 years, the highest average life expectancy attained by any country. The literacy target is 100 per cent. The income target is the logarithm of the average poverty line income of the richer countries, expressed in purchasing-power-adjusted international dollars. Human development indexes for member countries are presented in the *Human Development Report* of the UNDP.

Country Ranking by HDI and GNP

The human development index ranks countries differently from the way GNP per capita ranks them. The reason is that GNP per capita is only one of life's many developmental dimensions, while the human development index captures other dimensions as well. Sri Lanka, Chile, Costa Rica, Jamaica, Tanzania and Thailand, among others, do far better on their human development ranking than on their income ranking, shows that they have directed their economic resources more towards some social aspects of human progress. But Oman, Gabon, Saudi Arabia, Algeria, Mauritania, Senegal and Cameroon, among others, do considerably worse on their human development ranking than on their income ranking, showing that they have yet to translate their income into corresponding levels of human development. To stress an earlier point again, the human development index captures a few of people's choices and leaves out many that people may value highly - economic, social and political freedom and protection against violence, insecurity and discrimination, to name but a few. The HDI thus has limitations. But it provides a basic picture for policy makers to draw and compare with others.

Gender Related Development

Further, the *Human Development Report* 1995 offers the 'gender-related development index' (GDI) and 'gender empowerment measure' (GEM). Though in the last two decades women have gone a considerable distance towards gender equality and building up their capabilities, in no society even today do they have the same opportunities as men. A widespread disparity between men and women exists in different degrees in different societies. These disparities are seen in terms of their access to education and health, and in their participation in the economic and political spheres. Therefore, when HDI is adjusted for gender-bias (unequal status of women compared to men against each of the indicators used), GDI places a country either at the lower or higher rank depending upon its performance in the area of gender equality. For instance, Canada comes down to the ninth position and the USA to the sixth. China and Cuba, on the other hand, improve their ranks because of their support to women.

Table 4.1

HDI and GDI Ranks of Some Selected Countries

Countries	HDI Rank, 1995	Gender-Related Development Index Rank,1995
USA	4	6
Japan	8	13
China	106	93
India	139	128

Source: Human Development Report, *UNDP, 1998*

Poverty

During the past three decades the developing world has made enormous economic progress. This can be seen most clearly in the rising trend for incomes and consumption. Broader measures of well-being confirm this picture - life expectancy, child mortality, and educational attainment have all improved markedly. Viewed from either perspective - income and consumption on the one hand, broad social indicators on the other - the developing countries are advancing much faster than today's developed countries did at comparable stages of their development.

Against that background of achievement, it is all the more staggering - and all the more shameful - that more than one billion people in the developing world are still living in poverty. Progress in raising average incomes, however welcome, must not distract attention from this massive burden of poverty. The same is true of the broader measures of well-being. Life expectancy in India is 61.6 years (1995); in Japan it is 79.9 (1995). Mortality among children under 5 in India exceeds 110 deaths per thousand live births; in South Korea it is seven. More than 110 million children in the developing world lack access even to primary education; in the industrial countries anything less than universal enrollment would rightly be regarded as unacceptable.

Table 4.2

Population Below Poverty Line in Some Selected Countries

Country	Population Below Income Poverty Line (%)	
	$1 a day (1985 PPP$)	National Poverty Line 1989-1994
Sri Lanka	4.0	22.0
China	29.4	11.0
Pakistan	11.6	34.0
India	52.5	—
Nepal	53.1	—
Bangladesh	28.1	48.0

Source: Human Development Report, *UNDP, 1998*

Table 4.3

Poverty in India
Number and Percentage of Population Below Poverty Line

Year	Number (Million)	Poverty Ratio
1973-74	321	54.9
1977-78	329	51.3
1983	323	44.5
1987-88	307	38.9
1993-94	320	36.0

Source: *Economic Survey 1998-99, Government of India, Ministry of Finance, Economic Division, New Delhi*

Table 4.4

Percentage of Persons Below Poverty Line in Some Selected States

(1)	1983 (2)	1993-94 (3)
Andhra Pradesh	28.91	22.19
Assam	40.47	40.86
Bihar	62.22	54.9
Gujarat	32.79	24.21
Haryana	21.37	25.05
Karnataka	38.24	33.16
Kerala	40.42	25.43
Madhya Pradesh	49.78	42.52
Maharashtra	43.44	36.86
Orissa	65.29	48.56
Punjab	16.18	11.77
Rajasthan	34.46	27.41
Tamil Nadu	51.66	35.03
Uttar Pradesh	47.07	40.85
West Bengal	54.85	35.66

Source: *As quoted in RJ Cheliah & R Sudarshan,*
Income and Poverty: Human Development in India, 7999

Improving Women's Health

Good health is the plank on which a woman's ability to work, to give birth and look after children, to attend to household work and to participate in many other domestic, agricultural and community work rests. Absence of disease is only one dimension of health; intake of nutritional food, knowledge of safe and hygienic health practices, opportunities for rest and recreation, ability to develop a dialogue with other members of the family and the community on family health matters, and to make the right choices at the right time about family planning, for example, are all important aspects which contribute to the overall health status of woman. In this respect, there is, at least in developing countries, a significant gap between theory and practice. Available statistics about women's health are simply staggering by any standard. South Asia leads the world in maternal deaths, followed by other developing regions in Africa, Latin America and East Asia. Industrial countries have been able to bring down the MMR to about 13-30 per hundred thousand live births, whereas in South Asia it ranges from 140-1,500 per hundred thousand live births.

Table 4.5

Health Indicators in Selected Countries

Country	IMR (1997)	Under Five Mortality Rate (1997)	MMR (per 100,000 live births) 1990	Doctors (per 100,000 people) 1993
Sri Lanka	17	19	140	23
China	38	47	95	115
Pakistan	95	136	340	52
India	71	108	570	48
Bangladesh	81	109	850	18
Nepal	75	104	1500	5
Korea, Republic of	6	6	130	127
All Developing Countries	64	94	491	
Industrial Countries	6	7	3	

Source: Human Development Report, *UNDP, 1999*

FACTORS AFFECTING WOMEN'S HEALTH

DISCRIMINATORY PRACTICES AGAINST GIRLS

In some societies, during serving food, priority is given to senior males and boys in the household. Women and girls consume the leftovers which results in nutritional deficiency among girls, old women and pregnant women. With regard to excess female child mortality (for instance, female infant mortality rate in 1996 was 73 in comparison to 71 for male infants), the reasons behind this are fairly well established, namely, lower calorie intake for females than for male children and lesser utilisation of health services for girls. By and large girls also start working at an earlier age than their brothers and toil harder and longer. It was also found that women of childbearing age in the developing world are not found eating the recommended minimum of 2,250 calories a day.

EDUCATION

Education has clearly emerged as a critical factor to leave an impact on the health and welfare of women. There is a relationship between female literacy and the under-five mortality rate. In countries such as Nepal, Bangladesh, Pakistan and India, with a very high under-five mortality rate, the female literacy rate is less than 50 per cent. On the other hand, in countries which have a very high female literate population such as Australia, Japan and New Zealand, the under-five mortality rate is very low.

Table 4.6

Female Literacy Rate, IMR and U5 MR in Selected Countries, 1997

Country	Female Lit. Rate (%)	IMR 1996	Under Five (Child) Mortality Rate
Sri Lanka	87.6	17	19
China	74.5	38	47
Pakistan	25.4	95	136
India	39.4	71	108

Source: Human Development Report, *UNDP, 1999*

The families of educated mothers are generally likely to be healthier and smaller. Educated women are better able to adopt innovative behaviour - such as the use of contraception which lengthens birth intervals and reduces infant mortality; ensuring equal distribution of food within families and not only to boys; acquiring modern medical services and practicing new, more hygienic forms of child care.

EMPLOYMENT

Another factor to consider is women's gainful employment which demonstrates that women who earn money are better able to feed their children and provide them with better medical attention than those who operate as family dependents.

Table 4.7

Women's Participation in Economic Life

Women's Share of Adult Labour Force (%age 15 & above) 1995		Female Economic Activity Rate (as % of Male Rate) 1995
USA	45	82
Japan	41	69
India	31	46
China	45	82
Pakistan	26	36

Source: Human Development Report, *UNDP, 1999*

EARLY AND FREQUENT PREGNANCIES AND FAMILY PLANNING SERVICES

Worldwide there is evidence of the negative effects on both mother and child due to early childbearing and frequent pregnancies. Adolescent mothers run a greater risk of anemia, toxemia, miscarriage and obstetric complications. Maternal mortality among mothers aged 19 and under is also much higher compared to women aged 20-24 in both developed and developing countries. The WHO statistics showed that every year 10 million infants die before they reach the age of 12 months; half a million women die every year from pregnancy related causes, 98 per cent of which occur in the developing countries.

Some of the deaths are the direct outcomes of the absence of family planning: the 100,000 to 200,000 deaths among women each year resulting from unsafe abortion; other deaths of women for whom childbearing was medically contra-indicated but who had no means to avoid conception.

Malnutrition

Malnutrition is undoubtedly the most widespread and disabling health problem among women in developing countries. It is often the result of two inequalities: poverty and the status of women. These inequalities lead, among other outcomes, to the unfair distribution of food within the family and to the lack of money to buy good food. All of this is exacerbated by factors such as ignorance of nutritional requirements, illness and parasites (such as hookworm) that interfere with the body's utilisation of food storage or preparation, and taboos against eating certain foods. Malnutrition is, moreover, a contributing factor in many other health problems that prevent women enjoying physical, mental and social well-being.

Breastfeeding

Breastfeeding, besides promoting child growth by providing the best possible nutrition for both physical and mental development, also benefits maternal health in several important ways. Breastfeeding, by strengthening maternal-infant bonding and reducing the risks of severity of infections, greatly enhances the quality of infant care and woman's satisfaction. These effects are seen even among premature infants from socially deprived environments. For the mother, breastfeeding immediately after delivery may reduce the risk of postpartum hemorrhage - and of anemia. Breastfeeding also lowers the risk of ovarian and breast cancer, promotes child-spacing, and reduces fertility rates. Longer intervals between births allow women time to regain their strength and nutritional well-being before having another baby. Although these benefits of breastfeeding for baby and mother have been recognised for a long time, there has been a lag in ensuring the practical support that breastfeeding mothers need in their daily lives, such as adequate nutrition and reduced workload. With more women going to work outside the home, supportive policies are also needed to ensure that working mothers who want to breastfeed can continue to do so, for example policies to permit to take time off work to breastfeed, or the provision of child-care facilities near the work place.

Safe Motherhood

Women's reproductive health is largely influenced by the state of the their health during infancy, childhood and adolescence, their nutrition and their status in the family and in the community at large. In India a large number of females are subjected to various types of discrimination right from the time of their birth through infancy. Even before their birth, female foetuses are aborted through prenatal sex determination. Female infanticide, direct or indirect, is prevalent in certain sections of the population. Malnutrition, ill health and deaths are seen more among the female infants and children, but their access to medical care is significantly less. Girls get lesser attention and affections of parents than boys. Greater proportions of school dropouts occur among female children, and they get lesser opportunities for development. All these have adverse effects on their general health and well-being. Several studies have demonstrated that the optimal reproductive age of mother is between 20 and 30 years; higher reproductive wastage, in the form of abortion, still-birth, congenital malformations, etc, and higher maternal deaths occur among mothers below the age of 19 years. The minimum legal age of marriage for girls in India is 18 years. Yet, because of the existing social taboos and practices a significant percentage of girls are getting married before 18 years of age and getting pregnant - exposing themselves to the hazards of teenage pregnancy. Besides, these also deny them any

opportunity for proper education and intellectual development, and consequently economic independence. As a result, they are prevented from playing an effective role in the decision-making process in personal as well as family life.

Behind the immediate medical causes of maternal death are underlying factors such as:

- lack of access to family planning services to help women avoid unwanted pregnancies.
- a history of pregnancies that are too frequent or too numerous.
- a birth that came too early or too late in a woman's life.
- malnutrition or other pre-existing conditions such as malaria, anemia or tuberculosis that predispose to obstetrical complications.
- traditional practices such as female genital mutilation, nutritional taboos and unsafe delivery practices.
- And underlying these factors in turn are deeper economic and socio-cultural issues such as: « inaccessible or inappropriate health services.
- inadequate resources to provide for needed care.
- lack of education which enables women to make appropriate use of services.
- insufficient knowledge of the signs and symptoms of pregnancy-related complications.

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MODULE – IV

Population, Gender Equality and Quality of Life

What is the meaning of ‘Quality of Life’?

Sense of being pleased or happy or satisfied

with the conditions in which a person lives.

Physical and non-physical aspects (Their measurability)

What do we mean by 'Development of Human Resource and Human Development'?

Components and Indicators of Human Development

a) Longevity - Life expectancy at birth

b) Knowledge-Adult literacy rate

c) Income/Purchasing power for a decent living - GNP per Capita, Purchasing Power Parity in US $ (PPP$)

Table 4.5

Health Indicators in Selected Countries

Country	IMR (1997)	Under-five Mortality Rate (1997)	MMR (per 100,000) live births) 1990	Doctors (per 100,000 people) 1993
Sri Lanka	17	19	140	23
China	38	47	95	115
Pakistan	95	136	340	52
India	71	108	570	48
Bangladesh	81	109	850	18
Nepal	75	104	1500	5
Korea, Republic of	6	6	130	127
All Developing Countries	64	94	491	
Industrial Countries	6	7	13	

Source: *HDR, UNDP, 1999*

UNDP
Human Development Reports

Human Development Index	**:**	**HDI**
Gender-related Development Index	**:**	**GDI**

Table 4.1
HDI and GDI Ranks of Some Selected Countries

Countries	HDI Rank, 1995	GDI, 1995
USA	4	6
Japan	8	13
China	106	93
India	139	128

Source: *HDR, UNDP, 1998*

Improving Women's Health

Factors Affecting Women's Health

i)	Education
ii)	Employment
iii)	Early, frequent and too many pregnancies, Safe Motherhood
iv)	Malnutrition
v)	Social Discrimination - an overarching factor
vi)	Specific programme efforts targetted at women

Module-V

MODULE – V

NEEDS OF ADOLESCENTS AND REPRODUCTIVE HEALTH

CORE LEARNINGS

The material in this module/session has been designed to enable a trainee to:

1. discuss that adolescence is natural and universal, and it is a transitory period of rapid change with great significance for an individual.
2. explain why parents'and teachers need to understand the characteristic's of the process of growing up, and the special needs and problems of adolescents.
3. identify myths and misconceptions among adolescents about sex and sexuality and inculcate values of responsible sexual behaviour.
4. describe the meaning and importance of reproductive health, and ways to enhance sexual and reproductive health.

CONTENT OUTLINE

1. Adolescence Education: Concept and its need.
2. Needs and problems of adolescents, myths and misconceptions, education in human sexuality.
3. Reproductive and Sexual Health: Meaning and Importance.

TIME: 60 MINUTES

For this session, the procedure to be followed and the content to be covered are given. The emphasis is on the participatory and interactive mode. It is not necessary that every detail given in the content is to be told in the session. The main aim should be to achieve the objectives in terms of core learnings.

PROCEDURE

1. After announcing that in this session you are going to discuss about the needs and problems of adolescents and the need for reproductive health education,

   Ask: Who is an adolescent?

   How is an adolescent different from a child and an adult?

   Let a few trainees respond.

2. Explain the meaning and importance of adolescence.

3. **Ask: Have you ever heard or read about adolescence education?**

   Does school curriculum contain elements of adolescence education? What are they?

   Explain that the NCERT has identified the process of growing up, HIV/AIDS and drug abuse as the three components of adolescence education.

4. **How many of you are in favour of imparting education in human sexuality to adolescent/secondary school students?**

   Similarly ask: How many of you are not in favour? Ask the trainees to raise their hands.

   Spend 5 minutes in listening to their arguments in favour of and against. Synthesise the various arguments given in the Content Sheet.

5. During these arguments for education in human sexuality the question of myths and misconceptions about sex and sexuality should certainly come up.

   Ask the trainees to identify common myths. Take the help of the list of selected myths and misconceptions given in the Content Sheet.

6. Lastly, **explain the meaning of reproductive health.** Highlight its major components.

Content Sheet

What is Adolescence Education?

Adolescence education is a new education area, emerging in response to the pressing demands for introducing in the school curriculum the elements relating to critical problems that confront adolescents during the process of growing up. The period of adolescence, usually characterised by the youthful exuberance as its most endearing hallmark, is a distinct phase of dramatic physical, emotional and behavioural changes. The suddenness of these changes coupled with the non-availability of authentic information, results in anxieties and causes confusion and unrest among adolescents. It has, therefore, been advocated that education in these concerns should be imparted in schools. The demand has gained momentum in view of the growing problems relating to sexual behaviour of adolescents. The arrival of the AIDS pandemic has also added the element of urgency to this need. Moreover, the growing incidence of drug abuse, tobacco and alcohol among adolescents has also generated demands to incorporate preventive education in the school curriculum.

When NCERT decided to organise a National Seminar in 1993 to discuss the various implications of introducing sex education in the school curriculum, it used the concept of adolescence education. The term adolescence education was used for the first time by UNESCO (PROAP), Bangkok, as the title of a package on sex education. However, NCERT used this term not only as a euphemism for sex education with a view to enhancing its acceptability but also to broaden its scope to incorporate the adolescent reproductive health.

In this context, three major interrelated areas, namely *the process of growing up, STD and HIV/AIDS, and drug abuse* have been identified to constitute the core content of adolescence education. Adolescence education may, thus, be understood as education to provide the learner an opportunity to have an access to authentic information and knowledge about the process of growing up, HIV/AIDS and drug abused. Its aim is to inculcate in them rational and positive attitude towards sex and sexuality, including HIV/AIDS and HIV vulnerability through drug abuse.

Adolescence

The term adolescence is derived from the Latin word *adolescere* which literally means 'to grow to maturity'. This is a transition between childhood and adulthood; it begins with pubescence and terminates with adulthood. Pubescence refers to biological changes of adolescence that precede sexual maturity. Puberty is defined as a period of transformation from a stage of reproductive immaturity to a stage of full reproductive competence. This encompasses a number of physical, physiological, emotional and psychological changes. The age of onset of puberty varies from individual to individual; the girls on an average reach puberty earlier than the boys. The geographic, ethnic and genetic factors interact with socio-economic status, health, nutrition and emotional levels to determine the age of onset of puberty for any single individual. The duration of adolescence varies greatly; it may start at nine years and end at around 18 years in some, and it may start at 14 and end at around 25 years in others. Everybody grows up in a different way and at different rates. According to WHO, the adolescence period is from 10 to 19 years.

Characteristics of Adolescence

Any period of life tends to be characterised by a group of developments which are physical, psychological and social in origin and timing. But the period of adolescence, more than any other, is characterised by an upsurge of these changes and behavioural contradictions. It should be noted that these changes are normal and universal. The following significant characteristics of adolescence make this phase of life distinct from all other phases.

Physical

It is during adolescence that rapid physical growth and changes in the physiological process take place. Arising from hormonal changes, these developments produce reproductive maturation in individuals. These are highly co-related with the sexual development. It is a period exclusively identified with the development of secondary sexual characteristics. Adolescents have to learn to accept these changes and come to terms with them.

Psychology

Adolescence is also a period of progress towards mental, intellectual and emotional maturity. An adolescent displays a tendency to be independent like an adult, rather than remaining dependent on others like a child. During this period individuals experience intense sex drive for the first time and begin to define their relationship with the opposite sex. It is presumed to be a psychologically stressful and critical period.

Socio-Cultural

The interaction of adolescents with the existing socio-cultural milieu results in some new developments. It initiates a process of redefining their social relationships. Society generally does not define a distinctively definite role for adolescents. And hence, they are caught in the ambiguous overlap between the reasonable and categorically defined roles of childhood and adulthood. Their psychological needs also are not appreciated in proper perspective by the society. This, at times, generates among them aggressive and reactionary behaviour, many of which are socially disapproved. Individuals during adolescence experience anxiety or emotional stress to an unusual degree.

Behavioural

In view of the above developments, the adolescents reflect the following characteristics in their behavioural patterns.

a. Independence

The process of physical, psychological and social maturity initiates among adolescents a tendency to be independent. They start distancing themselves from the adult world. They begin to shift from parents to peers and from existing to new belief systems. In societies where adolescence is prolonged, adolescents tend to form subcultures to support their strive for independence. These sub-cultures gradually influence the existing culture of the society.

b. Identity

Adolescents struggle to define themselves and in the process tend to assert themselves. They display the gender role identity, a positive body image and a sense of esteem and competence through their behaviour.

c. Intimacy

During adolescence, some basic changes occur in defining relationship, particularly in the area of heterosexual relations. Adolescents suddenly discover their special interest in the opposite sex. Invariably they find it difficult to distinguish between infatuation and love with and/or without sexual orientation. They tend to feel sex urge for physical pleasure and satisfaction and do not generally appreciate its sublime orientation.

D. Peer-group Dependence

In an effort to assert their identity and reflect their independence, adolescents tend to break away from the close emotional ties of parents and prefer the company of their friends. Wherever the socio-cultural milieu does not permit interaction between boys and girls, adolescents of each gender group develop *homo-social* orientation and form gender-specific peer groups. While at home, they often prefer being alone and demonstrate their insistence inclination for privacy. These developments promote their dependence on the peer group, from which they derive approval and support for their changed behavioural pattern. At times, the peer pressure leads to substance/drug abuse, sex and violence.

E. Experimentation

Adolescents are prone to experiment. With increasing exposure to mass media, and satellite and cable TV, they come to know about various patterns and kinds of sexual behaviour. In the absence of guidance from elders, they are confused. Sometimes, they are involved in risky behaviour.

F. Intellect

The development of intellectual capacity in adolescents is also reflected through their behaviour. They become capable of conceptual thinking and of understanding logic, and deductive reasoning. All these result in the heightening of their self-esteem.

Nutrition: A Special Need During Adolescence

The nutritional requirement of adolescent girls and boys needs special attention. During adolescence both girls and boys need more nutrition in terms of calories and other nutrients such as protein, minerals, iodine and iron. Deficiency in nutrition retards growth, both physical and intellectual, and delays sexual maturation.

Iron deficiency in girls caused by menstruation needs to be adequately supplemented. A large number of adolescent girls are married in India. They are likely to get pregnant during their adolescence. Anaemia during pregnancy is a common cause for low-birth-weight (Ibw) babies. It also increases morbidity and mortality among both mothers and their newly born babies.

It is important for adolescents to develop healthy eating habits and life style.

Need for Adolescence Education

It is in this context that the need for educational response at the school stage is strongly felt. The aim is to provide scientific knowledge to adolescents about various aspects of the process of growing up, in particular reference to the reproductive health needs, and thus enable them to cope with the problems during this transitional phase. This need is particularly felt in India, because the school curriculum has not been able so far to incorporate several elements of reproductive health such as sexual development during adolescence, HIV/AIDS and drug abuse, which are closely interrelated concerns having decisive bearing on their reproductive health. The education in these elements cannot be complete by giving biological information alone. There is a need to make educational efforts primarily aimed at influencing attitudes, behaviours and value orientation.

Moreover, a number of studies lend support to the fact that adolescents desire and seek authentic knowledge on sex-related matters. But sex being a taboo in our society, like many others, there has been an absence of any

authentic source of accurate knowledge on it. This creates anxieties and confusion among adolescents who fall prey to prevailing myths and misconceptions that are carried over to their adulthood, subsequently creating problems with serious implications for family and marital relationships.

India has a large young population. Over one-fifth (190 million) are adolescents in the age group of 10—19 years, and 30 per cent (284 million) are in the age group of 10-24 years.

Because of the expansion of educational opportunities the number of boys and girls getting education is increasing. It has contributed to the rise in average age at marriage. On the other hand, because of improvements in nutrition and healthcare, the age of the onset of puberty is advancing. As a consequence, young people now have a longer interval between the onset of sexual maturity and marriage, increasing the possibility of their engagement in pre-marital sexual relations. Studies conducted in different cultural settings have found growing incidence of pre-marital sexual relations among adolescents.

A number of media reports almost at regular intervals highlight the growing pace of sex crimes in India, particularly the problems of sexual exploitation of young girls and even girl children in and around their household. The situations demand urgent educational intervention so that young children inculcate a healthy attitude towards sex and develop respect for the opposite sex.

The impact of traditional value system that used to influence sex-related behaviour of individuals has been waning because of a number of new trends of social development such as migration to cities, urbanisation and changes in life styles. The exposure of youth and children to the crude display of sex by the media has been eroding the influence of the cultural prop. There is a need to reinforce these social and cultural values that militate against premarital and extra-marital sexual relations and promote responsible sexual behaviour and respect for the opposite sex.

The scourge of the AIDS pandemic has added urgency to the need to introduce adolescence education in schools. Although HIV, the virus responsible for AIDS, can be transmitted through blood and blood products and from mother to her child, the principal mode of transmission in India, as elsewhere, is through sexual relations. The sharing of syringes and needles by drug addicts is also an important route of HIV transmission. Since there is no vaccine for immunisation against HIV and no cure for AIDS is available, preventive education is the only means to promote safer and responsible behaviour.

Education in Human Sexuality

Imparting education in sexuality is one of the most humane and significant contributions that can be made to the human society. This is so for the following important reasons:

1. Men and women do not live by their biological instincts alone. They have the capacity to differentiate between good and evil, beautiful and ugly, proper and improper, right and wrong. They are expected to take conscious decisions based on social norms. They form societies and not herds. Hence, the need for value building.

2. Sexuality has a deep and significant value throughout the human life cycle no matter what the age, gender, sexual disposition, economic status, state of health, nationality or religion.

3. Men and women need to be educated in order to develop responsible sexual behaviour.

4. Ours is a closed society and has double standards on questions of sexuality. This can be confusing to children.

5. Children get information about sex from sources such as servants, friends, relatives, etc. This information may be incorrect and could have damaging effects.

6. Pornography offers a distorted view on human sexuality.

7. Young people and adults experience a great deal of anxiety emerging out of a lack of knowledge in sexuality, and from myths and misconceptions.

8. A teenage boy needs not only information but also an adult to guide him when he has his first seminal emission, when he has sexual fantasies, and to relieve his doubts about masturbation. He needs an adult to help him alleviate his anxieties about his body image, to explain the different facets of boy-girl relationship and sexual attraction, and to guide him to cope with his newly-felt sexual urges.

9. A teenage girl needs information and an adult to guide her when she gets her first menstrual period (first menses), and to deal with her body changes. She also needs an adult to help her alleviate her anxieties about her body image, to explain the different facets of boy-girl relationship and sexual attractions, and guide her to cope with her newly-felt sexual urges.

10. Planned parenthood needs to be emphasised so that children will feel wanted and accepted in the family.

11. Education in human sexuality helps youngsters to develop positive attitudes towards human sexuality if they are given honest answers to queries at any age.

12. Youngsters who are comfortable with their own sexuality and have an understanding of their bodies and their feelings would develop self-confidence and self-esteem.

What is Education in Human Sexuality

Education in human sexuality is an educational programme aimed at promoting the individual's fulfillment both in personal living and in his/her family and social relationships by integrating sexuality into the total personality.

Education in human sexuality covers human reproduction, that is, the physical aspects and related issues such as contraception, sexually transmitted diseases (STD) and HIV/AIDS. Originally, the objective of such education was to reduce the increasing incidence of unintended pregnancies, abortions, STD, HIV/AIDS. This was a negative approach which only dealt with biomedical issues. It did not teach the students to differentiate between right and wrong, proper and improper, beautiful and ugly, the healthy and unhealthy, the beauty of relationships, and responsible sexual reproductive behaviour.

'Sexuality' implies psychological reactions associated with 'maleness' and 'femaleness' and determines behavioural responses. These sex-related behavioural responses are further conditioned by cultural heritage, social norms and images from the mass media. Cultural heritage is the sum total of religious beliefs and traditional concepts. Social norms are the products of compromise between the bio-emotional needs of the individual and the existing socio-cultural patterns in society. This compromise varies from society to society and from time to time; hence, the social norms also vary. The prevailing social norms and cultural traditions, therefore, need to be examined periodically. It is obvious that sexuality is a much broader term than sex which denotes only gender.

Education in human sexuality includes not only the anatomy and physiology of the sex organs but also the secondary sex characteristics and their growth and development. It imparts knowledge about the changes that take place in the emotional make-up of the person, thus determining individual responses to different life-situations. It also includes human dignity and interpersonal relationships, changing family roles, the status of women in the

family and society, healthy and responsible man-woman relationships, respect for the sex partner, and mutual concern in sexual relationships.

More significantly, education in human sexuality inculcates in young people positive values and attitudes towards human sexuality and helps them to develop self-esteem and the skills for making rational and responsible decisions related to sexual and reproductive behaviour in the context of their particular society.

Myths and Misconceptions

Adolescents suffer from various myths and misconceptions. It is important to remove them and give them correct information. Some myths and misconceptions about sex and sexuality are given below, more may be added:

1. Once a girl has had her first period, she can become pregnant	Fact	When a girl starts having menstrual periods, it means that her reproductive organs have begun working and that she can become pregnant. It does not mean, however, that her physical organs and body, and mental conditions are necessarily prepared for the birth of a child
2. Before a girl has had her first period, she can become pregnant	Fact	Because a woman's ovaries release an egg before the onset of her menstrual period, it is possible for a girl to get pregnant before her first period
3. It is unhealthy for a girl to bathe or swim during her period.	Fallacy	There is no reason why a woman should not indulge in a specific activity during her period, unless she has cramps or any such discomfort. She must maintain personal hygiene, in particular
4. Abstinence is the only method of preventing STD/HIV/AIDS and pregnancy that is 100 per cent effective	Fact	The only way to be absolutely sure of avoiding infection and pregnancy is to avoid having sex
5. Girls and boys can have sexually transmitted diseases without having any symptoms	Fact	While some STDs may have quite recognisable symptoms, others may not. Gonorrhoea, for example, typically displays no symptoms in women and is often undetectable in men. It is important to be examined by a doctor if you think you may have STD
6. A girl cannot get pregnant if she has sex only once or a few times	Fallacy	A girl can get pregnant with a single intercourse, including her first one.
7. A girl can get pregnant if she has sex during her period	Fact	It is possible for a girl to get pregnant at any time during her menstrual cycle
8. Once you've had gonorrhoea and been cured, you can't get it again	Fallacy	A person can get gonorrhoea as many times as he or she has sex with an infected person. It is important, therefore, that anyone who is treated for gonorrhea (or any other STDs, for that matter) make sure that his or her sexual partners are treated, as well

9. Condoms help prevent the spread of sexually transmitted diseases	Fact	Not only are condoms an effective method of birth control, they are also effective in preventing the spread of many STDs
10. The size of the penis is equivalent to masculinity or virility	Fallacy	The size of the penis either when it is flaccid (not erect) or when erect is no indication of a man's masculinity or sexual ability
11. A girl can get pregnant even if a boy doesn't ejaculate or 'come' inside her	Fact	Even if a boy does not ejaculate inside a girl's vagina, it is still possible that pre-seminal fluids will contain sperms and, therefore, a girl can get pregnant
12. Sexually transmitted diseases can be cured if the infected boy has sex with a virgin girl	Fallacy	STDs require regular medical treatment. By having sex with a virgin or anyone else, one will onl pass this infection
13. Menstruation is unclean	Fallacy	Menstruation is related to the cycle of life. The uterus prepares itself for the growth of the foetus, if and when conception takes place. When conception does not occur, the inner layers of the uterus shed its preparation which results in menstruation.
14. The female determines the sex of a baby	Fallacy	All human beings have 46 chromosomes, 23 from the cell (the female) and the other 23 from the sperm cell (the male). Together they make up 23 pairs in the baby. The mother's sex chromosomes are xx. The father's sex chromosomes are xy. If the sperm contains an x chromosome, the baby will be a female child, whereas if it contains a y chromosome, the baby will be a male child. Thus, it is the male's sex chromosomes that determine the sex of a baby
15. Nocturnal emissions make boys weak	Fallacy	Loss of semen through a wet dream, or masturbation, is a perfectly natural, harmless thing. It does not make one weak
16. Masturbation harms a person physically	Fallacy	According to modern medical science, masturbation does not harm a person. It is a normal sexual activity practised by both (male/female)
17. Circumcision increases the sexual power of the man	Fallacy	No. There is no change in the sexual pleasure or power of the man. Circumcision is a procedure by which the loose fold of the foreskin of the penis is cut off
18. A drop of semen is equal to 20 drops of blood. Hence the loss of semen weakens the body and should be avoided	Fallacy	Semen has no relationship with blood and its loss causes no weakness to the body. Semen is meant to be released from the body

What is Reproductive Health?

Its Meaning and Importance

As defined by the WHO and adopted in the International Conference on Population and Development (ICPD), Cairo, 1994 - Programme of Action, "reproductive health is a state of complete physical, mental and social well being and not merely the absence of disease or infirmity in all matters relating to the reproductive system and its functions and process". Reproductive health, therefore, implies that the people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide the number and spacing of their children. Implicit in this last condition are the rights of men and women to be informed of and to have access to safe, effective, affordable and acceptable methods of family planning of their choices, as well as other methods of their choice for regulation of their fertility which are not against the law, and the right of access to appropriate healthcare services that will enable women to go safely through pregnancy and child birth and provide couples with the best chance of having a healthy infant. In line with the above definition of reproductive health, reproductive healthcare is defined as a constellation of methods, techniques and services that contribute to reproductive health and well-being by preventing and solving reproductive health problems. It also includes sexual health, the purpose of which is enhancement of life and personal relations, and not merely counselling and care, related to reproduction and sexually transmitted diseases.

The importance of various components of reproduction health (RH) had been gaining increasing attention in different countries over the years in a fragmented manner, and an integrated comprehensive concept of RH has emerged only in recent years. Reproduction health is central to general health and is affected by other aspects of health, particularly health during infancy, childhood and adolescence, lifestyle, nutrition and environment. It also affects general health, and the health beyond reproductive years both in women and men. It affects everybody in all phases of life. It is also being realised that the problems and their remedial measures related to most of the components of reproductive health are very much interrelated and intertwined.

Health development and health maintenance depend upon the quality of healthcare, which involves self care and care by the family, the community and the healthcare systems. Furthermore, reproductive healthcare is a much wider concept and this would include preventive, promotive and rehabilitative measures, in addition to curative or medical care for reproductive ill health and other related problems.

The reproductive health problems facing women are serious and require urgent attention. It is not surprising, therefore, that most of the developments in this area have focussed on women's reproductive health. Not much consolidated thinking has occurred in the case of male reproductive health. In recent years, particularly after the ICPD - Cairo (1994) and International Women's Conference in Beijing (1995), emphasis is being given on gender equality and on increased responsibility and participation of men in family life, including family planning.

In nutshell, RH is inextricably linked to the issue of reproductive rights. It means: (i) people have the ability to reproduce and regulate their fertility, (ii) women have the ability to go through pregnancy and childbirth safely, (iii) the safety and well-being of the mother and the child should be ensured, (iv) couples have sexual relations without fear of pregnancy and infection/disease.

Questions from Adolescent Students, Answers from Experts

1. Why don't my parents understand me any more? They are always nagging me.

Ans: Yours is not an exceptional problem. Almost all teenagers undergo a phase similar to the one you are experiencing. It is unfortunate that most parents find it difficult to change and, like their parents before them, tend often to be authoritarian. However, you must try to understand that they may have a point of view just as you have. Their thinking is naturally influenced by the rigorous modes of behaviour instilled into them during their own childhood. Adolescents, on the other hand, tend to behave in a manner which appears to be the opposite of the prevailing normal behaviour of adults.

A family can seek amicable solution by trying to understand one another's views and attitudes. It is difficult for your parents to accept that their child who had hitherto led a sheltered life and readily accepted their guidance, now demands independence and wants to appear grown-up; the expression of opinions may appear to them to be highly critical of the prevalent norms and ideas.

You can play an important part in creating understanding by showing them that you can be trusted fully. You may thus convince your parents of your sincerity and help them become more tolerant and better able to understand the difficulties you are experiencing in this growing-up period. Talking things over helps to reduce misunderstanding and conflict within the family.

In general, better understanding between parents and children involves consistency in the interaction with the child and reward for his/her good behaviour, both of which should occur within the context of a warm conducive environment.

2. I am a 17-year old student. I am suffering from an acute inferiority complex due to lack of good looks and personality. I am very conservative. I am extremely shy and keep quiet in company. When I do speak, however, I am slow and unsure of what I am saying. I also have doubts regarding my masculinity. I am always dissatisfied and am envious of people who look happy. What should I do?

Ans: You seem to have developed a very low opinion of your personality. This has led to a low self-esteem and a feeling of worthlessness in your subconscious. This feeling is manifesting itself in the form of insecurities, shyness and inability to perform under stressful circumstances.

Try to inculcate feelings of pride, self-love and accomplishment in yourself every time you excel in your studies. Whenever you do this, you will feel good about yourself and your self-esteem will rise.

There is much that one can do to improve one's personality and appearance. You should first learn to like yourself. List your strengths and weaknesses and you will find there are many good things about yourself that are worth liking. Now, work on your weaknesses so that each of these can be gradually overcome, adopting a positive attitude and using your determination. As your list of strengths increases, so will your sense of self-worth and you will soon find your confidence grow.

3. I am a 16-year old boy. Lately, I have become tremendously interested in the opposite sex. Whenever I am alone, I cannot resist reading pornographic magazines, which I buy regularly. But this has given rise to a lot of sexual tension in me. I have also become addicted to cable television which adds to this tension.

I have been unable to relieve my emotions or even to reduce them. Nor can I ask any elder for advice. This attitude has not yet affected my studies, but it is affecting my concentration.

Ans: Being attracted to the opposite sex and wanting to find out more about them is perfectly healthy and normal for a boy of your age, as this is the time when you begin to be attracted towards girls. Although you may feel hesitant, you should talk to your father, teachers or to a mature person about any queries you might have. Do not be embarrassed, as everyone, including the elders around you have gone through a similar phase. The more information you collect on sex from authentic source, the less mysterious the subject will seem to you. You should never consult cheap literature or bank upon the knowledge given by your less-informed peer group. In any case, some degree of mystery is always good. But when you study or do any other work, you must concentrate on it.and shut out all thoughts of girls. It is possible. You have only to make some efforts.

Since it is desirable to sublimate sexual energy till such time when you marry, it would do you a lot of good to indulge in healthy outdoor games, group work and community activity, where boys and girls work together for a good cause.

Developing the right attitude towards girls is important, as this kind of attitude will reflect in your behaviour. It is important to remember that all human beings are born free and equal in dignity and rights. Therefore, those who do not have respect for human dignity of individuals, and girls in particular, lack certain basic human quality.

4. What do you mean by the term 'virgin'?

Ans: By definition, a virgin is a girl whose hymen is intact. The hymen is a fleshy, thin membrane which partially closes the mouth of the vagina. When the girl has the first sexual intercourse, the hymen is stretched and it ruptures. This is accompanied by some discomfort and bleeding. As the shape, texture and size of the opening differ considerably in different women, the extent of discomfort and bleeding varies.

However, there are many cases in which the hymen is not intact even in a virgin. In many cases it does not bleed at all even at the first intercourse, because the hymen may be very stretchable. In other cases, the hymen may be ruptured because of operation, injury or masturbation or any other pressure.

5. What is menstruation? How frequently does it occur?

Ans: Menstruation occurs monthly in a girl or woman during the child-bearing age. It is also referred to as having 'periods'. About two weeks before a girl menstruates, an egg cell matures inside her in one of the ovaries. The egg travels through an internal tube (fallopian tube) to the womb or uterus. Under the influence of special sex hormones, the internal lining of the uterus becomes velvety in appearance due to an increase in blood vessels and tissues.

If the woman has had intercourse and the ovum or egg has been fertilised in the tube by the male sperm, the fertilised egg moves into the tube where it is nourished by the rich tissues of the uterus. If the egg is not fertilised, the lining of the uterus is not needed and is gradually released during menstruation which lasts for a period of four to six days. During this period some girls feel low, unstable and moody. This is due to changes in the body chemistry. With the onset of the menstrual flow, the tension wears off. Menstruation is a proof that the girl or the woman is perfectly normal and healthy.

In the early stages of menstruation, which begin around 11-14 years, the hormones from the pituitary gland fluctuate and so do the responses of the hormones secreted by the ovary. In young girls this fluctuation is

manifested by delayed or too frequent periods. By 16-17 years of age, the menstrual cycle should have stabilised. Again, before cessation of menstruation, that is menopause, a similar disturbance becomes evident due to the waning of hormones around 43-45 years of age. However, if your irregularity persists beyond 16 years of age, it would be wise to consult a gynaecologist.

Also, the menstrual cycle varies in different women. Some have a 30-day cycle, others have one of 27 or 28 days and still others may have at the interval of every 35 days. It is the consistency of a cycle that determines regularity and not the number of days between periods. In actuality, a large number of women never achieve a regular cycle. Even those who do, may suddenly become irregular for a time due to shock, overwork or emotional stress.

6. Is bathing harmful and are cold things prohibited during menstruation?

Ans: No. On the contrary, it is necessary to take bath daily since it is important to maintain personal hygiene more carefully during menstruation. The vulva should be washed while bathing. Commencement of menstruation is not a reason for stopping baths, rather it calls for greater frequency in taking bath. Menstruation hygiene is very important. Cold things are not prohibited during menstruation. It is a superstition.

Genital Hygiene for Boys

There is a proverb, 'Cleanliness is next to Godliness'. Sexual organs require more cleansing than many other parts of the body. The foreskin of the male organ should be retraced during the bath and the secretion washed away. If this is not regularly done, smegma collects and the bacterial decomposition and consequent irritation, may lead to excitement and unclean habits.

7. What is masturbation?

Ans: Masturbation generally means the stimulation of the sex organs to obtain pleasure. Both boys and girls may indulge in it. Even small babies handle their own sex organs. This is simply a part of the normal process by which they explore and learn about their own bodies.

At around 12-14 years of age, the body undergoes changes which prepare it for eventual sexual behaviour. This stage is called puberty. After the onset of puberty, boys start experiencing the erection of penis which, being very sensitive to any rubbing, for example against the bed clothes, gives pleasure. If stroked with the hand, the pleasure is intense and may result in ejaculation. If a boy is ignorant of these facts he may get very worried. It is at this stage that he may fall into the trap of myths and misconceptions that are often created by the newspaper advertisements of *Hakims, Vaidyas* or unscrupulous doctors.

Of course, all myths and superstitions regarding masturbation are nonsense. This is a perfectly ordinary part of growing up. There is no reason to feel guilty when you have fantasies or day dreams or when you masturbate. Any of these is a perfectly normal behaviour. No physical harm results if a boy masturbates.

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MODULE – V

Needs of Adolescents and Reproductive Health

Who is an ‘ Adolescent’?

How is an ‘Adolescent’ different from a ‘child’and an ‘adult’?

Defining Age of Adolescent and Youth

- ✓ Adolescents - between 10 and 19 years of age (WHO)
- ✓ Youths - between 15 and 24 years (IPPF)
- ✓ Young people - between 10 and 24 years of age

Onset of puberty and legal age of majority

Why Adolescents?

- ✓ In the past, adolescents and their needs have been largely neglected in both population and health education programmes
- ✓ Over 1/5 (190 million) of India's population are adolescents in the age group of 10-19 years
- ✓ Births to teenage women account for over 10% of all births worldwide
- ✓ Between 1 and 4.4 million adolescent women have abortions in developing countries each year
- ✓ Actions taken during adolescence can affect a person's life opportunities, education and health

What is ‘Adolescence Education’?

It is

A :	A process of growing up
B :	HIV/AIDS Education
C :	Education to prevent substance (Drug, Alcohol & Tobacco) Abuse

What is 'Education in Human Sexuality'?

A :	Male and female reproductive organs
B :	Basic facts about HIV/AIDS/STD
C :	Myths and misconceptions
D :	Self-esteem - anxieties about one's body, curiosity about physical development
E :	Healthy and responsible attitude towards sex, sexuality and man-woman relationship
F :	Responsible sexual and reproductive behaviour

Why Education in Human Sexuality?

Meeting the needs of adolescent students

- Adolescents desire and seek more and more authentic information about the process of growing up, sex and sexuality. Most face serious health risks (unwanted pregnancy and STDs), with no factual information, no guidance about responsible sexual behaviour, and very little access to healthcare
- With too little information many are victims of myths and misconceptions. Many get information from their friends, magazines and media which may be misleading and confusing to young people
- The gap between the age at puberty and the age at marriage is increasing. Hence, there is a need for educational intervention

Myths and Misconceptions

Female Determines the Sex of a Baby

Menstruation
Masturbation
Semen
Pregnancy
STD
Condoms
Masculinity/Virility

Importance of Communication

between

i)	Parents and adolescent children
ii)	Teachers and adolescent students

Reproductive Health (RH) (Services and Rights)

International Conference on Population and Development, 1994

1)	Access to information about RH
2)	Freedom to decide the number and spacing between children
3)	Access to family planning and RH services
4)	Safe pregnancy and childbirth (Safe Motherhood)
5)	Satisfying and safe sex life without fear of pregnancy and disease

Module-VI

MODULE-VI

AIDS PREVENTIVE EDUCATION

CORE LEARNINGS

The material for this module/session has been designed to enable a trainee to:

1. recognise that AIDS is a major social problem impacting on health and development in India and the world.
2. explain the importance of AIDS preventive education and counselling to the adolescents and youth about the adverse effects of practising irresponsible sexual behaviour.
3. distinguish between HIV/AIDS and STD.
4. identify the major routes of HIV transmission and the ways through which it is not transmitted.
5. discuss the ways and means of preventing HIV transmission.
6. identify risky and safe sexual behaviour.
7. recognise that persons with HIV/AIDS need sympathetic and compassionate treatment, and hence others should show positive attitude towards them.

CONTENT OUTLINE

1. Why AIDS education?
2. Basic information about HIV and AIDS, STDs.
3. Prevention of HIV/AIDS.
4. Risky and Safe behaviour.
5. Drug abuse and HIV vulnerability.
6. Teachers' role as AIDS educators.

TIME: 75 MINUTES

For this session the procedure to be followed and the content to be covered are given. The emphasis, as you will see, is on the participatory and interactive mode. As far as the content is concerned, it is not necessary that every detail given in the content is to be told in the session. The main aim should be to achieve the objectives in terms of core learnings.

PROCEDURE

1. After announcing that in this session you are going to discuss about HIV/AIDS, begin by asking: **Why is there so much concern about the spread of HIV/AIDS? Why is there a need for imparting AIDS education to adolescents and young students?**

   Let a few trainees respond.

   You may highlight points that are included under sub-headings: Why AIDS education and AIDS - a special case.

2. Ask trainees to have a look at the accompanying maps showing status position of HIV/AIDS in India and the world. Trainees may be interested in knowing the status position in their state.

3. With the help of the illustration entitled 'How HIV Weakens your Immune System', explain what damage HIV causes to the human body.

4. Ask trainees to identify modes of HIV transmission.

Write down the major modes of HIV transmission on the blackboard. Ask trainees to also identify the ways through which HIV is not transmitted.

5. About STD stress three points, which are:
a. STD facilitates HIV transmission

b. STD, unlike HIV/AIDS, is curable, and

c. Adolescents and the young should immediately consult their parents and doctor in case of any sign/ symptom or doubt.

6. Ask which route of HIV transmission (among major routes written on the blackboard) accounts for the largest percentage of HIV infections.

What are the preventive measures for each route of HIV transmission? Write down on the blackboard this important information.

Alternatively, write on the blackboard the following three titles:

Route of HIV Transmission Risky Behaviour Safe Behaviour

For each route of transmission make a list of risky and safe behaviour with the help of and participation of trainees.

7. If you feel comfortable in conducting a brief (5 minute) discussion on condom, ask the following questions: **Which spacing methods of birth control are commonly available and used?**

Do you feel embarrassed/reluctant to buy a condom from a chemist shop? If yes, why? Does everyone know how to use a condom properly?

8. Please remember, it is important to inform the trainees that women are biologically and socially more vulnerable to STD, HIV/AIDS than men.

9. Ask: How does the sharing of needles and syringes cause HIV infection?

Discuss for a few minutes the drug abuse, especially sharing of syringes/needles, as a major concern due to its vulnerability to HIV infection.

10. **Ask: Why does an adolescent take to drugs? Ask the trainees to identify reasons?**

Hold a brief discussion on the importance of being (i) compassionate/sympathetic towards a person who is a drug addict or HIV positive, and (ii) non-judgmental.

Content Sheet[1]

Why AIDS Education

In the health sector one of the medical triumphs has been the eradication of small pox. Now one of the medical tragedies is AIDS. Unknown before I981[2], AIDS has become one of the dominant public health concerns today. It is caused by a virus called HIV There is no cure. That the cure will be found in the immediate future is considered unlikely. Preventive education is, therefore, the only means of preventive HIV/AIDS.

AIDS-A Special Case

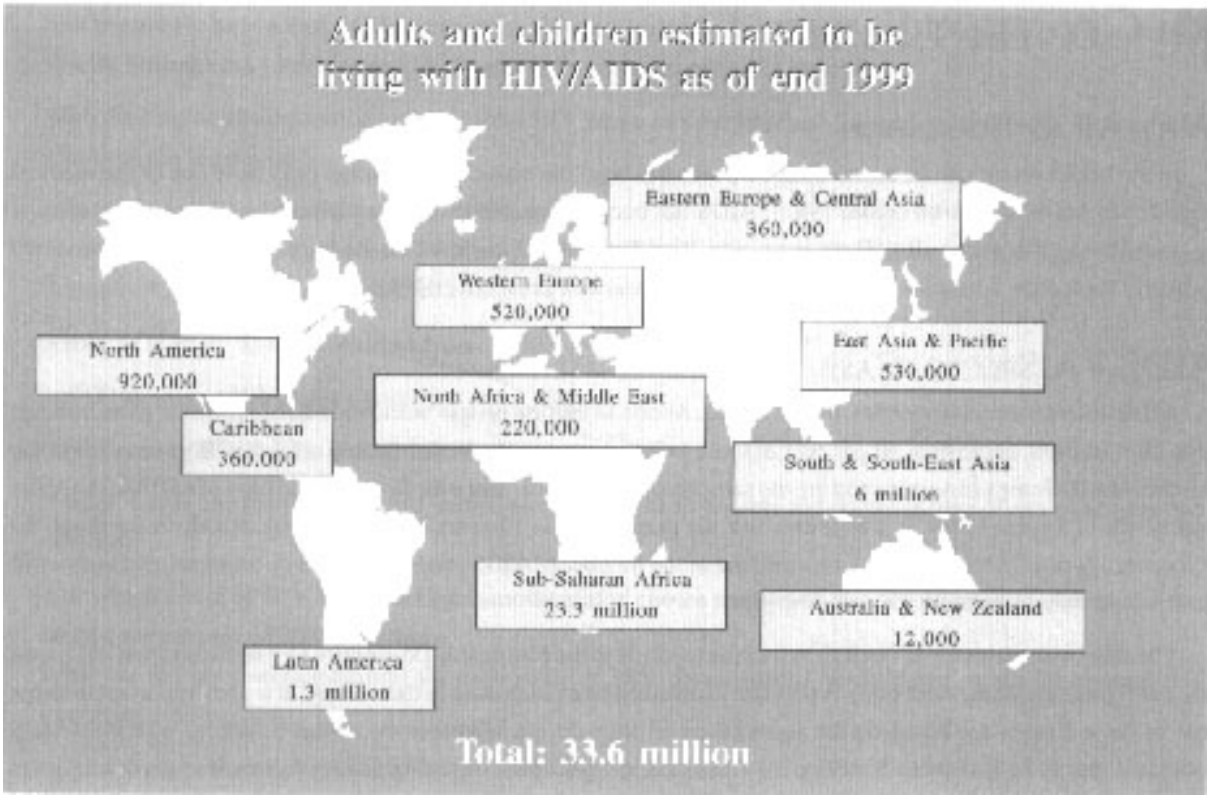
AIDS deserves special attention from all of us. About 34 million people worldwide were estimated to be infected with HIV in 1998. More than 90 per cent of these infected persons are in developing countries. The increase in the number of AIDS cases in Asia is showing the same trend as in Africa. Since the first reported case of AIDS in the Asian region was in the late 1980s, it is estimated that the graph for Asia 10 years later would look exactly as the graph for Africa stands now. While there will be a decline in the number of AIDS cases in the other continents, the number in Asia would only increase in the next few years.

The state-wise status of HIV/AIDS in India as reported to the National AIDS Control Organisation (NACO) shows that the figures are rising with every report that is received from each state in the country. It is also important to know that as these figures are based on the reported cases, they do not represent the actual numbers. WHO/UNAIDS estimated that India had about 5 million HIV infected in 1998. With these frightening figures it looks that in years to come India will be the AIDS capital of the world.

AIDS does not discriminate between classes, castes or communities. It spreads rapidly among people with high-risk behaviours such as those who have multiple sex partners and injecting drug users who share needles. The infection then spreads in the general population covering all segments of society. The world faces other killer diseases such as malaria, tuberculosis and diarrhoea, which are curable. These diseases claim millions of lives. Among the vulnerable are mostly the young or the aged. But AIDS primarily attacks men and women in their economically productive years when they provide the major labour force. It, thus, threatens the development prospects of the whole nation. Women are biologically and socially more vulnerable to HIV infection than men. Male to female transmission is two to four times more efficient than female to male. The low status of women in society inhibits their ability to protect themselves from HIV. Even if a woman knows about HIV and how to protect from it, it is not always possible for her either to refrain from sex with her husband even if she feels he has been unfaithful or to convince her husband to use a condom. In addition, infected mothers can transmit HIV to their foetus and newly bom babies. This can have serious impact on our efforts to reduce infant mortality in the country.

Youth in the age group 15-20 years constitute nearly one-third of the population. Majority of the infected individual belong to the age group 20-45 years, which is approximately another 30 per cent of the population. Ten years from now, the individuals who are between the ages of 5-20 will be in the age group 15-30 and those in the age group 20-45 years will be in the age group 30-55 years. While those in the age group below 20 years have not formed their behaviour patterns, those in the age group above 20 years have formed their risk behaviour patterns. It is, therefore, possible to educate and prevent the youth in the age group 15-20 years to form their behaviour on the

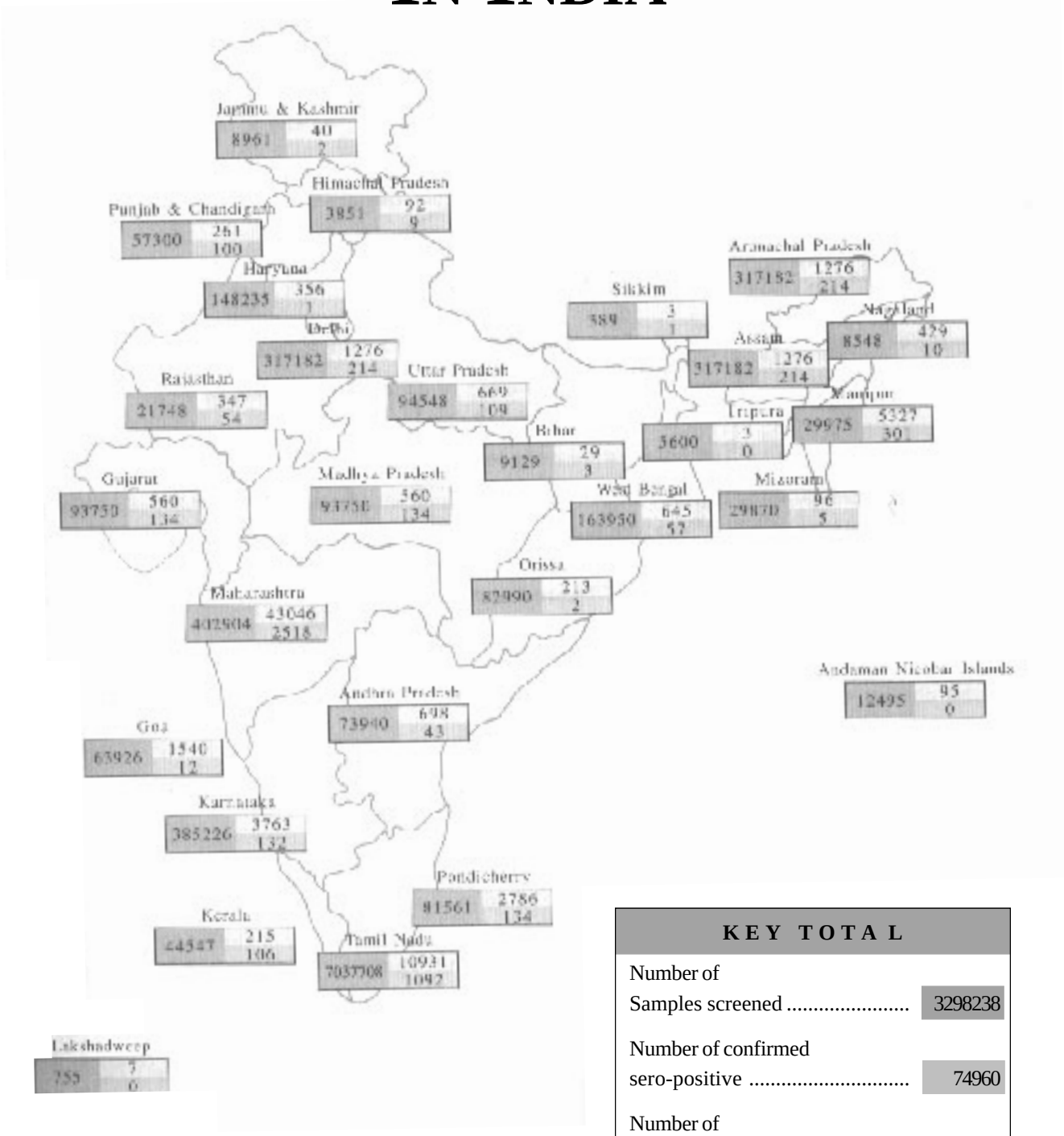
1. The content material has been drawn mainly from NCERT and NACO, *AIDS Education in Schools - A Training Package,* New Delhi, NCERT & NACO, 1994.
2. AIDS was first recognised in 1981. HIV, the cause of AIDS, was isolated in 1983. The serological tests to detect HIV became available in 1985.



Source: *UNAIDS*

AIDS and HIV infections in South-East Asia as of June 1999				
	Reported AIDS cases		**HIV infections**	
Country	**Number**	**Date of Last Report**	**Estimated 100,000 Pop**	**Rate per**
Bangladesh	10	3/97	21,000	16
Bhutan	1	8/98	< 100	< 16
DPR Korea	0	11/96	< 100	<1
India	6,252	3/98	4,000,000	418
Indonesia	237	5/99	25,000	12
Maldives	5	3/98	< 100	< 25
Myanmar	2,312	3/98	440,000	760
Nepal	183	1/98	25,000	66
Sri Lanka	77	3/98	6,000	32
Thailand	106,344	1/96	950,000	1,345
Total	**115,421**		**~5,600,000**	**> 358**

HIV/AIDS
IN INDIA



KEY TOTAL	
Number of Samples screened	3298238
Number of confirmed sero-positive	74960
Number of AIDS cases	5204
Sero-positive rate 22.73 per thousand	

Source: Country Scenario 1997-98, *NACO*

basis of information and knowledge related to HIV/AIDS transmission. Thus, over a period of time, we could attempt to create a healthy population, if we concentrate on educating the youth and the younger population about HIV/AIDS transmission. Simultaneously, those in the age group 20-45 years would require special attention to prevent further transmission of the disease and adopt safer lifestyles to prevent the infection load in the country.

HIV/AIDS: Basic Information

AIDS is a relatively new phenomenon and there is a lot about it that we don't know. But we do have a basic picture of HIV: the virus[3] which causes AIDS, how it is spread and how it affects the human body. It is essential to have a firm grasp of the basic facts to understand this phenomenon. Also, we have to be prepared to challenge prejudices and offer reassurances against unwarranted fears and anxieties.

This section aims at providing a sound base of knowledge and understanding for the AIDS Education Programme.

What is AIDS?

AIDS stands for:

Acquired	:	not genetically inherited but one gets it from somebody
Immunodeficiency	:	weakness or the inadequacy of the body's main defence mechanism to fight external disease producing germs
Syndrome	:	not just one disease or symptom but presents a group of diseases or symptoms

AIDS is a concern caused by a virus. A closer look at the term itself tells us a lot about what AIDS is. AIDS arises from damage to the immune system[4], acquired as a result of infection with HIV (Human Immunodeficiency Virus). There are many conditions which can result in someone being diagnosed as having AIDS but what links them all is a deficiency or weakness of the immune system. The word 'syndrome' is used to emphasise that AIDS presents itself as a group of signs and symptoms and not a single disease.

AIDS cannot be diagnosed on the existence of one sign or symptom. All the symptoms of AIDS can be symptoms of other diseases, too. Therefore, a person cannot tell whether he/she has AIDS or not unless he/she has been examined at a hospital or health centre and his/her blood tested.

What is HIV?

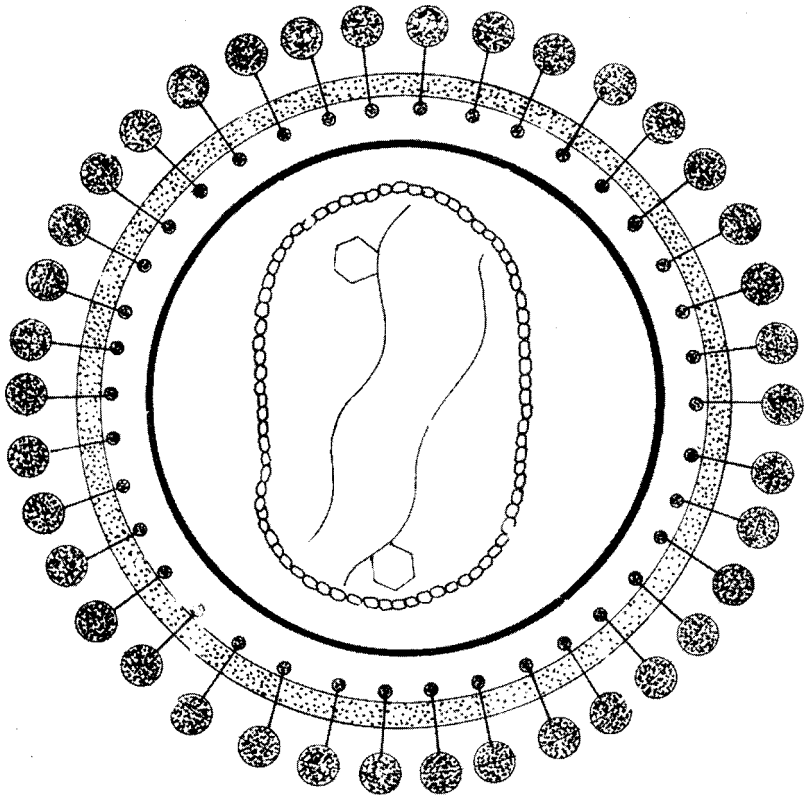
HIV stands for: Human
Immunodeficiency
Virus

HIV is a virus which causes impairment to the immune system in humans. There are currently two types of HIV, HIV 1 and HIV 2, which are known to cause AIDS. HIV belongs to a family of many viruses called retrovirus. It is tiny, a thousand times smaller than the thickness of a hair, and looks like a rolled up porcupine or a sunflower in full bloom. It also looks like a wheel having radiating spokes with clubbed terminals. Viruses are tiny organisms that

3. Virus: Disease producing smallest living object, micro-organism found as parasites in plants and animals, including humans.They cannot live or multiply outside a host cell. Each virus requires a specific cell. They are so small that they cannot be seen under a light microscope. Even filters which retain bacteria cannot prevent the virus from passing through them.
4. Immune System: The combination of body mechanism that provides organism with the ability to protect themselves from infection by germs. This is an essential requirement for survival. The immunity of animals, including humans, is due to impervious skin, secretion of mucous and acids, activity of germ engulfing cell in the blood and, most importantly, chemical defence by special antibodies and antitoxins.

cause many diseases in humans and other animals and even in plants. Viruses are the smallest and simplest living things. There are numerous types of viruses which cause many diseases. Human diseases caused by viruses include measles, polio, mumps, common cold and flu.

Figure 1: The Human Immunodeficiency Virus (HIV)



Source: AIDS Education in Schools, A Training Package, *NCERT-NACO, New Delhi, 1994*

Viruses cannot multiply on their own. They can only reproduce themselves by using the genetic materials of the cells of the host animal or plant. In order to reproduce, HIV attaches itself to the genetic material of the human cell it has infected. This makes it very hard for either the body or drags to deal with it, without destroying the cell itself. This is why it has been difficult to develop a 'cure' for HIV so far, since anything which damages the virus is likely to also damage the cell it has infected. The destruction of the immune system by the virus means infectious organism can invade the body unchallenged and multiply to cause disease.

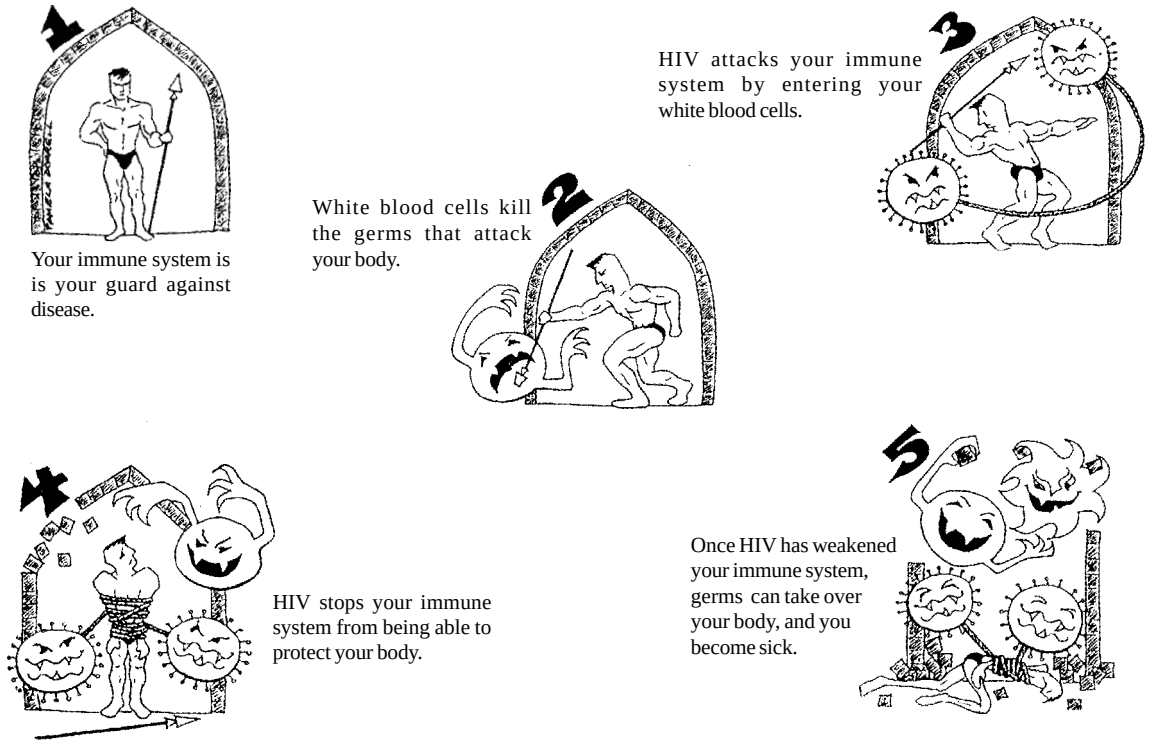
What Does HIV do in the Human Body?

HIV causes damage to the immune system. The immune system is the means by which the body protects itself from infection and disease. The skin serves as a physical barrier and the white cell in our blood deals with potentially harmful organisms such as viruses and bacteria. HIV is attracted to white blood cells. These cells are among the most important in the working of the body's immune system, as they regulate the immune response of the body in case of an infection.

After being infected with HIV, the body produces the antibodies to HIV in an effort to protect itself. These antibodies are not powerful enough to neutralise the virus and, by this time HIV will have already attached itself to and integrated into the genetic material of some white blood cells, ready to reproduce itself sometime in the future. Most people with HIV show no symptoms of disease and may be asymptomatic for months and even up to 10 years. These people may remain completely healthy and free from symptoms of disease but they have the virus in their blood and are at risk of developing AIDS at any time in future. Once a person is infected with HIV, he/she can transmit the virus to other people even though he/she may appear perfectly healthy and may not know that he/she has been infected with HIV.

There is no way of knowing whether a person is infected with HIV except by having a blood test. Some people with the HIV infection develop one or more of the signs and symptoms which make up AIDS. These can be easily mistaken for those of many other illnesses. They include persistent fatigue, severe weight loss, night sweats or fevers lasting several weeks and persistent diarrhoea lasting over one month. Common complaints of people with AIDS are painless swollen glands, usually in the neck and armpits which last for at least three months. Some people develop recurrent infections such as oral thrush (Candida); Herpes Zoster (shingles) or genital Herpes. Many develop TB. A common manifestation in children is failure to thrive, prolonged diarrhoea and pneumonia which does not respond to treatment.

Figure 2: How HIV Weakens Your Immune System



Source: AIDS Education in School, *op.cit.*

These symptoms are also common in people who do not have HIV infection. However, when several of these occur at the same time and they are persistent, this may indicate the development of AIDS. As the immune system is

increasingly damaged, these health problems become more serious and more difficult to treat, because the body no longer responds to treatment.

It is not yet understood why the length of time it takes for people with HIV to develop AIDS varies so widely from person to person. The following factors are thought to contribute:

- The amount of concentration of the virus in the blood and infection with different strains of virus.
- Individual differences in immune responses.
- Stress on the immune system through general lack of fitness and exposure to repeated or severe infections.
- State of mind-anxiety, depression and generally feeling low may increase the risk of other infections and so add stress to the immune system.
- Other health risks such as smoking, over-tiredness, low nutrition, poor diet and heavy drinking of alcohol.

How is HIV Transmitted?

It is now quite clear that HIV can be transmitted through semen, vaginal and cervical fluids, and blood.

Sexual Intercourse

The most common route of transmission is unprotected sexual intercourse with an infected partner. It accounts for nearly 80 per cent of the world's as well as India's HIV infections. HIV is present in semen and in cervical and vaginal fluids and the vagina and penis provide entry points to the body. The rapid spread of HIV/AIDS in the world is attributed to transmission through sex. HIV has been described as the 'latest' STD. Transmission is made easier by the presence of other STDs, particularly genital ulcer disease, such as chancroid and syphilis. In the presence of an STD, particularly where a sore is present, the risk of contracting HIV during unprotected sex with an infected person is very high. This is because semen or vaginal secretions of an HIV infected person can come in contact with open sores easily.

Infected Mother to New-Born Child

HIV can be transmitted by a woman with HIV to her child before, during birth and after birth. Before birth, it may be transmitted across the placenta to the foetus; during birth it may be transmitted through the mother's blood. The chance of an infected mother passing on HIV to her child is estimated at about 30 per cent. That means one out of every three children born to an infected mother is likely to be born already infected with HIV. Few children with HIV survive for longer than two to three years.

Blood

Human blood provides a good medium for the growth of micro-organisms, including HIV, because of its nutrient value, adequate oxygen content and adequate temperature. Therefore, infusion of blood and blood products, which are infected with HIV, is the most efficient means of transmission of HIV infection. As such testing of blood for HIV before transfusion is mandatory. This means that before transfusion each and every unit of blood must be tested for HIV. NACO in India, is therefore, trying to provide facilities of testing of every unit of blood

As a virus which lives in the blood, HIV may be transmitted by the transfusion of blood from an infected donor. HIV can also be transmitted through the use of improperly and inadequately sterilised needles, syringes, blades, knives, surgical instruments and other piercing instruments that have been used on an infected person. This includes

instruments used for circumcision, tattooing, acupuncture, earpiercing and traditional healing practices. Used needles and syringes can be soiled with minute amounts of leftover blood. If these needles and syringes are used, then the infected blood could directly transfer HIV into the blood stream. It should be noted that the possibility of transmission of HIV through normal injections in clinics and hospitals is extremely low. Sharing of syringes among injecting drug users is common. Such a behaviour is highly risky from the point of view of getting HIV infection as injecting drug users often end up giving themselves mini-transfusion.

HIV TRANSMISSION

The following table shows the efficiency rate and the percentage of HIV infected persons for different routes of HIV transmission.

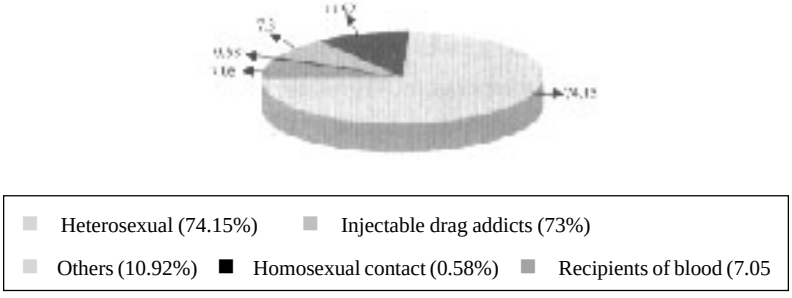
Table 6.1

HIV Transmission Routes

Type of Exposure Exposure	Efficiency per Single Infected (in percentage)	Percentage of Total No. of HIV persons
Blood Transfusion	90	3-5
Perinatal(mothertochild)	15-45	0.1
Injecting Drug Use (sharing needles)	0.5-1.0	5-10
Sexual Intercourse	0.1-1.0	80-90

In the table above, against each type of exposure, efficiency per single exposure and percentage of total number of HIV infected persons are shown. 'Blood transfusion' has the highest efficiency, but the percentage of persons who get the HIV infection through this route, is very low, that is 3-5 per cent. As against this 'sexual intercourse' has an extremely low efficiency rate, that is 0.1-1.0 per cent but the percentage of persons who get the HIV infection through this route is very high, that is 80-90 per cent. For instance, in India as on March 31,1998,5,204 AIDS cases were reported. Out of this total about 75 per cent of persons got it through sexual route.

Probable Sources of Infection



Source: Country Scenario 1997-98, *NACO*

How is HIV Not Transmitted

We know that HIV is not passed on in these ways:

- Shaking hands
- Kissing and hugging
- Sharing cups, plates and other eating utensils
- Sharing toilet and bathroom facilities
- Through coughing or sneezing or through the air we breathe
- Sitting in the same class or canteen
- Sharing work instruments or machinery
- Swimming together or playing together
- Donating blood to the blood bank (with sterilised needles)
- Bites by insects, for example mosquitoes, bed bugs, etc

One cannot get HIV/AIDS through everyday social contact with a person infected with HIV.

Sexually Transmitted Diseases

Why do we need to know about sexually transmitted diseases?

AIDS is only one of the sexually transmitted diseases (STDs) and knowledge about the others will help you to answer adolescents' questions. If the adolescents are already sexually active, it will help them to protect themselves from infection. If they are not sexually active, the information will provide a good basis for their understanding of AIDS.

What are STDs?

STDs are those diseases which are transferred via mucous membranes and secretions of the sexual organs, throat and rectum. Most STDs are easy to treat. If they are detected and treated early, they do not cause any serious problems. If they are not detected and treated early, the infection may spread and cause complications such as sterility. They are relatively easy to contract, and so it is important to know what they are, what they look like and what you need to do to get them treated.

In India, there is a very high incidence of STDs, primarily because there is a lack of knowledge of STDs, inadequate health facilities, inadequate utilisation of health facilities due to stigma associated with STDs and urbanisation which, at times, compels the person to leave his/her spouse and family in villages. Limited condom use and lack of personal hygiene are other factors.

HIV infection/AIDS is also a kind of sexually transmitted disease. The significant difference being that while most of the other STDs can be cured, HIV/AIDS is incurable. The incidence of HIV/AIDS is found to be directly co-related to the incidence of other sexually transmitted diseases, so people at low risk of STDs are also at low risk of HIV. For this reason too, it is important to concentrate on the prevention and treatment of STDs. The lifestyle which prevents STDs will also prevent HIV.

Prevention of STD infection : Abstinence from all sexual activity is the most effective prevention. However, most people do not choose a lifetime abstinence. The risk of acquiring an STD, including HIV is virtually absent when

one has sexual intercourse with a mutually faithful monogamous uninfected partner. In all other situations condoms should be used for protection against infections. Personal hygiene (washing of genitals after intercourse) might also contribute to prevention of infection, but by itself this is not an effective method of disease prevention.

Signs and symptoms of STDs: All STDs will not have signs and symptoms and the same STD may seem different in different people. It is extremely important to note that many,women and some men have an STD without sign or symptom. The following signs could indicate presence of STD in a sexually active person:

Both women

and men : Burning urination/sores/blisters/ulcers on genitals

Women : An unusual discharge or smell from vagina
Pain in the pelvic area between the navel and vagina
Burning or itching around the vagina
Abnormal bleeding from the vagina which is not the menstrual flow
Pain inside the vagina during sex
Swelling in the groin - area around the sex organ
Any change in menstrual cycle.

Men : A drip or discharge from penis

If untreated, STDs can lead to infertility, abortions, still births, birth defects, and damage to other body organs/ parts.

A person may be infected for some time and not know it. The danger is that the person can spread the disease to others without realising it. It is important that sexually transmitted diseases are adequately treated. If not, they can become chronic and be the cause of serious complications. For adequate and effective treatment it is necessary to go to a qualified doctor. Self-treatment or treatment by quacks is not advisable. One should not feel ashamed to go to a doctor. It is the doctor's duty to maintain strict confidentiality.

HIV/AIDS: Its Prevention and Control

How to prevent and control HIV/AIDS is a very difficult question to answer. There is no preventive vaccine or cure. The only option available is to prevent it by observing practices that are safe. Compliance with such practices can make a significant difference. The discussion in the following pages, therefore, is focussed on the preventive practices regarding three major routes of HIV infection: sexual intercourse; blood; and mother to child.

Sexual Intercourse

In most cases, HIV infection is caused by unsafe sex practices. A healthy attitude towards sex and observing responsible sexual behaviour can reduce the chances of getting HIV infection. Abstinence from sex, sticking to one uninfected life partner and not having multiple relations (or not having pre-marital and extra-marital sexual relations) constitute responsible sexual behaviour which are the best guarantees against HIV/AIDS.

Use of Condoms: Sex plays a very important role in a person's growth into adulthood and in his/her subsequent life. Decisions regarding sex must be based on careful and mature consideration. References to sexual behaviour have been made only in the context of HIV/AIDS. The use of condom is recommended not only for avoiding unwanted pregnancy but also as a 'protection' against HIV/AIDS and other STDs. Although the use of condom provides good protection, it should be remembered that it does not make sex 100 per cent safe.

Blood

Another route of HIV infection is through blood.

a) Sterilised syringes and needles: Great care should be taken that instruments which draw blood and are used in activities such as circumcision, tattooing or ear piercing, are sterilised after use if they are to be used again. Instruments can be cleaned by leaving them in a solution of one part bleach[5] (powder or liquid) to nine parts water (1.9) for 30 minutes or boiling them in water for 20 minutes. Do not get injections from unqualified doctors. The needles and syringes used by such practitioners are not sterile. If injection is needed, one must ensure that the syringe and needle are disposable or properly sterilised. There should never be any sharing of needles and syringes while taking an injection.

b) Blood Safety: The Blood Safety programme is an integral part of the AIDS Control Programme. In India, there are more than 1,000 blood banks, both government and non-government, which collect and supply blood. HIV Zonal blood testing centres have been set up in many cities and towns of the country. The centres receive samples of blood from blood banks for HIV testing. Under the Drug and Cosmetics Act, it is mandatory to test every unit of Wood for HIV The zonal blood testing centres and district level blood banks have been provided with testing kits and the necessary equipment for conducting tests. The blood of a donor is discarded if it is tested HIV positive. In order to know the prevalence and progression of HIV in the community and in the country as a whole, the mechanism of sentinel surveillance has been established. This is being done through screening of the blood samples, collected from sentinel sites, including STD clinics, antenatal clinics, drug de-addiction clinics, etc. The surveillance data from different states is compiled at the national level. Efforts are also being made to augment voluntary blood donations. Blood donation by professional donors has now been banned as per a court judgement.

Mother-to-Child

The risk of an HIV infected mother passing the virus to her unborn child is about 30 per cent, the risk being greater if she has symptoms of AIDS rather than if she has no symptoms. The risk of passing HIV through breastmilk is relatively small. Breastmilk has many substances in it that protect an infant's health and the benefits of breastfeeding for mother and child are well recognised. Bottle feeding is not safe because of difficulties in sterilising the feeding bottles or lack of clean water supplies. In developing countries, the risk of an infant becoming infected through breastfeeding is usually outweighed by the benefits of breastfeeding. A woman who is infected with HIV may wish to consider carefully the pros and cons of pregnancy in the light of 30 per cent chance of the child getting AIDS. She may also consider the factor that the surviving children would ultimately become orphans as their parents would die of AIDS.

'No Risk' or Safe Behaviours

The following 'no risk' behaviours are extremely important:

1. Responsible Sexual Behaviour

   a) Abstinence from sexual intercourse before marriage is a 'no-risk' behaviour. In this context, the traditional value of 'no sex' before marriage is important to stress. Students may be encouraged to discuss the significance of this traditional value in the contemporary situation. Abstinence is a responsible behaviour

5. *Bleach contains chemicals with oxidising bleaching action such as sodiumhypochlorite and chlorine. These chemicals are also good disinfectants and sterilization agents.*

and students need to discuss the reasons for observing abstinence and learn how to resist pressures to have sex.

b) Sex with one uninfected faithful partner is another 'no risk' behaviour. In this context, it is important to note that this is in consonance with the Indian value which discourages pre-marital and extra-marital sex.

c) Use of condoms.

2. Not sharing needle syringes and using sterilised disposable needles and syringes for all purposes.
3. Ensuring that one accepts HIV-free blood transfusion if and when necessary.

'Risky Behaviours'

The following behaviours carry the risk of HIV infection/AIDS:

1. Not sticking to one uninfected partner or having multiple sex partners.
2. Having sex with a person who has multiple sex partners.
3. Sharing unsterilised needles and syringes, accepting untested blood transfusion.

Women and AIDS

AIDS was first discovered among homosexual men in the Unites States. Till some years later it was considered to be a disease that affected only men. Now, in the 1990s it is becoming increasingly clear that AIDS is a disease which will have a major impact on women and children. In Africa, half of all HIV infections are among women and children: infant mortality rates are increasing rapidly due to number of children born with AIDS. AIDS will single-handedly wipe out all the advances made to date on maternal and child health, and by the year 2000, the WHO estimates that there will be 10 million uninfected orphans whose parents have died of AIDS.

Risks for Women

Women are biologically more vulnerable because (a) women have larger vaginal surface area for contact, (b) semen is found to be rich in HIV, and (c) women may have cervical erosions which put them at greater risk.

Male to female transmission is two to four times as efficient as female to male transmission, while, with other STDs male to female transmission is at least 15 per cent more efficient than female to male transmission.

STDs not diagnosed or treated: Many women suffer from asymptomatic STDs or have symptomatic STDs which are not diagnosed or treated. In addition, women have a limited access to STD treatment facilities, and healthcare in general. Should a woman go to an STD clinic, she is often considered a sex worker.

Use of non-barrier methods of contraception: Women use contraceptives without accurate knowledge of its relationship to HIV infection. Use of contraceptives such as the pill, injectables and implants discourages the use of condom, which is an effective way to prevent HIV/AIDS/STDs.

Traditional Practices: Traditional practices such as tattooing, etc, could place women at risk.

Other risks for women: Women are at risk for HIV infection and other STDs just like men if they have multiple partners, and inject drug. But women are also at risk of contracting the HIV infection from coercive sex, due to their economic status which force many women into selling sex for money. In addition, many women are at risk of HIV

infection from their partners. One estimate claims that every day 1,500 women become infected with HIV and their only risk behaviour is having sex with their husbands.

Drug Abuse and HIV Vulnerability

Asia, including India, has a long history of traditional use of locally produced drugs, such as cannabis and opium. In recent years, the region has become a transit point for international drug trafficking. Drug abuse is on the increase, and so are the problems caused by this abuse. It causes not only the deterioration in the physical and psychological health of the people who abuse drugs, but also drug-related crime, vehicular accidents, absenteeism in the workplace, disruption in the family life and violence. In more recent years the lifestyle and risky behaviour of drug users are also linked to the HIV/AIDS pandemic.

In India the abuse of heroin was confined to smoking and inhaling until about 1993. At that time the practice of injecting heroin began to increase. Today, it is a major concern in several parts of the country, especially urban centres such as Mumbai and Delhi and the North-Eastern states bordering Myanmar which, together with Laos and Thailand, constitute the Golden Triangle. Among the North-Eastern states a significant increase of HIV infection was initially noticed in Manipur in 1990. It has now expanded to Nagaland and Mizoram as well. The HIV prevalence among injecting drug users in Manipur is about 60-70 per cent. It has reached 50 per cent in Nagaland and 6-10 per cent in Mizoram. Among the likely sources of infection in the reported AIDS cases in India injecting drug use accounts for about 7 per cent. What is more disturbing is that the rapidly growing HIV infection among injecting drug users in Manipur is followed by a slower but steady increase of prevalence in the general female population.

The worst aspect of the drug abuse is its deepest impression on the school and college going youth who is most vulnerable. Most drug users begin taking drugs at an early age, as adolescents or even younger. Young students attack to drugs due to peer pressure, curiosity, ignorance, changing social structure, urbanization and other related causes.

Teachers as AIDS Educators

While traditionally psychologists, social workers and doctors have served as counsellors, it is important to explore the role of teachers as AIDS educators with young students. What a teacher needs to do is to gain the trust and confidence of students.

Responsible sexual behaviour being an important component of AIDS education, a teacher has to function as a resource for accurate information in matters relating to sex and sexuality which are sensitive in nature. Many teachers find it difficult to get over their embarrassment and shyness while dealing with such issues. With training, the embarrassment and shyness can be overcome among the teachers and they can be in a better position to communicate with the students in their own language and appreciate their problems and needs. The advice given by the teacher is more acceptable to students with a higher possibility of behaviour change.

It is extremely important for teachers to be non-judgmental so that they can treat the student as a person needing understanding, compassion and care. In communicating about AIDS/STD, understanding, compassion and care are very important for bringing about desirable change.

The teacher should not put off a student when he/she asks questions. The teacher should not tell the students that their questions are silly; rather he/she should tell them that their questions are very genuine and relevant.

The teacher may try to answer a student's questions as best as he/she can. For personal problems too the teacher may advise the student to the best of his/her ability. At the same time, if the problem demands, the student should be advised to consult a qualified doctor/counsellor for further treatment/counselling. The student should also be advised to talk to his/her parents in case of any serious personal problems.

The teacher should ensure that his/her students understand the following crucial messages:

i) Since there is no cure for HIV/AIDS, prevention is the only defense at the moment.

ii) Women now account for 43 per cent of the adults with HIV/AIDS. And about half of all new infections are in the 15-24-year-old.

iii) HIV can be transmitted through unprotected sexual intercourse, unsterilised needles and syringes, and contaminated blood.

iv) HIV transmission can be prevented through abstinence and mutually monogamous sexual relations in which neither partner is HIV infected. These constitute responsible sexual behaviour.

v) Use of condoms minimises the risk of HIV transmission as it reduces exposure to blood, semen or vaginal fluids.

vi) The risk of exposure to HIV increases with increase in sexual partners.

vii) Drug injectors must not share syringes or other drug-related instruments that pierce the skin with anyone else.

viii) In case of blood transfusion it should be assured that the blood is tested for HIV.

Questions from Adolescent Students, Answers from Experts

1. What is the difference between a person infected with HIV and one who has AIDS?

Ans: An HIV infected person (a person living with HIV) is one who has the Human Immunodeficiency Virus (HIV) in his/her body. Such a person remains infected and is infective for the rest of his/her life. However, he/she will appear to be perfectly normal and healthy and will be asymptomatic for many years. An asymptomatic HIV infected person does not have AIDS. But when an HIV positive person's lymphocyte count falls to 200 or less, he/she starts developing symptoms. All persons with AIDS are infected with HIV, but not all persons with HIV infection have AIDS. AIDS is only the end stage of this infection.

2. How long can the virus live outside the human body?

Ans: The HIV virus is fragile. Once the virus is outside the body in a dry form, it dies immediately. Even in a wet state, it does not live long when exposed to heat, detergents, or disinfectants. When stored in blood banks at 4 °C, it can live for about three weeks (or longer), or till the cell disintegrates.

3. How does an HIV positive person progress to AIDS?

Ans: A few weeks after the virus enters the body, some people have flu-like symptoms such as fever, bodyache, and headache. Every infected person may not experience these. These symptoms disappear after a while, and then there is a long phase of three to twelve years which is asymptomatic and which normally goes undiagnosed. After that, when the immune system starts failing, AIDS sets in. The early symptoms are,

- fatigue
- unexplained loss of weight in a very short time
- chronic diarrhoea
- prolonged fever
- cough
- night sweats
- lymph gland enlargement in more than one site

Later, other common infections present in that particular locality, may be picked up by an HIV positive person, such as:

- TB
- Herpes Zoster (Shingles)
- Fungal infections such as thrush
- Infections of the eye causing blindness
- Infections of the brain
- Certain types of pneumonia.

It is important to note that these symptoms are fairly common in various non-AlDS conditions also.

4. Is there any Ayurveda, Unani, Siddha, homeopathy, naturopathy, or yoga treatment for HIV/AIDS?

Ans: It is yet too early to say. A number of people working in these alternative forms of medicine feel that they may have a cure for the AIDS. Several drug trials are going on in different parts of the world. But nothing has yet been scientifically authenticated to prove that these forms of medicine have a cure for AIDS.

5. What is the 'window' period?

Ans: This is the time that the body takes to produce measurable amounts of antibodies after infection. For HIV, this period may be as short as two weeks, but it may be up to six or twelve weeks, and in rare instances this period may be even longer.

This means that if an HIV antibody test is taken during the 'window' period, it is likely to be negative since the blood test is looking for antibodies that may not yet be developed. Yet that person may already be HIV infected.

6. Can one get HIV infected by menstrual blood?

Ans: Menstrual blood from HIV-infected females does contain the virus. The risk of infection would be dependent on the flow and freshness of the blood, and whether on the situation the menstrual blood had access to the sexual partner's or any other person's bloodstream. However, the female who is menstruating is at a much higher risk for HIV infection through sexual intercourse, because during this period, the interior lining of the uterus is open to HIV present in the semen.

7. Do mosquitoes or other insects spread HIV?

Ans: No. The evidence clearly shows that HIV is not spread by mosquitoes and other insects. For example, bedbugs, lice and fleas in the household of persons with HIV/AIDS do not spread the virus among other persons living in the household.

From the way they bite, it might be thought that mosquitoes are like flying injection needles, passing HIV on to whoever they bite. But it is not so because mosquitoes do not inject blood, they suck blood.

HIV is not like the malaria parasite which lives very well in the mosquito and spreads in people when mosquitoes bite. Malaria germs go into the bloodstream of the mosquito. Then they come to its salivary glands. It is through salivary secretion during a mosquito bite that malaria germs enter the victim.

The incidence of HIV infection is the highest among the sexually active age group of 15-45 years. If mosquitoes were a means of spreading HIV, the incidence of HIV infection would have been uniformly high among all age groups.

8. Can blood donors get HIV by donating blood?

Ans: No. HIV cannot be acquired through blood donation. Neither HIV nor any other disease can be contracted from giving blood. The materials used for collecting blood are sterile and used only once.

9. Can a person get AIDS from a barbershop or a swimming pool?

Ans: No. It is very unlikely. You are talking about an unlikely string of coincidences - an HIV infected person must visit that barbershop; he must receive a cut which bleeds, leaving some blood on the razor; that must remain unwashed, and the blood must not dry; you must walk into that shop, be attended to by the same barber for a shave; he must cut you while shaving, with the same razor, and what is more, some of the blood from the razor must enter your blood. The chances of so many incredible coincidences in one morning would be less than one to a billion. Barbers should be requested to use a new blade for each customer.

One cannot get HIV infection in a swimming pool. It is important to know that Chlorine is an extremely effective way of destroying HIV. Any common household bleach in water is also an effective antiseptic; for example, one part of bleaching powder/liquid mixed in with nine parts of water, or hydrogen peroxide can be effective. However, low-level disinfectants such as Dettol and Lizol do not kill HIV.

10. Can HIV spread through kissing?

Ans: Light kissing such as on the cheek or lightly on the lips carries no risk of transmitting HIV. In deep kissing there is a low risk because the saliva of an infected person contains very few virus particles. There could be bleeding gums or ulcers in the mouth which could be because of poor oral hygiene. Exchange of infected saliva mixed with blood during kissing could transmit the HIV, but so far there have been no known cases through this route.

11. How would one know if a baby born to an HIV positive woman has the HIV infection?

Ans: Most children born to HIV positive mothers carry HIV antibodies from the mother in their blood. These take about 15 months to disappear. Only after that will an HIV antibody test show whether the baby is, in fact, infected with the HIV or not. In less developed countries, the chance of a baby born to an HIV infected mother being infected, is 35-40 per cent.

12. How can one test for the presence of HIV?

Ans: Some blood is taken and tested. One has to return for the results. There are a variety of tests such as ELISA, Western Blot, Rapid Test, etc. These tests detect antibodies to HIV and not HIV itself. Antibodies are produced by our body's defence system to fight against intruders like viruses and germs. These antibodies detect and destroy unwanted intruders. There are antibodies against HIV too, but these are powerless to destroy the virus.

13. How can I ensure that the blood I receive is uninfected?

Ans: Verify from the blood bank or hospital from where you are getting the blood whether it has been screened for HIV. Check the label on the bottle to see if it has been screened for HIV. There is a law which makes it mandatory for every blood bank to test each unit of blood for HIV.

14. What are the implications of HIV testing?

Ans: Before you go for a voluntary HIV test, there are some things you should think over :

- The question of testing is not just a medical issue, it also involves serious personal issues.
- If you are unduly worried that you might possibly be infected and if that affects the quality of your life, then taking the test may relieve you of uncertainties. But you should think about whether you would be able to cope with a positive result and whether a negative result would really stop you from worrying.
- A good counsellor at the testing centre would be able to help you think through the advantages and disadvantages of HIV testing and would help you to make your own decisions. At any rate, whether you take the test or not, you should continue to protect yourself and others from getting the HIV infection.
- Remember expert counselling is most advisable before and after the test.

15. Why can HIV/AIDS testing not be made compulsory?

Ans: Any testing must be done with the consent of the person to be tested. Unlike other diseases such as TB and malaria, the HIV/AIDS epidemic involves complex social, cultural, ethical, and political issues. Also, since anything linked to sex, such as prostitution, STD, and now HIV, is considered a taboo subject by society, a person living with HIV would be discriminated against and stigmatised. This, in turn, would encourage people with high risk behaviour to avoid testing and go into hiding and, thereby, hamper any measures taken to control the spread of the infection. Hence, voluntary, consented testing should be encouraged, but testing should not be made compulsory.

16. How can an HIV infected person maintain good health?

Ans: If an HIV infected person can improve his/her quality of life by adopting safer sex methods using condoms to prevent STD and HIV re-infection, has good nutrition, regular exercise and fresh air, seeks immediate medical attention for any ill health, avoids stress, has access to emotional support, continues to be active and has an optimistic outlook, he/she can live a longer, healthy, and productive life, even though he/she is HIV positive.

17. What happens if a person lives close to someone with AIDS?

Ans: Living near someone who has AIDS or who is infected with HIV will not infect anybody with HIV. A person can live in the same neighbourhood. In fact, he/she can live quite safely in the same room with someone who has AIDS, provided that he/she does not do sexual activity with the person having HIV. Moreover, proper precautions need to be taken in handling body fluids (urine, faeces, blood and vomit) of the person who is HIV infected or who has AIDS.

18. How can I help if a close friend or relative has AIDS?

Ans: A person with AIDS needs your friendship and love more than ever. It is important for him/her to know that you are a friend and that he/she can trust and rely upon you.

You may take note of the following:

- Give him/her a hug or hold his/her hand, if you get the opportunity.
- He/she will enjoy the physical contact and the reassurance that goes with it. .- :
- If he/she is on the phone, give him/her a call and gossip with him/her.
- Remember that he/she needs a friend who he/she can get close to and with whom he/she can relax and show how he/she really feels.
- Just because someone has AIDS does not mean that he/she wants to stay home all the time. Take him/her out for the day or in the evening.
- If he/she wants to talk about his/her illness, encourage him/her to do so.
- He/she may want to let off steam and you may be the ideal person on whom he/she can vent the anger or frustration he/she feels about being ill.
- Try to keep the person with AIDS up-to-date with what is happening medically. Hope is very important to someone with AIDS.

19. What is a condom?

Ans: A condom is a latex sheath (hence, it is also known as a 'rubber'). Condoms were originally invented to prevent the spread of STD. Later, their contraceptive use was recognised. A condom is available in a rolled, form. When unrolled, it appears as a long, thin rubber tube, closed at one end with a teat that provides space for the semen when ejaculation takes place. It has been found to be very effective in preventing HIV/AIDS/ STD and unwanted pregnancy.

20. Do contraceptives like IUD and the pill protect a woman from getting the HIV infection?

Ans: No, they do not. These contraceptives only prevent a woman from getting pregnant but do not prevent the potentially infected semen from coming into contact with the lining of the vagina or cervix. If the HIV, or organisms causing STD are present in the semen, they can still get into a woman's body.

21. What is a 'drug' and what is 'drug abuse'?

Ans: A drug is a chemical substance that changes the way our body works. A drug may or may not have medical use. When drugs are taken for reasons other than medical, in an amount, strength, frequency or manner that damages the physical or mental functioning of an individual, it becomes 'drug abuse'. Any type of drug can be abused.

22. Why do people become addicted to 'drug abuse' ?

Ans: There is no single reason. Most of the addicts start using drugs out of curiosity or to have some pleasure, often under the influence of their friends and peer groups. Some take to drugs to overcome boredom, depression and fatigue. Lack of love and understanding on the part of those the person is attached to also becomes a cause of addiction in many cases. Most of the addicts are found to suffer from frustration in life. Of course, easy availability of dependence producing drugs is a major factor in the proliferation of drug abuse.

Teenagers take to drugs commonly due to the following factors:

- Persuasion by school-mates and friends (peer pressure)
- Temptation of teenager 'to look and behave' like an adult (symbol of adulthood)
- Refusal to accept any kind of authority (rebellion)
- Mere curiosity to experience how it feels to take drugs (misconceived adventure)
- Imitating the drug-taking behaviour of others (demonstration impact)

Often, drugs are taken for the first time by a teenager due to peer pressure. A peer is usually a person of more or less the same age, who may be a close friend, a school mate or a neighbour.

23. What can you do to help prevent addiction to drugs?

Ans: As a parent

- Communicate openly with your child. Be a patient listener
- Keep yourself interested in your child's activities and friends
- Share problems at home, talk about your child's problems and teach him to handle them
- Do not abuse alcohol and drugs yourself and set an example
- Keep track of prescribed drugs in your home
- Learn as much as you can about drugs - be informed

As a teacher

- Talk to your students informally and openly
- Discuss with them the dangers of drug abuse
- Keep yourself interested in your students' interests and activities
- Encourage them to volunteer information of any incident of drug abuse
- Talk with students about the problems of adolescence and guide them on how to handle those
- Help them examine career options and set goals
- Learn as much as you can about drugs - be informed

As a citizen

- Do not entertain any request to keep/carry narcotic drugs
- If you notice poppy or other cannabis plants/crops, inform the nearest law enforcement authority
- If you come across with anything suspicious, inform the police, even anonymously
- Advise addicts to seek treatment from government hospitals or counselling/de-addiction centres funded by the government
- Learn as much as you can about drugs - be informed

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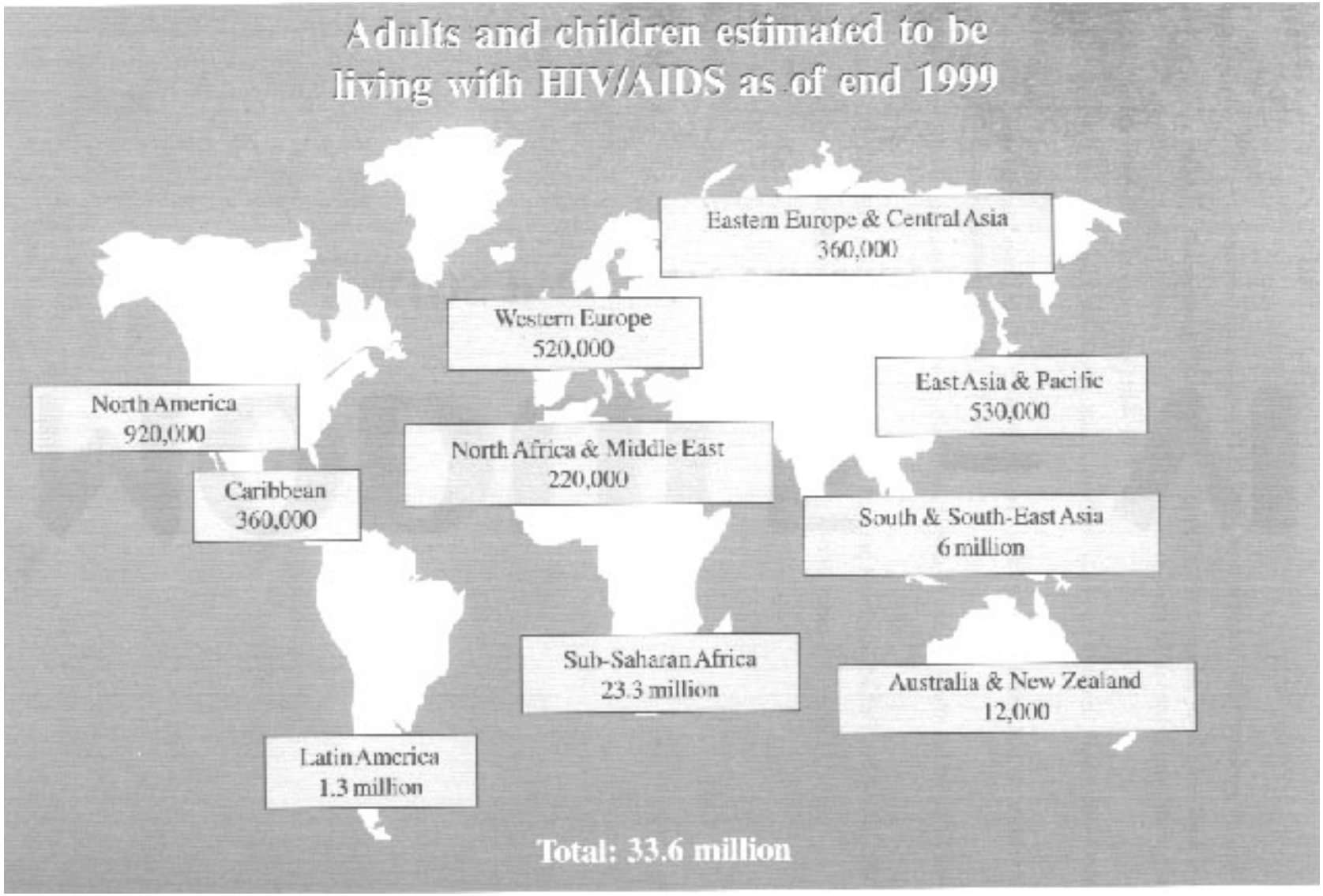
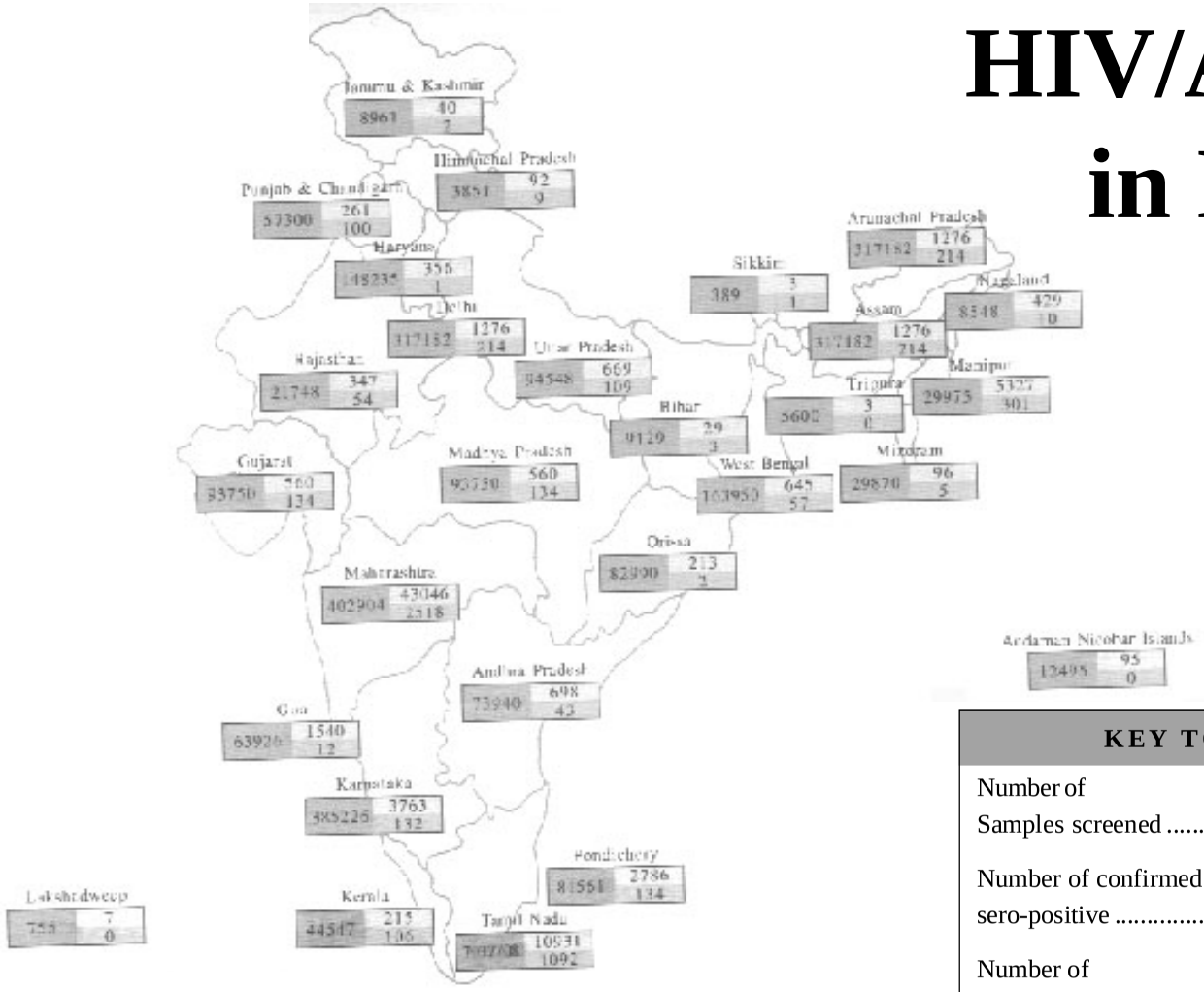
MODULE – VI

AIDS Preventive Education



Source: *UNAIDS*

HIV/AIDS in India



KEY TOTAL	
Number of Samples screened	
Number of confirmed sero-positive	
Number of AIDS cases	
Sero-positive rate 22.73 per thousand	

Source: *Country Scenario 1997-98, NACO*

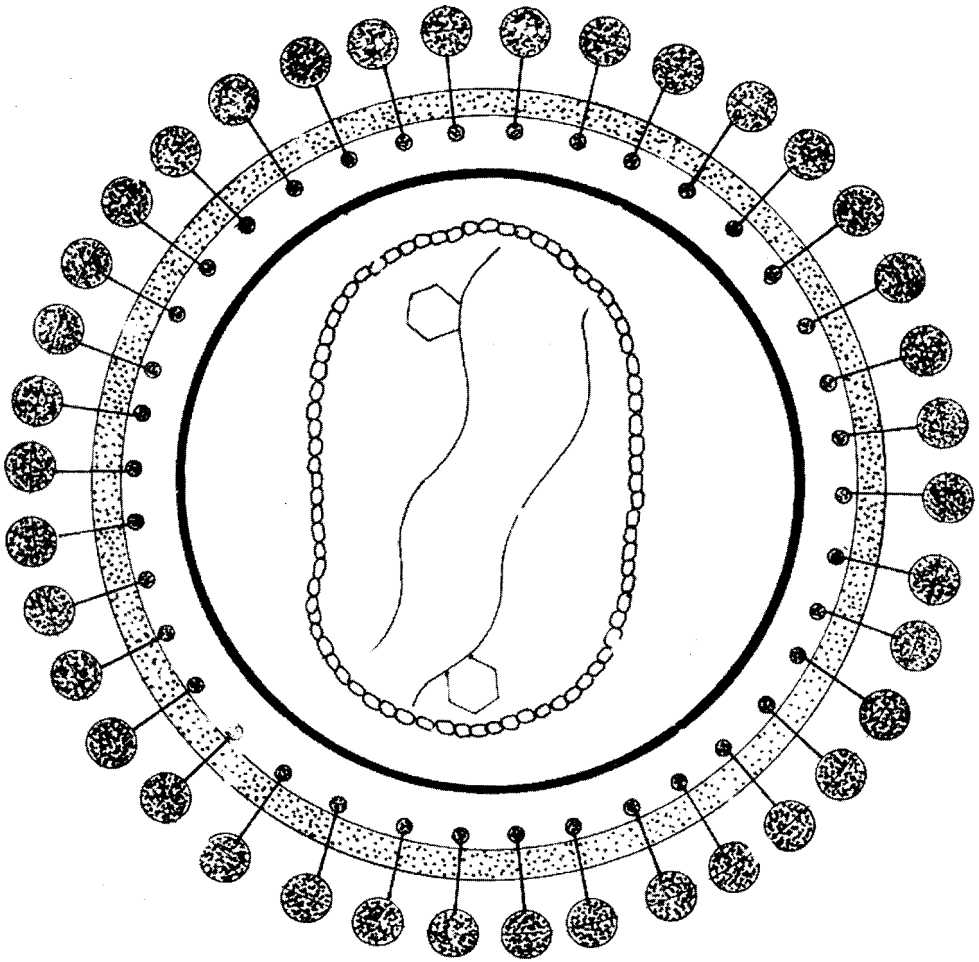
Why AIDS Education

i)	No preventive vaccine, no cure. Preventive education, the only means of preventing HIV/AIDS
ii)	34 million infected with HIV in the world in 1998. Ninety per cent in developing countries. UNAIDS/WHO estimated that India had 5 million in 1998
iii)	Young men and women (economically productive age group) most vulnerable. Serious development and demographic implications
iv)	Sexual route the main route of HIV transmission. Hence importance of education in human sexuality

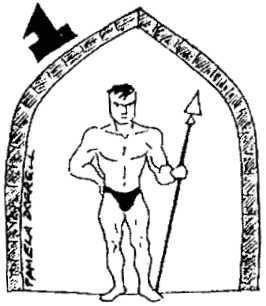
The HIV/AIDS Pandemic

- The Acquired Immunodeficiency Syndrome (AIDS) was first recognised in 1981
- The human immunodeficiency virus (HIV), the cause of AIDS, was isolated in 1983, and serological tests to detect HIV became available in 1985
- By the mid-1980s HIV had spread silently throughout the world
- First case of HIV/AIDS identified in India in 1986
- Precisely when and where this pandemic originated is not known, but such details are not important for prevention and/or control efforts

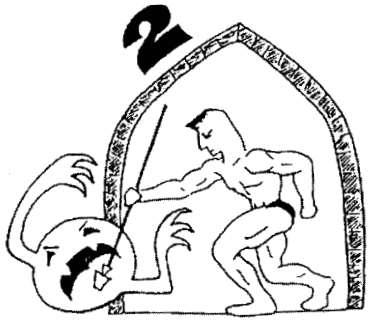
Human Immunodeficiency Virus (HIV)



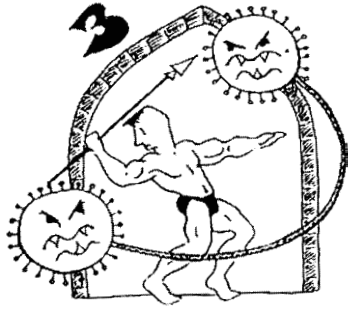
How HIV Weakens Your Immune System



Your immune system is your guard against disease.



White blood cells kill the germs that attack your body.



HIV attacks your immune system by entering your white blood cells.

HIV stops your immune system from being able to protect your body.

Once HIV has weakened your immune system, germs can take over your body, and you become sick.

HIV can enter your body through

- *Sexual intercourse without a condom with an infected partner*
- *Use of unsterilised needles or syringes infected with HIV*
- *An infected mother may pass it on to her child before, during or after birth*
- *Transfusion of blood infected with HIV*

Source: *AIDS Education in School, op.cit.*

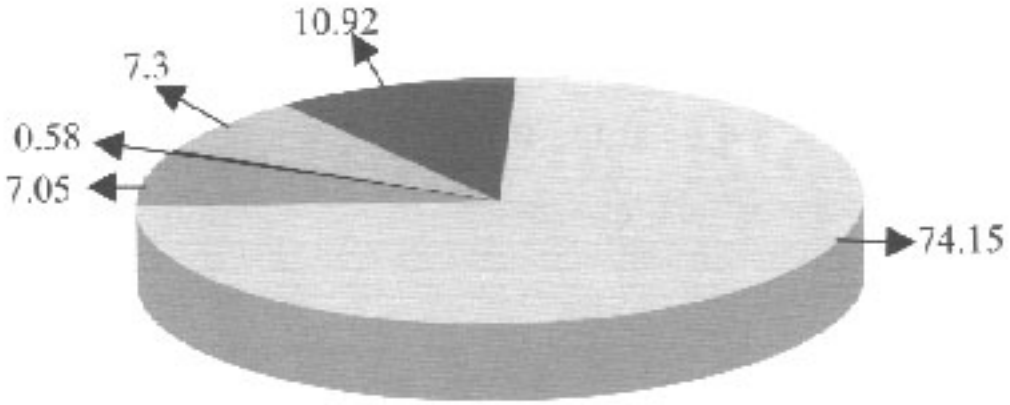
HIV Transmission Occurs from Exposure to HIV-infected Sexual Secretions or Blood

- Sexual intercourse (vaginal or anal)
- Sharing drug injecting equipment
- Transfusion, injection, or transplantation of HIV-infected blood, blood products, semen, tissues or organs
- From mother to foetus/infant (perinatal transmission!

Table 6.1
HIV Transmission Routes

Type of Exposure	Efficiency percentage per single exposure	Percentage of total no. of HIV infected persons
Blood transfusion	90	3-5
Perinatal (mother to child)	15-45	0 1
Injecting drug use (sharing needles)	0.5-1.0	5-10
Sexual intercourse	0.1-1.0	80-90

Probable Sources of Infection



Heterosexual (74.15%) Injectable drug addicts (73%)

Others (10.92%) Homosexual contact (0.58%) Recipients of blood (7.05

Source: *Country Scenario 1997-98, NACO*

HIV is not Transmitted by

- Casual contact, including shaking hands, hugging, or travelling in the same vehicle
- Swimming pools, eating utensils, food, door knobs, toilets, or telephones
- Insect bites, sweat, tears, or saliva

Women and AIDS

- Women are biologically and socially more vulnerable to the HIV infection than men
- Male to female transmission is 2-4 times more efficient than females to male
- Infected mothers can transmit HIV to their foetus and newly born babies
- Worldwide 60% of all HIV infections in women occur by the age of 20

STD
and
HIV/AIDS

i)	STD facilitates HIV transmission
ii)	STD, unlike HIV/AIDS, is curable
iii)	In case of doubt/symptom consult parents and doctor

Attitude Towards Persons Infected with HIV

i) Compassionate and caring

ii) Non-judgmental

ABC of HIV/AIDS Prevention

A	Abstain (abstain from or delay sexual activities)
B	Be faithful (mutually faithful relationship between couple/partners)
C	Condom use (for preventing infection and unwanted pregnancy)

Drug Abuse and HIV Vulnerability

- The worst aspect of the drug abuse is its deepest impression on the school and college going youth. Most drug users begin taking drugs at an early age, as adolescents or even younger
- Young students take to drugs due to peer pressure, curiosity, ignorance, urbanisation and other related causes
- The HIV prevalence among injecting drug users in the region is very high

Risky and Safe Behaviour

Route of HIV Transmission	Risky behaviour	Prevention/ Safe Behaviour
1) Injecting instruments, needles	Sharing of needles/ syringes for drugs	a:) Not injecting drugs/Not sharing needles b:) Use of sterilized needles
2) Blood transfusion	Taking untested/ infected blood	Giving blood
3) Sexual intercourse	a:) Sex with multiple partners or sex outside marriage	a:) Abstinence from sex
	b:) Unprotected sex (without a condom)/ having sex with a person who has multiple sex partners	b:) Sex with one uninfected, mutually faithful partner
		c:) Masturbation

Route of HIV Transmission	Risky behaviour	Prevention/ Safe Behaviour
Mother-to-Child	a:) 30% chance of the child getting AIDS b:) Children becoming orphans	

Module-VII

MODULE – VII

POPULATION EDUCATION IN SECONDARY SCHOOL TEXTBOOKS

CORE LEARNINGS

The material for the module/session has been designed to enable a trainee to:

1. identify population education elements in the secondary school textbooks (IX and X classes)
2. evaluate the adequacy of treatment of population education elements
3. identify population education elements which need to be incorporated in textbooks
4. link up various population education knowledge and content with the topics you teach in your own subject area.

CONTENT OUTLINE

1. Population education in the existing textbooks.
2. Analysis and conclusions

TIME: 40 MINUTES

For this session the procedure to be followed and the content to be covered are given. The emphasis is on the participatory and interactive mode. It is not necessary that every detail given in the content is to be told in the session. The main aim should be to achieve the objectives in terms of core learnings. At times, for achieving the objectives you may like to go beyond the content given in this module,

PROCEDURE

1. After announcing that in this session you are going to discuss the status position of population education content in secondary school textbooks, mention that while going through the last six modules the trainees have been exposed to the entire content of population and reproductive health education. The trainees may be asked to go through the list of core learnings given at the end of this module. Let them take 5-10 minutes to go through the entire list.

2. **Ask: In your own subject that you teach at the secondary school level, which population education content do you find in the textbooks?** Let a few trainees respond.

   Show them Table 7.1 and ask them to analyse it. Spend 10-15 minutes. Inform the trainees that Table 7.1 contains analysis of NCERT textbooks for classes IX & X.

   Discuss the following two points:

   i) Identify subjects and textbooks in which coverage has been found. Also identify modules and core learnings that are covered.

ii) What reasons do you assign for the non-inclusion of certain core learnings.

3. **Ask: Which textbooks are being used in your school by you and your students in different subjects, especially Geography, Economics, Civics and Science?**

   What population education content do these books cover?

   Let a few trainees respond.

   Spend 10-15 minutes.

4. **Ask: What are our conclusions after analysing textbooks?**

   Write each conclusion on the blackboard in consultation with the trainees. Compare these conclusions with those given in this module.

5. Finally, ask a few trainees how they will link up population education knowledge and content with the topics they teach in their own subjects.

CONTENT SHEET

The subjects in which the NCERT textbooks were content analysed are Geography, Economics, Civics, Science and Languages - both English and Hindi.

Table 7.1 given below presents the status position of population education in terms of coverage of core learnings in the secondary school stage textbook.

Table 7.1

Population Education Content in NCERT Textbooks (IX-X)

Sl. No.	Module Learnings	Core	Subjects (class)	Title of Textbook	Chapter	Content
1.	II	Explain population change in terms of increase & decrease in fertility & mortality	Geography (X)	India Economic Geography	Human Resources	Why is our population growing? The pace of natural increase in population depends upon a gap between the Birth Rate and Death Rate. Larger the gap, higher is the Growth Rate
			Economics (IX-X)	Our Economy	An Overview of the Indian Economy	Supplemented by a table showing population growth in India from 1901-1991 Population Situation in India: Population change in terms of the increase and decrease in fertility and mortality. Table showing Birth Rate, Death Rate and Growth Rate for the period 1901-1999
2.	II	Discuss the factors influencing fertility behaviour	Geography (X)	India Economic Geography	Human Resources	With education, female participation in the labour force increases, age of marriage is raised. Consequently there is a decline in the rates of fertility and infant mortality
			Economics (IX-X)	Our Economy	An Overview of the Indian Economy	Factors influencing fertility behaviour - 1. High incidence of Infant Mortality Rate coupled with the fact that children regarded as old age supports, 2. Economic status has inverse

						relationship with fertility, 3, Social factors, 4, Extnet of success of Family planing programme
3.	II	Explain the Eccects of rapid urbanization on the quality of life of the people	Geography (X)	Indian Economic Geography	Human Resources	Increase in the urban population supported by statistical figures, this has led to great strain on the existing resources and the services available in cities, leading to deteri-oration of quality of life.
4.	III	Expalin the meaning of 'Carrying Capacity of Environment' and 'Sustainable Development'	Civics (IX-X)	Indian Constitution and Government	Challenges before Indian Democracy	Increase in the urban sustainable development and its implications have been explained adequately, Although the term 'Carrying Capacity of Environment' has not been explained as such, but the idea behind it has been discussed
5.	III	Discus th contribution of over-population to environmental degradation	Geography (X) Geogrpahy (X) Science (X)	Understanding Environment Indian Encomic Geogrpahy Science	Human impact on environment Land Use and Water Resources Man and his Environment	The whole of the chapter discusses this core learning At various places references/ statements are made regarding this core learning Man is hte only consumer being at apex of the food-chain. Increase in human population strains all resources of food, clothing and shelter, leading eventually to poverty and decrease in per capita income
6.	III	Describe the inter-relationship between population, development, health and enviornmental issues	Geogrpahy (X)	Indian Economic Geography	Human Resources	One of the basic imputs in human resource development of education which leads to health consciousness. Better health care leads to rise in life expectancy. Desire to raise the standard of living leads to greater

						consumption of limited resources
			English (X)	English Reader (X)	Human Resources	Some extracts of a speech. delivered by Indra Gandhi in 1972 at the UN Conference on Human Environment at Stockholm in Sweden.
			Economic (IX-X)	Our Economy		Human beings may be resources if their qualitative aspects are developmed, eg adequate imputs of education, health and environment – this better work force may help in achieving higher national productivity
7.	IV	Discus how investment in human resource development, especially gender-related development, ensured a better quality of life quality of life for all people	Economics	Our Economy	An Oveview of the Indian Economy	Human resource development in terms of provisions of educational opportunities for womem may lead to more employment oportunities for them and accepting her role as decision-maker regarding family size-together these may ensure a better quality of life for all people
8.	IV	Identify instance of the discrimination against the girlchild and women in her family and socity, and discuss the irrationality of these discriminations from the standpoint of the principle of gender equality	Civis	Indian Constitution and Government (IX-X)	Challenges Beforer Indian Democracy	Ther is an emphasis on equal oppotunities in jobs outside home for women to ensure better quality of life for all people Inequality of Women: a number of instances of discrimination against the girl child and women in her family as well as in the society have been discussed; sterotype role almost as slaves in the family, no decision-making power, lower wages

CONCLUSIONS

1. Most of the population education related content covered in these textbooks belong to the areas of economic development, social development and to environment and resources. These areas have been covered in Modules II and III.

2. Further, it was observed that major population education elements have been integrated in the textbooks of Geography, Economics and Civics, that is Social Sciences and to some extent in Science. Language textbooks do not contain much.

3. i) Table 7.1 reveals that the population change in terms of the increase and decrease in fertility and mortality has been well explained in both Geography as well as in Economics. These subjects also highlight the major factors affecting fertility behaviour, such as high incidence of infant mortality rate, education and age at marriage of women, employment opportunities for women as the deciding factor of their economic status, and various social problems such as deplorable conditions of women with practically no say in the decision-making process, and considering children as sources of increasing family income.

   ii) The effects of rapid urbanisation on the quality of life of people have been discussed primarily in the Geography textbook for class X.

   iii) The concept of sustainable development has been introduced and explained only in Civics in spite of the fact that there was an ample scope for integrating this concept in the Geography textbook of class IX, particularly in the chapter entitled 'Area Development - Case Studies'.

   iv) As shown in Table 7.1, the contribution of over-consumption and over-population to environmental degradation has been discussed very well in Geography textbooks. In fact, the textbook for class IX carries one full chapter on it entitled 'Human Impact of Environment'. In Science also, there is a chapter entitled 'Man and his Environment' which has some reference to this concept. The focus, however, is on the degradation of economic conditions rather than the environment. This concept has also managed to find a place in one of the English language textbooks.

   v) The inter-relationship between population, development, health and environmental issues has received extensive coverage in Geography (Chapter: Human Resources) as well as in Economics (Chapter: An Overview of Indian Economy).

   vi) Core Learning 4.1 has been discussed quite explicitly in Civics and, to some extent, in Economics too. But, the core learning which requires identifying instances of the discrimination against the girl child and woman in her family and society, has not received the desired treatment. Although some of the parameters related to the status of women have been discussed in the class X History textbook in the chapter entitled 'Indian Awakening', they have been discussed only as evils of the society, such as Sati, and dowry systems, and illiteracy among women, and not from the standpoint of the principle of gender equality.

   vii) As far as AIDS preventive education is concerned, there is a paragraph in the Science textbook on what AIDS is and what the major routes of HIV transmission are.

4. I) Table 7.2 shows that core learnings discussed in Module I - Population Education: Concept and Content and in Module V - Needs of Adolescents and Reproductive Health are totally missing in secondary school textbooks. Since population education is not taught as a subject at the school stage, it is perfectly in order that the content of Module I does not find a place in school textbooks. Most of the core learnings of Module VI are also not reflected.

Table 7.2

List of Core Learnings Not Incorporated in NCERT Textbooks (IX-X)

SI. No.	C.L. No.	Core Learnings
1.	1.1	Explain in brief the concept of population education and its expanding content in the light of the lCPD, 1994.
2.	2.4	Describe the needs of the elderly.
3.	4.3	Discuss the great risk to women's health due to too early, too many and too frequent pregnancies and childbirths.
4.	4.4	Evaluate the impact of women's health and safe motherhood on child health and survival.
5.	5.1	Discuss that adolescence is natural and universal, and it is a transitory period of rapid change, with great significance for an individual.
6.	5.2	Explain why parents and teachers need to understand the characteristics of the process of growing up, and the special needs and problems of adolescents.
7.	5.3	Identify myths and misconceptions among adolescents and analyse the norms of responsible sexual behaviour.
8.	5.4	Describe the meaning and importance of reproductive health.
9.	6.1	Recognise that AIDS is a major threat to public health in India and the world.
10.	6.3	Distinguish between HIV/AIDS and STD.
11.	6.4	Identify the major routes of HIV transmission and the ways through which it is not transmitted.
12.	6.5	Discuss the ways and means of preventing HIV transmission.
13.	6.6	Identify risky and safe sexual behaviour.
14.	6.2	Explain the importance of AIDS education and counselling to the adolescents and youth about the adverse effects of practising irresponsible sexual behaviour.
15.	6.7	Recognise that persons with HIV/AIDS need sympathetic and compassionate treatment.
		ii) None of the core learnings of Module VI has been discussed except recognising AIDS as a dangerous disease and the major routes of HIV transmission. In fact, even how HIV is not transmitted is left out altogether.
		iii) Although some aspects of core learnings illustrated in Module IV - Gender Equality and Quality of Life - have been included in the textbooks, but except in Civics most of them are devoid of focussed discussion and, therefore, a great deal is left to be desired.

List of Core Learnings

SI. No.	Core Learnings
MODULE 1: Population Education: Concept and Content	
1.	Explain in brief the concept of population education and its expanding content in the light of the international conference on population and development, 1994.
MODULE II: The Population Concern	
2.1	Explain population change in terms of the increase and decrease in fertility and mortality.
2.2	Discuss the factors influencing the fertility behaviour.
2.3	Explain the effects of rapid urbanisation on the quality of life of the people.
2.4	Describe the needs of the elderly.
MODULE III: Population, Environment and Sustainable Development	
3.1	Explaining the meaning of 'carrying capacity of environment' and 'sustainable development.'
3.2	Describe the contribution of over-consumption and over-population to environmental degradation.
3.3	Describe the interrelationship between population, development, health and environmental issues.
MODULE IV: Population, Gender Equality and Quality of Life	
4.1	Discuss how investment in human resource development, especially gender-related development, ensured a better quality of life for all people.
4.2	Identify instances of the discrimination against the girl child and woman in his/her family and society, and discuss the irrationality of these discriminations from the standpoint of the principle of gender equality.
4.3	Discuss the great risk to women's health due to too early, too many and too frequent pregnancies and childbirth.
4.4	Evaluate the impact of women's health and safe motherhood on child health and survival.
MODULE V: Needs of Adolescents and Reproductive Health	
5.1	Discuss that adolescence is natural and universal, and it is a transitory period of rapid changes with great significance for adolescents.
5.2	Explain why parents and teachers need to understand the characteristics of the process of growing up, and the special needs and problems of adolescents.
5.3	Identify myths and misconceptions among adolescents and analyse the norms of responsible sexual behaviour.
5.4	Describe the meaning and importance of reproductive health.
MODULE VI: AIDS Preventive Education	
6.1	Recognise that AIDS is a major social problem impacting on health and development in India and the world.
6.2	Explain the importance of AIDS preventive education and counselling to the adolescents and youth about the adverse effects of practising irresponsible sexual behaviour.
6.3	Distinguish between HIV, AIDS and STD.
6.4	Identify the major routes of HIV transmission and the ways through which it is not transmitted.
6.5	Discuss the ways and means of preventing HIV transmission.
6.6	Identify risky and safe sexual behaviour.
6.7	Recognise that persons with HIV/AIDS need sympathetic and compassionate treatment, and hence others should show positive attitude towards them.

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8. Majumdar,T, *Our Economy*, NCERT, New Delhi, 1992
9. Padmanabhan, Ananta, N, *Understanding Environment*, NCERT, New Delhi, 1989
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MODULE – VII

Population Education in Secondary School Textbooks

Go through the list of Core Learnings given at the end of Module VII.

Which of these Core Learnings do you find in the syllabus of your subject?

For coverage of Population Education Content, study Table 7.1 given in Module VII and analyse.

Identify:

Textbooks:

Modules:

Core Learnings:

Conclusion

i)	Population education elements integrated with Geography, Economics, Civics and Science
ii)	HIV/AIDS discussed in one paragraph in Science textbook.
iii)	Needs of adolescents and reproductive health totally missing in secondary school textbooks

Study Table 7.2

What do you think
are the reasons for non-inclusion of many Core Learnings,
especially those of Modules V and VI?

How will you link up Population Education content with the topics you teach in your own subject?

Topics:

Linkages:

Module-VIII

Module - VIII

Communication Skills: Understanding Adolescents and their Problems, and Effectively Communicating with them

Core Learnings

The material in this module has been designed to enable a trainee to:

1. develop skills to effectively communicate with adolescents on matters relating to reproductive health, sex and sexuality.
2. develop skills to use certain techniques such as question box, role play, value clarification and case studies, for influencing attitudes and values of teachers and adolescents.

Content

1. Introductory. (Reproductive Health Needs of Adolescents)
2. Appropriate Behaviours
3. Question Box
4. Role Plays (Ways to Assert Oneself)
5. Value Clarification
6. Risky and Safe Behaviour
7. Case Studies
8. Utilising Peer Educators
9. Quiz Contest.

Time: 5-6 Hours

There are nine activities included in this module, to meet the emerging needs of teachers and teacher educators, specially in the area of reproductive health and adolescence related issues. Demonstration of the use of techniques given in these activities by the resource persons and practice sessions for the trainees to master these techniques are envisaged as a major strategy.

Keeping in view the time available and the cultural sensitivity of the trainer and the trainees, appropriate activities may be selected for demonstration and practice sessions.

Activity 1: Introductory (RH Needs of Adolescents)

Duration: 60 Minutes

Introduction

1. Distribute the handout and speak for about 10 minutes on the dynamics of behaviour change.
2. Tell the group that now that they have some idea about the dynamics of behaviour change, they can discuss the RH activities more concretely. Ask everyone to write a short description of someone they know (preferably an adolescent student) whom they think could benefit from RH programmes.
3. Ask each one to describe a person they have in mind according to age, perceived attitudes and practices related to RH.
4. Allow 10-15 minutes for preparation. Then invite two or three participants to read out their story.
5. Ask the group which of the six elements of behaviour change would influence the individuals in the case stories they have just heard.
6. Conclude the discussion by saying that these individuals are among the many people RH programmes should try to reach and provide service.

HANDOUT

FOR ACTIVITY 1: WHAT MAKES PEOPLE CHANGE THEIR BEHAVIOUR?

The question we need to *ask first* is:

What makes people change their behaviour?

More specifically we need to ask:

How can people be persuaded to change their behaviour? What interventions will best influence people to change their behaviour?

People do not change their behaviour merely because a teacher/trainer asks them to do so.

The task of changing behaviour is even more difficult if the behaviour to be changed is of a very personal nature, for example, sexual behaviour, or if the actions sought are primarily preventive in nature and if the adverse effects are perceived as not seriously damaging, or persistent.

There are at least six different factors of human nature that can influence why people change, or do not change, their health behaviour. All these elements can influence the effectiveness of a health communicator in various ways. They are:

1. Physical Element
2. Rational Element
3. Emotional Element
4. Skills Element
5. Family and Personal Networks Element
6. Social Structures Element

1) The Physical Element, based on Pain, Discomfort and Risks

People will change their habits - whether smoking, wearing shoes that are bad for their feet, or childbearing - if pain is greater than the benefits, or even if the memory of pain is great enough.

For example, family planning programmes have not adequately used this element which can be effective in convincing couples about the relative risks of contraceptive use and pregnancy. In case of HIV/AIDS, a person may be dissuaded from having unprotected sex with a stranger due to the fear of sure and painful death.

2) The Rational Element, based on Knowledge and Morals

Some people will change health behaviour, if

a) they understand the disadvantages of multiple pregnancies or a large family and advantages of a small family

b) they know the consequences of unprotected sexual intercourse, and

c) they know what to do to avoid them

Most health education programmes have relied heavily on a rational model, assuming that when people have the knowledge to improve their health, they will do so. Mass media programmes especially have often been designed to create awareness and convey information in the hope that knowledge will lead to action. Anti-smoking publicity began with emphasis on scientific findings and statistics as to the real health, hazards of smoking. In AIDS-prevention programmes, such slogans as 'Get the facts' and 'Don't die of ignorance' are obvious examples. In family planning, rational models for health behaviour have focussed on *health arguments,* how and why women and children will be healthier if they space their children. For men, rational arguments to use family planning have often focused on the *economic* burden of supporting and educating many children, and for women the harmful impact of multiple pregnancies on the health of the mother and the child, and on the family welfare.

3) The Emotional Element, based on the Intensity of Attitudes or Feelings

Some people will change their behaviour if they feel an intense and personal fear of its consequences. Sometimes, this emotional response is manifested by a concern to protect others whom they love. Emotions may be *negative,* based on fear, danger, *or positive,* based on affection, concern and hope for a loved one. For example, adolescents may be persuaded to practise responsible sexual behaviour, if they strongly fear unwanted pregnancies. A woman living with HIV may be persuaded to not opt for a child who in all probability would become an orphan.

4) The Practical Element, based on personal Skills in the new Behaviour

Some people will change their behaviour when they feel competent and confident in practising the new behaviour. It could be the use of condoms, or ability to assert one's health interests.

To channel a rational or an emotional response into specific behaviour changes, communicators have begun . put more emphasis on teaching specific skills. But teaching new skills has not been easy because, again, it is a very personal matter.

5) Family and personal Networks

Some people will change reproductive health (RH) behaviour if they think they are supported by other people: spouses, friends, relatives, colleagues, workers associations, or are publicly encouraged during special meetings. They would feel more secure if their own individual knowledge, emotions, and skills are reinforced and supported in the direction of the desired behaviour change.

Communicators need to use these social networks to influence individual behaviour and decisions. Decades of research have shown that people are most stimulated to act because of personal contacts, conversations, meetings and social pressures. These web of personal influences called social networks, whether they be spouses, family, teachers, friends of the same age and sex, neighbours, villagers, or community leaders, control the spread of any innovations or changes in behaviour.

6) Social Structures, including Social, Economic, Legal, and Technological Factors affecting Daily Life

Some people change RH behaviour because they have convenient access to supplies and services (such as counselling) and because they live in an environment where these services are legal, acceptable, and economically desirable.

Yet RH education programmes can play a major role in shaping public attitudes, determining what changes are to be adopted, how they are to be institutionally implemented, and to what extent they can influence individuals.

ACTIVITY 2

APPROPRIATE BEHAVIOURS

(Adapted from the 'Adolescence Education' modules, UNESCO Bangkok, 1991)

Duration: 40 Minutes

An adult code of conduct is very different from behaviours which are considered appropriate for children. Also, it is usually assumed by adults that adolescents are no longer children, and therefore adolescents are expected to follow a code of conduct very similar to that of an adult.

On the contrary, the transition from child to adult during puberty is complex, and adolescents experience enormous physical and emotional changes during these years. Also, a variety of influences determine the code of conduct which adolescents may favour, ranging from family and peer group influences to values projected by television programmes, popular movies and literature.

This exercise is designed to point out the different aspects of personal behaviour to emphasise the confusion in expectations from adolescents.

MATERIAL REQUIRED

Two charts, each with a heading: Appropriate', 'Not Appropriate'.

Thirteen cards, one card with each of the following phrases:

- kisses mother/father at home
- kisses mother/father in public
- holds hand with friend of the opposite sex
- cries when hurt
- walks down the street with arm around friend
- talks freely with person of the opposite sex
- gives mother/father a hug
- hugs a person of the opposite sex
- dresses to attract opposite sex engages in petting
- has intercourse with person of the opposite sex
- smokes a cigarette
- drinks alcohol with friends

INSTRUCTIONS

- Display the two charts for everyone to see clearly. Explain to the group that you will distribute the 13 cards with the different phrases, and they should read out each card one by one.
- Ask for two volunteers to fill in the charts.
- After each phrase is read out, let the group decide if the specific behaviour is appropriate.
- Once they all agree, each specific phrase should be written under the heading on the chart where it belongs.
- The result reflects a behavioural pattern that they seem to favour. It is important to emphasise that these behavioural patterns may sometimes be different from those reflected by popular television programmes, books and films.

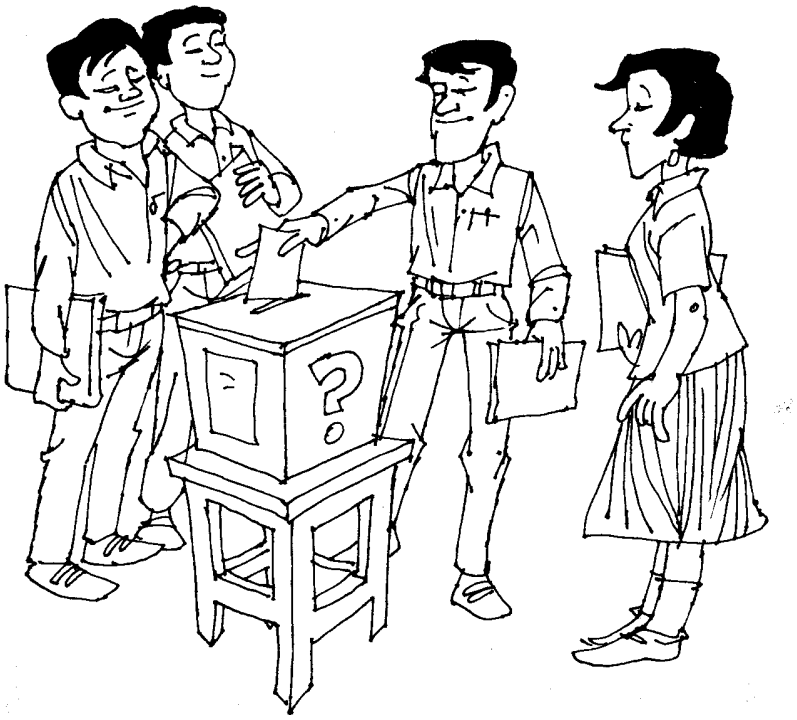
ACTIVITY 3: QUESTION BOX

(Adapted from 'AIDS Education in Schools', NCERT-NACO, New Delhi, 1994)

Duration: 1 Hour

INSTRUCTIONS

1. Arrange for a box (shoe box/wool box/etc) and make a slit in its lid. This will be used as the 'Question Box'.
2. Distribute a piece of paper to each trainee.
3. Trainees should be encouraged to ask questions/queries on matters pertaining to the process of growing up, STDs, AIDS, sexual health, sex-related myths and misconceptions, and family planning and welfare.
4. Let each trainee write his/her query/queries on the given piece of paper without mentioning his/her name. Since this technique is meant to be used for adolescents, trainees may imagine possible questions/doubts that might arise in the minds of adolescents.
5. Each trainee will insert his/her piece of paper in the Question Box through the slit provided.
6. The trainer may sort out the questions and identify some of the common queries. These queries may be classified for the purpose of answering them.
7. The trainer may select those questions which he/she can handle comfortably and satisfactorily.
8. For answering certain questions the trainer may like to consult a local expert/doctor/health educator/counsellor who has also been trained in RH education.
9. Some questions asked may be very personal. Such questions are best tackled privately. General announcement in this regard may be made to encourage individuals to get in touch personally.
10. The Question Box activity helps the trainee immensely to gradually build confidence and improve comfort level that are essential for effective communication with adolescents.



ACTIVITY 4: ROLE PLAY (WAYS TO ASSERT ONESELF)

Duration: 1 Hour

Role play means presenting small spontaneous plays which describe possible real life situations. In role play we imitate someone else's character. A situation is given to the group and they take on the roles of the people involved. Role play allows us to practise situations before we meet them in real life. More important than this is that it gives us an opportunity to practise skills that are important to protect ourselves from risky situations.

INSTRUCTIONS

1. Distribute photocopies of the Handout among the trainees and give them 5 minutes to go through it.
2. Identify three trainees who are ready to play different roles on smoking.
3. Assign them names and their respective roles. They can be given the name as Vijaya, Mujib and Manju with the following roles:
   (a) Vijaya is aggressive. He is a smoker. He wants that his other friends should also smoke. He calls Mujib and Manju. "Hello! Mujib, Hello! Manju. I have got some cigarettes, come and have a smoke."
   (b) Mujib is not self-confident. He is passive. He says, "Sure thanks, that's great". He is also thinking if he does not smoke, others would mock at him. So he also starts smoking.
   (c) Raju likes to please others. He knows that smoking may make him sick, but he does not want others to think that he is not a part of the group. He is indecisive and finally decides not to smoke.
   (d) Manju is assertive. She says, "No chance, I do not need to smoke to prove that I am an adult. 1 know smoking cigarette is bad for my health. I would not like to prove my adulthood at the cost of my health."
4. While assigning trainees their respective roles, make it clear that while their attitudes are already defined, they should be encouraged to expand on these roles.
5. After the role play, call the whole class and ask trainees how they felt during the role play.
6. Emphasise an appropriate action to be taken in such situations. Stress should be laid on developingAssertive Skill, especially among girls.

Note: Similar role plays can be enacted on *drinking* or *drug abuse.*

HANDOUT

FOR ACTIVITY 4

Am I assertive?

(Adopted from School Health Education to Prevent AIDS *and STD, WHO-UNESCO, 1994)*

Why?

You are assertive when you stand up for your personal rights without putting down the rights of others. If you can do this you will be able to: (1) Say no without feeling guilty; (2) Disagree without becoming angry, (3) Ask for help when you need it. As a result you will feel better about yourself and have more honest friends and relationships.

Distinguish between these three types of behaviour.

Passive

- Take no action to assert your own rights
- Put others first at your expense
- Give in to what others want
- Remain silent when something bothers you
- Lack self-confidence

Assertive

- Stand up for your own rights without putting down the rights of others
- Respect yourself as well as the other person
- Express positive and negative feelings
- Be confident, but not 'pushy'

Aggressive

- Stand up for your own rights with no thought about the other person
- Put yourself first at the expense of others
- Overpower others
- Get your own goals, but at the expense of others

ACTIVITY 5: VALUE CLARIFICATION

Duration: 40 Minutes

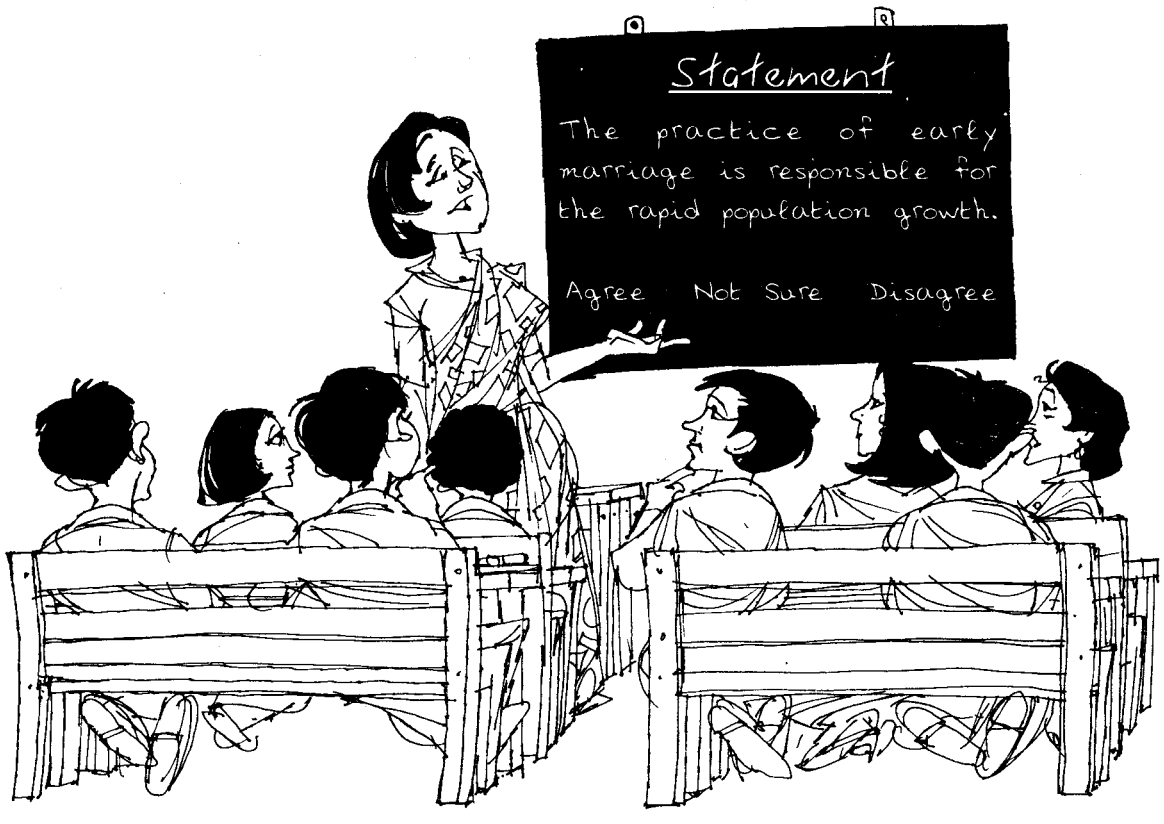
RH education aims at influencing and shaping attitudes and values of students and teachers about RH/population issue. As such, it relies heavily on various methods and techniques of developing positive and desirable values. Values influence and determine the behaviour of a person. Values are principles, beliefs or attitudes. The trainer's task is to present RH/population content in an objective or value fair manner.

Value clarification helps young people to make value-based decisions and develop their own value system. The basic assumption in a value clarification approach is that there are no decisions or actions which are by nature 'right' or 'wrong'. It is the trainer's responsibility to provide RH/population content which will enable trainees to evaluate the available options/alternatives for a given issue. In value clarification learners are given an opportunity to examine and clarify different value positions.

The *objective* of any activity on value clarification is to explore one's own attitudes and values regarding population and RH issues.

INSTRUCTIONS

1. This simple activity has been designed to give you an idea of how in day-to-day teaching one can easily use this technique to discuss various aspects of any value position or issue.
2. What you need is just three sheets of paper with one of the following written on them:



AGREE, DISAGREE, NOT SURE. Stick the papers in three comers of the room, or ask three trainees to hold and display the three paper sheets.

Alternatively, you may write the three words, namely AGREE, DISAGREE, NOT SURE on the left corner, the right corner and in the middle of the blackboard respectively.

3. Announce that you will now read out one statement or write it on the top of the blackboard. After you read or write the statement, the trainees should immediately go to the paper/corner of the blackboard which describes their response or position to it. Some statements are given below:

STATEMENTS

a) The practice of early marriage is responsible for the rapid population growth.

b) Low status of women accounts for the growth in population.

c) Sex education should be given to all the students, both boys and girls, at the secondary stage.

d) Use of condom for preventing HI V/AIDS and unwanted pregnancies should be taught to students of secondary stage.

e) If unmarried persons come to know that they have HIV, they should not get married.

f) Prostitutes (sex workers) and drug users are responsible for the spread of AIDS.

g) People who have HIV/AIDS should be put in isolation.

h) Safer sex should be taught to all young people in schools.

i) People with HIV/AIDS should not have children.

j) HIV infected students/teachers should not be allowed in schools.

4. When the trainees have taken their positions, there will be a few trainees standing at each of these positions. Each trainee should be asked to explain why she/he is standing there. Each may take 1*II* minute.

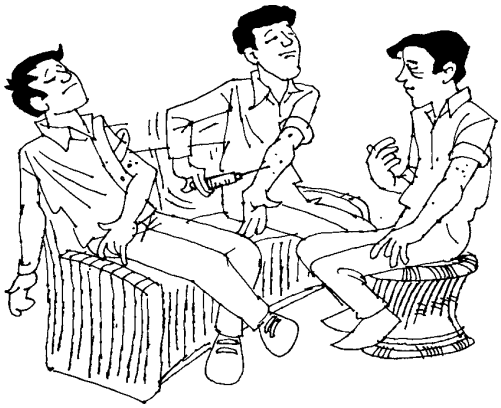
5. Trainees should not argue/discuss with each other. Let them listen to the others' views, even if they are different from their own.

6. If some aspects/points are not covered by the trainees, the trainer should place such aspects/points before trainees, and the matter should be left at that.

7. The number of statements to be taken up will depend upon the availability of time. You may like to frame your own controversial statement for this activity. You may also think in terms of modifying any statements given here.

ACTIVITY 6: RISKY AND SAFE BEHAVIOUR

Duration: 40 Minutes



INSTRUCTIONS

1. Divide the trainees into groups.
2. Ask each group to discuss the following modes of HI V/AIDS transmission:
   a) injecting instruments or needles
   b) blood transfusion
   c) sexual intercourse

   The groups should be asked to identify 'Safe' and 'Risky' behaviours pertaining to each of the three modes of transmission. Let each group make a list of these behaviours.
3. Fifteen minutes may be given to groups to complete the exercise.
4. During this period the trainer will write 'Safe' and 'Risky' on the left corner and on the right corner of the blackboard respectively.
5. Reassemble the trainees.
6. Now review the modes of transmission one by one. Take the first mode, namely injecting instruments or needles. Write it as a title on the blackboard.

   Ask each group to orally enumerate the behaviours it has listed under 'safe' and 'risky' behaviours. The trainer will write them on the blackboard as the trainees enumerate them one by one. On the basis of the checklist given at the end, the trainer may either correct or add if any behaviour is left out.
7. Follow the same procedure with regard to the other modes of transmission. While discussing 'sexual intercourse' the trainer may use his/her own discretion and decide whether it should be taken up or not, and if to be taken up, in what form and to what extent.
8. Checklist of Risky and Safe Behaviour

Mode	Risky	Safe
Injecting instruments. needles	Sharing needles/ syringes for drugs	Not injecting drugs/not sharing needles/ syringes, use of sterilised needles
Blood transfusion	Taking untested/ infected blood	Giving blood
Sexual intercourse	i) Sex with multiple partners or sex outside marriage ii) Unprotected sex (without a condom) iii) Having sex with a person who has multiple sex partners	i) Abstinence from sex ii) Sex with one uninfected, mutually faithful partner iii) Hugging and kissing

Activity 7: Case Studies (Family Conflicts and Gender Issues)

Duration: 1 Hour

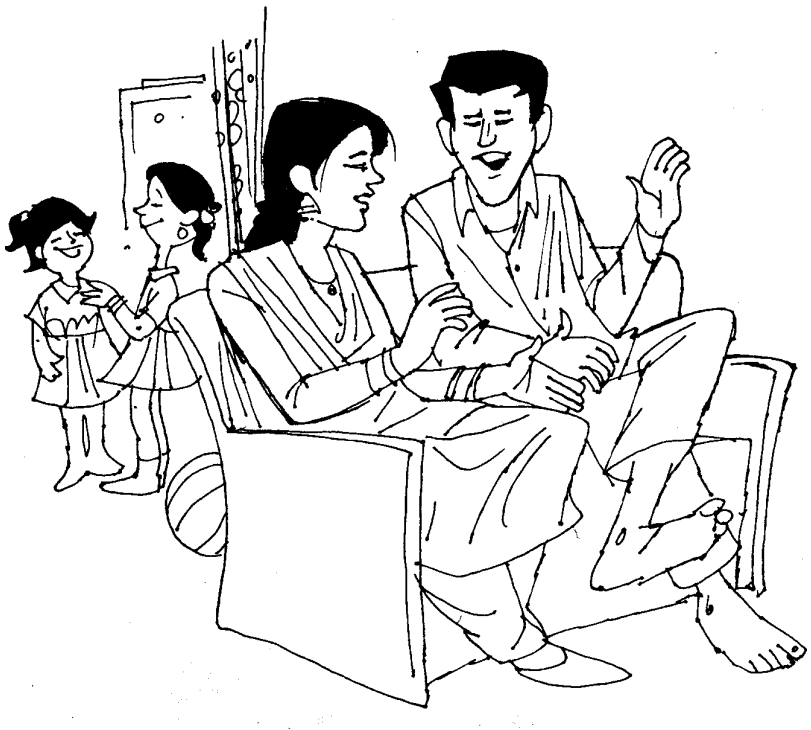
Daily newspapers and magazines contain many events, episodes and case histories/stories which have a bearing on RH/population issues. These cases are real and they reflect people's beliefs, values and behaviour. To discuss them systematically is a meaningful activity.

The *objective* of this activity on case studies is to help trainees understand RH/population issues in their own context and assist them to develop responsible and rational attitudes towards them.

Instructions

1. Select simple, realistic and short episodes and events for case studies.
2. Read out one case study to your trainees. You should read the case study to them very slowly. It is good to go over the main points again to make sure everyone has understood.
3. After reading out the case study you may facilitate the discussion with the help of some key questions:
   (i) What RH/population issues/values/points do you find in the case study?
   (ii) Why do people behave like this?
   (iii) Do you justify their behaviour?
   (iv) What are the options?
   (v) What are the possible consequences of each of these options?

   For adopting this methodology, some case studies/episodes are given as examples:



Case Study 1

Archana married very young. Ajay, Archana's husband, found her very immature: He expected that eventually Archana would change for the better. On the other hand, Archana found Ajay a rather serious type, not given to enjoying the lighter side of life. She, therefore, discovered that life was difficult. As days passed by, they had two children, one after another without enough spacing between the two. The condition was getting worse. Each felt that he/she was right and the other was wrong. Arguments were frequent. As the children grew up, they too were exposed to the tension in the family. Ajay and Archana, without properly communicating with each other, were individually worried about the situation.

Case Study 2

The following is a conversation between H (Husband) and W (Wife). H & W have two daughters. W had her education up to the middle stage before marriage. H's parents live with the family.

H: "My parents want that we should have a son. Many of our old relatives also feel that way." W: "But what is the guarantee the third child will be a son."

H: "We will have amniocentesis done to know the sex of the child well in advance. If it is a female child, we will have an abortion."

W: "No, that would be inhuman on our part. That would be an act against our religion as well. Besides, I don't want to have a third child. Look, I have already passed middle and I secured very good marks. I want to do matriculation and take up some work/a job."

H: "Parents won't allow that; in my family no woman has worked. It would be very embarrassing."

W: "Do you have to listen to your parents on a matter which concerns me?"

H: "If after matriculation you do a job, who would look after our children and home."

W: "I think your parents will help. And then, you can also help me in the morning and in the evening."

H: "This is all right. But I was talking about the third child."

W: "I don't want a third child, I think we should consider two children as enough."

Case Study 3: A Typical Day for a Man and His Working Wife

Time	Woman	Man
5.00 am	rises	rises
6.00 am	fixes breakfast for the family	
6.30 am	prepares children and takes them to school; keeps lunch ready for husband	takes breakfast
7.00 am	gets ready to go to her office	listens to radio
7.15 am	leaves for work	leaves for work

1.30pm	leaves office	takes lunch at his office and spends time with colleagues
2.00 pm	gives lunch to the family	
2.30 pm	takes lunch	
3.00 pm	takes rest	
5.00 pm	sweeps the house and attends to children	leaves office
6.00pm	takes up children's homework	watches TV/reads the newspaper
7.00 pm	prepares dinner	
8.00 pm	serves dinner to the family	takes dinner
9.00 pm	watches TV/ prepares for the next day	
10.00 pm	goes to bed	goes to bed

ACTIVITY 8

UTILISING PEER EDUCATORS

Duration: 30 Minutes

INTRODUCTION

Peer education here means an education that is imparted by some selected students to their fellow students through formal or informal sessions. Under peer education the selected students with leadership qualities and communication skills are given training with the purpose of sharing information, skills and attitudes with fellow students. The strategies of peer education have successfully been used to deal with health issues such as HIV/AIDS, sexual behaviour, drug abuse and alcoholism. Under the Population and Development Education Project, too, a modest effort is being made to make positive use of potential peer influence which is common during adolescence.

INSTRUCTIONS

1. Identify two students, preferably one boy and one girl from each section/class. Identify such students having:
   - Leadership qualities
   - Good communication with fellow students, and
   - Has participated in curricular and co-curricular activities
2. These selected students will play two roles:
   - Help the teachers incharge in organising and conducting students' sessions on Population and Reproductive Health Education.
   - Disseminate authentic information, knowledge and skills among fellow students through informal interactions.

In order to prepare peer educators for these three roles the trained teachers should give them at least 10 hours of training before any exposure is planned for all the students.

(i) Peer educators should be given copies of all the modules of the package especially Modules V, VI and VIII, and the Advocacy Folder and such other relevant materials to enable them to get acquainted with the content of the programme and details of the activities to be organised.

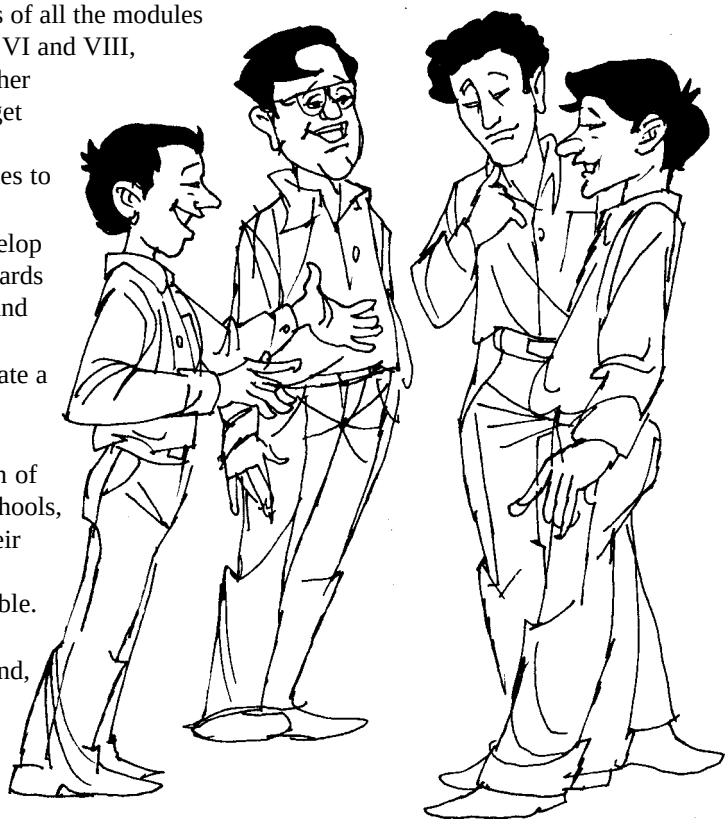
(ii) Special efforts should be made to develop positive and constructive attitude towards the entire programme of Population and Reproductive Health Education.

(iii) Peer educators should be asked to create a favourable environment for students' sessions.

(iv) Since the attendance and participation of students may be voluntary in some schools, depending upon the permission of their parents, peer educators should help making the programme more acceptable.

(v) Whenever they get a chance, peer educators should share information and, if possible, materials with classmates and fellow students.

(vi) Peer educators should help teachers incharge in all matters relating to the organisation of students' sessions.



ACTIVITY 9

QUIZ CONTEST

Duration: 30 Minutes

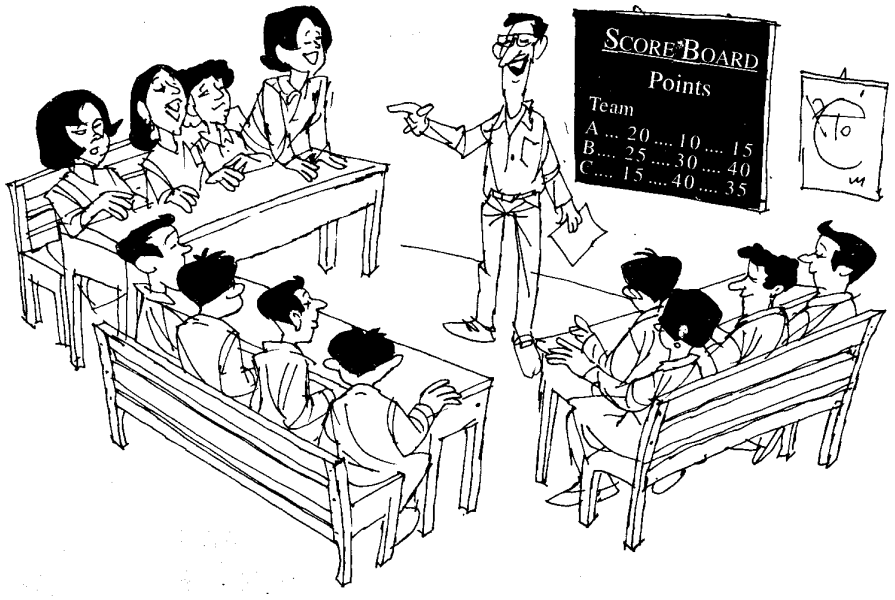
INTRODUCTION

Quiz contests on various population issues are quite common these days, and popular too.

Our country has acquired state-of-the-art experience in organising quiz contests at various levels, that is school, local, state and national. A quiz contest is a useful activity for creating necessary awareness among learners and motivating them to collect information about population and reproductive health issues.

INSTRUCTIONS

1. Trained teacher who would act as the quiz master should have a copy of all the modules on population and reproductive health.
2. Quiz items containing questions on population and reproductive health issues may be developed or obtained from other sources. A pool of a few questions is given at the end of this activity.
3. The class teacher may act as a quiz master and organise the contest in the classroom.
4. Two students may be selected to act as scorer and time keeper, respectively.
5. The whole class may be divided into three or four groups according to the number of rows of students. These groups may be named as Team A, Team B and so on.
6. The blackboard may be utilised as the scoreboard.
7. The quiz master/teacher may start asking questions one by one from the teams - A, B, C, D, etc.
8. The team will get 30 seconds to answer the question.
9. The team unable to answer a particular question will not get any point and the same question will be passed to the next team to reply. If the reply given by the first team is correct, it may be given 5 points. When the question is correctly answered by another team, if may get two bonus points.
10. In this order, five to six rounds may be completed, and the three teams getting the highest points in that order may be ranked first, second and third, respectively.
11. In case the two teams get equal points, tie breaker questions may be asked to decide their respective ranks. Thus, the whole class will be involved in the competition.



QUIZ ITEMS

MULTIPLE CHOICE QUESTIONS

1. On October 12, 1999, population of the world became (b)
   a. 5 billion
   b. 6 billion
   c. 7 billion
   d. 8 billion

2. The population of our country today is about (c)
   a. 85 crores
   b. 90 crores
   c. 100 crores
   d. 120 crores

3. What is India's rank in terms of its population size in the world? (b)
   a. First
   b. Second
   c. Third
   d Fourth

4. Which one of the following Indian states has the largest population size: (b)
   a. Madhya Pradesh?
   b. Uttar Pradesh?
   c. Rajasthan?
   d. Bihar?

5. Birth Rate means (a)
   a. Number of births per 1,000 population
   b. Number of births per 10,000 population
   c. Number of births per 100 population
   d. Number of births per 100,000 population

6. Maternal Mortality Rate (MMR) means (c)

   a. Number of deaths of women due to pregnancy and childbirth per 1,000 live births
   b. Number of maternal deaths per 10,000 live births
   c. Number of maternal deaths per 100,000 live births

7. Population size rapidly grows due to (c)

   a. High birth rate
   b. High death rate
   c. High birth rate and low death rate
   d. Low birth rate and low death rate

8. Lower mean age at marriage is indicative of (b)

   a. Less period for child bearing
   b. Longer period for child bearing
   c. Neither less nor long

9. Delayed marriage age helps in (b)

   a. Increasing fertility rate
   b. Having fewer children
   c. Having many children
   d. Having neither more nor fewer births

10. Which state of India has the lowest density of population? (a)

   a. Arunachal Pradesh
   b. Manipur
   c. Kerala
   d. Sikkim

11. Percentage of aged persons is higher (b)

   a. In developing countries
   b. In developed countries
   c. In countries exporting petroleum
   d. In South Asian countries

12. In India, the ratio of the number of females to number of males is (c)

    a. Equal

    b. Higher

    c. Lower

    d. Considerably higher

13. Literacy rate of females in India is (c)

    a. Same as of males

    b. Higher than males

    c. Lower than males

II TRUE/FALSE

1.	Humans play a vital role in modifying the environment.	True
2.	Human activities are endangering the survival of other species.	True
3.	Growing human and cattle population have seriously affected soil resources.	True
4.	A person infected with HIV can transmit it to another person through his/her body fluid and blood.	True
5.	An infected mother can pass HIV to her unborn child.	True
6.	A person may get HIV by hugging or shaking hands with a friend who has HIV/AIDS.	False
7.	AIDS is a contagious disease like common cold.	False
8.	When a person has AIDS, his or her body cannot defend itself from certain diseases.	True
9.	All persons suffering from STDs are also suffering from AIDS.	False
10.	A person can get HIV by giving (donating) blood.	False
11.	A person with HIV/AIDS can be cured these days.	False
12.	Masturbation is harmful.	False
13.	Medically it is advised that students who have HIV should not be allowed in school.	False
14.	People can reduce their chances of becoming infected with HIV by using condoms.	True
15.	Literacy among women is not associated with fertility.	False
16.	In India, daughters have equal legal rights to share wealth of their parents	True

17. Frequent pregnancies are harmful for the health of the mother.	True
18. If a childless woman meets a newly wedded bride, the bride too would become infertile.	False

III Short Answer Questions

1. What is the full form of AIDS?	Acquired Immunodeficiency Syndrome
2. What is the full form of HIV?	Human Immunodeficiency Virus
3. What is the full form of STD?	Sexually Transmitted Disease
4. AIDS can be cured if detected early?	No
5. Unprotected sex with many partners can increase a person's risk of getting infected with HIV?	Yes
6. Do mosquitoes transmit HIV?	No
7. Can HIV spread through shaking hands?	No
8. Can sharing a piercing instrument spread HIV?	Yes.
9. Can one get HIV infection when donating blood?	No.
10. AIDS is caused by	Virus/HIV
11. Name some of the major routes of HIV transmission.	Blood, body fluid, sexual intercourse, mother to child
12. How can we know whether one has HIV infection?	Blood test
13. Why is AIDS called the new STD?	The major route of transmission is sexual intercourse
14. What is the percentage of land area of India in comparison to the world total land area?	2.4%
15. What is the percentage of Indian population in comparison to world's total population?	16%
16. Name two main functions of food for our body.	a) Energy b) Growth
17. Name the five elements which our food should contain,	a) Carbohydrates b) Protein c) Salts d) Vitamins e) Water
18. What do you understand by Chipko Movement?	Movement to protect cutting of trees on a mass scale.

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Appendices

APPENDIX – i

TRAINING PROGRAMME SCHEDULE (FOUR-DAY TRAINING)

	Activity/Topic	Time
Day l		
1.	Welcome to trainees, introduction and about the CBSE's project on Population and Development Education	30 minutes
2.	Pre-test	20 minutes
3.	Module I - Population Education: Concept and Content	20 minutes
4.	Module II - The Population Concern	1 hour 15 minutes
5.	Module III - Population, Environment and Sustainable Development	1 hour
6.	Module IV - Population, Gender Equality and Quality of Life	40 minutes
7.	Module V - Needs of Adolescents and Reproductive Health	1 hour
Day 2		
1.	Module VI -AIDS Preventive Education	1 hour 15 minutes
2.	Module VII - Population Education in Secondary Education Curriculum	40 minutes
3.	Introduction to Module VIII	15 minutes
	Module VIII (Demonstration Sessions - Resource Persons)	
4.	Activity 1 Introductory (RH Needs of Adolescents)	40 minutes
5.	Activity 3 Question Box	40 minutes
6.	Activity 4 Role Play (Ways to Assert Oneself)	40 minutes
7.	Activity 5 Value Clarification	40 minutes
Day 3		
	Module VIII (Demonstration Sessions - Resource Persons)	
1.	Activity 6 Risky and Safe Behaviour	40 minutes

Activity/Topic		Time
Day 3		
2.	Activity 7 Case Studies (Gender Issues)	40 minutes
3.	Activity 8 Utilising Peer Educators	30 minutes
4.	Activity 9 Quiz Contest	30 minutes
5.	Preparation for Practice Sessions (Divide trainees into groups, each group having at least 5-10 trainees) **Module VIII (Practice Sessions - Trainees)**	30 minutes
6.	Activity 1	1 hour
7.	Activity 3	1 hour
Day 4		
	Module VIII (Practice Sessions -Trainees)	
1.	Activity 4	1 hour
2.	Activity 5	50 minutes
3.	Activity 6	50 minutes
4.	Activity 7	50 minutes
5.	Preparation of Work Plan by Trainees	1 hour 30 minutes
6.	Post-test	20 minutes
7.	Evaluation of the Training Programme	20 minutes
8.	Closing Session	10 minutes

SESSIONS AND WEIGHTAGE

1.	Interactive Sessions on Content	6 hours	30%
2.	Demonstration Sessions - Resource Persons (Module VIII)	5 hours	25%
3.	Practice Sessions - Trainees (Module VIII)	6 hours	30%
4.	Preparation of Work Plan by Trainees	1 hour 30 minutes	7.5%
5.	Opening Session, About the Project, Pre-post Test, Evaluation of the Training Programme, and Closing Session	1 hour 30 minutes	7.5%
		20 hours	**100%**

APPENDIX – ii

GUIDELINES FOR CO-CURRICULAR/SCHOOL-BASED ACTIVITIES

INTRODUCTION

Under the CBSE project on Population and Development Education more than 1,200 secondary school teachers, health educators and counsellors will be trained during the period of three years. These secondary school teachers will be drawn from 400 CBSE-affiliated schools of Bihar, Haryana, Rajasthan, Madhya Pradesh and Uttar Pradesh. The trained secondary school teachers will organise **at least 10 hours of co-curricular/school-based activities** for adolescent students, both boys and girls of class IX and XI every year. However, enough flexibility will be observed to accommodate adolescent students of other classes as well on a voluntary basis.

OBJECTIVES

The major objectives of co-curricular/school-based activities are:

1. to provide authentic information and knowledge on population and reproductive health issues to a large number of adolescent students of secondary schools
2. to develop assertive skills among adolescent students, both girls and boys, to enable them to protect their health interests
3. to promote among adolescent students healthy attitudes, and responsible and safe behaviour
4. to create an enabling environment in the school system for the incorporation of reproductive and sexual health in the school curriculum

GUIDELINES

1. The trained teachers will organise an advocacy meeting of their fellow teachers, parents and opinion leaders of the community. If parent-teacher association already exists in their schools, its special meeting may be called for advocacy. In the meeting the teachers will (a) explain the purpose and content of the entire programme, (b) distribute CBSE's advocacy flyer/folder and other such relevant material, and (c) seek the support of all.

   While explaining the purpose of the programme, **abstinence and promotion of healthy and responsible behaviour will be highlighted.**

   What we are seeking is the freedom to discuss matters relating to sex and sexuality, not sexual promiscuity. We want to promote a lifestyle of commitment, not of casualness.

2. In order to make the sessions interactive and participatory, it is advisable to hold sessions for not more than 40-50 students. If considered necessary, separate sessions for boys and girls may be organised at least in the initial stages.

3. The teachers may use two options: one, to organise and spread the activities over a period of time, for example one or couple of activities every fortnight or month for a group of 40-50 students; two, to organise most of the activities in one go within a week or a fortnight, for example to observe Population and Reproductive Health Education Week during July or AIDS Week during December.

4. In all the organised activities the emphasis should be on maximum involvement and participation of students with the help of peer educators.

5. The trained teachers will identify two peer educators, one boy and one girl from each group of 40-50 students, and follow instructions given in this regard in Activity 8 (Module VIII).

6. A notice may be circulated to all the targeted students in order to invite them to put their questions/queries/ doubts in the question box kept at a convenient place for the purpose. Questions queries/doubts may be invited on various topics, such as (a) population, environment, sustainable development and gender equality and quality, of life (b) HIV/AIDS, STD, sexuality, drug/substance abuse, etc. For ensuring maximum participation of the students it is necessary that the notice should explain the purpose. This may even be followed by personal explanations to the targeted students in their classes.

   The first activity on question box will help teachers to know the exact needs and requirements of their students. Alternatively, teachers may like to organise Activity 1 (Module VIII).

7. The assembled questions, queries and doubts may be categorised under (a) and (b) as mentioned in point No. 6. A one-hour session may be organised to answer questions under category (a).

8. One-hour session to answer those questions under category (b) which teachers can handle themselves comfortably.

9. One-hour session to answer sensitive questions with the help of health educators/counsellors.

10. One-hour session on Activity 5 (Module VIII). For this activity statements may preferably be formulated on the basis of common queries asked by students.

    One-hour session on Activity 6 (Module VIII).

    In these two activities above, the help of health educators/counsellors may be sought.

11. One-hour session on Activity 7 (Module VIII).

12. One-hour session on Activity 4 (Module VIII).

13. Three to four sessions, each lasting for one hour, may be organised as per the needs of students. For example, question box activity may be repeated as per local specific needs.

APPENDIX – iii

PRE/POST-TEST

DIRECTIONS

1. The purpose of this questionnaire is to obtain information on your knowledge on issues relating to Population, Development, Environment, Reproductive Health and HIV/AIDS.

2. It is important to work alone and not communicate with anyone.

3. Please do not write your name on the questionnaire or put your signature on it.

4. Please answer all the questions.

5. Your answers will be kept confidential.

   Thank you for completing the questionnaire.

1. In which year and where was the International Conference on Population and Development held?

   _____ _____

2. Mention any two emerging areas/topics that have now been included in Population Education.

   _____ _____

3. Identify the three factors that determine population change.

   _____ _____

   _____

4. Mention any two factors that influence fertility behaviour in India?

   _____ _____

5. What is the full form of the following?

   TFR _____

   IMR _____

   CPR _____

6. In Uttar Pradesh because of the IMR being _____ (high/low), TFR is high, whereas in Kerala because of the IMR being _____ (high/low), TFR is low.

7. In China because of the CPR being _____ (high/low), TFR is low, whereas in Pakistan because of the CPR being _____ (high/low), TFR is high.

8. Which of the following two contributes more to the population growth in cities in India? Migration or excess of urban births

_____

9. What percentage of India's Population is 60 years and above?

_____

10. In India at what age does a person become a Senior Citizen?

11. If the sex ratio in a society declines, it indicates that status of women in that society is (increasing/decreasing).

12. Give the meaning of sustainable development in twenty words.

_____

_____

_____

13. Explain the term 'Carrying Capacity' in twenty words.

_____

_____

_____

14. Identify the three key indicators of human development,

(i) _____

(ii) _____

(iii) _____

15. In Uttar Pradesh, literacy among women being _____(high/low), the average number of children per woman is high, whereas in Kerala literacy among women being _____(high/low), average number of children per woman is low.

16. Identify any two indicators that reveal the status of women in society.

_____ _____

17. Mention any two broad content areas that are included in Adolescence Education.

_____ _____

18. Give two reasons that are given in favour of education in human sexuality/sex education in schools,

(i) _____

(ii) _____

19. What is the full form of the following?

(i) AIDS _____

(ii) HIV _____

(iii) STD _____

20. Explain in twenty words the meaning of Reproductive Health.

_____

_____

_____

21. AIDS is _____ (curable/incurable), whereas most STDs are _____ (curable/incurable).

22. _____ is the most common route through which most people get infected with HIV/AIDS. (Sexual intercourse/blood transfusion).

23. Given below are five statements. Tick mark (T) true, (F) false, as the case may be.

(i) One can get HIV if he/she has sex once, without a condom.

(T) (F)

(ii) One can get HIV by hugging or touching a person who has HIV or AIDS.

(T) (F)

(iii) A person can get HIV by giving (donating) blood.

(T) (F)

(iv) The more sexual partners a person has, the greater is the chance of getting infected with HIV or another sexually transmitted disease.

(T) (F)

(v) Condoms protect a person from HIV and STD if they are used correctly everytime one has sexual intercourse.

(T) (F)

24. Explain briefly how drug abuse leads to HIV infection.

_____

_____

_____

25. Describe in twenty words the teacher's role in influencing students' behaviour.

_____

_____

_____

26. It is generally said that due to peer pressure, young people take to drugs. Explain the meaning of peer pressure in twenty words.

_____

_____

_____

27. The analysis of school textbooks reveals that content on the needs and problems of adolescents relating to sex and sexuality does not find a place in them. What reasons do you assign for non-inclusion of this topic?

_____

_____

_____

28. Mention one of the myths and misconceptions that adolescents generally suffer from.

_____

29. Do you know how to use the following techniques specially for developing skills and influencing attitudes ?
    (i) Role play Yes/No

    (ii) Value clarification Yes/No

30. Can you comfortably and effectively communicate with adolescent students on matters relating to sex and sexuality? Yes/No

APPENDIX – iv

EVALUATION OF THE TRAINING PROGRAMME

Direction: Please evaluate this training programme so as to enable us to make the future training programmes more effective. Do not put your name on this form.

1. Please rate the utility of the following:

(a) Training Material/Training Package	Very Good ( )	Good ( )	Poor ( )
(b) Content Session (Rate them in terms of how interactive and participatory these sessions have been).	Very Good ( )	Good ( )	Poor ( )
(c) Demonstration Sessions by Resource Persons	Very Good ( )	Good ( )	Poor ( )
(d) Practice Sessions by Trainees	Very Good ( )	Good ( )	Poor ( )

2. Mention any aspect of the training programme that you found most useful to you. _____ _____

3. Mention any aspect of the training programme that you found the least useful to you. _____ _____

4. Mention additional sessions/topics that you would like to have included in the training programme. _____ _____

5. Mention any comment/suggestion to improve the training programme. _____ _____

APPENDIX – V

REVIEW GROUP MEETING NOVEMBER 15-17, 1999

LIST OF PARTICIPANTS

SNo.	Name and Address	Telephone No	
		Off	Res
1.	DrAGSathe Family Planning Association *of* India, Ganesh Khind Road, Pune-411016	5885289	5676442
2.	Dr (Mrs) Savita Sinha Professor, DESSH, NCERT, New Delhi -110 016, New Delhi	6562582	6518018
3.	Ms Kusum Nijhawan Consultant, NACO		5930781
4.	Prof MK Premi 1036, Sector D-l, Vasant Kunj, New Delhi-110 070		6137696
5.	DrMAHaque Additional Director, Ministry of Environment & Forests, Govt of India New Delhi	4360667	91-360893
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SNo.	Name and Address	Telephone No	
		Off	Res
8.	Mr Ramesh Chandra Project Officer, Pop. & Dev. Edn. Cell, NCTE C-2/10, Safdarjung Dev Area, New Delhi-16	6967517 6561349 6967648	6855079
9.	Dr (Mrs) Kanan Sadhu Sr Lecturer, NCERT, Sri Aurobindo Marg, New Delhi	6964083	7413831
10.	Mrs Nisha Pesin DAV College Managing Committee, Chitra Gupta Rd, New Delhi	3620921	7872263
11.	Mr Satya Deo Bareth Programme Coordinator, Population and Development Education, State Resource Centre for AE, Jhalana International Area, Jaipur - 502 004	0141-518698 -510912	0141-780313
12.	Ms Anuradha Baijal PGT (Biology), Maharishi Patanjali, Vidya Mandir, Allahabad		460307
13.	Ms Vinita Mathur TGT (Bio), St. Thomas School, Mandir Marg, New Delhi-110 001		6476354
14.	Mrs Madhu Kapoor PGT School Social Worker, St Thomas School, Mandir Marg, New Delhi-110 001	3364094	7180349
15.	Mrs Renu Kalra Spring Dale Senior School, Fatehgarh, Churian Rd, VPO: Nangli, Amritsar -143 001		5191231

SNo.	Name and Address	Telephone No	
		Off	Res
16.	Ms Sukanya Sen Gupta DAV Jawahar Vidya Mandir, Shyamali, Ranchi, Bihar - 834 002		6231275
17.	Dr Indrajeet Singh Kendriya Vidyalaya No 1, Roorkee - 247 667	01332-72402	0133-76077
18.	Dr N U K Menon PGT(SS), Jawahar Lal Nehru School, Habibganj, Bhopal	0755-506733	0755-78005
19.	Ms Shipra Sarcar Air Force Golden Jubilee Institute, Subroto Park, New Delhi- 110010	5692819	6868199
20.	Dr T Chatterjee C/o Dr JK Sinha Indian School of Learning, Katras More, Jharia, Dhanbad, Bihar	0329-207656	0326-208018
21.	Mr SM Kamal Indian School of Learning, Katras More, Jharia, Dhanbad, Bihar	0326-460532	

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1. Prof B P Khandelwal Chairman, CBSE, Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi- 110092	2467263	6511249
2. Mr G Balasubramanian Director (Academic) CBSE, Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi - 110 092	2215829	91-627132
3. Prof D S Muley Consultant, Pop. & Dev. Edn. Cell, CBSE, 17-B, IP Estate, New Delhi-110002	3351235	6855045
4. Mr SP Chawla Project Coordinator, CBSE, 17-B, IP Estate, New Delhi- 110002	3351235	7464913
5. Mrs Usha Sharma Dy Secretary (Academic), CBSE, 17-B, IP Estate, New Delhi - 110 002	3725163	91-631956

Population and Development Cell
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