E4. Choosing Your Children’s Sex and Designer Children

Chapter objectives
There is a long history of discrimination against females in many cultures. In some cultures there is a lower number of females compared to males that indicates there is sex selection against females.

This chapter aims to:
1. Describe sex selection.
2. Discuss some of the ethical issues associated with its practice.
3. Consider the question of designer children.

E4.1. Sex Selection

Some people would prefer their child to be of one particular sex. Sometimes their preference has specific medical reasons; for example, in instances of sex-linked genetic disorders the couple may want a child of the other sex. This usually means a girl, because most sex-linked disorders affect boys. Another reason why couples would prefer a child of a particular sex is for specific social or even religious reasons.

The presence of both the sex chromosomes, X and Y, generally results in the birth of a male child while the presence of two X chromosomes leads to the birth of a female. A sperm can either carry the X or the Y chromosome along with the halved number of other chromosomes (22), the autosomes, which do not play a very important role in sex determination. The ova are of the same type with 22 autosomes and one X chromosome. This XX-XY sex determination mechanism in nature presents an equal chance of conceiving a female or a male child.

Box 1: Some Definitions

Sex selection: To prefer to continue/terminate a pregnancy as per the desired sex of the unborn child.

Sex determination: The endeavour to know the sex of the unborn child for medical/genetic reasons or for sex selection.

Family spacing: To terminate a pregnancy in case there are already very young children in the family.

Family planning: To terminate a pregnancy in case the child is not wanted by the couple.

Sex ratio: The number of females per thousand males.

Embryo: (Greek word meaning – to swell) term given to a human conceptus from conception until 8 weeks gestation.

Fetus: (Latin word meaning – little one, young one or offspring) term given to the human conceptus from 8 weeks gestation until birth.

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Q1. Would you like to have a girl or a boy? If you already had 3 boys would you like to have the next child be a girl?

E4.2. Pregnancy Termination

**Abortion** or the deliberate termination of termination is a medical procedure in which a fetus is not allowed to develop fully to term but is forced out of the mother’s womb. The process can be unsafe for the mother and can cause complications and even her death, especially in countries where access to experienced and safe medical clinics is restricted for economic or legal reasons. There are rarely grave medical conditions in which such a procedure is the only means to safeguard the health of the mother.

Many a times however, the simplicity of the procedure and the failure in upholding the life of the unborn has led to its misuse in various regions. Ultrasonography (the use of sound waves to form an image visible on a monitor) and a number of medical genetic techniques have made it easier to identify the sex of a child prenatally (before birth) thereby facilitating its use for sex selection, sex determination, family spacing and family planning (See Box 1).

The issue of abortion raises a number of issues pertaining to the ethical (right and wrong actions), social and legal implications. It has become a matter for even greater societal concern in the wake of the falling sex ratios, i.e. the birth of unequal number of girls and boys, which are seen in some states in India, Korea and China. There are laws against abortion for reasons of gender selection in many Asian countries, but the practice still occurs.

Advances in instrumentation and technology meant for diagnosis of diseased conditions can reveal the sex of an unborn child, sometimes associated with a genetic disorder (See chapter on Prenatal Diagnosis). However, this technology has been misused in many parts of the world to terminate a pregnancy for non-medical reasons (and there will always be an ethical debate over termination in the case of a fetus having a genetic disease). The vast majority of abortions are for normal fetuses not wanted by the parents at that time or because there are too many children already in the family.

Q2. What will an embryo or a fetus develop into? What is the chances of a fetus at 12 weeks being born if left to the natural course of pregnancy?

Q3. Is it right to terminate a pregnancy because the parents do not want a child? How about if it is because it is a girl child?
E4.3. Designer Children

In societies where males are preferred for family succession and females shunned, or for economic factors, for example, because of the dowry system in India, such practices have mushroomed being misconstrued and misused both by the medical professional and the people. This has resulted in less number of girls as compared to boys. The situation has long term consequences when there will be scarcity of brides in a particular society; men will quarrel over brides, killing each other and especially targeting married men to marry their widows, or seek brides outside their caste and social set-up. This will lead to insecurity of married life with detrimental affects for the children also.

The problems with pregnancy termination hence raise ethical queries into the status and rights of the unborn child, of the girl child, pregnancy termination as a family planning and spacing method, failure of medical ethics and legislation formulation and implementation. Some of the long-term consequences include social and marital implications, insecurity for married men and their children, lack of brides, etc.

Assisted reproductive technology (ART) can also be used for designer children. This means to design the characters in children before they are born or conceived. Preimplantation diagnosis (See chapter E2) can allow embryo selection at 3 days of age when an 8-cell embryo, and parents can then choose which embryo to implant. Most individuals who donate gametes (eggs or sperm) are motivated principally by the desire to help infertile couples and do it for free or a modest fee. However, the question arises whether the ARTs should be available to all to try to improve selected qualities in their children which are unrelated to health.

Athletic achievement, beauty, brains, social skills come immediately to mind. It is a fact that some wealthy couples, in the hope of having gifted or attractive children, are willing to pay large sums of money to donors they feel produce gametes of outstanding genetic quality. This demand has led, particularly in the US, to the development of competitive markets for superior sperm and oocytes dubbed “über-eggs” raising disconcerting echoes of eugenics (selective breeding programs) and related fears. The commercialization of oocyte donation, for instance, may coerce women to ignore the possible risks of IVF procedures or to conceal undesirable aspects of their and their family’s medical history (payment for organ donations is widely prohibited for this reason). An additional concern is whether extraordinary payments for gametes converts the child into a mere commodity.

Q4. List both short term and long term consequences of an act where sex ratio is deliberately altered.

Q5. Would you like to choose gametes from famous persons? From clever persons? From strong persons? Or just from the person you love?