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Family Planning Methods and Spacing Between Live Births

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Introduction

You have learnt about the concept of the need for family planning and family planning policies and family welfare programmes of the government of India in the previous unit. A detailed discussion of the different family planning methods, their advantages and disadvantages follows in this chapter. Since there can be side effects one must always seek the opinion of a qualified physician before deciding to use any of the methods. Above all the husband and wife should seriously consider the issues and acquire accurate knowledge on the subject. Since some religions have reservations on the use of family planning methods, the couple should also seek necessary spiritual guidance.

Family Planning Methods

Family Planning Methods or contraceptive methods by definition are preventive methods to help couples to avoid unwanted pregnancies. There are a number of methods which are commonly used by the people. Let us discuss details on those methods one by one.

1) **Condom**

Condom is the most widely used barrier device by the males around the world. In India, it is known by its trade name NIRODH, a Sanskrit word meaning

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prevention. Condom is receiving new attention today as an effective simple "spacing" method of contraception, without side effects. In addition to preventing pregnancies, condom protects both men and women form sexually transmitted diseases.

There are two kinds of condoms latex and skin. Latex condoms are by far the most widely used. The condom is fitted on the erect penis before intercourse. The air must be expelled from teat end to make room for the ejaculation. The condom must be held carefully when withdrawing it from the vagina to avoid spilling seminal fluid into the vagina after intercourse. A new condom should be used for each sexual act. Condom prevents the semen from being deposited in the vagina.

The advantages of condom are:

1) are easily available,

2) safe and inexpensive,

3) easy to use, do not require medical supervision.

4) no side effects,

5) Light, compact and disposable, and

6) They provide protection not only against pregnancy, but also against sexually transmitted diseases (STD).

The disadvantages are:

1) it may slip off or tear during intercourse due to incorrect use and

2) interferes with sex sensation locally about which some complain while others get used to it, by repeated use.

Although there is much publicity about the use of condoms to avoid pregnancy and getting infected with

STDs and HIV/AIDS you must remember that the condom does not guarantee hundred per cent safety. There is certainly a risk involved. There are several reported and confirmed cases of condom failure as a preventive method for pregnancy as well as HIV/AIDS infection.

2) **Diaphragm**

The diaphragm is a vaginal barrier. It was invented by a German Physician in 1882. It is a shallow cap made of synthetic rubber or plastic material. It has a flexible rim made of spring or metal. It is important that a woman be fitted with a diaphragm of the proper size.

The diaphragm is inserted before sexual intercourse and must remain in place for not less than 6 hours after sexual intercourse. A spermidical jelly is always used along with the diaphragm. Side effects are practically nil.

Advantages

The primary advantage of the diaphragm is the almost total absence of risks and medical contraindications.

Disadvantages

Initially a physician or some other trained person will be needed to demonstrate the technique of inserting the diaphragm into the vagina to ensure a proper fit. After delivery, it can be used only after involution of the uterus is completed. Hence it is not very useful in Indian families especially in rural area where medical assistance and privacy hardly exist. Further repeated or frequent pregnancy is a barrier to regular use of diaphragm.

3) **Intra-Uterine Devices (IUDs)**

The IUD are devices used for the control of conception by introducing a foreign body into the uterus. There

are two basic types of IUD: 'non-medicated' and 'medicated'. Both are usually made of polyethylene or other polymoss. In addition the medicated or bioactive IUDs release either metal ions (copper) or hormones (progestogens).

The IUDs are of different generations such as:

The non-medicated or insert IUDs	_	First generation IUDs
The copper IUDs	_	Second generation IUDs
The hormone releasing IUDs	_	Third generation IUDs

The medicated IUDs or the second and third generation IUDs were developed to reduce the incidence of side-effects and to increase the contraceptive effectiveness. However, they are more expensive and must be changed after a certain time to maintain their effectiveness.

The First Generation IUDs

The first generation IUDs comprise the inert or non-medicated devices. They appear in different shapes and sizes loops, spirals, coils, rings and bows. Lippes Loop, double-S-shaped device, is a very commonly used IUD in India.

The Second Generation IUDs

A new approach was devised in 1970s by adding copper to the IUD. It was found that, metallic copper had a strong anti-fertility effect. The addition of copper made it possible to develop smaller devices which are easier to fit. There are different types of copper IUDs – Copper-7, Copper-T and Nova-T. The Indian Council of Medical

Research in 1979 recommended to the Department of Family Planning the use of Copper-T. According to the recent reports copper devices have become very popular in India.

Advantages

1) Low expulsion rate,

2) Lower incidence of side effects,

3) Easier to fit even in nulliparous women,

4) Better tolerated by nullipara,

5) Increased contraceptive effectiveness, and

6) Effective as post-coital contraceptives, if inserted within 3 to 5 days of unprotected sexual intercourse.

The Third Generation IUDs

A third generation IUDs are based on another principle that is release of a hormone. The most widely used hormonal device is progestseart, which is a T-shaped device filled with progesterone, the natural hormone. The hormone is released slowly in the uterus. Long-term clinical experience with hormone releasing IUD has shown it to be associated with lower menstrual blood loss and fewer days of bleeding than other copper devices. The hormonal devices would be valuable for women in developing countries in whom excess blood loss caused by inert devices have shown to result in significant anemia. But these devices are too expensive, to be introduced on a wider scale.

Advantages

1) Simplicity, that is no complex procedures are involved in insertion; no hospitalization is required.

2) Insertion takes only a few minutes.

3) Once inserted IUD stays in place as long as required.

4) Inexpensive

5) Contraceptive effect is reversible by removal of IUD.

6) Virtually free of systematic metabolic side-effects associated with hormonal pills.

7) Highest continuation rate.

8) There is no need for the continual motivation required to take a pill daily or to use a barrier method consistently; only a single act of motivation is required.

4) **Hormonal Contraceptives**

Hormonal contraceptives when properly used are the most effective spacing methods of contraception. They provide the best means of ensuring spacing between one child birth and another.

Hormonal Contraceptives currently in use may be classified as follows:

i) Oral pills

- Combined pill
- Progestogen – only pill
- Post-coital pill
- Once-a-month (long acting) pill
- Male pill

ii) Depot (slow release) formulations

- Injections
- Subcutaneous implants
- Vaginal rings

i) **Oral Pill**

The Pill is given orally for 21 consecutive days, beginning on the 5th day of the menstrual cycle, followed by a break of 7 days during which period menstruation occurs. When the bleeding occurs this is considered as the first day of the next cycle. The bleeding which occurs is not like normal menstruation, but is an episode of uterine bleeding which from an incompletely formed endometrium caused by the withdrawal of exogenous hormones. Therefore it is called "withdrawal bleeding", rather than menstruation. If bleeding does not occur, the woman is instructed to start the second cycle one week after the proceeding one. Ordinarily the woman menstruates after the second course of pill intake.

The pill should be taken every day at a fixed time, preferably before going to bed at night. The first course should be started strictly on the 5th day of the menstrual period, as any deviation in this respect may not prevent pregnancy. If the user forgets to take a pill, she should take it as soon as she remembers, and that she should take the next day's pill at the usual time.

If taken according to prescription combined pills are 100 percent effective in preventing pregnancy. There is the benefit of pregnancy prevention and risk of abnormal cycle bleeding.

The other types of pills are to be taken according to the prescription of a medical practitioner.

Adverse Effects

1) *Cardio vascular effects*

   Based on some of the studies conducted in different parts of the world, it is reported that, women who had taken the pill had a 40 percent higher death rate than women who had never taken the pill.

Virtually, all the excess mortality was due to cardio vascular causes, that is myocardial infraction.

2) *Carcinogenesis*

Even though there is no clear evidence, the WHO multicentre Case Control Study on the possible association between the use of hormonal contraceptives and neoplasia, indicated a trend towards increased risk of cervical cancer with increasing duration of oral contraceptives.

3) *Metabolic effect*

The metabolic effects included the elevation of blood pressure, the alteration in serum lipids with a particular effect on decreasing high density lipoproteins, blood clotting and the ability to modify carbohydrate metabolism with the resultant elevation of blood glucose and plasma insulin. These effects are positively related to the dose of the progestogen component.

4) *Other adverse effects*

1) Liver disorders

2) Effect on lactation

3) Effect on subsequent fertility

4) Ectopic pregnancies and

5) Effect on foetal development.

5) *Common unwanted effects*

1) Breast tenderness, fullness and discomfort

2) Weight gain

3) Headache and migraine

4) Bleeding disturbances.

Beneficial Effects

The single most significant benefit of the pill is its almost 100 percent effectiveness in preventing pregnancy.

Women taking oral contraceptives should be advised annual medical checkup.

ii) **Depot Formulations**

The depot formulations are effective, long acting oestrogen free for spacing pregnancies, in which a single administration suffices for several month or years. The injectible contraceptives, subdermal implants, and vaginal rings come in this category.

a) *Injectable contraceptives*

They offer more reliable protection against unwanted pregnancies than the other barrier techniques.

b) *Subdermal (subcutaneous) implants*

The Population Council, New York has developed a subdermal implant known as 'Norplant' for long-term contraception. The Norplant ® -2, the Silastic capsules or rods are implanted beneath the skin of the forearm or upper arm. Effective contraception is provided for 5 years. The contraceptive effect of Norplant is reversible on removal of capsules. The main disadvantages, however, appear to be irregularities of menstrual bleeding and surgical procedures necessary to insert and remove implants.

c) *Vaginal Rings*

Vaginal rings containing levonorgestrel have been found to be effective. The hormone is slowly absorbed through the vaginal mucosa, permitting most of it to bypass the digestive system and liver and allowing a potentially lower dose. The ring is

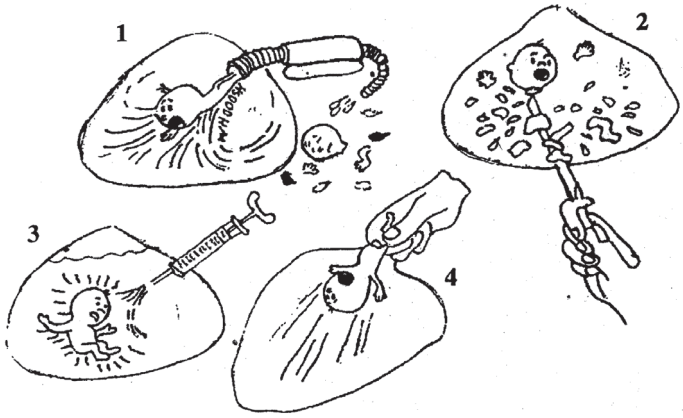
worn in the vagina for 3 weeks of the cycle and removed for the fourth.

5) **Post Conceptional Methods**

i) ***Menstrual Regulation:*** It consists of aspiration of the uterine contents 6-14 days of missed period, but before most pregnancy tests can accurately determine whether or not a woman is pregnant. Some regard menstrual regulation as a very early abortion; others view it as a treatment for delayed periods.

ii) ***Abortion:*** Abortion is theoretically defined as termination of pregnancy before the foetus becomes viable (capable of living independently). This has been fixed administratively at 28 weeks.

Abortions are usually categorized as spontaneous and induced. Spontaneous abortions occur once in every 15 pregnancies. They may be considered "Nature's method of birth control". Induced abortions, on the other hand, are deliberately induced. They may be legal or illegal. Illegal abortions are hazardous. They are usually the last resort of women determined to end their pregnancies at the risk of their own lives.



1. Suction Method
2. D&C (Dilation & Curettage)
3. Injection of Saline
4. Surgical Operation or Caesarean Section

Abortion Hazards

Abortions, whether spontaneous or induced, whether in the hands of skilled or unskilled persons are almost always filled with hazards; resulting in maternal morbidity and mortality.

The early complications of abortion include shock, septic condition, uterine perforation, cervical injury, thromboembolism, anesthetic and psychiatric complications. The late complications include infertility, ectopic gestation, and increased risk of spontaneous abortion and reduced birth weight.

6) **Other Methods of Family Planning**

i) **Abstinence**

The only method of birth control which is completely effective is complete sexual abstinence. It is sound in theory, in practice it amounts to repression of a natural force and is liable to manifest itself in other directions such as temperamental changes and even nervous breakdown. Therefore, it can hardly be considered a method of contraception to be advocated to the masses.

ii) **Coitus Interruptus**

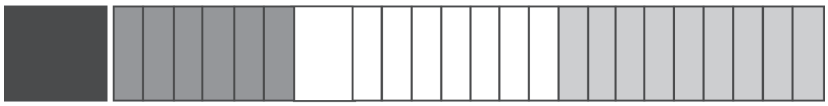
This is the oldest method of voluntary fertility control. It involves no cost or appliances. In this method, the male withdraws before ejaculation, and thereby tries to prevent deposition of semen into the vagina. Some couples are able to practice this method successfully, while others find it difficult to manage. The chief drawback of this method is that, the precoital secretion of the male may contain sperm, and even a drop of semen is sufficient to cause pregnancy. Further, the slightest mistake in timing the withdrawal may lead to the deposition of a certain amount of semen.

The alleged side-effects (eg. Pelvic congestion, vaginismus, anxiety neurosis) were highly magnified. It is better than using no family planning methods at all. It is admitted to be true that coitus interrupts along with abstinence and abortion played a major role in reducing birth rates in the developed world during the 18th and 19th centuries.

iii) **Safe Period (Rhythm Method)**

This is also known as the "Calendar method", first described by Ogino in 1930. The method is based on the fact that ovulation occurs from 12 to 16 days before the onset of menstruation (see figure). The days on which conception is likely to occur are calculated as follows:

Regulation of the period and Safe Period Method



Period

Non Fertile Days

Fertile Days

If you have irregular period, with a little treatment you can regulate your period. Then you divide your cycle in 3 equal parts. The infertile days are the 1st and the last parts of cycle.

The shortest cycle minus 18 days gives the first day of the fertile period. The longest cycle minus 10 days gives the last day of fertile period. For e.g. if a woman's menstrual cycle varies from 26 to 31 days, the fertile period during which she should no have intercourse would be from the 8th day to 12th day of the menstrual cycle, counting day one as the first day of the menstrual cycle. Figure, shows the fertile period and safe period in a 28-day cycle.

The drawbacks of calendar method are:

1) women's menstrual cycles are not always regular. If the cycles are irregular, it is difficult to predict the safe period.

2) it is only possible for this method to be used by educated and responsible couples with a high degree of motivation and co-operation.

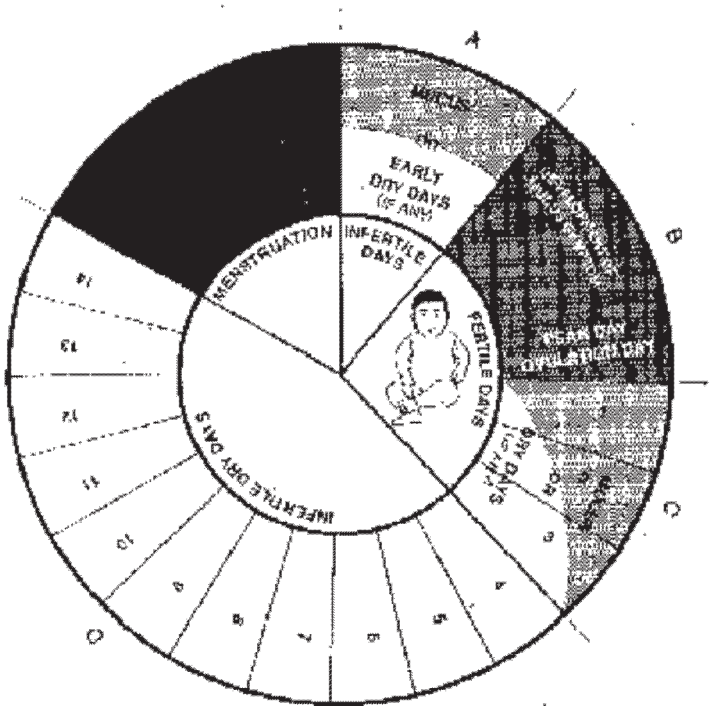
3) compulsory abstinence of sexual intercourse for nearly one half of every month may be called "programmed sex".

4) this method is not applicable during the postnatal period.

5) a high failure rate.

The Menstrual Cycle

The Mucus Pattern of Fertility and Infertility



7) **Natural Family Planning Methods**

a) basal body temperature (BBT) method,

b) cervical mucus method, and

c) symptothermic method.

Here the woman employs self-recognition of certain physiological signs and symptoms associated with ovulation as an aid to ascertain when the fertile period begins. For avoiding pregnancy, couples abstain from sexual intercourse during the fertile phase of the menstrual cycle. They totally desist from using drugs and contraceptive devices. This is the essence of natural family planning.

a) **Basal Body Temperature Method**

The BBT method depends upon the identification of a specific physiological event — the rise of BBT at the time of ovulation, as a result of an increase in the production of progesterone. The rise of temperature is very small, 0.3 to 0.5 degree C. When no ovulation occurs (e.g. as after menarche, during lactation) the body temperature does not rise. The temperature is measured preferably before getting out of bed in the morning. The BBT method is reliable if intercourse is restricted to the post-ovulatory infertile period, commencing 3 days after ovulatory temperature rise and continuing up to the beginning of menstruation. The major drawback of this method is that, abstinence is necessary for the entire preovulatory period.

b) **Cervical Mucus Method**

This is known as ovulation method. This method is based on the observation of changes in the characteristics of cervical mucus. At the time of ovulation, cervical mucus becomes watery clear becoming raw egg white, smooth, slippery and

profuse. After ovulation, under the influence of progesterone, the mucus thickens and lessens in quantity. It is recommended that, the woman use a tissue paper to wipe the inside of vagina to assess the quantity and characteristics of mucus. This method requires a higher degree of motivation than most other methods. The appropriateness of this method in countries like India, especially among the rural and poor is doubtful.

c) **Symptothermic Method**

This method combines the temperature, cervical mucus and calendar techniques for identifying the fertile period. If the women cannot clearly interpret one sign, she can 'double check' her interpretation with another.

To sum up, natural family planning demands discipline, and understanding of sexuality. It is not meant for everybody. The educational component is more important with this approach than with other methods.

d) **Breast-feeding**

Field and laboratory investigations have confirmed the traditional belief that, lactation prolongs post partum amenorrhea and provides some degree of protection against pregnancy. No more than 5-10 percent of women conceive during lactational amenorrhea, and even this risk exists only during the month preceding the resumption of menstruation. However, one menstruation returns, continued lactation no long offers any protection against pregnancy.

e) **Birth Control Vaccine**

Several immunological approaches for men and women are being investigated. The most advanced research involves immunization with a vaccine

prepared from beta sub-unit of human chronic gonad tropic (HCG) a hormone produced in early pregnancy. Immunization with HCG would block continuation of the pregnancy. Antibodies appeared in about 4-6 weeks and reached maximum after about 5 months and slowly declined reaching zero levels after a period ranging from 6-11 months. The immunity can be boosted by a second injection. Research on birth control vaccines continues and uncertainties are great.

8) **Terminal Methods (Sterilization)**

Voluntary sterilization is a well-established contraceptive procedure for couples desiring no more children. Currently female sterilizations account for 85 percent and male sterilizations for 10-15 per cent of all sterilizations in India, in spite of the fact that, male sterilization is simpler, safer and cheaper than female sterilization.

Sterilization offers many advantages over other contraceptive methods. It is a one-time method. It does not require sustained motivation of the user for its effectiveness. It provides the most effective protection against pregnancy. The risk of complications is small if the procedure is performed according to accepted medical standards. It is cost-effective.

i) **Male Sterilization**

Male sterilization or vasectomy being a comparatively simple operation can be performed even in primary health centres by trained doctors under local anesthesia. In vasectomy, it is customary to remove a piece of vas at least 1 cm after clamping. The ends are ligated and then folded back on themselves and sutured into position so that, the cut ends, face away from each other. This will reduce the risk of recanalisation at a later

date. It is important to stress the person is not immediately sterile after the operation, usually until intermediate period, another method of contraception must be used. If properly used vasectomies are 100 percent effective. Vasectomy is a simpler faster and less expensive operation than tubectomy.

ii) **Female Sterilization**

Female sterilization can be done as an interval procedure; post partum or at the time of abortion. There are two such commonly used methods.

a) **Laparoscopy**

This is a technique of female sterilization through abdominal approach with a specialized instrument called "laparoscope". The abdomen is inflated with gas (carbon dioxide, nitrous oxide or air) and the instrument is introduced into the abdominal cavity to visualize the tubes. Once the tubes are accessible, the Falope rings (or clips) are applied to obstruct the tubes. This operation should be undertaken only in those centres where specialist obstetrician-gynaecologists are available. The short operating time, shorter stay in hospital and a small scar are some of the attractive features of this operation.

b) **Minilap operation**

Minilaparotomy is a modification of abdominal tubectomy. It is a modification of abdominal tubectomy. It is a much simpler procedure requiring a smaller abdominal incision of only 2.5 to 3 cm conducted under local anaesthesia. It is found to be a suitable procedure at the primary health centre. It has the advantage over other methods with regard to safety,

efficiency, and ease in dealing with complications. Minilap is suitable for postpartum tubal sterilization.

Spacing Between Live Births

Till now you have learnt the different methods of family planning. Now let us see what is spacing and how does it affect the health of mother and child.

Spacing is the interval between two lives births. There are a number of social and cultural factors which have tended to increase the spacing between two births. The segregation of women after delivery, the taboo of sex relations when the child is young and abstinence on certain religious days are some of them. Prolonged lactation which has been observed may also be an important factor. The Hindu joint family has also helped in minimizing the frequency of sexual relationship. The prevalence of 'purdah' system did not allow the couples to meet very frequently. The so called rigid rules of social behaviour prevalent in traditional families did not allow undue sexual freedom to the couples. Social customs of the wife making frequent visits to her parental home, having the first child in her mother's house and such other customs have helped to increase spacing between two births.

The above mentioned factors which helped to increase spacing are gradually changing. With increased education, urbanization and economic prosperity, social atmosphere is changing. Widow remarriage is becoming more common; moral restraint is not much observed; and the joint family system is giving way to nuclear families. All these factors affect spacing. The birth of children is a voluntary decision of the couples rather than a culturally oriented phenomenon.

Religious Views and Spiritual Guidance

Our lives are profoundly influenced by advancement in the field of science and technology. As a result of these

advancements some people tend to consider religion and belief in God outdated and irrelevant. For them the teachings and heritage of the great religions make little or no sense.

It is true to say that, the teachings and traditions of the important religions have been the conscience keepers of the world. The ethical views of different religions have always condemned the violation of natural law.

All religious accept regulating family size by way of self-control and regulating sexual union between couples. The same way all religions condemn abortion and consider it as murder.

According to Hindu Vedas, abortion is considered to be a more serious sin than the killing of a Brahman (Shatapada Brahmana, XII, 3-11, Katha Samhita 31.7).

The 'Charka Samhita; a classical work on Hindu Medicine states that conception takes place in the womb by the union of semen and ovum, when the soul, along with the mind, enters the zygote. The embryo is of unique constitution, because it is a composite of the vital information it receives from both parents. The humanization of the individual takes place at the moment of conception and all future growth is only the actualization of conceptual potency.

Based of 'Shastras' and on the principle that the genetic components are complete at conception, the modern Hindu belief is that life begins with conception.

Though Hindu ethics condemn abortions generally, it accepts abortion on the grounds of rape, incest and when the mother is at the risk of grave injury or death. This is because, Hindu ethics place greater weight on the maternal rights rather than on the unborn child's right.

The basic teaching of Islam is that, life is a gift of god. Hence the Koran warns men not to interfere with the work of God. It is on this faith that, Muslims generally oppose abortion. The laws of Islam prohibit abortion since the foetus is considered a living being. But as per the doctors, foetus is only a human being after the fourth month. Hence abortion is allowed in general during the first ninety days of pregnancy and it is prohibited immediately afterwards. However, like Hindu ethics, Islamic ethics also permits abortion on the basis of pregnancy which endangers the mother's life, and where it is the result of a rape that does not result in marriage.

The Christian religion also condemns abortion. Christianity encourages couples to have self-control and promote natural family planning methods. Christianity considers abortion a grave sin and calls it murder. At the time of conception a new life has started and abortion is the killing of that new life. The Holy Bible warns emphatically against abortion at any stage of conception.

There are certain myths regarding religious faith, population, growth and family planning. Hindu religion promulgates monogamy and there is no law prohibiting family planning. But Muslim religion allows polygamy and prohibits family planning and hence there is rate of increase in population among them. These myths are to be examined in the light of studies conducted in India.

When these above mentioned myths are examined based on scientific study, it is understood that they remain as myths even now. Sample surveys conducted by Operations Research Group in 1983 and 1990 reports that, among Hindus 36 % who accepted any one kind of family planning methods in 1980 and increased to 46% (+10%) in 1989. Among Muslims it was 23% in 1980 and increased to 34% (+11%) in 1989. Similarly,

among scheduled castes it was 28% (1980) increased to 39% in 1989. Among Scheduled Tribes it was 33 % in 1980 and continued the same pattern in 1989 also.

Muslims are politically and culturally against the attitude of western concept of sexuality and abortion, rather than on family planning. Christians are very conservative about artificial family planning methods. But it is deadly against abortion.

Even though, all these religious are not positively promoting family planning, in the State of Kerala where literacy rate is very high, education of women is high and a high index of social development exist, the small family norms has been accepted and has become a way of life among people of different walks of life, no matter to what religion they belong.

Preference for Male Child

In India sons are important from a religious point of view. According to Hindu religion, a man, attains salvation only when a son performs certain rites at his funeral.

Preference for a son is not only a religious point of view, sons are considered as providers of security in old age and during prolonged illness. There are many other reasons as well. Once married, the girls are considered to belong to their husband's family, and therefore, they cannot be relied on for support in old age. In fact, there are strong taboos on taking any kind of help from a married daughter.

According to Blaikie the reasons for the importance of sons in Indian culture are:

1) Sons are required to perform the last funeral rites (sraddha) for their parents. It is interesting to note that in Sanskrit 'put' means hell and 'putra' means literally 'one that saves from hell'.

2) Sons, upon marriage, attract dowries for the parents.

3) Sons, provide economic and emotional security in old age. It is the son, not the daughter who remains at the parent's home after marriage.

4) Sons provide income and help in the house and in the fields from an early age.

5) Sons bring prestige and local political power (and even protection against the threat of physical force in confrontational situations) to the household, the kindship group and caste.

The question of son survivorship is therefore, so vital that people do not feel satisfied with just one son. They seek safety in numbers.

Women too have compelling reasons for desiring children, preferably sons. The most intense hope of a young woman is that she proves her worth to her husband's family by producing a healthy male child. The birth of a son entitles a woman to respect and status. She and her baby have been conditioned to see their success and destiny in terms of procreation specially of a son. In actual practice it is found that, the above arguments for male child is myth. Now as a result of the disintegration of joint family system and increase in the number of nuclear families, the expectation on the son to provide security at old age is coming down. With regard to the amount of work done by males and females, it is almost equal. Hence preference for male child is a myth.

Conclusion

In this chapter you have learnt the different family planning methods, including natural family planning its advantages and disadvantages. We also learnt the sterilization methods used in males and females as well as on abortion and religious views on abortion.

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