Part–II (Year–II)

Biological Determinants of Behavior and Neuropsychology

Aim:
Brain disorders cause symptoms that look remarkably like other functional psychological disorders. Learning how brain is involved in the genesis of normal and abnormal behavioral/emotional manifestation would result in better clinical judgment, lesser diagnostic errors and increase sensitivity to consider and rule out a neuropsychological origin or biochemical mediation of the psychopathology. Also, current researches have indicated many pharmacological agents dramatically alter the severity and course of certain mental disorders, particularly more severe disorders. Therefore, the aim of this course is to provide important biological foundations of human behavior and various syndromes. The main focus is the nervous system and its command center - the brain.

Objectives: On completion of the course trainees are required to demonstrate ability to:

1. Describe the nature and basic functions of the nervous system
2. Explain what neurons are and how they process information
3. Identify the brain's levels and structures, and summarize functions of the structures
4. Describe the biochemical aspects of the brain and how genetics increase our understanding of behavior.
5. State what the endocrine system is and how it regulates the internal environment and affects behavior.
6. Discuss the principles of psychopharmacology and review the general role of neurotransmitters and neuromodulators in the brain.
7. Describe the monoaminergic and cholinergic pathway in the brain and the drugs that affect these neurons.
8. Describe the role of neurons that release amino acid neurotransmitters and the drugs that affect these neurons.

Academic Format of Units:
Lectures, seminars and demonstrations by the experts in specific discipline, disease, topics such as by Anatomist, Biochemist, Physiologist, Psychiatrist, Neurologist and Neurosurgeons are required to impart knowledge and skills in certain domains. Depending on the resources available at the center these academic activities can be arranged.

Evaluation: Involving long and short essays and viva

Syllabus:

Unit-I: Anatomical sub-divisions of the human brain; the surface anatomy and interior structures of cortical and sub-cortical regions; anatomical connectivity among the various regions; blood supply to brain and the CSF system; cyto architecture and modular organization in the brain; Communication within (membrane potential, action potential) and between neurons (neurotransmitters, neuromodulators and hormones).

Unit-II: Biochemistry of the brain: Biochemical and metabolic aspects of brain; medical genetics; structure and function of chromosomes; molecular methods in genetics; single-gene inheritance; cytogenetic abnormalities; multifactorial inheritance; biochemistry of genetic diseases

Unit-III: Neurobiology of sensory-motor systems: Organization of sensory-motor system in terms of receptors, relay neurons, thalamus and cortical processing of different sensations; principle motor mechanisms of the periphery (muscle spindle), thalamus, basal ganglia, brain stem, cerebellum and cerebral cortex; neurobiology of drives, motivation, hunger, thirst, sex, learning, memory, emotion, and personality, regulation of internal environment: role of limbic, autonomic and the neuroendocrine system in regulating the internal environment; reticular formation and other important neural substrates regulating the state of sleep/wakefulness

Unit-IV: Psychopharmacology: Principles of psychopharmacology, sites of drug action (effects on production, storage, release, receptions, reuptake and destruction); drugs commonly used to treat psychiatric disorders and putative mechanisms of action, role of neurotransmitters and Neuro modulators (acetylcholine, monoamines (DA, NE and 5-HT), amino acids, peptides, lipids) in various aspects of behavior; neurobiology of mental disorders - neurochemical, metabolic and genetic aspect of major mental disorders, neurodevelopmental and behavioral disorders;

Part-B: Clinical Neuropsychology

Aim:
The course aims to provide an understanding of the relationships between the brain and cognition, affect and behavior across developmental stages through clinical evaluation and follow-up of a variety of cases with brain disease and injury.

Objectives: At the end of the course trainees,

1. Discuss at ease the functional aspects of different brain networks, and can explain how these would affect an individual in daily life situations and make recommendations for interventions and social rehabilitation in affected cases.
2. Describe what kinds of neuropsychological deficits are often associated with lesions of frontal, parietal, temporal and occipital lobes of the brain, and carry out the indicated neuropsychological assessment employing any valid battery of tests.
3. Describe what kinds of neuropsychological deficits are often associated with subcortical lesions of the brain.
4. List symptoms those are typical of focal and diffuse brain damage.
5. Enumerate the characteristics of clinical syndrome and the nature of neuropsychological deficits seen in various cortical and subcortical dementias.
6. Describe the neuropsychological profile of principal psychiatric syndromes.
7. Demonstrate an understanding of functional neuro-imaging techniques and their application in psychological disorders and cognitive neuroscience.
8. Demonstrate an understanding of the principles involved in neuropsychological assessment, its strengths and weaknesses, and indications.
9. Describe the nature of disability associated with head injury in the short and longer term, methods of remedial training and their strengths and weakness.

Academic Format of Units:
The learning would be primarily through clinical assessment of cases with brain lesions and disorders, and supplemented by lectures, seminars and tutorials, allowing trainees to participate in

collaborative discussion.

Evaluation: Practical/clinical exam in neuropsychological assessment with cases having a brain lesion/disorder and theory aspects by long and short essays, and comprehensive viva.

Syllabus:

Unit-I: Introduction: Relationship between structure and function of the brain; the rise of neuropsychology as a distinct discipline, logic of cerebral organization; localization and Lateralization of functions; approaches and methodologies of clinical and cognitive neuropsychologists.

Unit-II: Frontal and temporal lobe syndrome: Frontal lobe - disturbances of regulatory functions; attentional processes; emotions; memory and intellectual activity; language and motor functions; temporal lobe - special senses, hearing, vestibular functions and integrative functions; disturbances in learning and memory functions; language, emotions, time perception and consciousness.

Unit-III: Parietal and occipital lobe syndromes: Parietal lobe - disturbances in sensory functions and Body schema perception; agnosia's and apraxia's; occipital lobe - disturbances in visual space Perception; color perception; writing and reading ability.

Unit-IV: Neuropsychological assessment: Principles, approaches, scope and indications and issues involved in neuropsychological assessment of children, functional domains in children; Categorization of major brain functions, localization of functions in the brain, content of Empirically validated batteries such as LNNB, Halstead-Reitan battery, PGI-BBD, NIMHANS and other batteries of neuropsychological tests in current use and their application, Neuropsychological profile: Neuropsychological profile of cortical and subcortical dementia; major mental disorders, substance use disorders, neurodevelopmental disorders

Unit-V: Neuropsychological rehabilitation: Principles, objectives and methods of neuro-rehabilitation of traumatic brain injury, organic brain disorders, major psychiatric disorders and behavioural disorders; scope of computer-based retraining, neuro feedback, cognitive aids; application of functional human brain mapping techniques such as QEEG, EP & ERP, PET, SPECT, fMRI etc.

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Behavioral Medicine

Aim:
Health psychology, as one of the subspecialties of applied psychology, has made a notable impact on almost the entire range of clinical medicine. The field deals with psychological theories and methods that contribute immensely to the understanding and appreciation of health behavior, psychosocial and cultural factors influencing the development, adjustment to, treatment, outcome and prevention of psychological components of medical problems. The aim of behavioral medicine is to elucidate the effects of stress on immune, endocrine, and neurotransmitter functions among others, psychological process involved in health choices individuals make and adherence to preventive regimens, the effectiveness of psychological interventions in altering unhealthy lifestyles and in directly reducing illness related to various systems. Further, to provide the required skills and competency to assess and intervene for psychological factors that may predispose an individual to physical illness and that maintain symptoms, in methods of mitigating the negative effects of stressful situations/events, and buffering personal resources.

Objectives: On completion of the course, trainees are required to demonstrate ability to:

1. Appreciate the impact of psychological factors on developing and surviving a systemic illness.
2. Understand the psychosocial impact of an illness and psychological interventions used in this context.
3. Understand the psychosocial outcomes of disease, psychosocial interventions employed to alter the unfavorable outcomes.
4. Understand the rationale of psychological interventions and their relative efficacy in chronic disease, and carry out the indicated interventions.
5. Understand the importance of physician-patient relationships and communication in determining health
outcomes.
6. Understand how basic principles of health psychology are applied in specific context of various health problems and apply them with competence.
7. Demonstrate the required sensitivity to issues of death and dying, breaking bad news, and end-of-life issues.
8. Carry out specialized interventions during period of crisis, grief and bereavement.
9. Understand, assimilate, apply and integrate newer evidence-based research findings in therapies, techniques and processes.
10. Critically evaluate current health psychology/behavioral medicine research articles, and present improved design/methods of replicating such research.
11. Demonstrate the sense responsibility while working collaboratively with another specialist and foster a working alliance.

Academic Format of Units:
Competency/skills are imparted through supervised workups, assessment and practical work of carrying out various treatment techniques within clinical context. Depending on availability of resources at the parent center, the trainees may be posted for extra-institutional learning. Demonstration, clinical issue seminar, clinical seminar, clinical case conferences are required to impart the necessary knowledge and skills.

Evaluation: Theory - involving long and short essays, and practical/clinical - involving workup and assessment of clinical cases with viva voce.

Syllabus:

Unit-I: Introduction: Psycho-behavioral influence on neuroendocrine, neurotransmitter and neuro-immune responses to stress, negative affectivity, behavioral patterns, and coping styles, psychophysiological models of disease, theoretical models of health behavior, scope andapplication of psychological principles in health and illness; research and developments in health psychology, psychophysiology, psychoneuroimmunology, psychobiology, socio biology and their implications; demonstrated effects of psychological interventions on the biology of brain and Implications.

Unit-II: Central nervous system: Cognitive, behavioral, emotional disturbances in major CNS diseases like cerebrovascular (stroke, vascular dementia etc.), developmental (cerebral palsy), degenerative (Parkinson's etc.), trauma (traumatic brain and spinal cord injury), convulsive (epilepsy), and infectious (AIDS dementia), psychological assessment, intervention and rehabilitation of this population.

Unit-III: Cardiovascular system: Psychosocial, personality, lifestyle, and health practice issues, psycho-behavioral responses including coping with illness and functional loss in hypertension, MI, following CABG and other cardiovascular conditions, salient issues with regard to quality-of life and well-being, empirically proven methods of psychological management of CVS diseases.

Unit-IV: Respiratory system: precipitants, such as emotional arousal, and other external stimuli, exacerbates such as anxiety and panic symptoms, effects, such as secondary gain, low self-esteem in asthma and other airway diseases, psychological, behavioral and biofeedback strategies as adjunct in the management.

Unit-V: Genitourinary/renal/reproductive system: Psychosocial issues in male/female sexual dysfunctions, micturition/voiding problems including primary/secondary enuresis, end-stage renal disease, dialysis treatment, primary and secondary infertility, empirically validated psychological and behavioral interventions in these conditions.

Unit-VI: Gastrointestinal system and Dermatology: Evaluation of psychological factors including personality characteristics and stress/coping style in functional GI disorders (such as irritable bowel syndrome, inflammatory bowel disease, peptic ulcer disease, esophageal disorder etc.); role of stress and anxiety in psycho-dermatological conditions (such as psoriasis, chronic urticarial, dermatitis, alopecia etc.,); impact of these on self-esteem, body image and mood, role of psychological interventions such as relaxation, stress management, counseling, cognitive restructuring and biofeedback strategies.

Unit-VII: Oncology and Pain: Psychosocial issues associated with cancer - quality of life, denial, grief reaction to bodily changes, fear of treatment, abandonment, side effects, recurrence, resilience; physiological and psychological processes involved in pain experience and behavior, assessment tools for acute and chronic pain intensity, behavior, and dysfunctions/disability related to pain, psychological interventions such as cognitive, behavioral, biofeedback and hypnotic therapies.

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Psychotherapy and Counseling

Aim:

Impart knowledge and skills necessary to carry out psychological interventions in mental health problems with required competency. As a prelude to problem-based learning within a clinical context, the trainees are introduced to factors that lead to development of an effective working therapeutic alliance, pre-treatment assessment, setting therapy goals, evaluation of success of therapy in producing desired changes, and variables that affect the therapy processes. Further, the aim is to equip the trainees with various theories of clinical problems, and intervention techniques, and their advantages and limitations.

Objectives: By the end of Part – II, trainees are required to demonstrate ability to:

1. Describe what factors are important in determining how well patients do in psychotherapy?
2. Demonstrate an ability to provide a clear, coherent, and succinct account of patient's problems and to develop an appropriate treatment plan.
3. Demonstrate a sense of working collaboratively on the problem and ability to foster an effective

alliance.
4. Demonstrate a working knowledge of theoretical application of various approaches of therapy to clinical conditions.
5. Set realistic goals for intervention taking into consideration the social and contextual mediation.
6. Carry out specialized assessments and interventions, drawing on their knowledge of pertinent Outcome/evidence research.
7. Use appropriate measures of quantifying changes and, apply and integrate alternative or Complementary theoretical approach, depending on the intervention outcome.
8. Demonstrate skills in presenting and communicating some aspects of current intervention work for assessment by other health professionals, give and receive constructive feedback.
9. Demonstrate ability to link theory-practice and assimilate clinical, professional, academic and ethical knowledge in their role of a therapist.
10. Present a critical analysis of intervention related research articles and propose their own Methods/design of replicating such research.

Academic Format of Units: Acquiring the required competency/skills would be primarily through clinical workups and carrying out of various treatment techniques, under supervision, within clinical context. The trainees are required to be involved in all clinical service activities – institutional or community based, of the center. Demonstration, clinical issue seminar, clinical seminar, clinical case conferences are required to be planned to impart the necessary knowledge and skills.
Evaluation:

Theory - involving long and short essays, and practical/clinical - involving workup and assessment of clinical cases with viva voce.

Syllabus:

Unit-I: Introduction: Issues related to training therapists; ethical and legal issues; rights and responsibilities; consent/assent issues; planning and recording of therapy sessions; structuring and setting goals; factors influencing the therapeutic relationship; pre- and post-assessment; practice of evidence-based therapies; managed care.

Unit-II: Affective psychotherapies: Historical aspects and empirical status of psychodynamic, brief, humanistic, existential, gestalt, person-centered, Adlerian, transactional analysis, reality therapy, supportive, clinical hypnotherapy, play therapy, psychodrama, and oriental approaches such as yoga, meditation, shavasana, pranic healing, reiki, tai chi etc.

Unit-III: Behavior therapies: Indications and empirical status of behavioral techniques such as desensitization (imaginal, in-vivo, enriched, assisted); extinction (graded exposure, flooding and response prevention, implosion, covert extinction, negative practice, stimulus satiation); skill training (assertiveness training, modeling, behavioral rehearsal), operant procedures (token economy, contingency management); aversion (faradic aversion therapy, covert sensitization, aversion relief procedure, anxiety relief procedure and avoidance conditioning); self-control procedures (thought stop, paradoxical intention, stimulus satiation); biofeedback (EMG, GSR, EEG, Temp., EKG); behavioral counseling, Group behavioral approaches, behavioral family/marital therapies.

Unit-IV: Cognitive therapies: Indications and empirical status of rational emotive behavior therapy, cognitive behavior therapy, cognitive analytic therapy, dialectical behavior therapy, problem-solving therapy, mindfulness based cognitive therapy, schema focused therapy, cognitive restructuring, and other principal models of cognitive therapies, trans diagnostic cognitive behavior therapies

Unit-V: Systemic and Physiological therapies: Indications, and empirical status of family therapy, marital therapy, group therapy, sex therapy, interpersonal therapy; progressive muscular relaxation, autogenic training, biofeedback, eye- movement desensitization and reprocessing and other major therapies.

Unit-VI: Counseling and Psychoeducation: Behavioral, cognitive and humanistic approaches; counseling process; theory and procedures to specific domains of counseling; models of therapeutic education, family counseling for a collaborative effort towards recovery, relapse-prevention and successful rehabilitation with regard to various debilitating mental disorders.

Unit-VII: Psychotherapy research: Defining and estimating treatment effects, comparators issues, RCTs, causality in therapy research, biases and allegiance, common factors, specific effects, studying mechanisms, mediation and moderators, mediation analysis, non-inferiority and equivalence tests, identifying responders and moderators, therapist effect, design effect, nested and crossed designs, qualitative methods in understanding the causation, process-based therapy, client preference in therapy work and its implications, ethical issues in psychotherapy research

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Clinical Placement – 2

Part – A is first-half of the academic Year - 2, starting from the beginning of the academic session. During the placement, trainees continue to focus on development of knowledge and skills further for complex and long-term psycho therapeutic interventions that are empirically supported and as per best practice guidelines. At this level of training, students understand the pros and cons of evidence-based and evidence-informed practice and consider individual variables of their clients and engage them in shared decision-making. This facilitates acquiring most valuable clinical skills toperform empirically supported treatments also helps developing a cogent rationale for intervention strategies. Trainees focus and gain hands-on experience in offering therapies and techniques in special conditions where integrative/eclectic approach is the basis of clinical intervention. Undertake self-study supplementing didactic lectures on the methodology related to RCTs, qualitative research, public ethnographic research, process-outcome studies and meta-analysis and the process involved in scientific reporting of the experimental and qualitative findings. Trainees have opportunities to work with a wide range of theoretical orientations (including interpersonal, cognitive-behavioral, existential, humanistic, psychodynamic, multicultural, feminist, ACT, DBT, SFT, Trans diagnostic, trauma-focus CBT, EMDR and so on) and areas of specialization (such as gender issues, LGBTQA, disordered eating, sexual and relationship violence, suicide prevention, PTSD, career development, and crisis intervention) in a variety of multicultural settings. Additionally, trainees have an opportunity for supervision by a number of senior staff of other discipline as well resulting in supplementary learning opportunities of ethical practice through playing role of co-therapist and by clinical team participation.

The evaluation would include the skills acquired for;

a) Functioning autonomously within the collaborative environment

b) Ability to assume independent responsibility towards desired therapy outcome

c) Building and maintaining therapeutic relationship

d) Ability to carry out contextual and collaborative assessment

e) Engaging clients in shared decision-making

f) Maintaining therapy records as per the policy of the center

g) Eliciting session and outcome feedback, and learn and reflect on them

h) Maintaining confidentiality and adhering to ethical & professional guidelines

Part – B is second-half of Year-2. Trainees focus on acquiring professional competency in general medical setting through offering clinical workup and psychometric evaluations and a variety of advanced interventions targeted at psychological issues associated with acute, subacute and chronic health conditions. Recalling from the classroom discussion of behavioral medicine topics on the concept, theories, and models of clinical health psychology, trainees explore various domains of the professional practice and evaluation issues within the context of medical referrals and health & illness across lifespan. During the clinical assignments trainees demonstrate a clear understanding of psychological and behavioral influences on health and illness and psychophysiological models of disease and their application in health and heath care. Trainees discuss with ease the implications of contemporary research and developments in health psychology such as psychoneuroimmunology, psychobiology and the effects of psychotherapy on the biology of brain. On completion of the postings the trainees should have acquired the skills needed to apply models of behavior change, and design appropriate evidence-supported psychological intervention on the basis of an initial clinical health case formulation. Trainees over time learn to take account of the relevant issues such as psychological responses to illness, disability and hospitalization, adherence to medical treatment, symptom reduction, progress made/making, and ability to make therapeutic alliance in planning the short- and long-term goal-oriented interventions. Also, acquire competency to prognosticate the case on the basis of psychological theories, models of the etiology, progression, recovery, precursors, sequelae to psychological disorders associated with medial issues. Part-B posting will close by the end of Year – 2 with an Internal Evaluation and Viva Voce by faculty members shadowing and providing direct clinical supervision for a scheme of marks specified already.

The Part-B evaluation would include level of mastery acquired in various domains;

1. Ability to recognize and assess psychological responses to illness.
2. Ascertaining whether or not the presence of a psychological disorder and risk factors (using a range of assessment methods including psychometric assessments and interviews) in persons with a variety of chronic medical diseases
3. Integrating and synthesizing clinical data and presenting a diagnostic

formulation, and treatment approaches

4. Ability to design and carry out an appropriate empirically-supported psychological treatment on the basis of an initial clinical health case formulation
5. Demonstrating a critical understanding of the role and responsibility of Clinical Psychologists in medical settings and professional and ethical issues related to working in health care settings and within a multidisciplinary team.

Psychotherapy Record Submission

Guidelines for Submitting Psychotherapy Records

Trainees are required to submit a total of five therapy records, one of which should specifically be a child therapy record. All the records should be printed with double line spacing and bound together in a single format. The records must be submitted in this bound format, with all of them included together.Registration number, Date first seen, Supervising Consultant's name and his/her signature should be shown on the opening page of each record. All records should be endorsed by the concerned supervisor and organized under the following heads:

1. Socio-demographic data
2. Presenting complaints
3. Summary of the case (history of present illness, significant past history, family history, personal history, pre-morbid level of functioning and findings on Mental Status Examination)
4. Diagnosis
5. Sociocultural and contextual factors including client's life situation
6. Short- and log-term management
7. Rationale for the intervention
8. Specific areas to be focused including short- and long-term objectives
9. Type and technique of intervention(s) used
10. Therapy processes
11. Changes in the type of therapy, approaches or objectives (if any, and reasons for the same)
12. Outcome
13. Goals to be achieved in short- and long-term follow-up
14. Future plans

Research Thesis

Guidelines for Submitting Research Thesis

Three (hardbound) copies with one softcopy on pen drive should be submitted in print (use double line space, and Times New Roman 12) format. All records should be certified by the concerned Guide and Co-guide (where applicable) and forwarded by the Head of the Department under sign and seal. A declaration by the researcher that the present work is the product of his/her own efforts, carried out under the guidance of the supervisor/s mentioned and doesn't form a part of any other degree in the past, shall be inserted prominently in all copies. The Thesis shall be organized under the following heads:

1. An Introduction to the work
2. Review of literature in the form of different Chapters (up to 4, depending on the nature of research area)
3. Methods (Aim/s and objectives, Hypotheses, Sample (with inclusion and exclusion criteria), Sampling technique, and Sample size (procedure followed to determine) and Study design
4. Description of the tools/measures employed including those developed for the purpose of the study, the steps followed for modification or translation of the original tool, if any,
5. Procedure followed step by step and in detail
6. Statistical analysis carried out and the software employed
7. Results (using only one format)
8. Discussion (restricting to the data in hand)
9. Conclusion and implications (without grandiose claims)
10. Summary (crisp and in IMRD format)
11. References (APA guidelines)
12. Appendix – Copy of the following should be attached:

    a) Consent form
    b) Ethical committee clearance
    c) Permission granted by the center/s for data collection
    d) Tools employed in the research
    e) Purchase bill or permission by author/s, or copyright waiver to use the tools
    f) Declaration with regard to 'conflict of interest'
    g) Copy of the report generated for plagiarism screening using approved software by the concerned university.

Scheme of Examination

Part–II (II Year)

Papers	Title	Duration	Marks		
			Final Assessment (Maximum)	Internal Assessment (Maximum)	Total
Group "A"					
Paper I	Biological Determinants of Behavior and Neuropsychology	3hr.	70	30	100
Paper II	Behavioral Medicine	3hr.	70	30	100
Paper III	Psychotherapy and Counseling	3hr.	70	30	100
Practical: Psychological Therapy and Clinical Placement – II (Viva Voce)			140	60	200
Group "B"					
Submission of five cases of full-length Psychotherapy Report			None	100	100
Group "C"					
Research Thesis			70	30	100
Total					700