CHAPTER: I

INTRODUCTION
I. INTRODUCTION

Young people between ages 10 to 19 years number more than one billion worldwide. Their estimated number in India is 190 million. They comprise over one fifth of the entire population. Adolescence is the most important & critical developmental stage. However, many cultures recognize & mark transition from child to adult ignoring the concept of transitional period i.e. the adolescence as a developmental life stage. For most of them end of the childhood marks the beginning of the adulthood - adolescence being an unaffordable luxury.

The origin of the word adolescence is from a Greek Latin word 'adolesere', which means to grow or to grow to maturity. It is the process of development from childhood to adulthood. It begins with the appearance of secondary sex characteristics & terminates with the cessation of somatic growth. It comprises nearly half of the growing period in man.

During this period of growth marked morphological changes occur in all organs & systems. The hypothalamus - pituitary - gonadal system becomes mature. There is marked acceleration in the size & change in the contour of the body. Gonadal growth & development, growth of the sexual organs, characteristic changes in the body composition & the growth of most of the systems takes place. This leads to increased strength of the body & efficiency of energy production. These physiological changes of adolescence are more closely related to the growth spurt & to the maturation of reproductive organs than to the chronological age.

A growth spurt occurs during adolescence as a part of maturation, which is hormonally driven. Weight & height velocities are greater than between ages 5 & 10 years. Growth occurs in the skeleton, in the muscles & almost in all systems & organs of the body except brain & head.

Onset of growth spurt is between the ages of 10-14 years. Peak Height Velocity (PHV) occurs about one & one & a half-year before menarche. Additional height of 10.8-22.3 cms is gained after PHV & 7.4-10.6 cms. after menarche. This additional height may be gained over a period of 4.7 years after menarche.
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Growth of the pelvic bones which is critical for preventing obstructed labour continues for several more years after height is complete. Therefore menarche is not a good marker for optimal readiness to reproduce because growth continues for 4-7 years afterwards. Although puberty marks the biological beginning of adolescence, markers indicating its completion are multiple & not well defined. The only universal definition of adolescence appears to be 'although no longer considered a child, the young person is not yet considered as an adult'. During this period many adolescents experience critical life events - first marriage, first sexual intercourse & also parenthood.

Unfortunately in India, this group of adolescents is the most neglected by almost all programmes & planners & female adolescents are the worst affected. Adolescent girl is also a child since she has not completed her growth & development, which includes physical, emotional & sexual components & also personality development. Rapid growth of entire body, enlargement & maturation of the pelvic organs are still continuing. In other words adolescent girl still being a child is not yet prepared according to the nature for pregnancy & childbirth. However child giving birth to a child is not uncommon in almost all parts of the world.

It has been observed that the number of teenage pregnancies has increased in many parts of the world. This is because number of teenagers is more & average age at menarche is declining consistently over last many years. Another reason is related to the deeply rooted culture. In the past, large family size was necessary for the survival of a community in conditions of high mortality. Such deeply rooted cultures are difficult to change or take a long time to change & continue over years.

In addition to this, lack of job opportunities or alternatives to early marriage & early motherhood cause them to persist. Marriage & motherhood may be one of the few ways in which a young woman can affirm her value & identity. Even though young couples want to prevent pregnancy they may be unable to do so because of lack of knowledge or difficulty in accessing contraceptive methods.
All these reasons may be responsible for the increase in the problem of teenage pregnancy worldwide. Minimum legal age has been defined to protect children & adolescents from too early marriage & its consequences. However actual age of marriage seems to be lower than legal age which indicates that culture & tradition take precedence over the legal enforcement. In India mean age at marriage has increased from below 15 years prior to 1961 to about 19 years in 1991. However, during the same period number of married women in the age group 15-19 years has increased from 12 million to 13 million & proportion of teenage mothers has increased by 50%. This is likely to increase further. Even after 20 years of passing the minimum legal age act, for various cultural, social, economic reasons early marriages are still prevalent in India. Over the years as a secular trend age at menarche is gradually declining & this has increased the reproductive exposure of young girls, which begins at a much earlier age. It has been estimated that if all the marriages are postponed beyond 20 years totally avoiding adolescent pregnancy, the number of births will come down by almost 20-30%. Another facet of this problem is related to status of a woman in the community. Although both men & women suffer from the effects of the socio-economic inequity women are at a greater disadvantage than men due to their inferior position in the society. The status of a woman determines the care she receives & upbringing of her as a child. Her future role within the cultural setting will determine the education & training she receives, which in turn will determine her age at entry into the reproductive role. Health issues of women can be best analysed with a 'life cycle approach'. They start with the girl embryo in her mother's womb. Its survival & growth will depend on maternal nutrition, freedom from infection & diseases, unhealthy practices like smoking & drug abuse, hard work during antenatal period etc. Other factors include availability & accessibility of good antenatal, natal, postnatal care & mother's knowledge, willingness and utilisation of all these services.
Breastfeeding the girl child, adequate nutrition, rearing, immunisation, growth monitoring & educating through childhood & adolescence affect her growth & development. Lastly marriage & pregnancy at an appropriate age complete the cycle. In all these stages of the life cycle a 'girl child' faces the problems of discrimination. The childhood deprivation ends in nutritionally deprived mother who herself is short, undernourished & underweight producing LBW babies. This cycle of LBW babies continues from one generation to another.

The problem of discrimination is universal & therefore the World Health Report 1995 says that, 'the problem of a baby girl born in one of the least developed countries begins before birth since her mother is likely to be in poor health. If she is born in southern Asia, she has a 1 in 3 chance of being underweight, a greater chance of dying in infancy & a high probability of being malnourished throughout childhood. She has a 1 in 10 chance of dying before her first birthday & 1 in 5 chance of dying before her fifth. In some African countries her chance of being vaccinated is 1 in 2. She will be brought up in an inadequate housing under insanitary conditions thus exposing her to various infectious diseases. She will have 1 in 3 chance of ever getting enough schooling to learn how to read & write. She will marry in her teens & will have too many pregnancies too close together unless she dies in childbirth before that. The ancient traditions will prevent her from eating certain nutritious foods during her pregnancy & expose her to some of the dangerous practices increasing her already existing risk. She will be chronically anemic & will be in constant dangers from infectious diseases.

Caring for her family she will work hard not only at her home but also in the field. During her lifetime, if she gets exposed to some major illnesses, she will succumb quickly, having no access to medical care. She will not be able to pay anything herself and her country currently has less than a 9 $ a year to spend on her health.

The schooling seems to be closely linked to health status & pregnancy. A blackboard & a piece of chalk can be as powerful as antibiotics & as effective as contraceptive.
Thus one of the most powerful ways to promote equity, enhance development & protect health, is to improve the education of the adolescents in general & girls in particular. Studies in cultures after cultures around the world have adequately demonstrated the effect of education on virtually every social parameter that has been studied. These fields are - maternal health, maternal mortality, child survival, family nutrition, legal & social justice & of course family income & well being. None of these seems to be linked to the quality of education, its setting or even its contents. Women who have gone to school simply function better & more effectively in every society.

However, there is a problem of poor school enrollment of girls especially in rural & poor families. Economic realities often require young girl to work in field, fetch water & gather fuel wood for her family rather than persue her studies. This increases the school dropouts. Her future lies only in an early marriage & repeated childbirths. For many girls, marriage & pregnancy mean end of their schooling & career. It has been observed that a great majority of the Indian girls reach adolescence & womanhood illiterate or at the most semiliterate, with no knowledge or skills to prepare them for their role as a mother.

In developing countries women & especially adolescents do not enjoy the reproductive rights as envisaged in the UN declaration. Most adolescent girls being illiterate are not aware of FP methods & even if they are, they do not have easy access to FP services or fail to utilise them due to inhibitions or the pressure to attain motherhood to satisfy their in laws.

Another problem that needs to be considered is the nutritional status of young girls. To be a healthy woman there must be a strong foundation of good nutrition from childhood. If each girl receives the food she requires for healthy growth throughout early years, attention to food supplementation during growth spurt would not be necessary. But in a society where girl child has long been deprived & continues to eat the least & last, the hormone driven growth spurt is a brief yet an important opportunity that should not be missed. There is a need to pay close attention to nutritional needs during the hormone driven growth period.
This is a critical but relatively brief period of 2-3 years. Adolescent growth may possibly provide a final chance for intervention, to assure adequate development & nutritional status of a girl child. As it is a time to prepare for the nutritional demands of pregnancy, lactation & heavy workloads.

During this period nutritional requirements are increased. If at this stage adolescent conceives then there is possible competition for nutrients between the adolescent girl & her fetus with increased risk of developing babies who are preterm & LBW babies.

The growth pattern data indicates that, girls in affluent communities attain menarche early & the adolescent growth spurt is relatively short & rapid coming to a halt by 17 years. In poor undernourished adolescents growth spurt is delayed & prolonged. Thus the girls from poor communities marrying early & entering pregnancy while in their teens are denied the advantage of better growth. It has been observed that, adolescent mothers belonging to poor socio-economic backgrounds suffer from chronic nutritional deprivation from the day they enter extrauterine life. They are roughly 10 kg. lighter & 10 cm. shorter when compared to their counterparts in high socio-economic group. Further such adolescent mothers gain less weight or even lose weight during pregnancy. This has additive effect with her underweight, short stature, anemia rendering these 'child mothers' more prone to LBW babies & adverse fetal outcome.

Regardless of whether the pregnancy takes place inside or outside marriage, there are serious biomedical hazards, especially for adolescents below 17 years. They have disproportionate share of all adverse outcomes of pregnancy. Some of the risks are universally reported in majority of the studies.

When compared to women of 20 to 24 years those between 15 to 19 years of age experience higher rates of anemia, toxemia, complications of puerperium & maternal death. PIH is the special risk in adolescents. In addition to this intrapartum hemorrhage, abnormal presentations are also high. Malnutrition & rickets may be the predisposing factors for improper development of the pelvis resulting in rachitic pelvis, platypelloid pelvis & small gynecoid pelvis.
These factors increase the incidence of abnormal presentation & CPD. Abortions are twice common in girls less than 16 years compared to mothers in later age group\textsuperscript{8-11}. In addition, evidence indicates that younger adolescents are more likely to have a second child with shorter interpregnancy interval of 18 months after their first. The second babies born to teenagers also have increased risk of LBW & perinatal death when compared to their first-born siblings\textsuperscript{12}. Along with higher maternal risk, neonatal risk is also more in young mothers. Compared with newborns of non-adolescent mothers, newborns of mothers less than 15 years are more than twice likely to be LBW at birth & are nearly three times more likely to die within first 28 days of life. Prematurity rates are also found to be more than double. Increased prevalence of handicapped children has also been reported. Babies born to mothers younger than 15 years are two to four times more likely to be neurologically abnormal than babies born to women between 20 to 24 years of age\textsuperscript{13}. Some data suggest that premature births are associated with increased risk for abnormalities of child development in young mothers. Several studies also suggest that during the school age, children of adolescents have more behavioral problems & lower intelligence score than children of adults. In addition to this, social problems like lost educational opportunities & poor employability are noted with young mothers\textsuperscript{14}. With so many risks observed in teenage mothers it is unknown whether the poor outcome of teenage pregnancy is partly attributable to the biologic fact of a young maternal age or is solely the consequence of socio demographic factors generally associated with pregnancy among teenagers. Thus from this we can conclude that, in Indian situation the deeply rooted culture compounded with lack of educational & occupational opportunities available to girls, predispose them to marriage at younger age. They enter their marital life with lack of sex education & family life education. They do not have any say in decision making about their early marriage & also early pregnancy.
They have to accept the only alternative to prove their identity & status & that is to conceive, to deliver & preferably give birth to a male child. Poor nutritional status, lack of awareness about reproduction, childbearing & childrearing is superadded with lack of availability, accessibility & utilisation of health services. The most important factor is biological immaturity in young mothers, which increases the risk further. Such at risk mothers give birth to babies, which are equally at higher risk.

Various studies have been carried out not only in India but also worldwide concerning the problem of teenage pregnancy. However most of them are concerned with the mortality of mother & child & associated medical complications. There is paucity of studies related to socio-cultural factors associated with teenage pregnancy. A study is therefore undertaken in Sassoon General Hospitals, B.J. Medical College, Pune, which caters to a population from lower & lower middle class people of Pune district. This hospital being an apex institute acts as a referral center for complicated cases from both urban & rural areas of Pune district & also adjoining districts. Thus there is a high prevalence of teenage pregnancy in this hospital & therefore the study has been carried out in this hospital to identify various bio-socio-cultural aspects related to pregnancy at an earlier age.

In addition to this an attempt has been made to develop a scoring system to identify high-risk mothers by using a few objective criteria. Important modifiable & non-modifiable factors that have an effect on outcome of pregnancy are used for the same. With the help of these criteria health workers at grass root level will be able to identify at risk mothers at an earlier stage & can manage them with proper referral. This early identification & referral will be helpful for reducing the morbidity & mortality in mothers & also in their newborns. Similarly some of the interventions for this important public health problem have also been identified.