Childhood Nutrition and Malnutrition/FTT

A. Knowledge

Demographics: Relation of poverty to malnutrition and affect of Federal nutrition supplementation and cash benefit programs

- WIC
  - 59% of eligible children receive it
  - Saves 3 dollars for every dollar spent on prenatal WIC
- Food stamps
- AFDC
- Anthropometry
  - Triceps skin fold thickness
  - Midarm circumference
  - International classification/quantification of under nutrition (Gomez/Waterlow criteria)
  - Oral/motor developmental milestones (use of cup, spoon, etc., and relation to introduction of foods)
  - Breast feeding demographics
  - Anemia
    - Relation to poverty
    - Cognitive effects
    - Iron deficiency
- Medical (organic) issues in "non organic" FTT
  - Perinatal/neonatal/congenital/syndromic
  - Infection associated with malnutrition
  - Chronic illness and relation to FTT/under nutrition
- Laboratory assessment
  - Lab tests are rarely positive unless there is a clear indication for doing the test on history or PE
- Effect of malnutrition on developing brain
  - Decreased cell size
  - Decreased cell number
  - Fewer cell to cell connections
  - Smaller brain size
  - Biochemical changes in central neurotransmitters
  - Depression
  - Irritability
  - Altered temperament
  - Decreased sleep/arousal
- Social service/family evaluation
- Developmental consequences of malnutrition

Global developmental delay but especially expressive and receptive language delay
All young children with serious malnutrition need early intervention
School function/learning evaluation necessary for targeted remediation efforts which can potentially correct developmental delays

Effect of FTT/malnutrition on family interaction
Relation to child abuse
Social isolation
Stress chronic/acute
Altered dyadic interaction

Altered feeding behaviors
Anorexia associated with malnutrition per se
Behavioral feeding disorders

Evaluation of current diet
Three day diet history
Calorie counts
How to prescribe an age appropriate high cal diet

Nutritional interventions
Specific behavioral/therapies for aberrant feeding
Base caloric interventions on "ideal" weight for age
Rather than current weight
Concentration of calories in formulas/milk
Increase calorie counts to 1.5 to 2 times "normal"

B. Skills

Understanding of principles of child nutrition
Ability to take a nutritional history
Ability to take a family/social history: understanding impact on behavior and feeding
Behavioral modification skills re: feeding interaction
Ability to confront denial of condition without destroying patient alliance
Ability to work with other health care providers for a team approach

C. Attitudes

Awareness of relation of complex psycho social issues to malnutrition
Impact of poverty related malnutrition on family psyche and interaction
Acceptance, or appreciation of cultural food preferences

Importance of multidisciplinary team collaboration to improve outcomes

D. Barriers
- Social
  - Poor understanding of nutrition
  - Family or religious pressures
  - Societal concerns with obesity in adults
- Economic
  - Poverty related malnutrition: over 20% of children in the US lives below federal poverty level
- Cultural
  - Food preferences that are unusual and lacking in basic nutrition including micro nutrient deficiencies and protein-calorie deficiencies, associated with religious or cultural preferences or ill perceived notions of them

E. Advocacy
- Political
  - Work for increased funding for WIC, food stamps and other supplemental nutrition programs
- Lead
  - Ensure that families inappropriately denied benefits (especially supplemental nutrition benefits)
  - Educate parents concerning entitlement programs and options for obtaining them

References

Bithoney WG, Dubowitz H, Egan H. Failure to thrive, Pediatrics in Review, Vol 13, No. 12, 1992, pp. 453-460.

Bithoney WG, et al. The effect of a multidisciplinary team approach on weight gain in non organic failure-to-thrive. J Dev Behav Peds 12, No. 4, 1991, pp. 254-258.