FINAL PEP EXAM BLUEPRINT

Domain	Final No.	Knowledge Statements	% of Exam
1: Integrating clinical psychopharmacology with the practice of psychology			**7.3%**
1: Integrating clinical psychopharmacology with the practice of psychology	k0101	Knowledge of biopsychosocial variables as determinants of medication utilization and effects (e.g., age, gender, family history, patient belief systems/culture, economics/poverty, social support, current environmental circumstances)	
1: Integrating clinical psychopharmacology with the practice of psychology	k0102	Knowledge of limitations and benefits, patient perceptions (including help-seeking attitudes), and treatment expectations regarding psychopharmacological and psychological interventions as sole, additive, or interactive treatments for given disorders and functional impairments	
1: Integrating clinical psychopharmacology with the practice of psychology	k0103	Knowledge of practitioner-patient partnership for case and medication management, including the impact on patient education, medication adherence, effectiveness of treatment, adverse effects and response to side effects, and implications for the relationship when psychosocial and pharmacological interventions are utilized (e.g., ethnicity/culture, sexual orientation, gender identity, socioeconomic factors, religion, refugee status)	
1: Integrating clinical psychopharmacology with the practice of psychology	k0104	Knowledge of the development and implementation of a coherent and organized integrated treatment plan of psychosocial, cultural (including participation of traditional healers when appropriate) and pharmacological interventions with attention to comorbidities, as well as evidence-based developments in psychotherapy and pharmacotherapy	
2: Neuroscience			**6.7%**
2: Neuroscience	k0201	Knowledge of cellular and molecular nervous system biology and regulatory processes (e.g., neurotransmitter and neuromodulator systems, up and down regulation, tolerance/cross-tolerance) needed to understand the pharmacological effect of medications	
2: Neuroscience	k0202	Knowledge of the structure and function of the central and peripheral nervous systems	
2: Neuroscience	k0203	Knowledge of neurodevelopment and neuroplasticity	
2: Neuroscience	k0204	Knowledge of the major neuronal pathways and their functions, and associated messenger systems	
3: Nervous system pathology			**11.3%**
3: Nervous system pathology	k0301	Knowledge of etiological factors and diagnosis of dementia, delirium, and other cognitive and neurological disorders	
3: Nervous system pathology	k0302	Knowledge of etiological factors and diagnosis of chronic pain, including headache (e.g., migrainous vs. non-migrainous headache), neuropathic pain, fibromyalgia; and the role of the CNS in pain experience and management	
3: Nervous system pathology	k0303	Knowledge of etiological factors and diagnosis of sleep disorders	
3: Nervous system pathology	k0304	Knowledge of common idiopathic movement disorders, their etiological factors, signs, symptoms, and diagnosis (e.g., Parkinson's, Huntington's, Tourette's syndrome)	
3: Nervous system pathology	k0305	Knowledge of common iatrogenic or drug induced movement disorders, their etiological factors, signs, symptoms, and diagnosis (e.g., extrapyramidal symptoms, dystonias, dyskinesias, akathesia, Dystonic Tremors (DTs))	

3: Nervous system pathology	k0306	Knowledge of etiological factors and categories of seizure disorders	
3: Nervous system pathology	k0307	Knowledge of traumatic brain injury and post-concussive syndrome and its impact on prescriptive decisions	
3: Nervous system pathology	k0308	Knowledge of nervous system pathology (e.g., multiple sclerosis, infectious diseases, exposure to environmental neurotoxins, neoplasms, intellectual/developmental disabilities)	
3: Nervous system pathology	k0309	Knowledge of basic indications for neurodiagnostic imaging and testing (e.g., EEG, CT, MRI, neuropsychological assessment)	
4: Physiology and pathophysiology			**16.0%**
4: Physiology and pathophysiology	k0401	Knowledge of indications for referral to other health care providers for assessment or treatment when organ system pathology is indicated	
4: Physiology and pathophysiology	k0402	Knowledge at a functional level of cardiovascular system physiology and pathophysiology across the life span (e.g., rhythm and rate disorders such as prolonged QT interval), and their relationships to psychopharmacology and psychopathology (e.g., blood pressure changes secondary to psychotropic medication; mitral valve prolapse related to panic disorder)	
4: Physiology and pathophysiology	k0403	Knowledge at a functional level of pulmonary system physiology and pathophysiology across the life span, and their relationships to psychopharmacology and psychopathology (e.g., beta blockers and asthma, respiratory suppression with CNS depressants)	
4: Physiology and pathophysiology	k0404	Knowledge of etiological factors and diagnosis of central nervous system vascular disorders (e.g., cerebral vascular accidents, transient ischemic attacks)	
4: Physiology and pathophysiology	k0405	Knowledge at a functional level of renal/genitourinary system physiology and pathophysiology across the life span, and their relationships to psychopharmacology and psychopathology (e.g., effect of psychotropic substances on urinary/sexual functioning; role in excretion of wastes and medications; valproic acid and polycystic ovary syndrome (PCOS); lithium and renal functioning)	
4: Physiology and pathophysiology	k0406	Knowledge at a functional level of hepatic system physiology and pathophysiology across the life span, and their relationships to psychopharmacology and psychopathology (e.g., first-pass metabolism, the interaction between psychotropic medication and liver enzymes, such as the cytochrome P450 system; infectious liver disease, such as hepatitis; alcoholism)	
4: Physiology and pathophysiology	k0407	Knowledge at a functional level of endocrine system physiology and pathophysiology across the life span, and their relationships to psychopharmacology and psychopathology (e.g., elevated prolactin and antipsychotic medications; hormonal disequilibrium; thyroid disorders; premenstrual dysphoria)	
4: Physiology and pathophysiology	k0408	Knowledge at a functional level of hematological system physiology and pathophysiology across the life span, and their relationships to psychopharmacology and psychopathology (e.g., agranulocytosis and clozapine; anemia and depression)	
4: Physiology and pathophysiology	k0409	Knowledge at a functional level of muscular/skeletal physiology and pathophysiology across the life span, and their relationships to psychopharmacology and psychopathology (e.g., hypercalcemia and depression; idiopathic dystonias; osteoarthritis (OA) and depression; statins and rhabdomyolysis)	

4: Physiology and pathophysiology	k0410	Knowledge at a functional level of dermatologic system across the life span, and its relationship to psychopharmacology and psychopathology (e.g., lamotrigine and SJS/TENS; sensitivity reactions to some antipsychotic medications)	
4: Physiology and pathophysiology	k0411	Knowledge at a functional level of immunologic/rheumatology system physiology and pathophysiology across the life span, and their relationships to psychopharmacology and psychopathology (e.g., drug allergies, systemic lupus erythematosus and depression; fibromyalgia and depression; PANDAS)	
4: Physiology and pathophysiology	k0412	Knowledge at a functional level of the endocrine system's interface with neurotransmitter systems and their relationship to psychopharmacology and psychopathology (e.g., steroids and mood disorders; various medications and sleep disorders; antidepressants and sexual disorders)	
4: Physiology and pathophysiology	k0413	Knowledge of psychoneuroimmunology and impact on systems (e.g., interactions among stress, psychopharmacology and immune function; impact of psychopharmacology on psychological interventions on immune system function; interactions among hormonal disorders, psychopharmacology and sexual functioning; interactions among gastrointestinal system biome, neurophysiology and psychopharmacology)	
5: Biopsychosocial and pharmacological assessment and monitoring			**6.0%**
5: Biopsychosocial and pharmacological assessment and monitoring	k0501	Knowledge of individual and family history taking procedures and psychological assessments that provide information relevant to prescribing (e.g., review of systems, dietary habits, mental status, behavioral observations, developmental history, social history, academic history, family medical and psychiatric history (including knowledge of diversity-related variations in the incidence/prevalence of disorders), history of sexually transmitted disease and history of general level of functioning)	
5: Biopsychosocial and pharmacological assessment and monitoring	k0502	Knowledge of basic physical and neurological examination procedures (e.g., history and physical examination (HPE); review of systems (ROS)) and variations in these procedures for special populations (e.g., ethnicity for estimated glomerular filtration rate (EGFR))	
5: Biopsychosocial and pharmacological assessment and monitoring	k0503	Knowledge of appropriate laboratory tests and assessment procedures before prescribing particular medications (e.g., the implication of disease states, gender, ethnicity, sample timing, and potential effects of medications on those values) and ongoing during treatment (e.g., TDM for lithium blood levels, white blood cell monitoring with clozapine use)	
5: Biopsychosocial and pharmacological assessment and monitoring	k0504	Knowledge of behavioral assessment methods (e.g., rating scales, direct observation of behaviors, parent/teacher/self-report) at baseline and ongoing monitoring for therapeutic effectiveness, quality of life, and adverse effects of psychopharmacological agents (e.g., akathesia with antipsychotics and SSRIs; rating scales for ADHD; MMSE for cognitive function; CGI scale for global response to treatment)	
6: Differential diagnosis			**10.0%**
6: Differential diagnosis	k0601	Knowledge of medical disorders and their most prominent symptoms that may also present with psychological symptoms (e.g., ADHD versus PKU versus autism, anxiety versus Graves' disorder, dementia versus depression in the elderly; depression as a primary disorder vs. a prodromal sign of underlying cancer; personality changes in the elderly vs. dementia)	

6: Differential diagnosis	k0602	Knowledge of psychological signs and symptoms (e.g., mental status changes, memory dysfunction, depression, psychosis) secondary to substances of abuse, prescribed and over-the-counter medications, most commonly used herbal remedies that have psychological effects, and dietary supplements	
6: Differential diagnosis	k0603	Knowledge of the psychopharmacological treatment implications related to mental health disorders with multiple symptoms (e.g., one disorder with multiple symptoms vs. comorbid disorders with related symptoms: major depressive disorder with psychotic features vs. major depressive disorder and schizophrenia; anxious depression vs. anxiety disorder and dysthymia; bipolar vs. psychotic depression; behavioral health disorders and substance use disorders)	
6: Differential diagnosis	k0604	Knowledge of iatrogenic effects of medication versus primary symptoms of disease course (e.g., akathisia versus anxiety; anticholinergic effects versus dementia; medication induced tremor versus idiopathic movement disorders)	
7: Pharmacology			**12.7%**
7: Pharmacology	k0701	Knowledge of drug classifications for psychotropic and adjunctive medications (e.g., stimulants, sedatives, antidepressants, anticholinergics), major drug categories used to treat common medical disorders (e.g., antibiotics), OTC medications, herbals, and substances of abuse	
7: Pharmacology	k0702	Knowledge of pharmacokinetic parameters (e.g., absorption, distribution, metabolism, and elimination) and how each phase affects drug action (e.g., delayed-release preparations, routes of administration, area under the curve, lipophilicity and drug transit across membrane barriers, CYP enzymes, drug/drug and drug/food interactions, routes of clearance)	
7: Pharmacology	k0703	Knowledge of pharmacodynamic changes caused by medications (receptor up/down regulation; transcription)	
7: Pharmacology	k0704	Knowledge of the importance of biological half-life in determining steady state drug concentrations, dosing schedules, accumulation, and toxicity	
7: Pharmacology	k0705	Knowledge of drug properties and characteristics (e.g., therapeutic index, therapeutic blood levels/prescription doses, potency, bioavailability, efficacy, cognitive and behavioral manifestations of toxicity, dose response relationships)	
7: Pharmacology	k0706	Knowledge of types of drugs/receptor interactions (e.g., direct and indirect agonists, antagonists, partial agonists, and inverse agonists, competitive vs. non-competitive antagonism and agonism)	
7: Pharmacology	k0707	Knowledge of the relationship between neurotransmitters and their receptor targets and the behavioral effects of stimulation vs. inhibition (e.g., 5HT1A and anxiety, beta blockers and performance anxiety, D2 and psychosis; histamine and sedation; ACh and memory)	
7: Pharmacology	k0708	Knowledge of the mechanism of action of common therapeutic agents (e.g., receptor stimulation/inhibition; receptor up and down regulation; tolerance, dependence, and withdrawal)	
7: Pharmacology	k0709	Knowledge of the theoretical relationship between neurotransmitter systems and psychopathological conditions (e.g., serotonin and norepinephrine in depression, dopamine in psychosis and substance abuse; dopamine in Parkinson's disease; acetylcholine in Alzheimer's disease)	

7: Pharmacology	k0710	Knowledge of the factors (e.g., biological, ethnic, pharmacodynamic, genetic, pharmacokinetic) related to intra- and inter-individual responses to medications (e.g., variation of blood levels to the same dose across individuals, change in responsiveness within same individual across administrations of same drug [e.g., pregnancy, obesity, age])	
7: Pharmacology	k0711	Knowledge of drug-induced disease, dysfunction, and adverse reactions (e.g., hepatotoxicity, agranulocytosis, dystonias)	
8: Clinical psychopharmacology			**16.0%**
8: Clinical psychopharmacology	k0801	Knowledge of indications and contraindications for various psychotropic medications, including use of multiple medications both on and off label	
8: Clinical psychopharmacology	k0802	Knowledge of decision making strategies for psychotropic medication selection (e.g., risk-benefit analysis, practice guidelines, genetics, ethnicity, cost, pregnancy, disease status, limitations of current diagnostic systems [e.g., DSM, ICD])	
8: Clinical psychopharmacology	k0803	Knowledge of dosing, time course of therapeutic action and adverse effects of medication based on patient factors (e.g., weight, gender, ethnicity, culture, age, trauma, pregnancy, concurrent disease)	
8: Clinical psychopharmacology	k0804	Knowledge of dosing strategies (e.g., augmentation, titration, cross taper, discontinuation)	
8: Clinical psychopharmacology	k0805	Knowledge of common signs and symptoms of drug toxicity and the management of adverse reactions to drugs (e.g., referral for appropriate medical care, use of appropriate medications)	
8: Clinical psychopharmacology	k0806	Knowledge of the management of at risk patients (e.g., relapse prevention, adherence, suicide prevention, patients seeking medication inappropriate or inconsistent with treatment plan)	
8: Clinical psychopharmacology	k0807	Knowledge of potential adverse psychological and physiological signs of drugs used for common medical conditions (e.g., steroids, beta blockers, antibiotics, antivirals), OTCs, and herbals/dietary supplements	
8: Clinical psychopharmacology	k0808	Knowledge of psychological and physiological signs of common recreational substances and the management of intoxication or addiction, including strategies for assisted withdrawal, maintenance, and relapse prevention	
8: Clinical psychopharmacology	k0809	Knowledge of how to recognize and manage tolerance, cross-tolerance, dependence and abstinence syndromes, sensitization/cross-sensitization with respect to specific medications	
8: Clinical psychopharmacology	k0810	Knowledge of the patient factors (e.g., culture, literacy, stage of change) that need to be considered when informing patients about drug utilization, risks, benefits, potential complications, and alternatives to pharmacotherapy	
9: Research			**7.3%**
9: Research	k0901	Knowledge of research designs and analytic techniques used in psychopharmacological research (e.g., open label, single vs double blind, random assignment, placebo control, drug washout, dose response relationships, intent-to-treat analyses, within-subject and group designs, concurrent administration of other drugs, FDA drug development process)	
9: Research	k0902	Knowledge of how to critically review clinical research data including non-evidence based therapies and emerging research methodologies, and use the information for making treatment decisions (e.g., NNT, NNH, OR, RR, effect size)	

9: Research	k0903	Knowledge of influential, non-industry sponsored multi-site research studies relating to psychopharmacology (e.g., CATIE, STAR-D, CUtLASS, MTA)	
9: Research	k0904	Knowledge of evidence-based research regarding complementary and alternative medicines (e.g., Omega-3, folate, DHEA, St. John's Wort, melatonin)	
10: Professional, legal, ethical, and interprofessional issues			**6.7%**
10: Professional, legal, ethical, and interprofessional issues	k1001	Knowledge of relevant legal and ethical codes and standards that pertain to pharmacological practice; and laws and statutes for prescribing psychotropic medications (e.g., DEA regulations, telehealth)	
10: Professional, legal, ethical, and interprofessional issues	k1002	Knowledge of practice guidelines and standards of care for prescribing psychotropic medications (including relationship with referring psychologist)	
10: Professional, legal, ethical, and interprofessional issues	k1003	Knowledge of patients' rights related to medication treatments and therapy (e.g., informed consent, right to refuse treatment, right to treatment within the least restrictive environment, inappropriate psychotropic restraints, duty to warn, privileged communication, alternative decision maker, living will, durable power of attorney, advance directives)	
10: Professional, legal, ethical, and interprofessional issues	k1004	Knowledge of ethical issues regarding relationships with pharmaceutical companies (e.g., acceptance of gifts and samples, revealing sources of funding and affiliations, interactions with pharmaceutical reps)	