METHODS OF NUTRITIONAL ASSESSMENT

BY

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People can have an *optimal nutritional status* or they can be *under-, over- and/or malnourished*.

**Severe underweight**
(Under-nourished)

**Healthy baby**
(Optimal nutritional status)

**Morbid Obesity**
(Over-nourished)
OBJECTIVES

I. Nutritional deficiency diseases

II. s/s

III. Prevention

IV. NNP

V. Education
Direct Methods of Nutritional Assessment

These are summarized as ABCD

• Anthropometric methods
• Clinical methods
• Dietary evaluation methods
• Biochemical, laboratory methods
Indirect Methods of Nutritional Assessment

- Ecological variables including agricultural crops production
- Economic factors e.g. household income, per capita income, population density, food availability and prices
- Cultural and social habits
- Vital health statistics: morbidity, mortality and other health indicators e.g., infant and under-fives mortality, Utilization of maternal and child health care services, fertility indices and sanitary conditions
Other anthropometric Measurements

- Mid-arm circumference
- Skin fold thickness
- Head circumference
- Head/chest ratio
- Hip/waist ratio
Interpretation of BMI for adults

For adults 20 years old and older, BMI is interpreted using standard weight status categories that are the same for all ages, and for both men and women.

<table>
<thead>
<tr>
<th>BMI</th>
<th>Weight Status</th>
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<tbody>
<tr>
<td>Below 18.5</td>
<td>Underweight</td>
</tr>
<tr>
<td>18.5 – 24.9</td>
<td>Normal</td>
</tr>
<tr>
<td>25.0 – 29.9</td>
<td>Overweight</td>
</tr>
<tr>
<td>30.0 and Above</td>
<td>Obese</td>
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</table>
2. Clinical assessment

ADVANTAGES

• Fast & Easy to perform
• Inexpensive
• Non-invasive

LIMITATIONS

• Did not detect early cases
OBESITY AND DISEASES

- Demencia
- COPD
- Fatty Liver Disease
- Heart Disease
- Diabetes Mellitus
- Erectile Dysfunction
- Osteoarthritis
- Varicose Veins
3. Dietary assessment

Nutritional intake of humans is assessed by five different methods. These are:

- 24 hours dietary recall
- Food frequency questionnaire
- Dietary history since early life
- Food dairy technique
- Observed food consumption

Healthy diet
4. Initial Laboratory Assessment

- Laboratory tests based on blood and urine can be important indicators of nutritional status, but they are influenced by non-nutritional factors as well.

- Lab results can be altered by medications, hydration status, and disease states or other metabolic processes, such as stress.

- As with the other areas of nutrition assessment, biochemical data need to be viewed as a part of the whole.
Specific Lab Tests

- Measurement of individual nutrient in body fluids (e.g. serum retinol, serum iron, urinary iodine, vitamin D)
- Detection of abnormal amount of metabolites in the urine (e.g. urinary creatinine/hydroxyproline ratio)
- Analysis of hair, nails & skin for micro-nutrients.
PRECIPITATING FACTORS

- LACK OF FOOD (famine, poverty)
- INADEQUATE BREAST FEEDING
- WRONG CONCEPTS ABOUT NUTRITION
- DIARRHOEA & MALABSORPTION
- INFECTIONS (worms, measles, T.B)
Nutritional programmes in India

Ministry of Rural Development
- Applied nutrition programme

Ministry of Social Welfare
- Integrated child development services scheme
- Balwadi nutrition programme
- Special nutrition programme

Ministry of Health and Family Welfare
- National nutritional anemia prophylaxis programme
- National prophylaxis programme for prevention of blindness due to vitamin A deficiency
- National iodine deficiency disorder control programme

Ministry of Education
- Mid-day meal programme
Mental Health
Mental Illness
Misconception
Causes
Signs & Symptoms
Classification
Types of Mental Disorders & Treatment
MENTAL HEALTH

The World Federation of mental health has recently come out with a three point definition of mental health based the following three questions

2. Do you feel good about yourself?
3. Do you feel comfortable with other people?
4. Are you able to meet life’s demands?
What is Mental Health?

- Mental health refers to the maintenance of successful mental activity.
- Maintaining productive daily activities and maintaining fulfilling relationships with others.
- Maintaining the abilities to adapt to change and to cope with stresses.
MENTAL ILLNESS

- Mental illness can occur when the brain (or part of the brain) is not working well or is working in the wrong way.
- When the brain is not working properly, one or more of its 6 functions will be disrupted.
Definition of Mental disorders

Mental disorder/illness is a disorder/illness that causes disturbances in thinking, perception and behavior beyond those that might be experienced even in accurately distressed state (Dogra, N.; Lunn, B.; Copper, S. 2011).
Causes of Mental disorders

It is unusual in psychiatry to find many disorders that have a single etiological factor.

Mental health problems/disorders usually arise out of complex interplay between the biological, the social and the psychological factors.
Causes of Mental disorders

Key etiological factors predisposing, precipitating and/or perpetuating to mental disorders are arranged as following:

- Biological factors:
  - Physical disorders
  - Genetic factors
  - Changes in brain structure, neuropharmacology and functional imaging.
Physical factors

- **Physical factors**
  - In utero and birth problems:
    - Intrauterine exposure to toxin
  - Perinatal, brain injury at birth; premature birth
  - Severe head injury

- **Related disorder or features**
  - Fetal alcohol syndrome
  - ADHD (Attention Deficit Hyperactivity Disorder)
  - ADHD
  - May impair intellectual abilities
  - Mood disorders
  - Frontal lobe disorder
Physical factors con’t...

Physical factors

- Infection
  - Syphilis
  - HIV
- Viral encephalitis (e.g. HSV)
- Neurological disorders
  - Neoplasm and other space occupying lesions

Related disorder or features

- Dementia
- Dementia, severe misuse, depression
- Amnesic Sd, behavioral disturbances, irritability, depression
- Personality changes
- Mood disorders
Physical factors con’t...

Physical factors

- Neurological disorders
  - Poorly controlled temporal lobe epilepsy
- Post myocardial infarction
- Endocrine disturbance
  - Hyperthyroidism

- Related disorder or features
  - Schizophrenia-like psychosis
  - Depression
  - Anxiety
Physical factors con’t...

- Physical factors
  - Hypothyroidism
  - Addison’s disease
  - Cerebro-vascular
  - Stroke

- Arteriovenous malformations

- Related disorder or features
  - Depression
  - Depression
  - Depression, mood variability, anxiety, change in personality
  - Mood disorder or anxiety
Physical factors con’t...

- Physical factors
  - Iatrogenic factors
  - Corticosteroids
  - Anabolic steroids
  - Methylphenidate

- Related disorder or features
  - Elation and depression
  - Aggression, changes in personality
  - Psychosis
Changes in brain structure, neuropharmacology and functional imaging.

- Reduced overall brain volume
- Increased volume of cerebral ventricles
- Reduction in volume of parts of the frontal and temporal cortices
Causes of Mental disorders con’t…

- Psychological factors:
  Individual personality traits and personality types are significant factors in the development of mental health problems. This encompasses temperament type, which is often used for children. The development life stage that someone is at may also be an important factor.
Psychological factors

- Personality types
- Attachment
- Self-esteem
- Intellectual Quotient (IQ)
Causes of Mental disorders con’t...

- Social factors:
  - Cultural factors
  - Religion
  - Families
  - Neighborhoods and housing
  - Work and school
  - Life events (which are not a normal expected part of life).
  - Environment factors
Causes of Mental disorders con’t...

- Socio-political factors:
  - Socioeconomic disadvantage
  - War and conflict
  - Stress
  - Resilience
10 Warning Signs

- Feeling very sad, withdrawn or unmotivated for more than two weeks.
- Making plans or trying to harm or kill oneself.
- Out-of-control, risk-taking behaviors.
- Sudden overwhelming fear for no reason, sometimes with a racing heart or fast breathing.
- Not eating, throwing up or using laxatives to lose weight; significant weight loss or weight gain.
- Severe mood swings causing problems in relationships.
- Excess use of drugs or alcohol.
- Drastic changes in behavior, personality or sleeping habits.
- Extreme difficulty in concentrating or staying still.
- Intense worries or fears getting in the way of daily activities like hanging out with friends or going to classes.
ICD 10

(International Statistical Classification of Disease & Related Health Problems)
ICD 10 (International Statistical Classification of Disease & Related Health Problems)- 1992 :-

- This is WHO’s classification for all diseases & related health problems.
- The chapter ‘F’ classifies psychiatric disorder as mental & behavioral disorders & codes them on an alphanumeric system from F00 to F99.

The Main Categories in ICD 10:-
F00 – F09 Organic, Including Symptomatic, Mental disorders

F00 – Dementia in Alzheimer’s disease
F01 – Vascular dementia
F04 – Organic amnestic syndrome
F05 – Delirium
F06 – Other mental disorders due to brain damage & dysfunction & to physical disease
F07 – Personality & behavioral disorders due to brain disease, damage & dysfunction
F10 – Mental & behavioral disorders due to use of alcohol
F11 - Mental & behavioral disorders due to use of opioids
F12 – Mental & behavioral disorders due to use of cannabinoids
F13 – Mental & behavioral disorders due to use of sedatives & hypnotics
F14 – Mental & behavioral disorders due to use of cocaine
F16 – Mental & behavioral disorders due to use of hallucinogens
Schizophrenia, Schizotypal & Delusional Disorders

F20 – Schizophrenia
F20.0 – Paranoid Schizophrenia
F20.1 – Hebephrenic Schizophrenia
F20.2 – Catatonic Schizophrenia
F20.3 – Undifferentiated Schizophrenia
F20.4 – Post-schizophrenia depression
F20.5 – Residual Schizophrenia
F20.6 – Simple Schizophrenia
F21 – Schizotypal disorder
F22 – Persistent delusional disorders
F23 – Acute & Transient psychotic disorders
F24 – Induced Delusional disorders
F25 – Schizoaffective disorders
F30 – F39 Mood (affective) Disorders

F30 – Manic episode
F31 – Bipolar affective disorder
F32 – Depressive episode
F33 – Recurrent depressive disorder
F34 – Persistent mood disorder
F40 – F49 Neurotic, Stress-rapid & somato-form disorders

F40 – Phobic anxiety disorders
F41 – Other anxiety disorders
F42 – Obsessive – Compulsive disorder
F43 – Reaction severe stress & adjustment disorders
F44 – Disociative (Conversion) disorders
F45 – Somatoform disorders
F50 – F59 Behavioral syndromes associated with physiological disturbances & physical factors

F50 – Eating Disorders
F51 – Non-organic sleep disorders
F52 – Sexual dysfunction
F60 – F69 Disorders of adult personality & behavior

F60 – Specific personality disorders
F60.0 – Paranoid personality disorders
F60.1 – Schizoid personality disorders
F60.2 – Dissocial personality disorders
F60.3 – Emotionally unstable personality disorder
F60.4 – Histrionic personality disorders
F60.5 – Anankastic personality disorders
F60.6 – Anxious personality disorders
F60.7 – Dependent personality disorders
F61 – Mixed & other personality disorders
F62 – Enduring personality changes, not attributable to brain damage & disease
F63 – Habit & impulse disorders
F64 – Gender identity disorders
F65 – Disorders of sexual preference
F70 – F79 Mental Retardation

F70 – Mild Mental Retardation
F71 – Moderate Mental Retardation
F72 – Severe Mental Retardation
F73 – Profound Mental Retardation
F80 – F89 Disorders of psychological development

F80 – Specific developmental disorders of speech & language
F81 – Specific developmental disorders of scholastic skills
F82 – Specific developmental disorders of motor function
F83 – Mixed specific developmental disorders
F84 – Pervasive developmental disorders
F90 – F98 Behavioral & emotional Disorders with onset usually occurring in childhood & adolescence

F90 – Hyperkinetic disorders
F91 – Conduct disorders
F93 – Emotional disorders with onset specific to childhood
F94 – Disorders of social functioning with onset specific to childhood & adolescence
F95 – Tic Disorders
F98 – Other behavioral & emotional disorders with onset usually occurring in childhood & adolescence
The Five Axes of DSM IV Are:-

**Axis I**: Clinical psychiatric diagnosis  
**Axis II**: Personality disorder & mental retardation  
**Axis III**: General medical conditions  
**Axis IV**: Psychosocial & environmental problems  
**Axis V**: Global assessment of functioning in current & past one year.
Indian Classification:

In India Neki (1963), Wig & Singer (1967), Vahia (1961) & Varma (1971) have attempted some modification of ICD8 to suit Indian conditions.

A) Psychosis:
1. Functional: - Schizophrenia
2. Affective: - Mania & Depression
3. Organic: - Acute or Chronic
B) Neurosis:
- Anxiety neurosis
- Depressive neurosis
- Hysterical neurosis
- Obsessive-compulsive neurosis
- Phobic neurosis

C) Special disorders:
- Childhood disorders
- Personality disorders
- Substances abuses
- Psycho physiological disorders
- Mental retardation
Treatments & Therapies

• Drug Therapy
• Electroconvulsive Therapy (ECT)
• Psychotherapy
  – Supportive Psychotherapy
  – Psychoanalysis
  – Psychodynamic Psychotherapy
  – Cognitive Therapy
  – Behavior Therapy (Exposure Therapy)
  – Cognitive-Behavioral Therapy
    (Dialectical Behavior Therapy)
  – Group / Interpersonal Therapy
Treatments & Therapies

• Biomedical Treatment
• Spiritual Treatment
• Self-Help Treatment
• Holistic Treatments
  – Yoga / Meditation
• Alternative Treatments
  – Acupuncture
  – Biofeedback
  – Hypnosis / Dream Interpretation
  – Magnetic Stimulation Therapy
Drug Therapy

• Depression
  – tricyclics: imipramine, desipramine
  – monoamine oxidase inhibitors (MAOIs)
  – selective serotonin reuptake inhibitors (SSRIs): fluoxetine, sertraline, paroxetine, citalopram
  – new: bupropion

• Schizophrenia
  – antipsychotic (neuroleptic) medications: clozapine, risperidone, olanzapine
Drug Therapy

• Bipolar Disorder
  – antimanic medications: lithium
  – antidepressants
  – anticonvulsants: valproic acid, carbamazepine, topiramate

• ADD / ADHD
  – stimulant medications: amphetamine, methylphenidate
  – non-stimulant medications: atomoxetine
Drug Therapy

• Obsessive-Compulsive Disorder
  – buspirone, propranolol
  – antianxiety medications: benzodiazepines
  – antidepressant medications: fluoxetine, paroxetine, sertraline
Electroconvulsive Therapy (ECT)

- severe depression accompanied by psychosis, suicidal intent, or refusal to eat
- mania that does not improve with medications
- schizophrenia when symptoms are severe or medications aren’t enough
Psychotherapy

- depression
- bipolar disorder
- personality disorders
- dissociative disorders
- anxiety disorders
- impulse control & addiction disorders
Thank you!