chapter 8: prenatal and other developmental influences

233

premature or preterm birth and low birth weight

Prematurity may have long-term consequences for the child. Premature or preterm birth is defined as birth at a gestational age of 37 weeks or earlier, regardless of birth weight. The low-birth-weight infant weighs less than 5.5 pounds or 2,500 g regardless of gestational age. The baby may have completed the 38th week in utero. The very-low-birth-weight (VLBW) baby weighs less than 1,500 grams (3.3 pounds). The extremely low-birth-weight (ELBW) baby weighs less than 1,000 grams (a little over 2 pounds). Both the VLBW and ELBW baby will be of low gestational age or premature (34, 57). The small-for-gestational-age (SGA) or small-for-date newborn, as a result of slow intrauterine growth, has a birth weight less than the 10th percentile in the intrauterine growth curve (weights less than 90% of all babies of the same gestational age). Low birth weight is the major factor associated with death of the infant during the first 4 weeks of life (57). Later developmental and behavioral problems, such as physical and cognitive retardation or hyperactivity, may also result (53). Females who are physically abused during pregnancy are more likely to deliver low-birth-weight infants, compared with unabused pregnant females. Being physically abused also doubles the chance of having a miscarriage. Abuse, physical and emotional, may be one of the most frequent problems in pregnancy (57).

If low-birth-weight babies survive the dangerous early days, and more do, there is concern about their development. SGA infants

box 8-2: causes of paternal contributions to birth defects in the child

direct (occur at conception)
1. Damage to spermatozoa caused by exposure to fumigants, solvents, vinyl chloride, methylmercury, hypothermia, lead, radiation, pesticides, diethylstilbestrol (DES), alcohol, lack of vitamin C, marijuana and tobacco smoking.
2. Factor or agent affects chromosomes or cytogenic apparatus in sperm cells or their precursors, e.g., cocaine, lead, mercury.
3. Drugs, alcohol, and chemicals cross into testes and male accessory reproductive organs for secretion in semen.

examples of paternal contributions to fetal and early childhood risks
1. Down syndrome (trisomy 21): paternal nondisjunction and extra chromosome; 20% to 30% of cases occur when father is 55 years or older at time of conception.
2. Sex chromosome disorders in child.
3. Adverse outcomes such as spontaneous abortion and perinatal death (stillbirth) due to methadone, morphine, or heroin dependency and chemicals such as fumigants, solvents, and vinyl chloride.
4. Hemophilia: coagulation disorder in child; deficiency of factor VIII.
5. Marfan syndrome: connective tissue disorder with elongated extremities, hands.
7. Decreased neonatal survival due to methadone, morphine, and heroin dependency.
8. Birth defects if father is epileptic, taking phenytoin; or if father is exposed to lead, anesthetic gases, Agent Orange, or dioxin.
9. Tumors of nervous system if father is miner, printer, pulp or paper mill worker, electrical worker, or auto mechanic.
10. Low birth weight linked to nonsmoking pregnant woman’s exposure to secondhand smoke from male partner; cancer development in childhood.

interventions for health promotion

Educate that the following maternal factors contribute to a higher risk of low-birth-weight babies (34, 38, 57, 152):
1. Underweight before pregnancy, or less than 21 pounds gained during pregnancy.
2. Inadequate prenatal care.
3. Age of 17 years or younger, or over 40 years.
5. Low socioeconomic level.
6. Smoking cigarettes or use of addictive drugs or alcohol during pregnancy.
7. Exposure to toxic substances or chemicals.
8. Complications during pregnancy, poor health status, vaginal bleeding, or exposure to infections.
9. High stress levels, including physical or emotional abuse.
10. Previous low-birth-weight infants or multiple miscarriages.
11. Having given birth less than 6 months or 10 or more years before. A safe interval between pregnancies is a minimum of 18 to 23 months.
12. Many of these factors are interrelated and affected by low socioeconomic level (19, 51, 96, 104).