



La-Net

COM 205

INTRODUCTION TO MEDICAL PSYCHOLOGY



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Course code: COM 205

Course title: Introduction to Medical Psychology

Course credit load: 1 Unit

Series 1: Basic Concepts in Psychology

- **Part 1.1: Psychology as a Science**
 - Sub Part 1.1.1: Definition, scope, and goals of psychology
 - Sub Part 1.1.2: Major schools of psychological thought
 - Sub Part 1.1.3: Psychology and medicine: the biopsychosocial model
- **Part 1.2: Behaviour, Stimulus, and Response**
 - Sub Part 1.2.1: Defining behaviour and its determinants
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- **Part 1.3: Motivation and Mood**
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Introduction

Psychology is the scientific study of the mind and behaviour; it occupies a uniquely central position in the health sciences because every clinical encounter involves not just a body with a disease but a person with thoughts, feelings, motivations, fears, and social relationships that



profoundly shape the course and outcome of illness and the effectiveness of treatment; the clinician who understands psychological principles is better equipped to communicate with patients, elicit accurate histories, promote treatment adherence, support patients through distressing diagnoses, and recognise when psychological factors are contributing to physical presentations.

This Series introduces the foundational concepts of psychology that are most relevant to medical practice: the definition and scope of the discipline, its major schools of thought and their different ways of understanding behaviour, the biopsychosocial model that integrates psychology into clinical medicine, the concepts of behaviour and stimulus that form the basis of learning theory and behaviour modification, and the psychology of motivation and mood that determines why patients act as they do in relation to their health and how emotional states influence physical health outcomes.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 1.1** define psychology, describe its major schools of thought, and explain the biopsychosocial model and its relevance to clinical medicine,
- **SLO 1.2** define behaviour, explain the role of stimulus systems and the nervous system in determining behaviour, and
- **SLO 1.3** describe the major theories of motivation and emotion, and explain how mood and affect influence health outcomes.



1.1 Psychology as a Science

1.1.1 Definition, scope, and goals of psychology

Psychology is defined as the scientific study of behaviour and mental processes; behaviour refers to any observable action or response made by an organism, from the reflexive withdrawal of a hand from a hot surface to the complex social behaviour of political negotiation; mental processes refer to the internal, subjective experiences that accompany and guide behaviour, including perception, thought, memory, emotion, motivation, and consciousness; the adjective scientific in the definition is important: psychology uses systematic methods of observation, measurement, and analysis to generate knowledge about behaviour and mental processes, rather than relying on intuition, common sense, or untested tradition.

The goals of psychology are fourfold: description (accurately characterising behaviour and mental processes, answering the question of what is happening), explanation (identifying the causes and mechanisms of behaviour, answering why it happens), prediction (using knowledge of causes to anticipate how behaviour will occur in specified circumstances), and control or modification (applying psychological knowledge to change behaviour in beneficial directions, the goal most directly relevant to clinical medicine); the scope of psychology is extremely broad, encompassing areas as diverse as the neurochemical basis of emotion, the cognitive development of children, the social psychology of prejudice, the clinical assessment and treatment of mental disorders, and the psychological factors that influence physical health and healthcare behaviour.

Fill in the blank: The four goals of psychology are description, _____ (identifying causes and mechanisms), prediction, and control or modification of behaviour.

1.1.2 Major schools of psychological thought

The history of psychology as a scientific discipline has been shaped by a succession of schools of thought, each offering a different framework for understanding behaviour and mental processes; structuralism (Wilhelm Wundt, late nineteenth century) attempted to identify the basic elements of conscious experience through introspection; functionalism (William James, late nineteenth century) focused on the adaptive functions of mental processes rather than their structure;



psychoanalysis (Sigmund Freud, early twentieth century) proposed that behaviour is driven by unconscious forces, particularly repressed sexual and aggressive drives, and that early childhood experiences shape adult personality; behaviourism (John Watson, B.F. Skinner, early to mid-twentieth century) rejected the study of unobservable mental processes and focused exclusively on observable behaviour and its environmental determinants, producing influential learning theories based on classical and operant conditioning.

Humanistic psychology (Abraham Maslow, Carl Rogers, mid-twentieth century) reacted against both behaviourism and psychoanalysis by emphasising the inherent worth and growth potential of human beings, the importance of subjective experience, and the capacity for self-directed change; cognitive psychology (from the 1960s onward) restored the study of mental processes by examining information processing, memory, attention, and problem-solving using objective experimental methods; biological psychology (neuroscience) examines the brain and nervous system mechanisms underlying behaviour, linking psychological phenomena to neural structures and neurochemical processes; and evolutionary psychology applies Darwinian evolutionary theory to explain psychological mechanisms as adaptations shaped by natural selection; in contemporary psychological practice, these perspectives are increasingly integrated rather than treated as mutually exclusive, with most clinicians drawing on biological, psychological, and social explanations simultaneously.

Fill in the blank: _____ psychology, associated with Maslow and Rogers, emphasises the inherent worth and growth potential of human beings, the importance of subjective experience, and the capacity for self-directed personal change.

1.1.3 Psychology and medicine: the biopsychosocial model

The relevance of psychology to medicine is captured most comprehensively in the biopsychosocial model, introduced by George Engel in 1977, which holds that health and illness are best understood as the product of three interacting dimensions: the biological (genetic, neurochemical, physiological, and immunological factors), the psychological (thoughts, emotions, beliefs, personality, and behaviour), and the social (family relationships, cultural norms, socioeconomic status, social support, and healthcare systems); the model does not merely



add psychology alongside biology as a separate consideration but argues that these three dimensions are continuously interacting and that a complete understanding of any illness requires attending to all three simultaneously.

In clinical practice, the biopsychosocial model has several specific applications: it directs the clinician to assess not only the biological features of a presenting complaint but also the patient psychological responses (fear, beliefs about illness causation, coping style, and mood) and social context (family support, work demands, financial resources, and cultural illness narratives); it provides the framework for understanding how psychological states influence physical health (stress suppressing immune function, depression predisposing to cardiovascular disease, anxiety producing somatic symptoms); it supports the integration of psychological interventions (counselling, cognitive-behavioural therapy, relaxation training, and motivational interviewing) alongside medical treatments; and it underpins the importance of the therapeutic relationship as itself a healing instrument, since a trusting, empathic clinical relationship improves patient disclosure, adherence to treatment, and health outcomes independently of the specific treatments applied.

Fill in the blank: The biopsychosocial model, proposed by George _____ in 1977, holds that health and illness are best understood as the product of three interacting dimensions: the biological, the psychological, and the social.



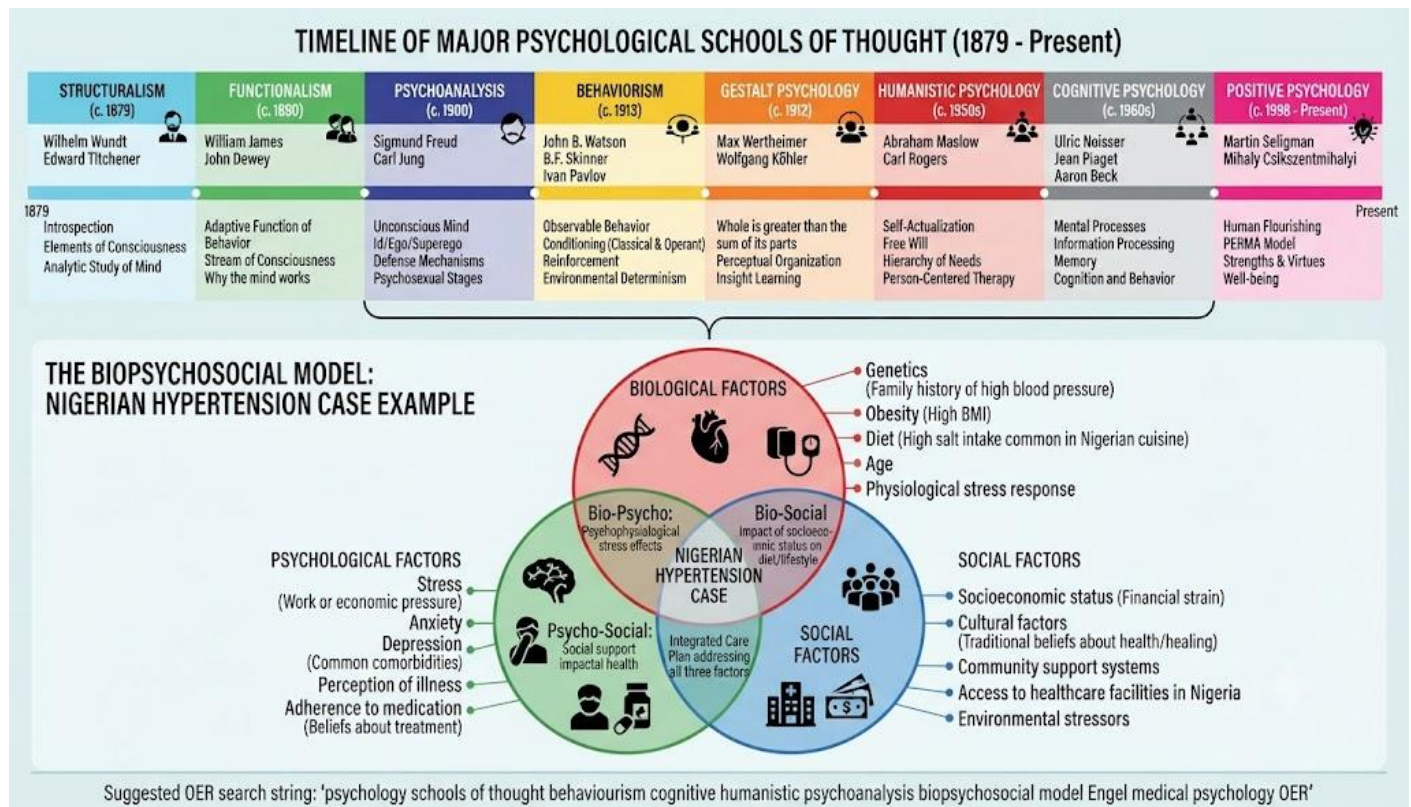


Figure 1.1: Major schools of psychology and the biopsychosocial model

Pilot questions 1.1

1. Define psychology and state its four goals.
2. Name six major schools of psychological thought and state the key focus of each.
3. Explain the biopsychosocial model and describe three of its clinical applications.
4. Explain why behaviourism rejected the study of mental processes and what its main contribution to psychology was.

1.2 Behaviour, Stimulus, and Response

1.2.1 Defining behaviour and its determinants

Behaviour is any observable and measurable action or response of an organism; it ranges from simple reflexes (the knee jerk reflex in response to a tap on the patellar tendon) through routine



motor actions (walking, speaking, and writing) to complex goal-directed activities (seeking healthcare, adhering to treatment, managing a chronic illness); in clinical medicine, health behaviour encompasses all actions related to health, including preventive behaviours (immunisation, screening, dietary habits, physical activity), treatment-seeking behaviours (when and where to seek care), treatment adherence behaviours (taking medications, attending follow-up appointments, completing rehabilitation), and risk behaviours (tobacco use, alcohol consumption, unsafe sexual practices).

The determinants of behaviour are multiple and operate at different levels: at the biological level, genetic predispositions, neurochemical states, hormonal influences, and physiological drives (hunger, thirst, pain, and fatigue) shape behaviour directly; at the psychological level, learning history, cognitive appraisals (how a person interprets a situation), emotional states, personality traits, attitudes, beliefs, and self-efficacy (the belief in one own capacity to perform a specific behaviour) all influence what a person does; at the social level, the behaviour of others (modelling and social pressure), cultural norms, social support, and environmental conditions determine what behaviours are possible, reinforced, or punished; behaviourists emphasised environmental determinants while cognitive psychologists emphasised the role of thought and belief; the contemporary view is that behaviour is always the product of the interaction between the individual (biological and psychological) and the environment (social and physical).

Fill in the blank: Self-_____, a key determinant of health behaviour at the psychological level, refers to the belief in one own capacity to successfully perform a specific behaviour, such as taking medication regularly or quitting smoking.

1.2.2 Stimulus systems and perception

A stimulus is any event or condition in the internal or external environment that is detected by sensory receptors and has the potential to elicit a response; stimuli are detected by the five external sensory systems (vision, hearing, touch, taste, and smell) and by internal sensory systems that detect the body own physiological states (proprioception, interoception, and the vestibular sense); perception is the active process by which the brain organises, interprets, and gives meaning to sensory information, transforming raw sensory data into a coherent experience



of the world; perception is not a passive recording of reality but an active construction influenced by past experience, expectation, attention, and context.

The relevance of stimulus and perception to medical psychology is significant: patient perception of bodily symptoms (the interpretation of a sensory signal such as chest discomfort as cardiac, musculoskeletal, or anxiety-related) determines whether and how quickly they seek medical care; the perception of pain is not a direct read-out of tissue damage but a complex psychological construction influenced by attention, emotional state, prior experience, cultural conditioning, and the social context of pain expression (in Nigerian clinical contexts, cultural norms around the expression of pain and stoicism vary across ethnic groups and genders, influencing how patients report pain and how clinicians interpret those reports); perceptual processes also underlie clinical assessment, as the clinician must correctly perceive and interpret the patient verbal and non-verbal communications.

Fill in the blank: _____ is the active process by which the brain organises, interprets, and gives meaning to sensory information, transforming raw sensory data into a coherent experience; it is not a passive recording of reality but an active construction influenced by experience, expectation, and context.

1.2.3 The nervous system as the basis of behaviour

The nervous system is the biological substrate of all psychological processes and behaviour; it is divided into the central nervous system (CNS, comprising the brain and spinal cord) and the peripheral nervous system (PNS, comprising all neural tissue outside the CNS); the brain is the organ most directly relevant to psychology, with different regions specialised for different functions: the cerebral cortex (the outermost layer, divided into frontal, parietal, temporal, and occipital lobes) processes perception, voluntary movement, language, reasoning, and planning; the limbic system (including the amygdala, hippocampus, hypothalamus, and cingulate gyrus) is involved in emotion, memory formation, motivation, and the regulation of autonomic functions; the brainstem (midbrain, pons, and medulla) controls basic vital functions including breathing, heart rate, and sleep-wake cycles; and the cerebellum coordinates movement and balance.



The peripheral nervous system is divided into the somatic nervous system (controlling voluntary skeletal muscle movement and carrying sensory information from the body surface to the CNS) and the autonomic nervous system (ANS, controlling the involuntary functions of internal organs); the ANS is further divided into the sympathetic division (the fight-or-flight response, which prepares the body for action in response to threat by increasing heart rate, blood pressure, and blood glucose, dilating pupils, and diverting blood to skeletal muscles) and the parasympathetic division (the rest-and-digest response, which restores the body to a resting state after a stress response by slowing heart rate, stimulating digestion, and conserving energy); the balance between sympathetic and parasympathetic activation is of central importance in understanding the physiological mechanisms by which psychological stress affects physical health.

Fill in the blank: The _____ nervous system controls involuntary functions of internal organs and is divided into the sympathetic division (fight-or-flight) and the parasympathetic division (rest-and-digest).

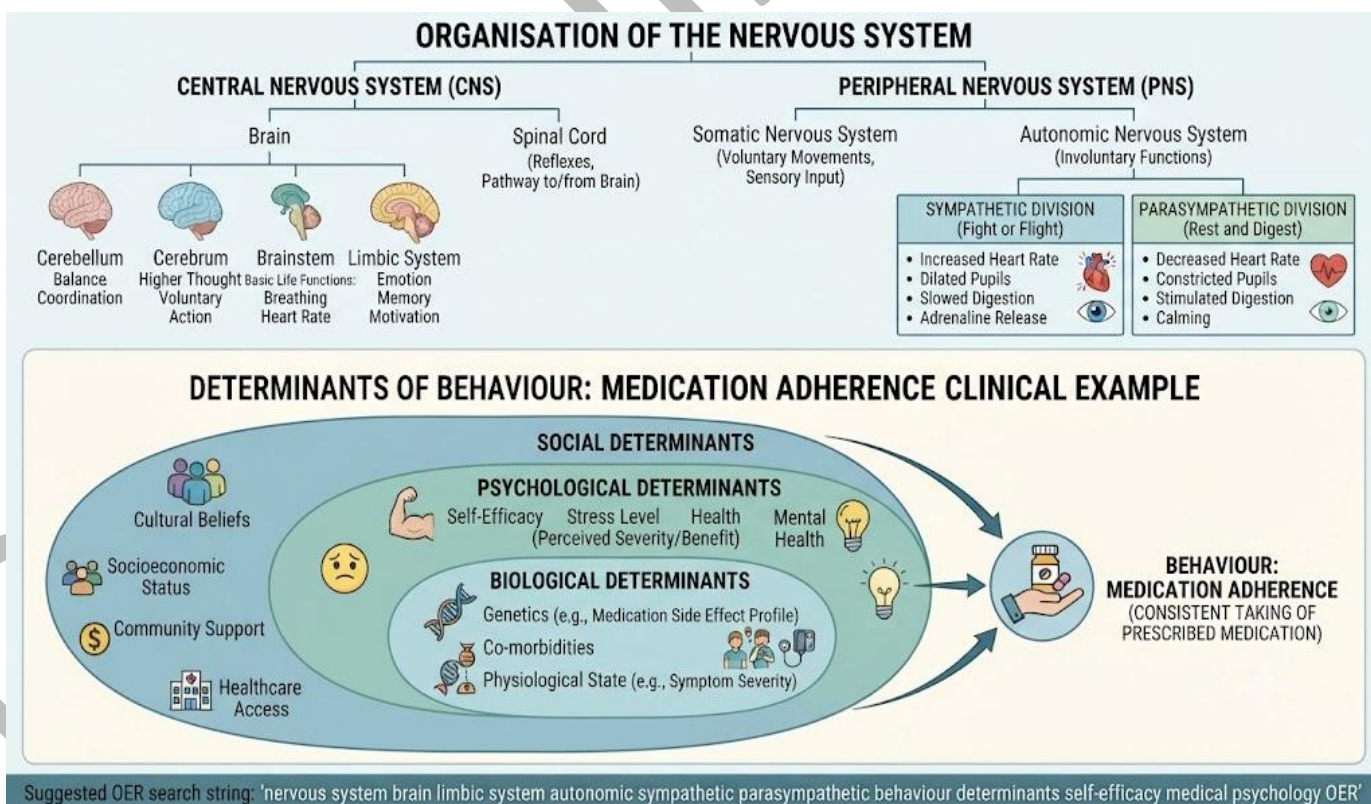


Figure 1.2: The nervous system and behaviour



1. Define behaviour and name four categories of health behaviour relevant to clinical medicine.
2. Explain three determinants of behaviour and give one medical example of each.
3. Explain what perception is and describe how it is relevant to the clinical assessment of pain.
4. Describe the autonomic nervous system and explain its relevance to the psychology of stress.

1.3 Motivation and Mood

1.3.1 Theories of motivation

Motivation refers to the internal states and external stimuli that initiate, direct, and sustain behaviour toward a goal; understanding motivation is central to medical psychology because it determines why patients engage or fail to engage in health-promoting behaviours, why they seek or delay healthcare, and why they adhere or do not adhere to treatment; motivation has both biological and psychological components: biological drives (hunger, thirst, pain, fatigue, and the sex drive) are states of physiological need or arousal that motivate behaviour directed toward need reduction; while psychological motives (the need for achievement, affiliation, autonomy, and self-esteem) are acquired through learning and socialisation and motivate a much wider range of human behaviour.

The major theories of motivation include: drive reduction theory (Clark Hull), which proposes that biological needs create drives (states of tension) that motivate behaviour to reduce the need and restore homeostasis; arousal theory, which proposes that organisms seek an optimal level of arousal (not too high, not too low) and that the motivation for behaviour is the maintenance of this optimal state; expectancy-value theory, which proposes that the strength of motivation to perform a behaviour is the product of the expected probability of success and the value placed on the outcome (relevant to health behaviour: a patient will take medication if they believe it will work and if they value the health outcome it produces); and self-determination theory (Deci and Ryan), which distinguishes between extrinsic motivation (behaviour motivated by external rewards or avoidance of punishment) and intrinsic motivation (behaviour motivated by inherent



interest, enjoyment, or personal value), and proposes that intrinsically motivated health behaviours are more durable and self-sustaining than those maintained by external incentives alone.

Fill in the blank: Self-determination theory distinguishes between extrinsic motivation (driven by external rewards or punishment avoidance) and _____ motivation (driven by inherent interest, personal value, or enjoyment), with intrinsic motivation producing more durable health behaviour change.

1.3.2 Emotion: nature, components, and theories

Emotions are complex, multi-component reactions to personally significant events that involve subjective feelings (the conscious experience of the emotion), physiological changes (alterations in heart rate, blood pressure, respiration, hormonal secretion, and the activity of the immune system), cognitive appraisal (the interpretation of the situation that gives the emotion its specific quality, as when the same physical arousal is labelled as fear or excitement depending on the context), action tendencies (the motivational impulse associated with the emotion, as when fear motivates escape and anger motivates confrontation), and expressive behaviour (facial expressions, posture, tone of voice, and gesture that communicate the emotional state to others); emotions evolved as adaptive responses to significant environmental events, preparing the organism to respond appropriately to threats, opportunities, losses, and social situations.

The major theories of emotion include: the James-Lange theory (William James and Carl Lange, independently, 1884), which proposes that emotion is the awareness of physiological changes that occur in response to an emotion-eliciting event (we feel afraid because we tremble, not we tremble because we are afraid); the Cannon-Bard theory (Walter Cannon), which argued that the physiological response and the subjective feeling of emotion occur simultaneously and independently, mediated by the thalamus; the two-factor theory (Stanley Schachter and Jerome Singer, 1962), which proposes that emotion requires both physiological arousal and a cognitive label applied to that arousal based on contextual cues; and the cognitive appraisal theory (Richard Lazarus), which emphasises the role of the individual evaluation of the personal



significance of an event in determining both the emotion experienced and the coping response; in clinical medicine, appraisal theory is particularly useful for understanding why the same diagnosis (such as cancer or HIV) produces very different emotional responses in different patients depending on their appraisal of its meaning and their coping resources.

Fill in the blank: The James-_____ theory of emotion proposes that emotion is the awareness of physiological changes that occur in response to an emotion-eliciting event, rather than physiological changes being the consequence of felt emotion.

1.3.3 Mood, affect, and their relevance to health

Mood refers to a diffuse, persistent affective state that is less intense, less specifically triggered, and more sustained than emotion; while emotions are typically brief reactions to specific events (fear on hearing a threatening sound, joy on receiving good news), moods colour the entire psychological field of an individual over periods of hours, days, or weeks and are often not clearly linked to a specific cause; affect is the broader term for the subjective experience of feeling states, encompassing both emotions and moods; in clinical assessment, mood is assessed both by direct enquiry (asking the patient how they have been feeling) and by observation of expressed affect (the visible, behavioural expression of feeling states through facial expression, tone of voice, and body language); incongruence between reported mood and observed affect (for example, a patient who reports feeling fine but whose affect is flat and restricted) is an important clinical sign.

The relationship between mood and physical health operates through multiple pathways: neurobiological pathways (depression and anxiety alter the activity of the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system, increasing levels of cortisol and inflammatory cytokines that directly damage cardiovascular, immune, and metabolic systems), behavioural pathways (negative mood states reduce motivation for health-promoting behaviours such as exercise, healthy eating, and medication adherence, while increasing engagement in health-damaging behaviours such as tobacco use, excessive alcohol consumption, and social withdrawal), and social pathways (depression and anxiety impair social relationships and reduce



access to social support, which is itself a powerful health-protective factor); in Nigeria, where depression is prevalent and significantly undertreated, its contribution to the burden of physical illness through these pathways is substantial and underrecognised.

Fill in the blank: _____ refers to a diffuse, persistent affective state that colours the entire psychological field over hours to weeks and is less intense and less specifically triggered than an emotion.

Pilot questions 1.3

1. Define motivation and distinguish between biological drives and psychological motives.
2. Explain expectancy-value theory and self-determination theory as frameworks for understanding health behaviour.
3. Name the four major theories of emotion and explain the key claim of each.
4. Explain the three pathways through which negative mood affects physical health.



Series Summary

This Series established the foundational concepts of psychology that underpin medical practice, beginning with the discipline itself as a science with four goals: description, explanation, prediction, and control of behaviour and mental processes. The major schools of psychological thought were traced from structuralism and functionalism through psychoanalysis, behaviourism, humanism, and cognitive psychology to the contemporary integration of biological, psychological, and social perspectives in the biopsychosocial model introduced by George Engel in 1977; the model was shown to have direct clinical applications in patient assessment, the integration of psychological and medical treatment, and the understanding of how psychological states shape physical health outcomes. Behaviour was defined and its multiple determinants at biological, psychological, and social levels were examined, with stimulus systems and perception explored as the mechanisms through which environmental events are detected and interpreted to produce behavioural responses.

The nervous system was introduced as the biological substrate of behaviour, with attention to the cortical regions underlying cognition and the limbic system underlying emotion, and with particular emphasis on the autonomic nervous system whose sympathetic and parasympathetic divisions mediate the physiological effects of psychological stress on the body. Motivation was examined through drive reduction, arousal, expectancy-value, and self-determination theories, each offering a different lens on why patients engage or fail to engage in health behaviours; intrinsic motivation was identified as most durable for sustained behaviour change. Emotion was examined through its four components and four major theories, with Lazarus cognitive appraisal theory highlighted as particularly useful for understanding variable patient responses to the same diagnosis. Mood and affect were distinguished from emotion and their pathways of influence on physical health through neuroendocrine, behavioural, and social mechanisms were described, with depression in Nigeria identified as a substantially undertreated contributor to physical illness burden.



Glossary of Terms

- **Affect:** the broader term for subjective feeling states, encompassing both discrete emotions and more sustained moods.
- **Autonomic nervous system (ANS):** the division of the peripheral nervous system controlling involuntary functions of internal organs; divided into sympathetic (fight-or-flight) and parasympathetic (rest-and-digest) branches.
- **Behaviourism:** the school of psychology that focuses exclusively on observable behaviour and its environmental determinants, rejecting the study of unobservable mental processes.
- **Biopsychosocial model:** the framework proposed by Engel (1977) holding that health and illness result from the interaction of biological, psychological, and social factors.
- **Cognitive appraisal:** the individual evaluation of the personal significance of an event, which determines the specific emotion experienced and the coping response mobilised.
- **Emotion:** a complex multi-component reaction to a personally significant event, involving subjective feeling, physiological change, cognitive appraisal, action tendency, and expressive behaviour.
- **Intrinsic motivation:** motivation arising from inherent interest, personal value, or enjoyment of an activity, associated with more durable and self-sustaining behaviour change than extrinsic motivation.
- **Mood:** a diffuse, persistent affective state that colours the psychological field over hours to weeks, less intense and less specifically triggered than a discrete emotion.
- **Perception:** the active process of organising, interpreting, and giving meaning to sensory information; influenced by experience, expectation, attention, and context.
- **Self-efficacy:** the belief in one own capacity to successfully perform a specific behaviour, a key psychological determinant of health behaviour.

Concept Check Questions [Series 1]



Objective Questions

1. The four goals of psychology are description, _____, prediction, and control or modification of behaviour. (Linked to SLO 1.1)
2. _____ psychology, associated with Maslow and Rogers, emphasises human worth, growth potential, and subjective experience. (Linked to SLO 1.1)
3. Self-_____, a key psychological determinant of health behaviour, is the belief in one own capacity to successfully perform a specific behaviour. (Linked to SLO 1.2)
4. The _____ nervous system controls involuntary organ functions and is divided into sympathetic and parasympathetic divisions. (Linked to SLO 1.2)
5. _____ motivation, arising from inherent interest or personal value, is more durable than extrinsic motivation for sustaining health behaviour change. (Linked to SLO 1.3)

Short-Answer Questions

6. Explain the biopsychosocial model and describe two of its clinical applications. (Linked to SLO 1.1)
7. Distinguish between the sympathetic and parasympathetic divisions of the autonomic nervous system and explain their relevance to stress. (Linked to SLO 1.2)
8. Explain cognitive appraisal theory of emotion and describe its clinical relevance. (Linked to SLO 1.3)

Long-Answer Question

9. Discuss the basic concepts of psychology most relevant to medical practice, covering the major schools of thought, behaviour and its determinants, and motivation and mood. (Linked to SLOs 1.1, 1.2, 1.3)



Answers to Concept Check Questions [Series 1]

Objective Questions

1. Explanation.
2. Humanistic.
3. Efficacy.
4. Autonomic.
5. Intrinsic.

Short-Answer Questions

6. The biopsychosocial model holds that health and illness result from the continuous interaction of biological (genetic, physiological, neurochemical), psychological (thoughts, emotions, personality, behaviour), and social (family, culture, socioeconomic status, social support) factors; Engel proposed it in 1977 as a more complete framework than the purely biomedical model. Clinical applications: (1) patient assessment includes not only biological findings but also psychological responses (illness beliefs, mood, coping) and social context (family support, work demands, cultural norms); (2) psychological interventions (cognitive-behavioural therapy, relaxation, motivational interviewing) are integrated alongside medical treatments to address all three dimensions.
7. Sympathetic division: the fight-or-flight response, activated by threat or stress; effects include increased heart rate, blood pressure, and blood glucose, dilation of pupils, and diversion of blood to skeletal muscles; mediated by noradrenaline at target organs. Parasympathetic division: the rest-and-digest response, dominant at rest and after stress resolution; effects include slowing of heart rate, stimulation of digestion, and energy conservation; mediated by acetylcholine. Relevance to stress: chronic psychological stress maintains sympathetic activation, producing chronically elevated cortisol, raised blood pressure, immune suppression, and metabolic dysregulation that contribute to cardiovascular disease, diabetes, and vulnerability to infection.
8. Lazarus cognitive appraisal theory proposes that emotion is determined not by the event itself but by the individual evaluation of the event personal significance; primary appraisal evaluates whether the event is irrelevant, benign, or threatening/challenging; secondary appraisal evaluates the coping resources available; together these appraisals determine both the specific emotion and the coping response; clinical relevance: the same diagnosis (e.g. HIV positive) produces widely different emotional responses (devastation versus equanimity versus denial) depending on the



patient appraisal of what it means for their life and their coping capacity; interventions can target maladaptive appraisals to reduce psychological distress.

Long-Answer Question

9. Major schools: structuralism (elements of consciousness), functionalism (adaptive function), psychoanalysis (unconscious drives, childhood experience), behaviourism (observable behaviour, conditioning), humanistic (human worth, self-actualisation), cognitive (information processing, mental representations), biological (brain, neurochemistry); contemporary integration in the biopsychosocial model (Engel 1977: biological x psychological x social interaction determines health and illness). Behaviour and determinants: behaviour = any observable action from reflex to complex social activity; health behaviours include preventive, treatment-seeking, adherence, and risk behaviours; biological determinants (drives, neurochemistry, genetics), psychological determinants (self-efficacy, appraisals, emotions, personality), social determinants (norms, modelling, social support, cultural context); stimulus is any event detected by sensory receptors; perception is the active brain construction of meaning from sensory data (pain perception as complex psychological construction); nervous system: cortex (cognition), limbic (emotion), brainstem (vital functions), ANS (sympathetic fight-or-flight vs parasympathetic rest-and-digest). Motivation: drive reduction (need->drive->behaviour->need reduction); expectancy-value (motivation = expected success x outcome value); self-determination (intrinsic > extrinsic for durability). Emotion: subjective feeling, physiological change, cognitive appraisal, action tendency, expressive behaviour; James-Lange (feel emotion because of physiological changes), Cannon-Bard (simultaneous independent response and feeling), Schachter-Singer (arousal + cognitive label), Lazarus (appraisal determines emotion and coping). Mood versus emotion; neurobiological, behavioural, and social pathways through which negative mood worsens physical health.

Answers to Pilot Questions [Series 1]

Part 1.1

1. Psychology is the scientific study of behaviour and mental processes; its four goals are: description (what is happening, accurate characterisation of behaviour), explanation (why it happens, identifying causes and mechanisms), prediction (anticipating how behaviour will occur



given known causes), and control or modification (applying psychological knowledge to change behaviour in beneficial directions, the goal most relevant to clinical medicine).

2. Structuralism (Wundt: basic elements of consciousness through introspection), functionalism (James: adaptive functions of mental processes), psychoanalysis (Freud: unconscious drives and childhood experience), behaviourism (Watson, Skinner: observable behaviour and environmental conditioning), humanistic psychology (Maslow, Rogers: human worth, self-actualisation, subjective experience), cognitive psychology (information processing, memory, mental representations).
3. The biopsychosocial model holds that health and illness result from the continuous interaction of biological, psychological, and social factors; three clinical applications: (1) patient assessment addresses all three dimensions, not only biological findings; (2) psychological interventions (CBT, motivational interviewing, relaxation) are integrated alongside medical treatments; (3) the therapeutic relationship is recognised as itself a healing instrument, improving patient disclosure, adherence, and outcomes through the biological effects of trust, safety, and positive affect.
4. Behaviourism rejected the study of unobservable mental processes (such as thoughts and feelings) as unscientific because they could not be directly measured; it focused exclusively on the objective relationship between observable stimuli and observable responses; its main contribution was the development of learning theories based on classical conditioning (Pavlov, Watson) and operant conditioning (Skinner), which showed how behaviour is acquired and maintained by environmental stimuli and consequences, providing the basis for behaviour modification techniques still widely used in clinical psychology and health promotion today.

Part 1.2

1. Behaviour is any observable and measurable action or response of an organism; four categories of health behaviour: preventive behaviour (immunisation, dietary choices, physical activity, screening), treatment-seeking behaviour (recognising symptoms, deciding when and where to seek care), treatment adherence behaviour (taking medications, attending follow-up, completing rehabilitation), risk behaviour (tobacco use, excessive alcohol, unsafe sexual practices).
2. Biological determinants: genetic predispositions and physiological drives; example: pain as a biological drive that motivates healthcare-seeking even in patients who would otherwise avoid clinics. Psychological determinants: self-efficacy and illness beliefs; example: a patient with low self-efficacy for insulin injection who avoids diabetes management because they do not believe they can successfully administer insulin. Social determinants: cultural norms and social pressure;



example: community norms around hospital delivery being dangerous that delay women seeking skilled birth attendance.

3. Perception is the active brain process of organising and interpreting sensory information to construct a meaningful experience; in pain assessment, the clinical relevance is that pain is not a direct read-out of tissue damage but a psychological construction influenced by attention (pain perceived as more intense when focused upon), emotional state (anxiety amplifies pain; positive affect reduces it), prior experience (previous painful procedures sensitise subsequent pain perception), and cultural conditioning (norms around pain expression vary across Nigerian ethnic groups and genders, influencing patient reporting and clinician interpretation).
4. The autonomic nervous system (ANS) controls involuntary functions of internal organs; sympathetic division (fight-or-flight): activated by psychological or physical stress, it increases heart rate, blood pressure, blood glucose, and blood flow to skeletal muscles, preparing for action; mediated by noradrenaline and adrenaline; parasympathetic division (rest-and-digest): dominant at rest, it slows heart rate, promotes digestion, and conserves energy; mediated by acetylcholine; relevance to stress: chronic psychological stress (from work demands, financial insecurity, or relationship conflict) maintains prolonged sympathetic activation, producing chronically elevated cortisol and catecholamines that damage the cardiovascular system, suppress immunity, and disrupt metabolic regulation.

Part 1.3

1. Motivation refers to the internal states and external stimuli that initiate, direct, and sustain behaviour toward a goal; biological drives are states of physiological need or arousal (hunger, thirst, pain, fatigue, sex drive) that motivate behaviour directed toward restoring homeostasis; psychological motives are acquired through learning and socialisation and include the needs for achievement, affiliation, autonomy, and self-esteem, which motivate complex social and goal-directed behaviour; biological drives are universal while psychological motives are culturally shaped and individually variable.
2. Expectancy-value theory: motivation to perform a behaviour = the expected probability of success multiplied by the value placed on the outcome; clinical application: a patient will adhere to antihypertensive medication if they believe (1) it will effectively lower their blood pressure (high expectancy) and (2) that normal blood pressure matters to their health and quality of life (high value); interventions targeting low expectancy (explaining how the medication works) and low value (discussing the consequences of uncontrolled hypertension) will improve adherence. Self-determination theory: intrinsic motivation (activity valued for its own sake) produces more



durable health behaviour change than extrinsic motivation (taking medication for fear of the doctor disapproval); clinical implication: helping patients find personal meaning in their health behaviours and supporting their sense of autonomy produces better long-term adherence than reward and punishment approaches.

3. James-Lange theory: emotion is the awareness of physiological changes that occur in response to an emotion-eliciting event (we feel afraid because our heart races, not the reverse). Cannon-Bard theory: physiological response and subjective emotion occur simultaneously and independently, mediated by the thalamus. Schachter-Singer two-factor theory: emotion requires two factors: physiological arousal plus a cognitive label applied to that arousal based on contextual cues (the same arousal can be labelled as anxiety or excitement). Lazarus cognitive appraisal theory: the specific emotion experienced depends on the individual appraisal of the event personal significance (primary appraisal: is this threatening?) and their coping resources (secondary appraisal: can I handle this?).
4. Neurobiological pathway: negative mood (depression, anxiety) activates the HPA axis and sympathetic nervous system, raising cortisol and inflammatory cytokines that damage the cardiovascular system, suppress immune function, and disrupt metabolic regulation, directly increasing risk of cardiovascular disease, infection, and type 2 diabetes. Behavioural pathway: negative mood reduces motivation for health-promoting behaviours (exercise, healthy diet, medication adherence) and increases engagement in health-damaging behaviours (tobacco, alcohol, social withdrawal), indirectly worsening physical health. Social pathway: depression and anxiety impair social relationships and reduce the ability to seek and use social support, which is itself a powerful health-protective factor that buffers the effects of stress and illness.



References and Attributions

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Figures, Plates, Tables, and Boxes

- Figure 1.1: Major schools of psychology and the biopsychosocial model Attribution: AI generated. Suggested OER search string: "psychology schools of thought behaviourism cognitive humanistic psychoanalysis biopsychosocial model Engel medical psychology OER".
- Figure 1.2: The nervous system and behaviour Attribution: AI generated. Suggested OER search string: "nervous system brain limbic system autonomic sympathetic parasympathetic behaviour determinants self-efficacy medical psychology OER".



Course code: COM 205

Course title: Introduction to Medical Psychology

Course credit load: 1 Unit

Series 2: Cognitive Processes and Learning

- **Part 2.1: Attention and Perception in Clinical Contexts**
 - Sub Part 2.1.1: Attention: definition, types, and clinical relevance
 - Sub Part 2.1.2: Perceptual organisation and clinical implications
 - Sub Part 2.1.3: Consciousness and its alterations
- **Part 2.2: Learning Theories and Their Clinical Applications**
 - Sub Part 2.2.1: Classical conditioning
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- **Part 2.3: Memory, Intelligence, and Their Health Implications**
 - Sub Part 2.3.1: Memory: types, processes, and disorders
 - Sub Part 2.3.2: Intelligence: definitions, theories, and measurement
 - Sub Part 2.3.3: Health literacy, cognitive capacity, and clinical communication

Introduction

Cognitive processes are the mental operations through which information from the environment is received, selected, organised, stored, retrieved, and used to guide behaviour; they include



attention (the selective focus of mental resources), perception (the interpretation of sensory information), learning (the relatively permanent change in behaviour or mental representations resulting from experience), memory (the encoding, storage, and retrieval of information), and intelligence (the capacity to reason, solve problems, and adapt to new situations); these processes are not merely academic psychological constructs but have direct and practical relevance to every dimension of clinical medicine, from the patient ability to understand and remember a diagnosis and treatment plan to the clinician capacity to learn from clinical experience and update their knowledge base.

This Series examines each of these cognitive processes in turn, with particular attention to their clinical applications: how attention and consciousness are altered in illness, how learning principles from classical and operant conditioning explain the acquisition of health behaviours and phobias and can be applied to behaviour modification and anxiety management, how memory systems work and fail (including the memory impairments that affect elderly patients and those with brain injury or dementia), and how intelligence and health literacy determine whether patients can understand and act on health information; understanding these processes allows the clinician to communicate more effectively, design more appropriate health education, and better serve patients whose cognitive function is compromised.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 2.1** define attention and describe its types, explain how perception is organised, and describe the major alterations of consciousness encountered in clinical practice,
- **SLO 2.2** explain classical and operant conditioning and observational learning, and describe their clinical applications in health behaviour and behaviour modification, and
- **SLO 2.3** describe the major memory systems and their clinical disorders, define intelligence and its major theories, and explain the implications of health literacy and cognitive capacity for clinical communication.



2.1 Attention and Perception in Clinical Contexts

2.1.1 Attention: definition, types, and clinical relevance

Attention is the cognitive process of selectively concentrating mental resources on one aspect of the environment or of one own thoughts while ignoring others; it is a limited resource: the human brain cannot fully process all of the sensory information available at any given moment, and attention serves as the gatekeeper that selects which information receives deeper processing; the types of attention include sustained attention (the ability to maintain focused attention over a prolonged period, also called vigilance; relevant to tasks such as reading a long patient record or monitoring a patient in intensive care), selective attention (the ability to focus on a target stimulus while ignoring distractors; relevant to performing a clinical examination in a busy, noisy environment), divided attention (the ability to attend to multiple stimuli or tasks simultaneously; relevant to taking a history while observing the patient non-verbal communication), and alternating attention (the ability to shift attention flexibly between different tasks or stimuli; relevant to switching between writing in the clinical notes and re-engaging with the patient).

Attention has significant clinical relevance in multiple directions: as a clinical skill (the clinician attention to subtle signs and symptoms determines diagnostic accuracy), as a clinical assessment target (deficits in sustained or selective attention are among the earliest and most sensitive indicators of cognitive impairment, delirium, traumatic brain injury, and attention-deficit hyperactivity disorder (ADHD)), and as a patient variable affecting clinical interactions (a patient in pain, high anxiety, or an altered state of consciousness has severely reduced attentional capacity and will not retain information delivered during such a state, so health education must be timed appropriately); the clinical assessment of attention uses simple bedside tests such as the serial sevens (counting backward from 100 by sevens) or WORLD backward (spelling the word WORLD in reverse order), which detect attentional impairment in delirium and dementia.

Fill in the blank: _____ attention is the ability to maintain focused mental concentration over a prolonged period; it is assessed by serial sevens and WORLD backward tests and is among the earliest functions impaired in delirium and dementia.



2.1.2 Perceptual organisation and clinical implications

Perception is not a passive registration of sensory input but an active process in which the brain uses prior experience, expectation, and contextual information to construct a coherent interpretation of sensory data; the Gestalt psychologists (early twentieth century) identified several principles by which the brain organises perceptual input into meaningful wholes: the principle of figure-ground (the tendency to perceive a figure as distinct from its background), proximity (elements close together are perceived as grouped), similarity (similar elements are grouped together), closure (incomplete figures are perceived as complete), and continuity (elements aligned in a smooth path are perceived as connected); these principles explain many optical illusions and have practical implications for the design of medical devices, forms, and patient information materials, where visual organisation determines whether critical information is perceived and interpreted correctly.

In the clinical setting, perceptual processes have several important implications: clinical diagnosis depends heavily on pattern recognition, which is a perceptual-cognitive skill in which experienced clinicians rapidly perceive clusters of signs and symptoms as matching a familiar disease template (the Cushingoid appearance, the facies of Down syndrome, or the gait of Parkinson disease); perceptual errors occur when expectation overrides sensory evidence (seeing what one expects to see rather than what is there, an error that contributes to diagnostic error); and patients' perceptual interpretation of their own bodily sensations determines whether they interpret a symptom as serious enough to warrant healthcare-seeking (a patient who perceives chest tightness as indigestion rather than as a cardiac symptom will delay seeking emergency care with potentially fatal consequences).

Fill in the blank: The Gestalt principle of _____ describes the tendency to perceive incomplete figures as complete wholes; this and other Gestalt principles explain how the brain actively organises sensory input rather than passively registering it.

2.1.3 Consciousness and its alterations

Consciousness refers to the state of being aware of and responsive to one's own thoughts, sensations, and surroundings; it is a multi-dimensional construct that includes arousal (the degree



of wakefulness, ranging from alert to asleep to comatose), awareness (the content of conscious experience: what one is perceiving, thinking, and feeling), and self-awareness (the recognition of oneself as a distinct entity); the normal waking state of full consciousness is maintained by the ascending reticular activating system (ARAS) in the brainstem, which projects diffusely to the cortex; disruption of the ARAS or of widespread cortical function produces altered states of consciousness.

The clinically important alterations of consciousness include: delirium (acute confusional state, characterised by acute onset, fluctuating course, inattention, disorientation, and often perceptual disturbances including visual hallucinations; caused by systemic illness, medications, substance withdrawal, or metabolic disturbance and is a medical emergency); stupor (a state of near-unconsciousness from which the patient can be briefly aroused by strong stimuli); coma (a state of unresponsive unarousability, assessed by the Glasgow Coma Scale which scores eye opening, verbal response, and motor response to give a maximum score of 15); and the persistent vegetative state (eyes open without awareness); sleep (a naturally occurring altered state of consciousness characterised by reduced responsiveness to the environment, periodically cycling between non-REM and REM stages); and drug-induced states (general anaesthesia, sedation, and the dissociative states produced by ketamine).

Fill in the blank: _____ is an acute confusional state characterised by acute onset, fluctuating course, inattention, and often perceptual disturbances; it is caused by systemic illness or metabolic disturbance and is a medical emergency requiring urgent identification of the underlying cause.



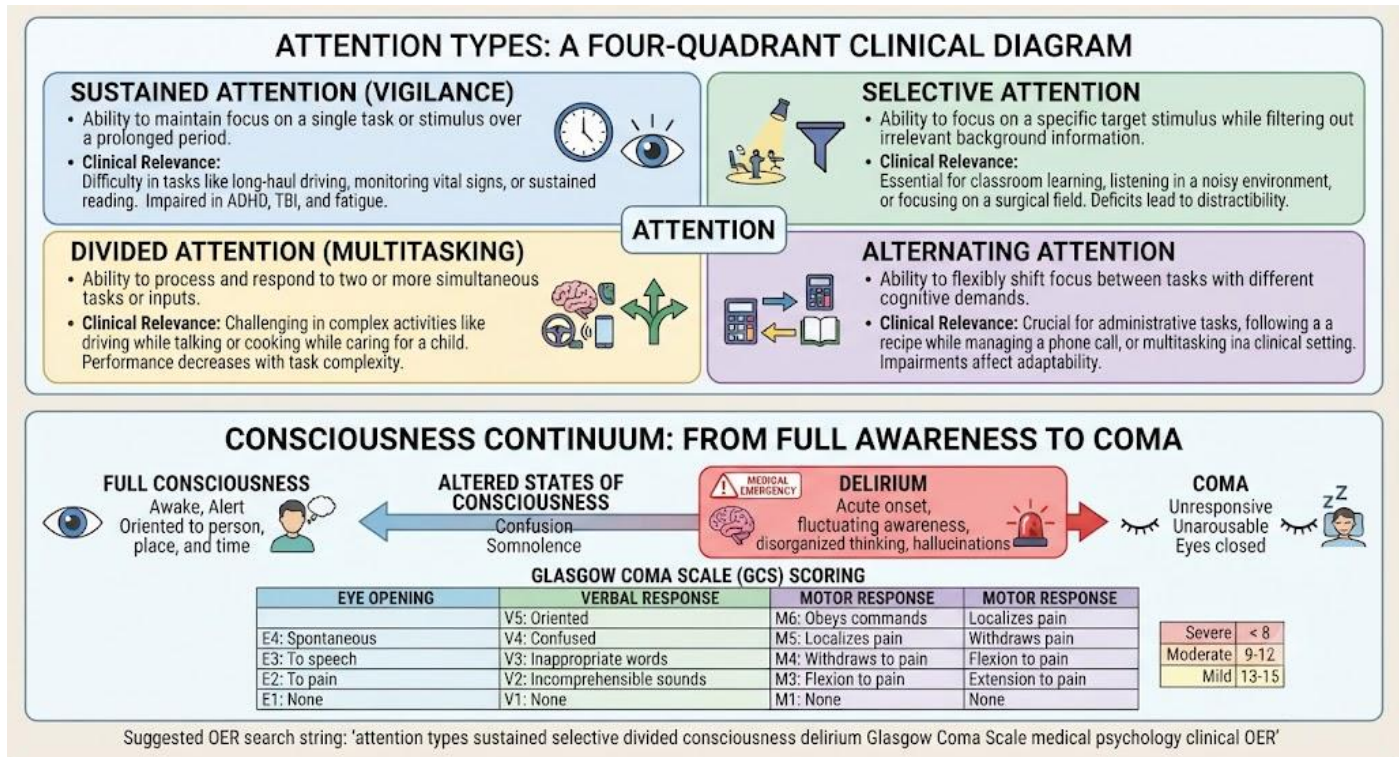


Figure 2.1: Attention types and alterations of consciousness

Pilot questions 2.1

1. Name and define the four types of attention and state the clinical relevance of each.
2. Explain three Gestalt principles of perceptual organisation and give a clinical application of pattern recognition.
3. Describe the clinical features of delirium and explain why it is a medical emergency.
4. Explain how the Glasgow Coma Scale assesses consciousness.

2.2 Learning Theories and Their Clinical Applications

2.2.1 Classical conditioning

Classical conditioning, first described by Ivan Pavlov through his experiments with dogs in the late nineteenth and early twentieth centuries, is a form of learning in which a previously neutral stimulus (the conditioned stimulus, CS) comes to elicit a response (the conditioned response,



CR) by being repeatedly paired with a stimulus that naturally elicits that response (the unconditioned stimulus, UCS, which naturally produces the unconditioned response, UCR); in Pavlov original experiments, the sound of a bell (CS) was repeatedly paired with the presentation of food (UCS, which naturally produced salivation, UCR), until the sound of the bell alone produced salivation (CR); the learning process requires acquisition (the repeated pairing of CS and UCS), and the learned response can subsequently be weakened through extinction (repeated presentation of CS without UCS, causing CR to diminish) and can spontaneously reappear after extinction (spontaneous recovery).

Classical conditioning has several directly relevant clinical applications: conditioned anxiety and phobias (a previously neutral medical stimulus such as a hospital, needle, or white coat can acquire fear-eliciting properties through association with a painful or frightening experience, producing anticipatory anxiety and avoidance of healthcare that persists long after the original experience; needle phobia, which is highly prevalent and is a significant barrier to vaccination and blood testing, is a classically conditioned fear response); conditioned nausea and vomiting in cancer chemotherapy (the nausea produced by chemotherapy drugs can become conditioned to the hospital environment, the smell of the ward, or even the thought of treatment, producing anticipatory nausea before the drug is given); and systematic desensitisation (a behaviour therapy for phobias based on extinction of the conditioned fear response through graded exposure to the CS in a relaxed state, which is highly effective for needle phobia and other medically relevant phobias).

Fill in the blank: Systematic _____ is a behaviour therapy for phobias based on extinction of a conditioned fear response through graded exposure to the conditioned stimulus in a relaxed state, and is highly effective for needle phobia and other medically relevant anxiety responses.

2.2.2 Operant conditioning

Operant conditioning, developed by B.F. Skinner building on the earlier work of Edward Thorndike, describes how the consequences of behaviour determine the probability of that behaviour being repeated; the key concepts are: reinforcement (any consequence that increases the probability of a behaviour being repeated), which can be positive (the addition of a desirable



stimulus following the behaviour, such as praise, payment, or relief from symptoms) or negative (the removal of an unpleasant stimulus following the behaviour, such as the relief of pain following analgesic use, which negatively reinforces medication-seeking); and punishment (any consequence that decreases the probability of a behaviour being repeated), which can be positive (adding an unpleasant consequence) or negative (removing a desirable stimulus); schedules of reinforcement (the timing and frequency of reinforcement relative to the behaviour) powerfully affect the strength and persistence of learned behaviour.

Operant conditioning principles have extensive clinical applications: behaviour modification programmes (systematically applying reinforcement and extinction principles to increase desired health behaviours such as medication adherence, physical rehabilitation exercises, and weight management, and to decrease undesired behaviours such as self-injurious behaviour in children with developmental disorders); token economy systems (used in psychiatric units and rehabilitation settings, in which patients earn tokens for desired behaviours that can be exchanged for privileges, providing consistent positive reinforcement for adaptive behaviour); biofeedback (using real-time physiological monitoring to provide the patient with information about their own physiological responses, allowing operant conditioning of normally involuntary processes such as muscle tension, heart rate, and blood pressure, which has applications in pain management, hypertension, and headache); and the explanation of drug dependence (both positive reinforcement by the pleasurable effects of drugs and negative reinforcement by the relief of withdrawal symptoms maintain drug-taking behaviour and make cessation extremely difficult).

Fill in the blank: _____ reinforcement occurs when the removal of an unpleasant stimulus following a behaviour increases the probability of that behaviour being repeated; the relief of pain following analgesic use is an example that negatively reinforces medication-seeking behaviour.

2.2.3 Observational and cognitive learning

Observational learning (also called social learning or modelling), described by Albert Bandura in his social learning theory (1977), proposes that much human learning occurs not through direct



experience but through observing the behaviour of others (models) and the consequences of their behaviour; the conditions for effective observational learning are: attention (the observer must attend to the model behaviour), retention (the observed behaviour must be encoded in memory), reproduction (the observer must have the physical and cognitive capacity to reproduce the behaviour), and motivation (the observer must be motivated to perform the behaviour, influenced by the expected consequences and by self-efficacy); Bandura concept of self-efficacy (first introduced in 1977) is particularly important: people are more likely to attempt and persist in a behaviour if they have high self-efficacy for that behaviour, which is influenced by prior performance accomplishments, vicarious experience (seeing similar others succeed), verbal persuasion, and physiological states.

Cognitive learning (insight learning, latent learning, and the formation of cognitive maps) refers to forms of learning that involve the acquisition of knowledge and understanding rather than simply the conditioning of specific stimulus-response associations; insight learning (Wolfgang Kohler), the sudden realisation of how to solve a problem by perceiving the relationships among its elements, is relevant to clinical problem-solving and to patient understanding of their illness; cognitive learning theory underpins the clinical application of cognitive-behavioural therapy (CBT), which targets the maladaptive thoughts and beliefs that maintain psychological distress and dysfunctional health behaviour, rather than focusing only on behavioural reinforcement contingencies; observational learning has direct health applications in peer education programmes, modelling of health behaviours by community health workers, and the influence of media portrayals of health and illness behaviour on patient expectations and self-management.

Fill in the blank: Albert Bandura identified four conditions for effective observational learning: attention to the model, _____ of the observed behaviour, physical capacity for reproduction, and motivation to perform the behaviour.



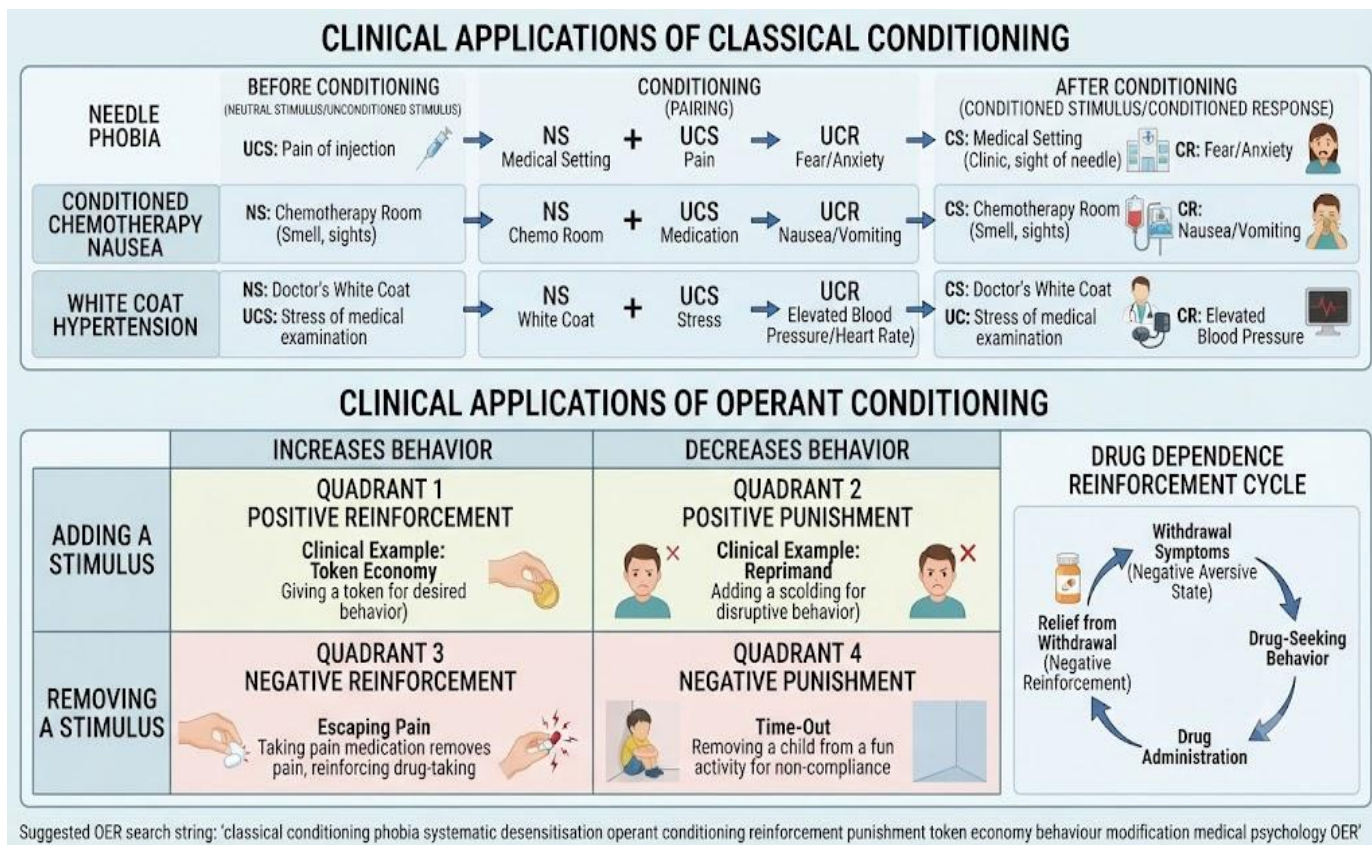


Figure 2.2: Classical and operant conditioning in clinical practice

Pilot questions 2.2

1. Explain the process of classical conditioning using needle phobia as an example.
2. Distinguish between positive and negative reinforcement and give one clinical example of each.
3. Explain the concept of systematic desensitisation and describe how it would be applied to needle phobia.
4. Explain Bandura social learning theory and describe two clinical applications of observational learning.



2.3 Memory, Intelligence, and Their Health Implications

2.3.1 Memory: types, processes, and disorders

Memory is the cognitive system that encodes, stores, and retrieves information; it is not a single unitary system but a collection of distinct memory systems with different neural substrates and functional properties; the major memory systems include: sensory memory (the brief, modality-specific retention of sensory information, lasting approximately 0.5 to 3 seconds, from which information is selected for further processing), short-term memory (STM, also called working memory, the system that holds a small amount of information in an active, accessible state for approximately 15 to 30 seconds; capacity is limited to approximately 7 plus or minus 2 items or chunks of information as described by George Miller in 1956), and long-term memory (LTM, the system that stores information over extended periods from hours to a lifetime; LTM is further divided into explicit or declarative memory, which stores consciously accessible factual knowledge about the world [semantic memory] and personally experienced events [episodic memory], and implicit or non-declarative memory, which stores unconsciously acquired skills, habits, and conditioned responses).

The three processes of memory are encoding (transforming information into a form that can be stored; deep or elaborative encoding, in which information is processed for meaning and connected to existing knowledge, produces more durable memories than shallow encoding), storage (maintaining encoded information over time; long-term memories are maintained through synaptic consolidation involving protein synthesis and structural changes at synapses), and retrieval (accessing and reconstructing stored information; retrieval is facilitated by retrieval cues that were present at encoding, explaining the context-dependent nature of memory); clinically important memory disorders include anterograde amnesia (the inability to form new memories after a brain injury or illness; seen in severe hippocampal damage from herpes simplex encephalitis, Wernicke-Korsakoff syndrome from thiamine deficiency, or severe traumatic brain injury), retrograde amnesia (the loss of memories formed before the onset of illness or injury), and the progressive memory impairment of dementia (most commonly Alzheimer disease, characterised by the progressive loss of recent episodic memory followed by semantic memory and ultimately by procedural memory and basic function).



Fill in the blank: _____ memory is the consciously accessible long-term memory system divided into semantic memory (factual knowledge about the world) and episodic memory (personally experienced events); it is the system most prominently impaired in Alzheimer dementia.

2.3.2 Intelligence: definitions, theories, and measurement

Intelligence is the capacity to learn from experience, adapt to new situations, solve problems, and use knowledge to achieve goals; it is one of the most studied and most controversial constructs in psychology, with ongoing debate about its nature, its determinants, and the validity and cultural fairness of its measurement; the early conceptualisation of intelligence as a single general factor (the g factor, identified by Charles Spearman through factor analysis of cognitive test performance) remains influential, and the strong correlation between performance on diverse cognitive tasks (mathematical reasoning, verbal ability, spatial reasoning, memory, and processing speed) does suggest that a common underlying cognitive capacity contributes to performance across domains.

Multiple intelligence theories have challenged the single-factor view: Howard Gardner proposed eight distinct types of intelligence (linguistic, logical-mathematical, spatial, musical, bodily-kinaesthetic, interpersonal, intrapersonal, and naturalist), arguing that the standard psychometric g factor captures only a narrow range of human cognitive abilities; Robert Sternberg proposed a triarchic theory distinguishing analytical intelligence (academic problem-solving), creative intelligence (generating novel solutions), and practical intelligence (applying knowledge to real-world problems); intelligence is measured by standardised intelligence tests such as the Wechsler Adult Intelligence Scale (WAIS) and the Wechsler Intelligence Scale for Children (WISC), which generate an intelligence quotient (IQ) score with a mean of 100 and a standard deviation of 15; intellectual disability is defined as an IQ below 70 accompanied by significant deficits in adaptive functioning, while IQ above 130 defines intellectual giftedness.

Fill in the blank: Charles Spearman proposed the _____ factor (g), a general underlying cognitive capacity that correlates performance across diverse intelligence test domains including verbal, mathematical, spatial, and processing speed tasks.



2.3.3 Health literacy, cognitive capacity, and clinical communication

Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions; it encompasses reading literacy (the ability to read and comprehend written health information), numeracy (the ability to understand and use health-relevant numerical information such as medication dosages, laboratory values, and risk statistics), and navigational literacy (the ability to navigate the healthcare system, understand appointment schedules, and follow procedural instructions); health literacy is distinct from general educational attainment, though they are correlated; low health literacy is extremely prevalent (estimates suggest that approximately 36 percent of adults in developed countries and substantially more in low-income countries have limited health literacy) and is strongly associated with worse health outcomes, lower preventive care use, higher rates of hospitalisation, and poorer chronic disease management.

In the Nigerian clinical context, health literacy challenges are compounded by language (many patients receive health information in English, their second or third language, reducing comprehension even among educated individuals), numeracy difficulties (misunderstanding of medication dosing instructions, particularly when involving fractions or decimals, is a major cause of medication errors at home), and cognitive capacity limitations in specific populations (elderly patients with early dementia, patients in acute illness with delirium, and children whose cognitive development is still in progress all have reduced capacity to understand and retain health information); effective clinical communication for low health literacy requires: plain language (short sentences, common words, avoiding jargon), teach-back method (asking the patient to explain back what they have been told, to verify understanding rather than merely asking "do you understand?"), visual aids and pictograms, and written take-home materials summarising key information.

Fill in the blank: The _____-back method asks patients to explain back what they have been told in their own words, verifying actual comprehension rather than merely eliciting a "yes I understand" response that may not reflect genuine understanding.



Pilot questions 2.3

1. Describe the three major memory systems and explain which is most prominently impaired in Alzheimer dementia.
2. Distinguish between anterograde and retrograde amnesia and name two causes of anterograde amnesia.
3. Explain Spearman g factor and describe Gardner theory of multiple intelligences.
4. Define health literacy and explain four strategies for communicating effectively with patients who have low health literacy.



Series Summary

This Series examined the cognitive processes of attention, perception, learning, memory, and intelligence that underpin both the patient experience of illness and the clinician practice of medicine. Attention was described as a limited and selective resource, classified into sustained, selective, divided, and alternating types, each with specific clinical relevance; its assessment through serial sevens and WORLD backward tests was identified as a sensitive bedside screen for cognitive impairment and delirium. Perception was examined as an active constructive process organised by Gestalt principles, with pattern recognition identified as a perceptual-cognitive skill central to clinical diagnosis, and perceptual error as a contributor to diagnostic mistakes. Consciousness was explored across its continuum from full wakefulness to coma, with delirium highlighted as an acute medical emergency requiring urgent assessment and treatment.

The three major learning theories were examined for their clinical applications: classical conditioning explains the acquisition of medically relevant fear responses including needle phobia and conditioned chemotherapy nausea, and provides the basis for systematic desensitisation treatment; operant conditioning explains how reinforcement and punishment shape health behaviour and provides the principles for behaviour modification, biofeedback, token economy systems, and the understanding of drug dependence; and observational learning, through Bandura social learning theory, explains the role of modelling and self-efficacy in health behaviour acquisition and provides the basis for peer education and CBT. Memory was examined through its multiple systems, three processes, and clinical disorders including amnesia and dementia. Intelligence was addressed through the g factor and multiple intelligence theories, and health literacy was established as the practical intersection of intelligence, education, and clinical communication, with teach-back and plain language identified as essential skills for every clinician working with patients of varied cognitive capacity.



Glossary of Terms

1. **Anterograde amnesia:** the inability to form new memories after the onset of illness or injury, caused by hippocampal damage from encephalitis, Korsakoff syndrome, or traumatic brain injury.
2. **Classical conditioning:** a form of learning in which a neutral stimulus acquires the ability to elicit a response by being repeatedly paired with a stimulus that naturally produces that response.
3. **Delirium:** an acute confusional state characterised by acute onset, fluctuating course, inattention, disorientation, and often perceptual disturbances; a medical emergency.
4. **Explicit memory:** the consciously accessible long-term memory system, divided into semantic (factual) and episodic (autobiographical) memory.
5. **Health literacy:** the degree to which individuals can obtain, process, and understand health information needed to make appropriate health decisions.
6. **Implicit memory:** the long-term memory system storing unconsciously acquired skills, habits, and conditioned responses.
7. **Negative reinforcement:** the removal of an unpleasant stimulus following a behaviour, which increases the probability of that behaviour being repeated.
8. **Operant conditioning:** a form of learning in which the consequences of behaviour (reinforcement or punishment) determine the probability of that behaviour being repeated.
9. **Sustained attention:** the ability to maintain focused concentration over a prolonged period; among the earliest functions impaired in delirium and dementia.
10. **Teach-back method:** a clinical communication technique in which patients are asked to explain in their own words what they have been told, verifying genuine comprehension.



Concept Check Questions [Series 2]

Objective Questions

- _____ attention, the ability to maintain concentration over a prolonged period, is among the earliest cognitive functions impaired in delirium and dementia. (Linked to SLO 2.1)
- _____ is an acute confusional state with acute onset, fluctuating course, and inattention; it is a medical emergency. (Linked to SLO 2.1)
- Systematic _____ is the behaviour therapy for phobias based on graded exposure to the conditioned stimulus in a relaxed state. (Linked to SLO 2.2)
- _____ reinforcement increases the probability of a behaviour by removing an unpleasant stimulus; pain relief from analgesics is an example. (Linked to SLO 2.2)
- The _____ -back method asks patients to explain health information in their own words to verify genuine comprehension. (Linked to SLO 2.3)

Short-Answer Questions

1. Explain classical conditioning and describe two medically relevant examples. (Linked to SLO 2.2)
2. Distinguish between explicit and implicit memory and name two causes of anterograde amnesia. (Linked to SLO 2.3)
3. Define health literacy and explain three strategies for communicating with low-health-literacy patients. (Linked to SLO 2.3)

Long-Answer Question

4. Discuss how learning theories and cognitive processes are relevant to clinical medical practice, covering classical conditioning, operant conditioning, memory, and health literacy. (Linked to SLOs 2.2, 2.3)



Answers to Concept Check Questions [Series 2]

Objective Questions

6. Sustained.
7. Delirium.
8. Desensitisation.
9. Negative.
10. Teach.

Short-Answer Questions

11. Classical conditioning: a neutral stimulus (CS) repeatedly paired with a naturally effective stimulus (UCS) acquires the ability to elicit a response (CR) on its own; Example 1: Needle phobia (CS=needle, UCS=painful injection, UCR=pain and fear, CR=anticipatory panic and avoidance of needles; maintained by repeated pairing; treated with systematic desensitisation). Example 2: Conditioned chemotherapy nausea (CS=hospital smell or treatment environment, UCS=cytotoxic drug, UCR=nausea/vomiting, CR=anticipatory nausea before drug is given; recognised by oncology teams as a significant cause of treatment-related distress).
12. Explicit (declarative) memory: consciously accessible long-term memory, divided into semantic (factual knowledge about the world: capitals of countries, drug mechanisms) and episodic (autobiographical memory of personally experienced events: yesterday clinic, last year holiday); the system most prominently impaired in early Alzheimer dementia. Implicit (non-declarative) memory: unconsciously acquired skills, habits, and conditioned responses that are not consciously accessible (riding a bicycle, playing an instrument, conditioned fear responses); preserved in early Alzheimer dementia. Two causes of anterograde amnesia: (1) hippocampal damage from herpes simplex encephalitis; (2) Wernicke-Korsakoff syndrome from chronic thiamine (vitamin B1) deficiency in alcoholism.
13. Health literacy is the capacity to obtain, process, and understand health information needed to make appropriate health decisions; three strategies for low-health-literacy



patients: (1) plain language: short sentences, common words, avoiding medical jargon and acronyms; (2) teach-back method: asking "can you tell me in your own words what I just explained?" rather than "do you understand?", which verifies actual comprehension; (3) visual aids and pictograms: using diagrams, pictures of medications and doses, and illustrated treatment schedules to supplement verbal instructions for patients with limited literacy.

Long-Answer Question

14. Classical conditioning: Pavlov CS+UCS pairing produces CR; clinically: needle phobia (CS=needle, CR=panic; treatment=systematic desensitisation: graded exposure on a fear hierarchy in relaxed state); conditioned chemotherapy nausea (CS=hospital environment, CR=anticipatory nausea); white coat hypertension (CS=clinical setting, CR=blood pressure elevation). Operant conditioning: Skinner; reinforcement increases behaviour probability (positive: add pleasant stimulus e.g. praise for adherence; negative: remove unpleasant e.g. pain relief reinforcing analgesic use), punishment decreases it; clinical applications: behaviour modification programmes (increasing adherence, rehabilitation exercise), biofeedback (operant conditioning of involuntary physiological responses), token economy systems in psychiatric settings, understanding drug dependence (positive reinforcement by drug pleasure + negative reinforcement by withdrawal relief = powerful conditioning). Memory: sensory (brief, modality-specific), short-term/working memory (7+/-2 items, 15-30 seconds), long-term (explicit=semantic+episodic; implicit=skills and habits); encoding (deep=durable), storage (synaptic consolidation), retrieval (context-dependent); anterograde amnesia (hippocampal damage: herpes encephalitis, Korsakoff, TBI); progressive dementia (Alzheimer: episodic>semantic>procedural decline). Health literacy: capacity to obtain, process, understand health information; impaired by language (second language), numeracy, cognitive decline; strategies: plain language, teach-back, visual aids, written take-home materials; teach-back most important verification tool; health literacy deficits predict worse outcomes, more hospitalisations, poorer chronic disease management.



Answers to Pilot Questions [Series 2]

Part 2.1

1. Sustained attention (prolonged concentration over time; clinical relevance: ICU monitoring, reading long records; impaired early in delirium and dementia; assessed by serial sevens and WORLD backward). Selective attention (focus on target while ignoring distractors; clinical relevance: examining patient in busy noisy ward; impaired in ADHD and anxiety). Divided attention (simultaneous attention to multiple inputs; clinical relevance: taking history while observing non-verbal cues; impaired by fatigue and cognitive overload). Alternating attention (flexible shifting between different tasks; clinical relevance: switching between clinical notes and re-engaging patient; impaired by high cognitive demand and brain injury).
2. Figure-ground (tendency to perceive a distinct figure against its background; clinical: recognising an abnormality against normal tissue on an X-ray). Closure (tendency to perceive incomplete figures as complete; clinical: clinicians may perceive a partial pattern of symptoms as a complete familiar diagnosis, risking premature closure). Continuity (elements aligned in a path perceived as connected; clinical: linear pattern of bruising perceived as consistent with a specific mechanism of injury). Pattern recognition as a clinical perceptual-cognitive skill: experienced clinicians rapidly perceive clusters of signs and symptoms matching a known disease template (Cushingoid appearance, Down syndrome facies, Parkinsonian gait); this is fast system 1 thinking but is vulnerable to error when expectation overrides evidence (confirmation bias).
3. Delirium clinical features: acute onset (hours to days), fluctuating course (waxes and wanes over the day, often worse at night), inattention (the cardinal feature: inability to sustain or direct attention, detected by serial sevens or digit span), disorientation (to time, place, and sometimes person), and often perceptual disturbances (visual illusions and hallucinations); it is a medical emergency because it reflects acute brain dysfunction caused by an underlying systemic illness, metabolic disturbance, medication toxicity, or substance withdrawal that, if untreated, can progress to permanent brain damage or death; rapid identification of the cause is essential.



4. The Glasgow Coma Scale (GCS) assesses three components: Eye opening (E): 4=spontaneous, 3=to voice, 2=to pain, 1=none; Verbal response (V): 5=oriented, 4=confused, 3=inappropriate words, 2=sounds, 1=none; Motor response (M): 6=obeys commands, 5=localises pain, 4=withdraws, 3=abnormal flexion, 2=extension, 1=none; maximum score=15 (fully conscious), minimum=3 (deep coma); score below 8 indicates severe brain injury requiring airway protection; it provides a standardised, reproducible assessment of consciousness level for communication between clinical team members.

Part 2.2

6. Classical conditioning process for needle phobia: Before conditioning: needle (CS) produces no specific fear response; injection pain (UCS) naturally produces pain and fear (UCR). During conditioning: needle (CS) is repeatedly paired with injection pain (UCS). After conditioning: needle (CS) alone produces anticipatory fear and avoidance behaviour (CR), the conditioned fear response; this is maintained even when subsequent needle procedures are not painful because avoidance behaviour prevents extinction; it generalises from the specific needle to syringes, nurses in uniforms, and the smell of antiseptic.
7. Positive reinforcement: adding a pleasant stimulus following a behaviour, which increases its probability; example: a nurse who praises a patient for correctly performing their insulin injection technique (pleasant social reward) increases the patient likelihood of continuing to perform the technique correctly (desired health behaviour). Negative reinforcement: removing an unpleasant stimulus following a behaviour, which increases its probability; example: the relief of headache pain following paracetamol use (removal of unpleasant pain) negatively reinforces future paracetamol-taking for headache; more clinically concerning: the temporary relief of anxiety symptoms by avoiding a feared medical procedure (hospital, needle) negatively reinforces avoidance behaviour and maintains the phobia.
8. Systematic desensitisation for needle phobia: Step 1: teach relaxation response (progressive muscle relaxation or slow diaphragmatic breathing, to produce a physiological state incompatible with anxiety). Step 2: construct a fear hierarchy with the patient (a list of needle-related situations from least to most frightening: seeing a picture



of a needle -> seeing a real needle in a glass case -> holding a capped needle -> holding an uncapped needle -> touching the skin with a needle -> receiving an injection in a clinical setting). Step 3: while maintaining relaxation, work through the hierarchy from the least to the most frightening step, pausing at each until anxiety fully subsides before proceeding; the CS (needle) is repeatedly presented in a relaxed state, extinguishing the conditioned fear response at each level before advancing.

9. Bandura social learning theory: much human learning occurs through observing others (models) and the consequences of their behaviour rather than through direct reinforcement; four conditions: attention (observe the model), retention (encode the behaviour in memory), reproduction (have the capacity to perform the behaviour), motivation (expect positive consequences and have sufficient self-efficacy); self-efficacy (belief in own capacity to perform the behaviour) determines whether an observed behaviour is attempted. Two clinical applications: (1) peer education programmes: training community members with HIV who are living well on treatment to model treatment adherence and positive health behaviour to newly diagnosed patients, increasing the observer self-efficacy for living with HIV; (2) health professional role modelling: medical students learn clinical communication, hand hygiene, and professional behaviour by observing senior clinicians, making the behaviour of supervisors a powerful determinant of the habits interns develop.

Part 2.3

11. Sensory memory (brief modality-specific retention, 0.5-3 seconds, unlimited capacity; the visual sensory store is called iconic memory), short-term or working memory (active, accessible, limited capacity of 7 ± 2 chunks, 15-30 seconds without rehearsal; holds information being actively processed and used to guide ongoing behaviour), long-term memory (storage over hours to a lifetime; divided into explicit: semantic memory (factual knowledge) and episodic memory (autobiographical events), and implicit: procedural skills, habits, and conditioned responses); the most prominently impaired system in Alzheimer dementia is episodic memory (recent autobiographical events), which is characteristically lost while procedural memory (how to walk, dress, and perform overlearned activities) is preserved until late in the disease.



12. Anterograde amnesia: the inability to form new memories after the onset of the causative illness or injury, reflecting damage to the hippocampal memory consolidation system; retrograde amnesia: the loss of memories formed before the onset of illness or injury, reflecting disruption of previously consolidated memories; the two can co-occur in the same patient. Two causes of anterograde amnesia: (1) herpes simplex encephalitis (HSE): the herpes simplex virus has a particular predilection for the temporal lobes and hippocampi; severe HSE produces bilateral hippocampal destruction and profound anterograde amnesia; (2) Wernicke-Korsakoff syndrome: thiamine (vitamin B1) deficiency in chronic alcoholism damages the mamillary bodies and thalamus, producing severe anterograde amnesia (Korsakoff syndrome) often accompanied by confabulation.
13. Spearman g factor: a general underlying cognitive capacity identified by factor analysis of diverse cognitive test performance; the strong positive correlations among performance on verbal, mathematical, spatial, memory, and processing speed tasks suggest that a common general factor contributes to all cognitive performance; g factor is the basis for IQ testing. Gardner theory of multiple intelligences: proposes eight distinct types of intelligence: linguistic (language), logical-mathematical (reasoning and numbers), spatial (visual-spatial), musical (pitch and rhythm), bodily-kinaesthetic (movement and body control), interpersonal (understanding others), intrapersonal (self-understanding), and naturalist (classifying natural objects); Gardner argues that standard IQ tests capture only the first two and ignore the rest, which are equally valid and important forms of human intelligence.
14. Health literacy is the capacity to obtain, process, and understand health information needed to make appropriate decisions; four strategies: (1) plain language: use short sentences, everyday words (say "heart attack" not "myocardial infarction", "twice a day" not "b.i.d."), and active voice; (2) teach-back method: "I want to make sure I explained this clearly - can you tell me in your own words what you will do when you get home?" - verifies comprehension rather than asking "do you understand?" which reliably produces "yes" regardless of actual understanding; (3) visual aids and pictograms: illustrated medication schedules, diagrams of the anatomical location of a problem, pictorial descriptions of procedure steps - particularly important for patients with low reading literacy or language barriers; (4) limiting information: provide only the two or three most



critical pieces of information per clinical encounter, supplemented with written take-home materials the patient can re-read at home.



References and Attributions

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Figures, Plates, Tables, and Boxes

1. Figure 2.1: Attention types and alterations of consciousness Attribution: AI generated. Suggested OER search string: "attention types sustained selective divided consciousness delirium Glasgow Coma Scale medical psychology clinical OER".
2. Figure 2.2: Classical and operant conditioning in clinical practice Attribution: AI generated. Suggested OER search string: "classical conditioning phobia systematic desensitisation operant conditioning reinforcement punishment token economy behaviour modification medical psychology OER".



Course code: COM 205

Course title: Introduction to Medical Psychology

Course credit load: 1 Unit

Series 3: Thinking and Cognitive Theories

- **Part 3.1: Thinking and Problem Solving**

- Sub Part 3.1.1: The nature of thought and mental representations
- Sub Part 3.1.2: Problem-solving strategies and clinical reasoning
- Sub Part 3.1.3: Cognitive biases and errors in clinical judgement

- **Part 3.2: Cognitive Theories and Personality**

- Sub Part 3.2.1: Major cognitive theories: Piaget and information processing
- Sub Part 3.2.2: Personality: definitions and major theories
- Sub Part 3.2.3: Personality, coping, and health outcomes

- **Part 3.3: Stress, Coping, and Psychological Resilience**

- Sub Part 3.3.1: Stress: definitions, types, and physiological responses
- Sub Part 3.3.2: Coping strategies and their effectiveness
- Sub Part 3.3.3: Psychological resilience and its promotion in clinical practice

Introduction

The capacity for complex thought is the defining feature of human psychology; it allows human beings to reason about the past and future, to solve problems that have never been encountered



before, to hold multiple perspectives simultaneously, to form plans and evaluate their likely consequences, and to create the scientific, artistic, and philosophical knowledge that defines human civilisation; in clinical medicine, thinking processes are central both to the clinician work (clinical reasoning, diagnostic problem-solving, and treatment planning all depend on sophisticated cognitive processes) and to the patient experience (how patients think about their illness, the meaning they assign to symptoms, and the cognitive appraisals they make of their coping capacity determine their emotional response to illness and their health behaviour).

This Series examines the psychology of thinking, including the mental representations and reasoning strategies that underlie it and the cognitive biases that systematically distort it; it introduces the major cognitive theories of psychological development (Piaget) and information processing; it addresses personality, one of the most important individual difference variables in medical psychology, and its relationship to coping style and health outcomes; and it examines psychological stress in depth, from its physiological mechanisms to the coping strategies available for managing it, concluding with the concept of psychological resilience and its practical promotion in clinical settings.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 3.1** describe the nature of thought and mental representations, explain problem-solving strategies and clinical reasoning, and identify major cognitive biases affecting clinical judgement,
- **SLO 3.2** describe major cognitive theories including Piaget stages, explain the major theories of personality, and discuss the relationship between personality, coping, and health outcomes, and
- **SLO 3.3** define stress, describe its types and physiological responses, classify and evaluate coping strategies, and explain psychological resilience and its clinical promotion.



3.1 Thinking and Problem Solving

3.1.1 The nature of thought and mental representations

Thought (or cognition) refers to the mental processes involved in manipulating information, including reasoning, concept formation, decision-making, problem-solving, and language; thinking operates on mental representations, the internal symbolic structures through which information about the world is encoded and stored in the mind; the major types of mental representation include: concepts (mental categories that group objects, events, or ideas sharing common features; concepts allow efficient information processing by enabling categorisation rather than requiring each stimulus to be processed anew; in clinical diagnosis, disease concepts are the mental templates against which patient presentations are compared); schemas (organised knowledge structures that represent typical patterns of objects, events, or relationships; clinical schemas represent the typical features of a disease, a patient type, or a clinical procedure, and guide the clinician expectation and information-gathering); and mental images (visual or other sensory representations that can be manipulated to reason about spatial relationships).

Language is both a form of mental representation and the medium through which thought is communicated; the Sapir-Whorf hypothesis proposes that language shapes thought by determining which distinctions are easily made and which concepts are easily expressed; in medical psychology, the language available in different Nigerian languages for expressing psychological and physical symptoms influences what patients can communicate about their experience, and the absence of culturally familiar terms for specific psychiatric symptoms can make psychiatric assessment in cross-cultural contexts particularly challenging; dual process theory (Daniel Kahneman) distinguishes between system 1 thinking (fast, automatic, unconscious, pattern-based, and intuitive) and system 2 thinking (slow, deliberate, conscious, analytical, and rule-based), and proposes that most everyday thinking uses system 1, with system 2 deployed for novel, complex, or high-stakes decisions.

Fill in the blank: _____ are organised knowledge structures representing typical patterns of objects, events, or relationships; in clinical medicine they represent the typical features of a disease and guide the clinician expectation and information-gathering during assessment.



3.1.2 Problem-solving strategies and clinical reasoning

Problem-solving is the cognitive process of moving from a current state to a desired goal state when the path between them is not immediately obvious; the major problem-solving strategies include: algorithms (systematic, step-by-step procedures that guarantee a correct solution if applied correctly; used in medicine when a standardised diagnostic protocol or treatment guideline specifies the sequence of steps required); heuristics (mental shortcuts or rules of thumb that are faster and less demanding than algorithms but may lead to error; clinical examples include the availability heuristic, in which the ease of recalling examples of a disease influences the estimate of its probability); means-end analysis (identifying the difference between the current state and the goal, and taking actions to reduce this difference step by step); and working backward (starting from the desired goal and reasoning back to determine what is needed to achieve it, useful in planning complex interventions).

Clinical reasoning is the specific application of problem-solving processes to medical diagnosis and management; it integrates pattern recognition (the rapid matching of a clinical presentation to a familiar disease template, system 1 thinking) with analytical reasoning (the deliberate, step-by-step evaluation of diagnostic hypotheses against evidence, system 2 thinking); the hypothetico-deductive method of clinical reasoning involves generating a small set of diagnostic hypotheses early in the clinical encounter (based on the initial presenting complaint and the patient demographic), then systematically testing each hypothesis by gathering history, examination, and investigation findings that would be expected if the hypothesis were true and absent if it were false; effective clinical reasoners use both pattern recognition (for speed and efficiency) and analytical reasoning (for accuracy and completeness), knowing when to trust their initial intuition and when to slow down and re-examine.

Fill in the blank: The hypothetico-_____ method of clinical reasoning involves generating diagnostic hypotheses early in the encounter and then systematically testing each against evidence gathered through history, examination, and investigation.

3.1.3 Cognitive biases and errors in clinical judgement



Cognitive biases are systematic errors in thinking that arise from the use of mental shortcuts (heuristics) and from motivational and emotional influences on judgement; they are particularly important in clinical medicine because diagnostic errors (which contribute to a significant proportion of adverse medical events globally) are frequently attributable to cognitive bias rather than to inadequate knowledge; the most clinically relevant cognitive biases include: anchoring bias (the tendency to rely too heavily on the first piece of information encountered, causing the clinician to stick with an initial diagnosis even when subsequent evidence contradicts it); availability bias (judging the probability of a diagnosis by how easily examples come to mind, causing overestimation of recently seen or vivid diagnoses and underestimation of rare ones); and confirmation bias (the tendency to search for, interpret, and remember information in a way that confirms pre-existing beliefs or hypotheses, leading the clinician to notice evidence supporting the working diagnosis while ignoring disconfirming evidence).

Additional clinically important biases include: premature closure (accepting the first plausible diagnosis without adequately considering alternatives; the single most common cognitive error in clinical diagnosis); framing effects (the way in which information is presented influencing the decision made, even when the objective content is identical; a patient described as "a known alcoholic" may receive less thorough investigation of their presenting complaint than one described as "a professional with a drinking problem"); and commission bias (the tendency toward action rather than watchful waiting, driven by the clinician discomfort with uncertainty; this can lead to unnecessary investigations, procedures, and treatments with their associated risks); awareness of these biases, combined with deliberate use of analytical system 2 thinking particularly for complex or atypical cases, is among the most important tools available for improving diagnostic accuracy.

Fill in the blank: _____ closure, the acceptance of the first plausible diagnosis without adequately considering alternatives, is the single most common cognitive error in clinical diagnosis and is a primary cause of missed or delayed diagnoses.



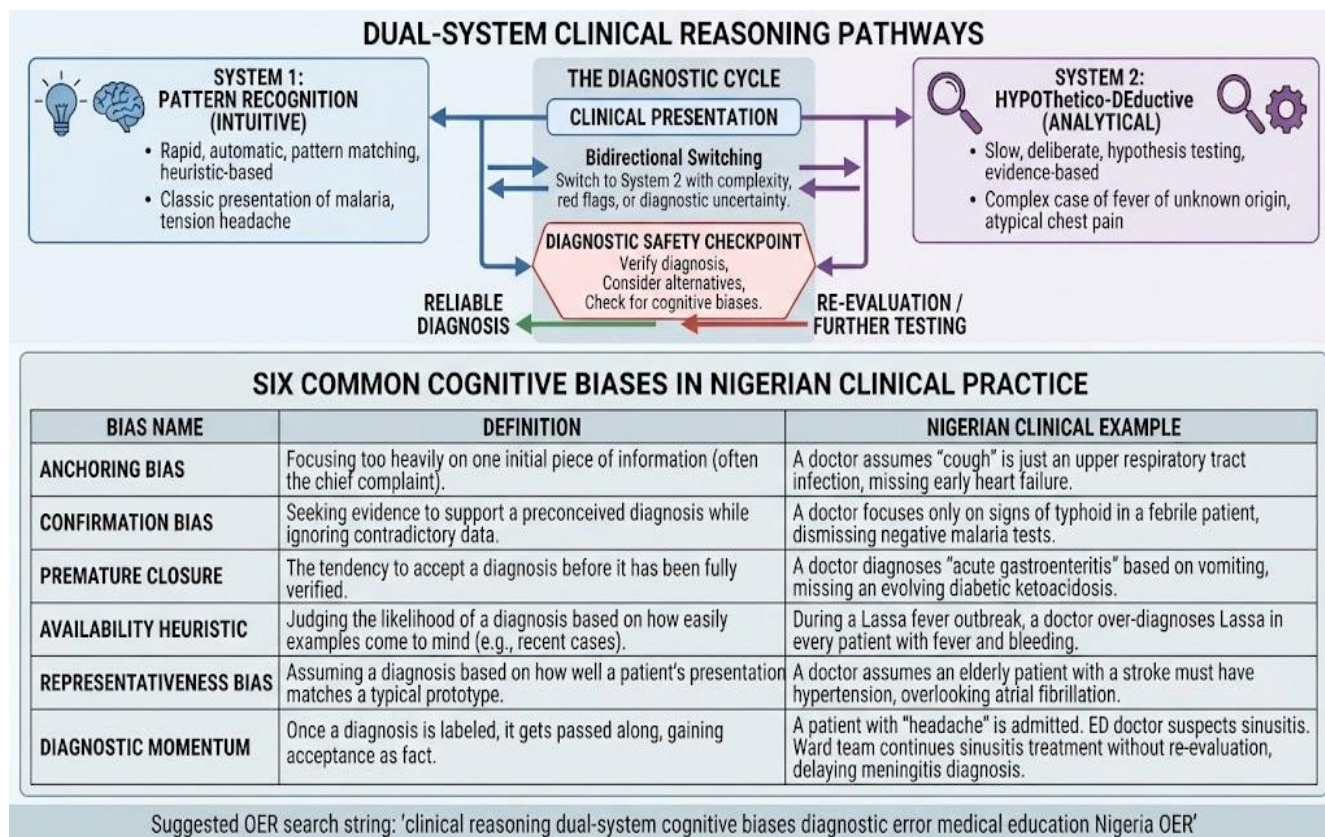


Figure 3.1: Clinical reasoning and cognitive biases

Pilot questions 3.1

1. Explain the difference between system 1 and system 2 thinking and describe how each is used in clinical diagnosis.
2. Explain the hypothetico-deductive method of clinical reasoning.
3. Define anchoring bias, availability bias, and premature closure and give a clinical example of each.
4. Explain how schemas function as mental representations in clinical medicine.



3.2 Cognitive Theories and Personality

3.2.1 Major cognitive theories: Piaget and information processing

Jean Piaget proposed the most influential theory of cognitive development, describing how thinking changes qualitatively across four stages of childhood and adolescence; the sensorimotor stage (birth to approximately 2 years) is characterised by learning through direct sensory and motor interaction with the environment and by the gradual development of object permanence (the understanding that objects continue to exist when not perceived); the preoperational stage (approximately 2 to 7 years) is characterised by the emergence of symbolic thought (language and pretend play) but by egocentrism (difficulty taking the perspective of another) and by the absence of conservation (the understanding that quantity is unchanged by changes in appearance); the concrete operational stage (approximately 7 to 11 years) is characterised by logical reasoning about concrete objects, conservation, classification, and seriation, but by difficulty with abstract reasoning; and the formal operational stage (approximately 12 years onward) is characterised by the ability to reason abstractly, hypothetically, and systematically.

Piaget theory has significant medical applications: understanding the cognitive stage of a child patient determines the appropriate level at which to communicate information about illness and treatment (a preoperational child understands illness in egocentric and magical terms and cannot understand probability or abstract risk, while a concrete operational child can understand simple causal explanations but not statistical reasoning; a formal operational adolescent can understand complex medical information in essentially adult terms); the theory also explains why children may have magical thinking about the cause of their illness (believing they are ill as punishment for bad behaviour) or about treatment (fearing that operations or injections will be harmful in ways unrelated to the actual procedure); the information processing model of cognition (developed in the 1950s-70s) conceptualises the human mind as a system that takes in information (input), processes and transforms it through stages of attention, perception, memory, and reasoning, and produces output (behaviour), analogous to the operation of a computer.



Fill in the blank: In Piaget preoperational stage (approximately 2 to 7 years), children demonstrate _____, the difficulty in taking the perspective of another person, and lack conservation, the understanding that quantity is unchanged by changes in appearance.

3.2.2 Personality: definitions and major theories

Personality refers to the stable, enduring patterns of thoughts, feelings, and behaviours that characterise an individual and distinguish them from others; personality traits are consistent across time and across different situations (though the degree of cross-situational consistency is a matter of ongoing debate), and they have both genetic and environmental determinants; the five-factor model (the Big Five), the most empirically supported personality taxonomy, describes personality in terms of five broad dimensions: Openness to experience (curiosity, creativity, and receptiveness to new ideas), Conscientiousness (organisation, dependability, and goal-directedness), Extraversion (sociability, positive affect, and assertiveness), Agreeableness (cooperativeness, trust, and empathy), and Neuroticism (emotional instability, anxiety, and vulnerability to negative emotions), remembered by the acronym OCEAN.

Other influential personality theories include: the psychodynamic theory of Freud (personality as the product of the interaction among the id, ego, and superego, driven by unconscious drives and shaped by childhood experience and defence mechanisms); the humanistic theory of Rogers (emphasising the self-concept and the tendency toward self-actualisation, with psychological disorder arising from incongruence between the actual self and the ideal self); and the type A and type B personality distinction (originally proposed by cardiologists Meyer Friedman and Ray Rosenman in the 1950s), which distinguished competitive, time-pressured, hostile type A behaviour from the more relaxed type B, and initially claimed a specific association between type A personality and coronary heart disease; subsequent research has refined this to show that the hostility component of type A is the most robust predictor of cardiovascular risk, rather than time-pressure or achievement orientation alone.

Fill in the blank: The five-factor model of personality (Big Five) describes five dimensions: Openness, Conscientiousness, _____, Agreeableness, and Neuroticism, remembered by the acronym OCEAN.



3.2.3 Personality, coping, and health outcomes

Personality influences health through multiple pathways: behavioural pathways (personality traits directly shape health behaviours; conscientious individuals are more likely to adhere to treatment, attend screening appointments, and maintain preventive health behaviours; neurotic individuals are more likely to engage in unhealthy coping behaviours such as tobacco use and emotional eating), physiological pathways (high neuroticism and hostility are associated with heightened physiological reactivity to stress, including larger and more prolonged cortisol and sympathetic nervous system responses to stressors, which cumulatively damage the cardiovascular and immune systems), and social pathways (extraversion and agreeableness facilitate the development of social support networks that protect against the health consequences of stress, while neuroticism and hostility undermine the quality of social relationships and reduce access to support).

Coping style, the characteristic way in which an individual responds to stressors, is closely related to personality and has significant health consequences; problem-focused coping (addressing the source of the stress directly through action to change the stressful situation) and emotion-focused coping (managing the emotional distress produced by the stressor through strategies such as emotional expression, social support-seeking, reappraisal, and acceptance) are the two major coping categories described by Lazarus and Folkman (1984); problem-focused coping tends to be more adaptive when the stressor is controllable, while emotion-focused coping is more appropriate when the stressor cannot be changed (such as an incurable diagnosis); maladaptive coping styles including avoidant coping (denying the stressor or avoiding thinking about it), rumination (repetitive passive focus on negative feelings), and catastrophising (exaggerating the severity of the stressor and expecting the worst) are associated with worse psychological and physical health outcomes.

Fill in the blank: _____-focused coping involves addressing the source of stress directly through action to change the stressful situation, and is most adaptive when the stressor is within the individual control; emotion-focused coping is more appropriate when the stressor cannot be changed.



Pilot questions 3.2

1. Name and briefly describe Piaget four stages of cognitive development and explain one clinical implication of each.
2. Name the Big Five personality dimensions and explain how conscientiousness and neuroticism each affect health behaviour.
3. Distinguish between problem-focused and emotion-focused coping and describe when each is more adaptive.
4. Explain the hostility component of type A personality and describe its association with cardiovascular health.

3.3 Stress, Coping, and Psychological Resilience

3.3.1 Stress: definitions, types, and physiological responses

Stress is the psychological and physiological response to demands (stressors) that are perceived as exceeding the individual coping resources; the definition emphasises perception: the same objective event (a difficult examination, a medical diagnosis, or a family conflict) produces different stress responses in different individuals depending on their appraisal of the event threat and their appraisal of their coping capacity; Walter Cannon identified the fight-or-flight response as the fundamental physiological stress response, in which the sympathetic nervous system and adrenal medulla are activated, releasing adrenaline and noradrenaline that prepare the body for action; Hans Selye extended this by describing the General Adaptation Syndrome (GAS), the stereotyped physiological response to prolonged stress consisting of three stages: alarm (the initial fight-or-flight activation), resistance (the body attempting to adapt to the prolonged stressor using hormonal resources, particularly cortisol from the adrenal cortex), and exhaustion (the depletion of adaptive resources when stress is prolonged, resulting in breakdown of physiological regulatory capacity and vulnerability to illness).

The major types of stress include: acute stress (brief, intense stressors such as a near-miss accident or an acute medical emergency, which produce powerful but transient physiological



activation and are generally well tolerated by healthy individuals), chronic stress (prolonged, sustained stressors such as poverty, caring for a chronically ill family member, or living in a conflict-affected environment, which maintain prolonged cortisol and sympathetic activation with damaging consequences for cardiovascular, immune, metabolic, and psychological health), traumatic stress (exposure to actual or threatened death or serious injury, producing the intense fear, helplessness, and physiological responses that may develop into post-traumatic stress disorder, PTSD), and daily hassles (the cumulative minor irritants of everyday life, which research has shown to be more strongly predictive of psychological wellbeing than major life events, because they are more frequent and more unavoidable).

Fill in the blank: Selye General Adaptation Syndrome describes three stages of the physiological response to prolonged stress: alarm (initial fight-or-flight activation), _____ (adaptation through cortisol and hormonal resources), and exhaustion (depletion of adaptive resources and vulnerability to illness).

3.3.2 Coping strategies and their effectiveness

Coping refers to the cognitive and behavioural efforts made to manage (reduce, minimise, or tolerate) the demands of stressful situations; it is important to note that coping is an active process of managing rather than mastering or conquering, and that coping effectiveness is context-dependent: what works well in one situation may be maladaptive in another; Lazarus and Folkman (1984) transactional model of stress and coping proposes that the stress response results not from the objective characteristics of the stressor but from the transaction between the stressor and the individual, as mediated by two appraisal processes: primary appraisal (is this situation threatening, challenging, or irrelevant to my well-being?) and secondary appraisal (what can I do about it? what are my coping resources?).

The major coping strategies and their clinical relevance include: cognitive reappraisal or reframing (changing the cognitive interpretation of a stressful situation to reduce its emotional impact; for example, reappraising a cancer diagnosis as a challenge to be met rather than a death sentence; one of the most effective coping strategies for unchangeable stressors), social support-seeking (seeking emotional, informational, or practical support from others; one of the most



robustly protective coping strategies, particularly effective against chronic stress), problem-solving (identifying and implementing solutions to the controllable aspects of the stressor), acceptance (acknowledging the reality of an unchangeable stressor without fighting against it; a key component of mindfulness-based stress reduction and acceptance and commitment therapy), and avoidant coping (denying the stressor, suppressing thoughts about it, or distracting oneself; adaptive in the very short term but associated with worse outcomes when the stressor is persistent and requires active management).

Fill in the blank: Cognitive _____ or reframing is a coping strategy that involves changing the cognitive interpretation of a stressful situation to reduce its emotional impact; it is one of the most effective strategies for managing unchangeable stressors.

3.3.3 Psychological resilience and its promotion in clinical practice

Psychological resilience is the capacity to recover from adversity, trauma, or significant stress, and to maintain or restore psychological well-being and functional capacity in the face of challenging circumstances; it is not the absence of distress or the suppression of negative emotion (which are associated with worse outcomes), but the ability to process and integrate difficult experiences and to mobilise resources effectively in response to challenge; resilience is not a fixed trait that some people have and others lack but a dynamic capacity that fluctuates across time, circumstances, and developmental stages, and that can be developed and strengthened through experience and intentional intervention; the factors associated with greater resilience include strong and supportive social relationships, a sense of personal efficacy and mastery, a sense of meaning and purpose, optimism (the expectation that positive outcomes are likely), cognitive flexibility (the ability to appraise situations from multiple perspectives), and access to community and institutional resources.

Clinical promotion of psychological resilience involves: identifying and strengthening existing sources of social support (helping patients map their support networks and develop plans for accessing support during illness); building self-efficacy through supported success in small, achievable health management tasks (each successful self-management experience increases confidence in future capacity); meaning-making (helping patients find meaning in their illness



experience, for example through engagement with religious or spiritual frameworks, which are particularly important in Nigerian cultural contexts where spiritual explanations of illness and recovery are common); teaching specific cognitive coping skills (cognitive reappraisal, problem-solving, and relaxation techniques); and connecting patients to peer support groups where they can benefit from the lived experience and modelling of others who have successfully navigated similar challenges.

Fill in the blank: Psychological _____ is the capacity to recover from adversity and maintain well-being in the face of challenge; it is not the absence of distress but the ability to process difficult experiences and mobilise resources effectively.

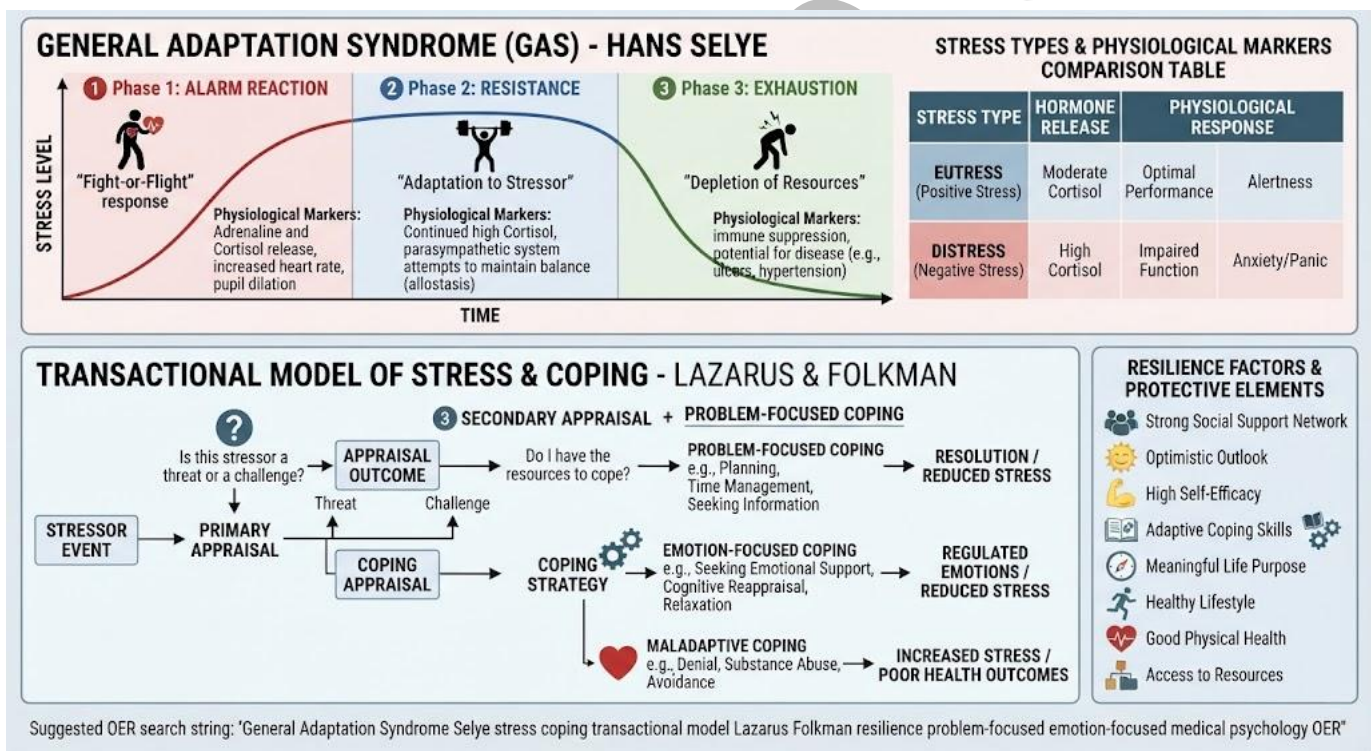


Figure 3.2: Stress, coping, and resilience

Pilot questions 3.3

1. Explain Selye General Adaptation Syndrome and describe the physiological changes at each stage.
2. Distinguish between acute and chronic stress and explain why chronic stress is more damaging to health.



3. Explain the Lazarus and Folkman transactional model of stress and coping.
4. Describe three factors associated with psychological resilience and explain how each can be promoted in clinical practice.



Series Summary

This Series examined thinking and cognitive theories as the intellectual foundation of both clinical reasoning and the patient experience of illness. The nature of thought was explored through mental representations including concepts, schemas, and mental images, and through the dual process model distinguishing fast intuitive system 1 thinking from slow analytical system 2 thinking; schemas were identified as both enabling efficient clinical pattern recognition and as sources of cognitive bias when they cause the clinician to see what they expect rather than what is present. Problem-solving strategies from algorithms and heuristics through hypothetico-deductive reasoning were examined, and the major cognitive biases including anchoring, availability, confirmation bias, and premature closure were described as systematic sources of diagnostic error that awareness and deliberate analytical thinking can mitigate.

Piaget four stages of cognitive development provided a framework for age-appropriate clinical communication with child patients, and the information processing model situated human cognition within a broader theoretical framework. Personality was examined through the Big Five dimensions and the type A behaviour pattern, with conscientiousness and neuroticism identified as particularly significant for health behaviour and cardiovascular risk respectively; coping style was linked to personality and assessed for adaptive value across different types of stressor. Stress was examined in depth through Cannon fight-or-flight response and Selye General Adaptation Syndrome, with the distinction between acute, chronic, traumatic, and daily hassle stressors connected to their different health consequences. The transactional model of Lazarus and Folkman established cognitive appraisal as the mediating mechanism between stressor and coping response, and the Series concluded by defining psychological resilience and describing the practical clinical strategies for its promotion in Nigerian patients facing illness-related adversity.



Glossary of Terms

1. **Anchoring bias:** the cognitive tendency to rely too heavily on the first piece of information encountered, maintaining an initial diagnosis even when contradicting evidence accumulates.
2. **Availability bias:** the cognitive tendency to judge the probability of an event by how easily examples come to mind, leading to overestimation of vivid or recently seen diagnoses.
3. **Confirmation bias:** the tendency to search for, interpret, and remember information in a way that confirms pre-existing beliefs, causing disconfirming evidence to be overlooked.
4. **General Adaptation Syndrome (GAS):** Selye description of the three-stage physiological response to prolonged stress: alarm, resistance, and exhaustion.
5. **Premature closure:** acceptance of the first plausible diagnosis without adequately considering alternatives; the single most common cognitive error in clinical diagnosis.
6. **Problem-focused coping:** coping by addressing the source of stress directly through action; most adaptive when the stressor is controllable.
7. **Psychological resilience:** the dynamic capacity to recover from adversity and maintain well-being; strengthened by social support, self-efficacy, meaning, and optimism.
8. **Schema:** an organised knowledge structure representing typical patterns of objects, events, or relationships; clinical schemas guide diagnostic expectation and information gathering.
9. **System 1 thinking:** fast, automatic, intuitive, pattern-based thinking that underlies clinical pattern recognition; efficient but vulnerable to cognitive bias.
10. **System 2 thinking:** slow, deliberate, analytical, rule-based thinking; more accurate but more cognitively demanding; deployed for novel, complex, or high-stakes clinical decisions.



Concept Check Questions [Series 3]

Objective Questions

- _____ are organised knowledge structures representing typical patterns; in clinical medicine they represent disease features and guide diagnostic expectation. (Linked to SLO 3.1)
- _____ closure, the most common cognitive error in diagnosis, involves accepting the first plausible diagnosis without considering alternatives. (Linked to SLO 3.1)
- In Piaget preoperational stage, children show _____ (difficulty taking another person perspective) and lack conservation. (Linked to SLO 3.2)
- The Big Five personality dimensions are Openness, Conscientiousness, Extraversion, _____, and Neuroticism. (Linked to SLO 3.2)
- Selye General Adaptation Syndrome describes three stress response stages: alarm, _____, and exhaustion. (Linked to SLO 3.3)

Short-Answer Questions

1. Explain three cognitive biases that lead to diagnostic error and suggest one strategy to counteract each. (Linked to SLO 3.1)
2. Explain how personality traits (using the Big Five) influence health behaviour and health outcomes. (Linked to SLO 3.2)
3. Describe the Lazarus and Folkman transactional model of stress and coping and explain the difference between adaptive and maladaptive coping. (Linked to SLO 3.3)

Long-Answer Question

4. Discuss thinking, cognitive theories, and stress and coping with reference to clinical diagnosis, personality, and psychological resilience in medical practice. (Linked to SLOs 3.1, 3.2, 3.3)



Answers to Concept Check Questions [Series 3]

Objective Questions

6. Schemas.
7. Premature.
8. Egocentrism.
9. Agreeableness.
10. Resistance.

Short-Answer Questions

11. Anchoring bias: over-reliance on first information; example: initial triage label of "drunk" for a patient with slurred speech causing missed diagnosis of hypoglycaemia; counteract by explicitly listing alternative diagnoses before committing to the first one. Availability bias: frequency judged by ease of recall; example: overdiagnosing malaria in every febrile patient in a setting where malaria was recently common, missing typhoid or bacterial sepsis; counteract by consciously listing base rates and differentials. Premature closure: accepting first plausible diagnosis without alternatives; example: diagnosing and treating pneumonia without considering TB co-infection in an HIV-positive patient; counteract by using a diagnostic pause: "what else could this be?" before finalising the working diagnosis.
12. Conscientiousness (organised, reliable, goal-directed): associated with better medication adherence, higher preventive health behaviour uptake (screening, immunisation), regular healthcare attendance, and lower rates of risk behaviour; most protective Big Five trait for physical health outcomes. Neuroticism (emotional instability, anxiety, vulnerability to negative emotion): associated with poorer health outcomes through heightened physiological stress reactivity, more unhealthy coping (smoking, emotional eating, alcohol), avoidance of health information that provokes anxiety, and higher rates of depression and anxiety disorders; strongest Big Five predictor of psychological disorder and poorer chronic disease management. Agreeableness and Extraversion: facilitate



strong social support networks that buffer stress; agreeableness also associated with better therapeutic relationships and more collaborative treatment partnerships.

13. Lazarus and Folkman transactional model: stress is not an objective property of the stressor but the product of the transaction between stressor and individual, mediated by two appraisals: primary appraisal (is this threatening, challenging, or irrelevant?) and secondary appraisal (what can I do? what are my coping resources?); coping is the cognitive and behavioural effort to manage the demands of the situation. Adaptive coping: problem-focused (problem-solving for controllable stressors; e.g. researching treatment options after diagnosis), emotion-focused adaptive (reappraisal, acceptance, social support for uncontrollable stressors; e.g. finding meaning in a chronic illness experience); outcomes: stress managed, psychological wellbeing maintained. Maladaptive coping: avoidance, rumination, catastrophising; outcomes: stress maintained or amplified, psychological disorder risk increased, worse physical health outcomes.

Long-Answer Question

14. Clinical thinking: mental representations (concepts, schemas, mental images) and dual process theory (system 1: fast, pattern-based, intuitive; system 2: slow, deliberate, analytical); schemas enable pattern recognition (rapid disease template matching) but cause bias (premature closure, confirmation bias). Problem-solving: algorithms (protocols), heuristics (mental shortcuts, faster but error-prone), hypothetico-deductive method (hypothesis generation -> systematic testing). Cognitive biases: anchoring (first information overweighted; strategy: list alternatives), availability (vivid/recent cases overestimated; strategy: consider base rates), confirmation (seek only confirming evidence; strategy: actively seek disconfirming findings), premature closure (most common; strategy: diagnostic pause). Piaget stages: sensorimotor (0-2, object permanence), preoperational (2-7, egocentrism, no conservation), concrete operational (7-11, logical reasoning about concrete objects), formal operational (12+, abstract reasoning); clinical implications for age-appropriate communication. Information processing: input -> attention -> perception -> memory -> reasoning -> output.



Personality (Big Five OCEAN): conscientiousness (best health behaviour predictor), neuroticism (worst physical and psychological outcome predictor), hostility component of type A (cardiovascular risk). Coping: Lazarus-Folkman transactional model (primary appraisal: threat? secondary appraisal: resources?); problem-focused vs emotion-focused; adaptive vs maladaptive (avoidance, rumination, catastrophising). Stress (GAS): alarm, resistance, exhaustion; acute vs chronic vs traumatic vs daily hassles. Resilience: social support, self-efficacy, meaning and purpose, optimism, cognitive flexibility; clinical promotion through support mapping, supported self-management success, meaning-making, peer groups.

Answers to Pilot Questions [Series 3]

Part 3.1

1. System 1 thinking: fast, automatic, unconscious, pattern-based, intuitive; used in clinical diagnosis for rapid pattern recognition when a presentation matches a familiar disease template (recognising the Cushingoid appearance, or immediately identifying a presentation as consistent with severe malaria); efficient but vulnerable to cognitive biases (anchoring, availability, premature closure). System 2 thinking: slow, deliberate, conscious, analytical, rule-based; used when the clinical situation is novel, complex, or atypical and the system 1 match does not feel right; more accurate but cognitively demanding and slower; effective clinical reasoning uses both, switching to system 2 when system 1 prompts uncertainty, when the presentation is atypical, or when the initial treatment is not working.
2. The hypothetico-deductive method: at the start of a clinical encounter, the clinician generates a small set of diagnostic hypotheses (the differential diagnosis) based on the presenting complaint and the patient age, sex, and context; the clinician then systematically tests each hypothesis by determining what history, examination, and investigation findings would be expected if the hypothesis were true and what would be expected if it were false; findings that are expected with the hypothesis and absent



without it increase its probability; findings that are absent when expected or present when unexpected decrease its probability; the process continues until one hypothesis is sufficiently supported and alternatives sufficiently excluded to justify a working diagnosis and management plan.

3. Anchoring bias: over-reliance on the first diagnostic label; clinical example: a patient brought in confused is labelled "drunk" in triage; subsequent clinicians anchor on this label and miss the hypoglycaemia causing the confusion; counteract by always treating the initial label as provisional and listing alternatives. Availability bias: probability judged by ease of recall; clinical example: a clinician working in a malaria-endemic area who recently saw several cases of cerebral malaria diagnoses the next confused patient with malaria without adequately considering bacterial meningitis; counteract by consciously reviewing base rates and differential diagnoses rather than relying on the most immediately available disease template. Premature closure: accepting the first plausible diagnosis without further consideration; clinical example: diagnosing and treating a patient with fever and cough as pneumonia without considering that the clinical picture also fits tuberculosis in an HIV-positive patient, closing the diagnostic process before all possibilities are explored; counteract by asking "what else could this be?" before finalising any diagnosis.
4. Schemas are organised knowledge structures that represent the typical features of a category of object, event, or relationship; in clinical medicine, disease schemas represent the characteristic combination of history, examination, and investigation features that define a particular diagnosis; they function as mental templates against which patient presentations are compared during pattern recognition (system 1 clinical thinking); they enable rapid and efficient diagnosis when the presentation matches a familiar template, but they can also cause error when the clinician forces an atypical presentation into an overly familiar schema rather than recognising it as an exception or a different diagnosis.



Part 3.2

6. Sensorimotor (0-2 years): learning through direct sensory and motor experience; object permanence develops; clinical implication: procedures should be explained to parents rather than to the infant; pain management must rely on non-verbal behavioural cues rather than self-report. Preoperational (2-7 years): symbolic thought, language, egocentrism, magical thinking, no conservation; clinical implication: children may believe illness is punishment for bad behaviour (magical thinking about causation); illness should be explained simply and concretely; children cannot understand probability or statistical risk. Concrete operational (7-11 years): logical reasoning about concrete objects, conservation, classification; clinical implication: simple causal explanations can be understood ("the bacteria makes your body feel hot and weak") but not abstract statistical reasoning; children can give simple consent for minor procedures. Formal operational (12+ years): abstract, hypothetical, systematic reasoning; clinical implication: adolescents can understand complex medical information, probability, and treatment trade-offs in essentially adult terms; confidentiality and consent considerations apply.
7. Big Five: Openness (curious, creative, receptive to new ideas), Conscientiousness (organised, dependable, goal-directed), Extraversion (sociable, positive affect, assertive), Agreeableness (cooperative, trusting, empathic), Neuroticism (emotionally unstable, anxious, vulnerable to negative emotion). Conscientiousness and health: highly conscientious individuals take medications on schedule, attend follow-up appointments, maintain preventive behaviours (exercise, screening), and avoid risk behaviours; it is the Big Five trait most strongly associated with better physical health outcomes and longevity. Neuroticism and health: neurotic individuals experience more intense and prolonged physiological stress responses (higher cortisol, greater sympathetic activation), engage in more unhealthy coping (smoking, emotional eating, alcohol), are more likely to develop depression and anxiety disorders, and show worse management of chronic conditions; it is the Big Five trait most strongly associated with psychological disorder and poorer physical health.
8. Problem-focused coping: cognitive and behavioural efforts to address the source of stress directly; strategies include gathering information, planning, seeking instrumental help,



and taking direct action; most adaptive when the stressor is within the individual control (e.g. poor medication adherence causing poor diabetes control can be addressed by problem-solving barriers to adherence). Emotion-focused coping: efforts to manage the emotional distress produced by the stressor rather than addressing the stressor itself; strategies include seeking emotional support, cognitive reappraisal, acceptance, venting, and relaxation; most adaptive when the stressor is not within the individual control (e.g. a terminal diagnosis cannot be changed, but the emotional response can be managed through acceptance, social support, and meaning-making).

9. The hostility component of type A behaviour (characterised by frequent anger, cynical distrust of others, and aggressive responding to frustration) is associated with cardiovascular risk through multiple mechanisms: physiological (hostile individuals show larger and more prolonged sympathetic and cortisol responses to interpersonal stressors, producing chronically elevated blood pressure and more atherosclerotic plaque formation), behavioural (hostile individuals are less likely to maintain social support networks, more likely to smoke and consume alcohol, and less likely to adhere to medical advice), and social (hostility damages therapeutic relationships with healthcare providers, reducing the quality of care received).

Part 3.3

11. Selye General Adaptation Syndrome: alarm stage (the initial fight-or-flight response: sympathetic nervous system activated, adrenaline and noradrenaline released from the adrenal medulla, heart rate and blood pressure rise, blood glucose increases, blood diverted to skeletal muscles, physiological resistance temporarily below baseline as the body mobilises); resistance stage (the body adapts to the prolonged stressor: hypothalamic-pituitary-adrenal axis activated, cortisol released from the adrenal cortex, maintained above-baseline physiological resistance through hormonal resources, stress response sustained); exhaustion stage (adaptive hormonal resources depleted by prolonged stress, physiological resistance falls below baseline, the body systems that



were sustained by stress hormones begin to fail, vulnerability to physical illness, psychological breakdown, and organ dysfunction increases).

12. Acute stress: brief and intense (e.g. near-miss road accident, acute medical emergency, public speaking); produces powerful but transient sympathetic activation; generally well tolerated by healthy individuals and may enhance performance through the Yerkes-Dodson inverted-U relationship between arousal and performance; GAS returns to baseline quickly. Chronic stress is more health-damaging because: prolonged cortisol elevation damages the hippocampus (causing memory impairment), suppresses immune function (increasing infection and cancer risk), accelerates atherosclerosis (cardiovascular disease risk), disrupts metabolic regulation (type 2 diabetes risk), and depletes the neurobiological resources for emotional regulation (depression and anxiety risk); the body was designed for brief acute stress responses, not for the sustained activation required by chronic stressors such as poverty, caregiving demands, or ongoing conflict.
13. Lazarus and Folkman transactional model: stress is not in the stressor or the person but in the transaction between them; it arises when the demands of a stressor exceed the person perceived coping resources; two sequential appraisal processes mediate this transaction: primary appraisal (evaluating whether the stressor is irrelevant, benign, or threatening/challenging to personal wellbeing), secondary appraisal (evaluating what coping resources and options are available: "what can I do about this?"); coping is then selected from available strategies; the model explains why the same objective stressor produces very different stress responses in different people (those with greater perceived coping resources appraise the same event as a challenge rather than a threat) and why interventions that build coping resources (such as psychoeducation about treatment and peer support) can reduce the stress response to an illness diagnosis.
14. Social support (strong, supportive social relationships buffer the health effects of stress and provide emotional, informational, and practical resources during illness; clinical promotion: help patients map their existing support network, identify gaps, and develop plans for mobilising support; facilitate connection to support groups for patients with specific conditions). Self-efficacy (belief in one own capacity to perform specific tasks; associated with better coping and persistence in the face of setbacks; clinical promotion: structure treatment goals as a series of small, achievable steps; celebrate each successful



self-management achievement; use problem-solving rather than criticism when difficulties arise). Meaning and purpose (finding personal meaning in the illness experience or maintaining a sense of purpose despite illness; particularly important in Nigerian cultural contexts where religious and spiritual frameworks provide powerful meaning-making resources; clinical promotion: explore spiritual beliefs non-judgementally; refer to chaplaincy or pastoral care as appropriate; help patients identify continued roles and contributions they value).

References and Attribution

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Figures, Plates, Tables, and Boxes

1. Figure 3.1: Clinical reasoning and cognitive biases Attribution: AI generated. Suggested OER search string: "clinical reasoning system 1 system 2 cognitive biases anchoring availability confirmation premature closure diagnostic error medical psychology OER".



2. Figure 3.2: Stress, coping, and resilience Attribution: AI generated. Suggested OER search string: "General Adaptation Syndrome Selye stress coping transactional model Lazarus Folkman resilience problem-focused emotion-focused medical psychology OER".



Course code: COM 205

Course title: Introduction to Medical Psychology

Course credit load: 1 Unit

Series 4: Social and Behavioral Research

- **Part 4.1: Introduction to Social Psychology**

- Sub Part 4.1.1: Social influence: conformity, compliance, and obedience
- Sub Part 4.1.2: Attitudes, attitude change, and health behaviour
- Sub Part 4.1.3: Social cognition: attribution, prejudice, and the clinician-patient relationship

- **Part 4.2: Group Processes and Communication in Healthcare**

- Sub Part 4.2.1: Group dynamics and their effects on behaviour
- Sub Part 4.2.2: Interpersonal communication and the therapeutic relationship
- Sub Part 4.2.3: Health communication and behaviour change

- **Part 4.3: Behavioural Research Methods in Medical Psychology**

- Sub Part 4.3.1: Research designs in behavioural science
- Sub Part 4.3.2: Measurement and data collection in psychological research
- Sub Part 4.3.3: Ethics in behavioural research



Introduction

Human beings are fundamentally social animals; the vast majority of clinically significant behaviours, from the decision to seek medical care to adherence to treatment and the ability to cope with chronic illness, are embedded in social contexts and shaped by social influences; social psychology, the scientific study of how people think, feel, and behave in social situations, provides essential tools for understanding how social influence, group processes, attitudes, and interpersonal communication shape health-related behaviour and the clinical encounter itself; the clinician who understands social psychological principles is better equipped to communicate effectively, build therapeutic alliances, navigate group dynamics in the clinical team, and design effective health communication campaigns.

This Series addresses social psychology and behavioural research as twin pillars of the social dimension of medical psychology; it examines the mechanisms of social influence and the psychology of attitudes and attitude change, social cognition and its role in shaping the clinician-patient relationship, group dynamics and interpersonal communication in healthcare settings, and the methods and ethics of behavioural research; by the end of this Series, the medical student should appreciate not only the social forces that shape patient behaviour but also the scientific methods used to study these forces and generate the evidence base for psychologically informed clinical practice.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 4.1** explain the mechanisms of social influence including conformity, compliance, and obedience, describe attitude formation and change, and explain social cognition concepts including attribution and their implications for clinical practice,
- **SLO 4.2** describe group dynamics and their effects on behaviour, explain the principles of effective interpersonal and health communication, and describe features of the therapeutic relationship, and



- **SLO 4.3** describe the major research designs used in behavioural science, explain the key principles of measurement in psychological research, and describe the ethical principles governing behavioural research.

4.1 Introduction to Social Psychology

4.1.1 Social influence: conformity, compliance, and obedience

Social influence refers to the ways in which the behaviour, opinions, and emotions of one person or group affect those of others; it is one of the most powerful determinants of human behaviour, operating even when people are unaware of it; the three major types of social influence are: conformity (changing one own behaviour or beliefs to match those of a group, even without direct pressure; Solomon Asch classic conformity experiments demonstrated that a substantial proportion of participants would give obviously incorrect answers to perceptual questions simply because other group members gave those answers, illustrating the power of the desire for social acceptance and the tendency to use others as a source of information about reality), compliance (changing behaviour in response to a direct request from another person, even without authority; techniques for increasing compliance include foot-in-the-door, reciprocity, social proof, and scarcity), and obedience (following the instructions of an authority figure; Stanley Milgram landmark experiments demonstrated that ordinary people would administer what they believed to be severe and potentially lethal electric shocks to an innocent person under the instructions of an experimenter in a position of authority, illustrating the extraordinary power of perceived legitimate authority).

Social influence is directly relevant to clinical medicine in multiple ways: the patient tendency to conform to perceived social norms around illness behaviour (whether it is acceptable to complain of pain, whether men should seek medical care, and whether traditional or biomedical treatment is the expected first choice in the patient community) profoundly shapes healthcare-seeking; compliance techniques are used in health promotion to encourage uptake of preventive behaviours; and obedience to medical authority (the tendency of patients to follow doctor



instructions without fully understanding or inwardly agreeing with them) can support adherence in the short term but undermines shared decision-making and may reduce adherence when authority is absent (the patient is away from the clinical setting and relies on personal motivation alone); in the clinical team, obedience hierarchies can suppress junior team members from raising safety concerns, contributing to medical errors.

Fill in the blank: Stanley Milgram obedience experiments demonstrated that ordinary people would follow the instructions of an _____ figure to administer what they believed were dangerous electric shocks, illustrating the extraordinary power of perceived legitimate authority over individual judgement.

4.1.2 Attitudes, attitude change, and health behaviour

An attitude is a relatively stable evaluative response toward a person, object, or issue, involving cognitive (belief-based), affective (feeling-based), and behavioural (action tendency) components; attitudes toward health behaviours (such as exercise, contraception, vaccination, and healthcare-seeking) are among the most important psychological determinants of those behaviours, though the attitude-behaviour relationship is not always straightforward: attitudes are better predictors of behaviour when they are strong and stable, when the attitude and behaviour are measured at the same level of specificity (a specific attitude toward a specific behaviour predicts better than a general attitude), and when the situation does not impose strong constraints that override the attitude-based intention (as when a person who holds a positive attitude toward hospital delivery cannot access a facility due to cost or distance); the theory of planned behaviour (Ajzen, introduced in Series 2) formalises this by proposing that behaviour is predicted by intention, which is determined by attitude toward the behaviour, subjective norm, and perceived behavioural control.

Attitude change is produced through persuasion, the intentional use of communication to alter attitudes; the elaboration likelihood model (ELM) of persuasion (Petty and Cacioppo, 1986) distinguishes two routes to attitude change: the central route (when the recipient of a persuasive message is motivated and able to process its content, attitude change occurs through careful evaluation of the quality of the arguments presented; attitudes changed by the central route are



more durable and more predictive of behaviour) and the peripheral route (when the recipient is not motivated or able to process the content carefully, attitude change occurs through superficial cues such as the attractiveness, expertise, or likeliness of the source; more vulnerable to counterpressure and attitude reversal); health communication campaigns can be designed to maximise central route processing by ensuring the message is personally relevant, the arguments are strong and evidence-based, and the recipient is engaged.

Fill in the blank: The elaboration likelihood model distinguishes two routes to attitude change: the _____ route (careful argument evaluation, producing durable attitude change) and the peripheral route (superficial cues such as source attractiveness, producing less durable change).

4.1.3 Social cognition: attribution, prejudice, and the clinician-patient relationship

Social cognition refers to the mental processes through which people perceive, interpret, and understand social information about other people; attribution is the process of explaining the causes of behaviour, either one own behaviour or that of others; the fundamental attribution error (also called the correspondence bias) is the tendency to over-attribute other people behaviour to internal dispositional causes (their personality, character, or motivation) while under-attributing it to situational factors (the circumstances they are in), whereas when explaining one own behaviour, the reverse tends to apply (the actor-observer bias): we explain others behaviour in terms of who they are and our own behaviour in terms of what the situation required.

In clinical medicine, attribution errors profoundly shape the clinician-patient relationship: a clinician who attributes a patient failure to take medication to laziness or non-compliance (dispositional attribution) rather than to the side effects, cost, or complex regimen imposed by the prescription (situational attribution) will respond with frustration rather than problem-solving, damaging the therapeutic alliance and worsening the adherence problem; prejudice (an unjustified negative attitude toward members of a social group, based on their membership of that group rather than their individual characteristics) and discrimination (treating people differently based on group membership) are documented in healthcare settings globally, including Nigeria, where patients from certain ethnic groups, those with stigmatised conditions



such as HIV or mental illness, and those from lower socioeconomic backgrounds may receive less thorough assessment and less empathic care than more privileged patients; awareness of social cognitive biases is the essential first step in reducing their influence on clinical practice.

Fill in the blank: The fundamental _____ error is the tendency to over-attribute other people behaviour to internal dispositional factors (personality, character) while under-attributing it to situational factors (circumstances), leading clinicians to blame patients for behaviour that is largely situationally determined.

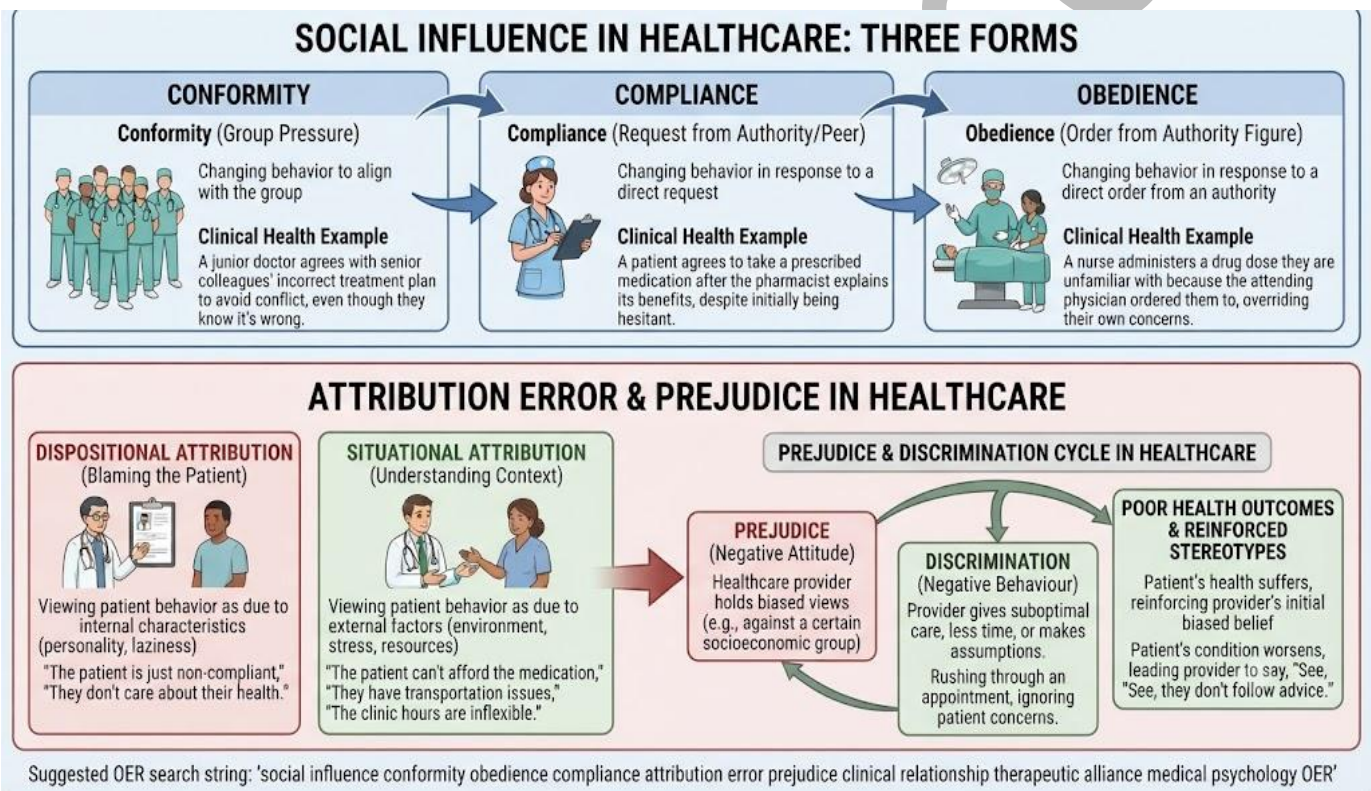


Figure 4.1: Social influence and social cognition in clinical practice

Pilot questions 4.1

1. Explain conformity, compliance, and obedience as types of social influence and give one clinical health example of each.
2. Explain the elaboration likelihood model of persuasion and describe how it can inform the design of a health promotion campaign.



3. Explain the fundamental attribution error and describe its consequences for the clinician-patient relationship.
4. Explain how prejudice in clinical settings affects the quality of care received by stigmatised patient groups.

4.2 Group Processes and Communication in Healthcare

4.2.1 Group dynamics and their effects on behaviour

A group is a collection of two or more people who interact with one another, share common goals or identity, and are aware of their mutual membership; groups have powerful effects on the behaviour of individual members through several mechanisms: social facilitation (the presence of others tends to improve performance on well-learned tasks but impair performance on novel or complex tasks, because the presence of others increases general arousal which narrows attention and enhances dominant responses; relevant to the performance of clinical procedures in observed settings), social loafing (the tendency for individuals to exert less effort when working collectively in a group than when working individually, because personal accountability is reduced; relevant to group clinical team responsibilities where specific task ownership is not clearly assigned), and groupthink (the deterioration of mental efficiency, reality testing, and moral judgement in cohesive groups under pressure to reach consensus, described by Irving Janis in 1972; in clinical teams, groupthink can suppress legitimate safety concerns and lead to collective errors that no individual member would have made alone).

The clinical team in Nigerian hospital settings operates as a group with complex internal dynamics: leadership hierarchies (the consultant leads, and junior staff may be reluctant to challenge senior opinions even when they have relevant information), team composition (teams that include nurses, pharmacists, physiotherapists, and social workers alongside doctors make better decisions through the complementary knowledge each member contributes), and team communication norms (whether it is culturally acceptable for junior team members to raise concerns, disagree with senior colleagues, or report errors) all determine the quality of clinical decision-making and the safety of care delivered; team-based healthcare, which deliberately



structures clinical teams to maximise the contribution of all members regardless of hierarchical position, has been shown to improve patient outcomes, reduce error, and increase job satisfaction across all professions.

Fill in the blank: _____ think, described by Irving Janis, is the deterioration of mental efficiency and reality testing in cohesive groups under pressure to reach consensus; in clinical teams it can suppress legitimate safety concerns and produce collective errors.

4.2.2 Interpersonal communication and the therapeutic relationship

Interpersonal communication in the clinical setting encompasses the verbal and non-verbal exchange of information, meaning, and emotional content between the clinician and the patient; effective clinical communication is not merely the transmission of accurate medical information but a relational process in which the patient experience of being heard, understood, and respected is as important as the content of what is communicated; the core features of effective clinical communication include: active listening (attending fully to the patient verbal and non-verbal communication, paraphrasing to check understanding, and demonstrating engagement through eye contact, posture, and minimal encouragers), empathy (understanding and communicating awareness of the patient emotional experience, which reduces patient anxiety, improves disclosure of sensitive information, and increases adherence to treatment), and clear and respectful information delivery (presenting information in plain language, checking understanding, and inviting questions).

The therapeutic relationship (also called the working alliance) is the quality of the collaborative relationship between clinician and patient; research consistently shows that the quality of the therapeutic relationship is a stronger predictor of treatment outcome across a wide range of clinical conditions than the specific technical content of the treatment applied; the three components of the therapeutic relationship are: agreement on the goals of treatment (both clinician and patient understand and share the objectives of the intervention), agreement on the tasks of treatment (both understand and accept what the patient and clinician are each expected to do), and the quality of the emotional bond between them (trust, mutual respect, and care); the



therapeutic relationship is built through consistent honesty, empathy, respect for patient autonomy, and the reliable fulfilment of professional obligations.

Fill in the blank: The _____ relationship, also called the working alliance, is one of the strongest predictors of treatment outcome across clinical conditions; its three components are agreement on goals, agreement on tasks, and the quality of the emotional bond between clinician and patient.

4.2.3 Health communication and behaviour change

Health communication encompasses the planned use of communication strategies and channels to deliver health information to specific audiences with the goal of influencing health knowledge, attitudes, norms, and behaviour; effective health communication is audience-centred rather than source-centred: it begins with a thorough understanding of the target audience including their current knowledge, attitudes, and beliefs; the barriers they face to the desired behaviour; the communication channels they use and trust; and the cultural values and norms that shape how health messages are received and interpreted; in Nigeria, as noted in Series 4 of COM 201 and COM 203, effective health communication must reach diverse audiences through multiple channels, using local languages and culturally trusted messengers including traditional leaders, religious authorities, and community health workers.

The stages of change model (Transtheoretical Model, reviewed in Series 2), the Health Belief Model, and the Theory of Planned Behaviour (all reviewed in earlier Series) provide theoretical frameworks for designing health communication messages that are matched to the audience readiness for change; social marketing applies commercial marketing principles to health behaviour change by treating health behaviour as a product that must be designed to meet consumer needs, priced to minimise barriers, promoted through appropriate channels, and placed in accessible locations (the 4 Ps); mass media campaigns are effective for raising awareness and shifting population norms around stigmatised health issues (such as HIV testing, mental health help-seeking, and domestic violence), while interpersonal communication through trusted community intermediaries is more effective for motivating specific individual behaviour change;



the combination of both approaches within a comprehensive communication strategy is most effective for complex, deeply embedded health behaviours.

Fill in the blank: Social _____ applies commercial marketing principles to health behaviour change by treating health behaviour as a product that must be designed, priced, promoted, and placed to meet the needs of the target audience.

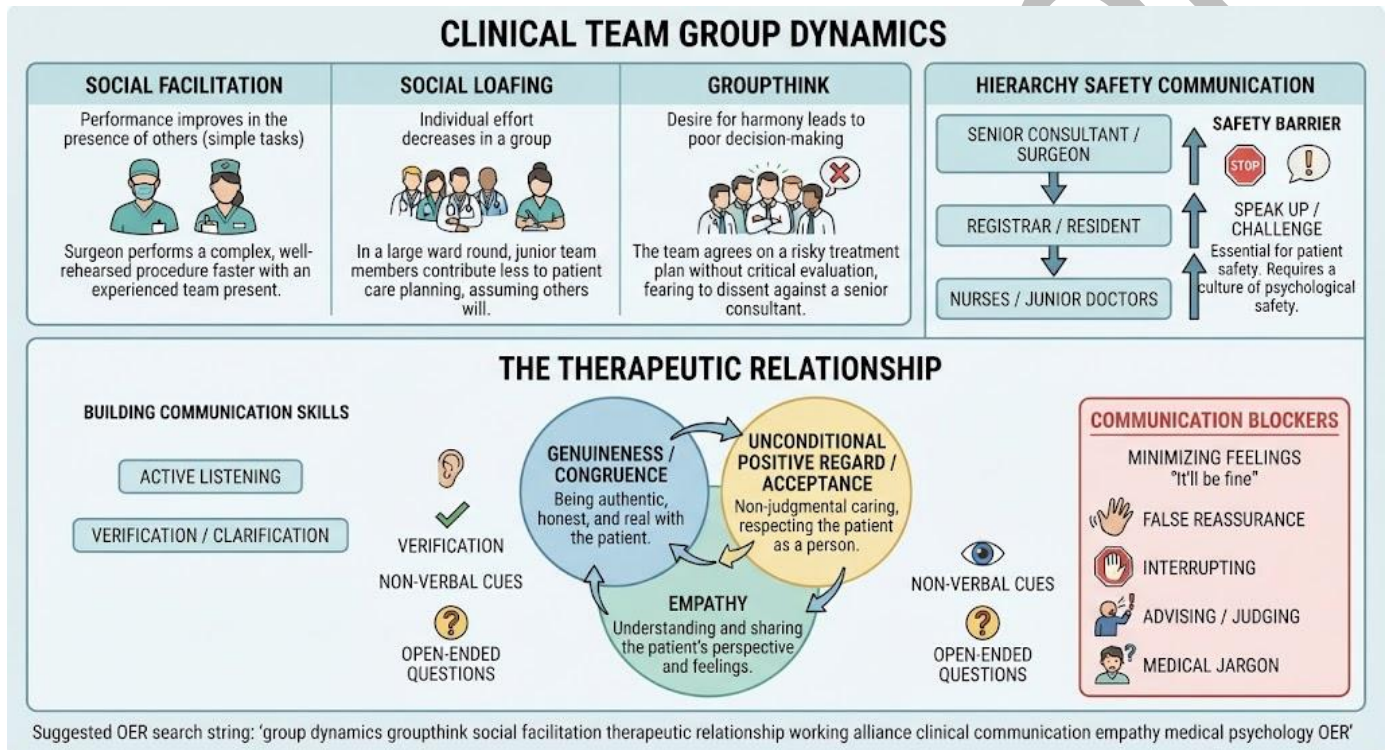


Figure 4.2: Group dynamics and therapeutic communication

Pilot questions 4.2

1. Explain groupthink and describe two strategies for preventing it in a clinical team.
2. Explain the three components of the therapeutic relationship and describe how each is built in clinical practice.
3. Explain social loafing and describe how it can be prevented in clinical team task allocation.
4. Describe three features of effective health communication for a Nigerian audience.



4.3 Behavioural Research Methods in Medical Psychology

4.3.1 Research designs in behavioural science

Behavioural research in medical psychology uses a range of research designs, each suited to answering different types of research questions and each with characteristic strengths and limitations; the major designs include: experimental research (the researcher randomly assigns participants to conditions, manipulates one or more independent variables, and measures the effect on dependent variables; this is the design that most convincingly establishes causal relationships, because random assignment controls for pre-existing differences between groups; randomised controlled trials, the gold standard for evaluating psychological interventions, are experimental designs); quasi-experimental research (the researcher manipulates an independent variable but without random assignment, using naturally occurring groups instead; useful when random assignment is not feasible, but less able to rule out confounding variables); correlational research (measures the relationship between two or more variables without manipulating either; useful for identifying associations and generating hypotheses but cannot establish causation; example: studying the correlation between depression scores and treatment adherence in a diabetes clinic); and qualitative research (uses non-numerical methods such as interviews, focus groups, and observation to understand the meanings, experiences, and perspectives of participants in their own terms; essential for understanding why health behaviours occur and what illness means to patients, particularly in culturally diverse Nigerian contexts).

Case studies (in-depth examination of an individual case, providing rich clinical and psychological detail), surveys (self-report questionnaires administered to samples of participants, providing data on the distribution of psychological characteristics in populations), and longitudinal designs (following the same participants over time, allowing causal inference about whether psychological variables predict later health outcomes) complete the major research design options; in medical psychology, mixed methods designs (combining quantitative and qualitative approaches) are particularly valuable because they can capture both the statistical patterns across populations and the individual meanings and contexts that shape those patterns; the choice of research design must be guided by the research question, with the principle of using



the most rigorous design that is feasible given the ethical and practical constraints of the research context.

Fill in the blank: _____ research randomly assigns participants to conditions, manipulates independent variables, and measures effects on dependent variables; it is the design most able to establish causal relationships, with randomised controlled trials as its clinical form.

4.3.2 Measurement and data collection in psychological research

Psychological constructs such as depression, anxiety, intelligence, personality, health literacy, and treatment adherence cannot be directly observed but must be measured through operational definitions (specific, observable measures that represent the construct); the major methods of data collection in psychological research include: self-report questionnaires (standardised instruments with fixed response options that participants complete themselves; advantages: efficient, economical, and directly capture subjective experience; limitations: social desirability bias, recall errors, response sets, and the assumption that participants can accurately introspect their own mental states); structured and semi-structured interviews (trained interviewers administer questions with fixed or flexible formats; more reliable than unstructured conversation but more resource-intensive than questionnaires); behavioural observation (systematic recording of observable behaviour by trained observers using standardised coding systems; avoids self-report bias but is expensive and may produce reactivity if participants know they are being observed); and physiological measures (heart rate, cortisol levels, skin conductance, neuroimaging, and other biological measures of psychological states; objective and not subject to self-report bias, but expensive and sometimes invasive).

Key measurement concepts in psychological research include: reliability (the consistency of a measure; a reliable measure produces the same result when applied to the same person under the same conditions; types include test-retest reliability and inter-rater reliability), validity (the degree to which a measure actually measures what it is intended to measure; a valid depression scale measures depression rather than general distress or neuroticism), and standardisation (the development of population norms against which individual scores can be compared; a standardised measure has been administered to a large representative sample, allowing clinicians



to determine whether an individual score is normal, elevated, or deficient relative to the relevant population); validated instruments developed in Western populations may not be directly applicable to Nigerian patients without cross-cultural adaptation, which involves translation, back-translation, cultural review, and psychometric validation in the target population.

Fill in the blank: _____ refers to the degree to which a measure actually measures what it is intended to measure; a valid depression scale measures depression specifically rather than general emotional distress or other related but distinct constructs.

4.3.3 Ethics in behavioural research

Ethical conduct in behavioural research is governed by principles designed to protect the rights and welfare of research participants; the foundational ethical principles for research involving human beings were established in the Belmont Report (1979), which identified three core principles: respect for persons (treating participants as autonomous agents capable of making their own decisions, operationalised through the requirement for informed consent: participants must receive complete and accurate information about the study, must understand it, and must voluntarily agree to participate without coercion), beneficence (maximising benefits and minimising harms of the research to participants and society), and justice (ensuring that the benefits and burdens of research are fairly distributed, and that vulnerable populations are not exploited as research subjects while more privileged populations enjoy the benefits of the resulting knowledge).

Additional ethical requirements in behavioural research include: confidentiality and anonymity (protecting the privacy of participants and ensuring that individual responses cannot be linked to identified individuals in research reports), deception (occasionally used in social psychology research when advance disclosure of the true purpose would alter participants behaviour, but requiring full debriefing immediately after participation and ethical review board approval), the right to withdraw (participants must be free to withdraw from a study at any time without penalty), and special considerations for vulnerable populations (children, people with intellectual disabilities, prisoners, and patients who may have impaired decisional capacity all require additional protections including parental or guardian consent for children and independent



capacity assessment for cognitively impaired individuals); in Nigeria, research ethics approval from an institutional review board or ethics committee is required before any behavioural research involving human participants can be conducted.

Fill in the blank: The Belmont Report identified three core research ethics principles: respect for _____ (informed consent and autonomy), beneficence (maximising benefits and minimising harms), and justice (fair distribution of research benefits and burdens).

Pilot questions 4.3

1. Distinguish between experimental, correlational, and qualitative research designs and state the type of research question each is best suited to answer.
2. Define reliability and validity as measurement concepts and explain why both are required for a useful psychological assessment instrument.
3. Name the three principles of the Belmont Report and explain how each applies to a behavioural research study.
4. Explain what cross-cultural adaptation of a psychological measure involves and why it is important in Nigerian research contexts.



Series Summary

This Series examined the social dimension of medical psychology and the scientific methods used to study it, demonstrating that both the patient and the clinician are social beings whose behaviour is profoundly shaped by social forces that must be understood and actively managed in clinical practice. Social influence was explored through the mechanisms of conformity, compliance, and obedience, with Asch conformity experiments and Milgram obedience experiments providing classic empirical demonstrations of how powerfully social context shapes individual behaviour even against individual judgement; their direct relevance to healthcare-seeking norms, treatment adherence, and clinical team hierarchy dynamics was identified. Attitude structure and the elaboration likelihood model of persuasion provided a theoretical framework for designing health communication campaigns that produce durable attitude change through central route processing, while attribution theory and prejudice were examined as sources of systematic clinical bias that undermine equitable and effective patient care.

Group dynamics including social facilitation, social loafing, and groupthink were examined in the context of Nigerian clinical teams, with groupthink identified as a specific safety risk in hierarchical clinical environments; the therapeutic relationship was established as a key predictor of treatment outcome in its own right, and its three components of goal agreement, task agreement, and emotional bond were linked to specific communication behaviours that build or undermine it. Social marketing and multi-channel communication strategies were introduced for health behaviour change. The Series concluded with behavioural research methodology, covering experimental, quasi-experimental, correlational, and qualitative designs; reliability, validity, and standardisation as measurement quality criteria; and the Belmont Report principles of respect for persons, beneficence, and justice as the ethical foundations of all human research, with specific attention to cross-cultural adaptation requirements and the need for institutional ethics review in Nigerian research settings.



Glossary of Terms

1. **Attribution:** the process of explaining the causes of behaviour, either one own or that of others; the fundamental attribution error is the tendency to over-attribute others behaviour to dispositional causes.
2. **Elaboration likelihood model (ELM):** a persuasion theory distinguishing central route (careful argument evaluation; durable attitude change) and peripheral route (superficial cues; less durable change).
3. **Groupthink:** the deterioration of mental efficiency and judgement in cohesive groups under consensus pressure; a safety risk in hierarchical clinical teams.
4. **Informed consent:** the ethical requirement that research participants receive complete information about a study, understand it, and voluntarily agree to participate without coercion.
5. **Reliability:** the consistency of a psychological measure; a reliable measure produces the same result under the same conditions across repeated administrations.
6. **Social facilitation:** the tendency for the presence of others to improve performance on well-learned tasks but impair performance on novel or complex tasks.
7. **Social loafing:** the tendency for individuals to exert less effort when working in a group than when working individually, due to reduced personal accountability.
8. **Social marketing:** the application of commercial marketing principles (product, price, promotion, place) to health behaviour change interventions.
9. **Therapeutic relationship:** the quality of the collaborative clinician-patient alliance; includes agreement on goals, agreement on tasks, and the quality of the emotional bond.
10. **Validity:** the degree to which a psychological measure actually measures the construct it is intended to measure.



Concept Check Questions [Series 4]

Objective Questions

- Stanley Milgram experiments demonstrated the power of _____ to authority figure instructions, showing that ordinary people would administer severe shocks under experimental authority. (Linked to SLO 4.1)
- The elaboration likelihood model distinguishes the _____ route (careful argument evaluation, durable attitude change) from the peripheral route (superficial cues). (Linked to SLO 4.1)
- _____ think is the deterioration of mental efficiency in cohesive groups under pressure to reach consensus; a specific safety risk in hierarchical clinical teams. (Linked to SLO 4.2)
- The therapeutic _____ is a strong predictor of treatment outcome; its three components are agreement on goals, agreement on tasks, and the emotional bond. (Linked to SLO 4.2)
- The Belmont Report identified three research ethics principles: respect for persons, beneficence, and _____. (Linked to SLO 4.3)

Short-Answer Questions

1. Explain the fundamental attribution error and describe two consequences for clinical practice. (Linked to SLO 4.1)
2. Explain groupthink and describe two strategies for preventing it in a clinical team. (Linked to SLO 4.2)
3. Distinguish between reliability and validity and explain why both are required for a useful psychological measure. (Linked to SLO 4.3)

Long-Answer Question



4. Discuss social psychology and behavioural research as they apply to medical practice, covering social influence, the therapeutic relationship, and research ethics. (Linked to SLOs 4.1, 4.2, 4.3)



Answers to Concept Check Questions [Series 4]

Objective Questions

6. Obedience.
7. Central.
8. Group.
9. Relationship.
10. Justice.

Short-Answer Questions

11. The fundamental attribution error is the tendency to over-attribute other people behaviour to internal dispositional factors (personality, laziness, moral character) while under-attributing it to situational factors (circumstances, barriers, context); the reverse applies to attributions about one own behaviour (actor-observer bias). Two clinical consequences: (1) a clinician who attributes patient non-adherence to laziness rather than to the cost of medication, side effects, or a complex regimen will respond with frustration and blame rather than problem-solving, damaging the therapeutic relationship and worsening adherence; (2) a clinician who attributes a patient repeated emergency attendance to attention-seeking rather than to unmet medical needs and inadequate community support may under-investigate and under-treat, causing harm.
12. Groupthink: the deterioration of critical thinking, reality testing, and moral judgement in cohesive, hierarchical groups under pressure to reach consensus, described by Irving Janis; in clinical teams it can suppress junior staff from raising legitimate safety concerns, leading to collective errors; symptoms include illusion of invulnerability, collective rationalisation, self-censorship, and pressure on dissenters. Two prevention strategies: (1) explicitly assign a devil advocate role to one team member whose function is to identify weaknesses in the proposed plan and voice dissenting opinions without social risk; (2) use structured clinical decision-making tools (such as differential diagnosis checklists or safety briefing frameworks) that require each team member to independently evaluate the situation before the team discussion, preventing premature consensus.



13. Reliability is the consistency of a measure: a reliable measure produces the same result when applied to the same person under the same conditions on repeated occasions (test-retest reliability) or when scored by different trained raters (inter-rater reliability). Validity is the degree to which a measure actually measures the construct it is intended to measure: a valid depression scale measures depression specifically rather than general distress, physical illness, or fatigue. Both are required: a reliable but invalid measure consistently measures something irrelevant; a valid but unreliable measure is too inconsistent to be useful clinically; only a measure that is both reliable and valid provides consistent, meaningful data on the construct of clinical interest.

Long-Answer Question

14. Social influence: conformity (matching group behaviour without direct pressure; Asch experiments; clinical: healthcare-seeking norms shaped by community conformity), compliance (changing behaviour in response to direct request; foot-in-the-door used in vaccination campaigns), obedience (following authority; Milgram experiments; clinical: patient defers to doctor without understanding, reducing autonomous adherence; clinical team: junior staff silent about errors due to obedience hierarchy; solution: psychological safety in teams). Attitudes and change: attitude=cognitive+ffective+behavioural components; ELM: central route (motivated audience, strong arguments, durable change) vs peripheral route (unmotivated, superficial cues, less durable); health campaign design: personal relevance, strong evidence-based arguments = central route. Attribution: fundamental attribution error (over-attribute others to disposition, own to situation); clinical consequence: blame for non-adherence rather than problem-solving; prejudice: documented reduced care quality for stigmatised groups (HIV, mental illness, low SES) in Nigeria. Therapeutic relationship: goals + tasks + emotional bond; stronger predictor of outcome than specific treatment content; built by active listening, empathy, respect for autonomy, honesty; destroyed by interrupting, jargon, dismissal. Group dynamics: social facilitation (improves well-learned, impairs novel tasks), social loafing (reduced effort without personal accountability; prevention: explicit task assignment), groupthink (consensus pressure suppresses dissent; prevention: devil advocate, structured tools). Health communication: audience-centred; stages of change matching; social marketing (4



Ps); mass media for awareness + interpersonal for behaviour change. Research designs: experimental (RCT; best for causation), correlational (associations), qualitative (meanings and experiences); measurement: reliability (consistency) + validity (accuracy of construct measurement); Belmont Report: respect for persons (informed consent), beneficence (harm minimisation), justice (fair burden/benefit distribution); Nigerian context: ethics review board, cross-cultural adaptation.

Answers to Pilot Questions [Series 4]

Part 4.1

1. Conformity: changing behaviour or beliefs to match those of a group without direct pressure; Asch experiments showed participants gave obviously wrong perceptual answers to conform with group; clinical health example: a patient from a community where consulting a traditional healer before a hospital is the social norm conforms to this norm even when they personally believe hospital treatment is needed first, delaying biomedical care. Compliance: changing behaviour in response to a direct request; foot-in-the-door technique: asking for a small commitment first increases compliance with a larger subsequent request; clinical example: asking patients first to take a pamphlet about vaccination, then to attend an educational session, then to accept the vaccination. Obedience: following instructions of an authority figure; Milgram experiments showed ordinary people administered severe shocks under authority instruction; clinical example: patient takes medication as prescribed without understanding it because the doctor said so; reduces when patient is away from clinical setting; clinical team example: nurse does not question an unusual medication dose because of deference to consultant authority.
2. The elaboration likelihood model (ELM) describes two routes by which persuasive communications produce attitude change: central route (the recipient is motivated and able to carefully process the message content; attitude change results from evaluation of argument quality; attitudes changed centrally are strong, stable, and predictive of behaviour), peripheral route (the recipient is not motivated or able to process carefully;



attitude change results from superficial cues such as source attractiveness, expertise, or apparent confidence; attitudes changed peripherally are weaker, less stable, and more reversible). Health campaign application: to maximise central route processing and produce durable attitude change toward vaccination, the campaign should: make the message personally relevant ("your child will be protected"), present strong evidence-based arguments about vaccine safety and efficacy, use messages at the educational level of the target audience, and engage the audience actively (interactive sessions rather than passive leaflets).

3. The fundamental attribution error is the tendency to attribute other people behaviour to their internal disposition (personality, character, laziness) rather than to the situational factors acting on them, while applying the reverse logic to one own behaviour (actor-observer bias). Clinical consequences: (1) attributing patient medication non-adherence to laziness or poor motivation (dispositional) rather than to the side effects, cost, complex regimen, or family demands acting on the patient (situational) produces clinician frustration and blame instead of collaborative problem-solving, damaging the therapeutic alliance and worsening adherence; (2) attributing a patient repeated emergency department attendance to attention-seeking (dispositional) rather than to genuine unmet clinical need, social isolation, or inadequate community support (situational) leads to under-investigation and dismissive care, risking serious harm.
4. Prejudice is an unjustified negative attitude toward members of a social group based on their group membership rather than their individual characteristics; in clinical settings, documented prejudice against stigmatised groups affects care quality through several mechanisms: reduced diagnostic thoroughness (less comprehensive history and examination), less empathic and less respectful communication, assumptions about patient reliability, intelligence, or motivation based on group membership, attribution of symptoms to psychiatric or drug-seeking causes rather than organic disease, and reduced willingness to prescribe adequate analgesia; in Nigeria, patients with HIV, mental illness, tuberculosis, or who are perceived as members of lower socioeconomic or certain ethnic groups may experience these forms of discrimination; the consequence is a cycle of disengagement from healthcare, later presentation, worse outcomes, and reinforcement of the provider prejudice.



Part 4.2

6. Groupthink arises in cohesive, hierarchical groups under pressure to reach consensus quickly; symptoms: illusion of invulnerability (group believes it cannot be wrong), collective rationalisation (group dismisses contradictory evidence), pressure on dissenters (members who raise doubts are silenced), self-censorship (members suppress their own doubts), and illusion of unanimity (absence of expressed dissent is interpreted as consensus). Two prevention strategies: (1) Assign a devil advocate: explicitly designate one team member in each clinical decision to challenge the proposed diagnosis or management plan, voice alternative possibilities, and identify potential weaknesses without social consequences; this makes dissent structurally legitimate rather than personally risky. (2) Use structured decision tools: require each team member to independently record their assessment (differential diagnosis, concern list) before the group discussion begins, preventing premature convergence on the senior clinician view and ensuring that divergent information reaches the team.
7. The therapeutic relationship has three components: (1) Agreement on goals (both clinician and patient understand and share the same objectives for the treatment; built by explicitly negotiating and confirming treatment goals rather than assuming the patient shares the clinician biomedical priorities). (2) Agreement on tasks (both understand and accept what each is expected to do; built by clearly explaining the rationale for each component of the management plan and checking the patient capacity and willingness to perform their role). (3) Emotional bond (trust, mutual respect, and care; built through consistent honesty, empathic communication, respect for patient autonomy and dignity, and the reliable fulfilment of professional obligations including punctuality, confidentiality, and follow-through on commitments).
8. Social loafing occurs when individuals exert less effort in a group than when working individually, because personal accountability is diffused across the group; in clinical teams it manifests as tasks being discussed in ward rounds but not clearly assigned to specific individuals, so that each team member assumes another will complete the task; prevention: every clinical task agreed during a ward round or team meeting must be



assigned to a named individual with a specified time frame; verbal handover of incomplete tasks at shift changes must be explicit and documented; team meeting minutes should record task owner and completion deadline for every action item.

9. Three features for a Nigerian audience: (1) Local language and culturally familiar messengers: health messages delivered in the patient primary language by trusted community figures (religious leaders, traditional rulers, or community health workers of the same ethnic and cultural background) are more credible, more comprehensible, and more persuasive than messages in English from unknown sources; (2) Cultural sensitivity and alignment with existing values: messages that align with or build on existing cultural values (family protection, religious duty, community solidarity) rather than opposing them will encounter less resistance; (3) Multi-channel delivery combining mass and interpersonal approaches: radio and community announcement for awareness, followed up by interpersonal counselling through community health workers and health facility staff for individual behaviour change, is more effective than either channel alone.

Part 4.3

11. Experimental design: the researcher randomly assigns participants to conditions, manipulates one or more independent variables, and measures effects on dependent variables; best for establishing causal relationships; clinical form: randomised controlled trial; example: randomly assigning hypertensive patients to receive motivational interviewing versus standard care and measuring blood pressure adherence at 6 months. Correlational design: measures the association between two or more variables without manipulation; cannot establish causation; best for identifying associations and generating hypotheses; example: measuring depression scores and treatment adherence in a diabetes clinic to assess whether depression predicts adherence. Qualitative design: uses interviews, focus groups, or observation to understand meanings, experiences, and perspectives; best for understanding why health behaviours occur; example: in-depth interviews with Nigerian women who declined antenatal care to understand the reasons and barriers in their own words.



12. Reliability: the consistency of a measure: a reliable measure produces the same result under the same conditions on repeated occasions (test-retest reliability) or when scored by different trained raters (inter-rater reliability); example: a reliable depression questionnaire gives similar scores when administered to the same clinically stable patient two weeks apart. Validity: the degree to which a measure actually measures the construct it is intended to measure; example: a valid depression scale measures depressive symptoms rather than general distress, fatigue from physical illness, or social desirability. Both required: a reliable but invalid measure consistently measures something other than what is needed (garbage in, garbage out: the measure is consistent but useless); a valid but unreliable measure is too inconsistent to be clinically useful (the measure is theoretically sound but the data is too noisy to interpret); only a reliable AND valid measure provides clinically useful, meaningful, and interpretable data.
13. Respect for persons (treat participants as autonomous agents capable of self-determination; operationalised through informed consent: participants receive complete and accurate information about the study, understand it, and voluntarily agree without coercion; in a behavioural study: participants are told the study purpose, what they will be asked to do, how long it will take, any risks, their right to withdraw, and how their data will be protected). Beneficence (maximise benefits and minimise harms; in a behavioural study: ensure questionnaire items about sensitive topics such as trauma or substance use do not cause unnecessary distress; provide referral information for participants who become distressed; ensure the research will generate knowledge that benefits the population studied). Justice (ensure benefits and burdens of research are fairly distributed; vulnerable or disadvantaged populations should not bear research burdens while more privileged groups enjoy the benefits; in Nigeria: research addressing conditions affecting disadvantaged populations should also be designed to benefit those populations directly, not merely to generate publications for researchers in wealthier institutions).
14. Cross-cultural adaptation involves: (1) translation of the original instrument from its source language (usually English) into the target language by a bilingual translator; (2) back-translation by a second independent bilingual translator who translates the target-language version back into the source language, without seeing the original, to identify



discrepancies; (3) cultural review by a panel of experts and community members who identify items that are culturally inappropriate, confusing, or invalid in the target population and suggest culturally relevant alternatives; (4) pilot testing with a small sample from the target population; (5) psychometric validation in a sufficiently large sample from the target population to assess reliability and validity. Cross-cultural adaptation is important in Nigerian research because instruments developed in Western populations may contain concepts, idioms, or response formats that are not culturally familiar or meaningful to Nigerian patients, producing invalid measurement if used without adaptation.

References and Attributions

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Figures, Plates, Tables, and Boxes



1. Figure 4.1: Social influence and social cognition in clinical practice Attribution: AI generated. Suggested OER search string: "social influence conformity obedience compliance attribution error prejudice clinical relationship therapeutic alliance medical psychology OER".
2. Figure 4.2: Group dynamics and therapeutic communication Attribution: AI generated. Suggested OER search string: "group dynamics groupthink social facilitation therapeutic relationship working alliance clinical communication empathy medical psychology OER".



Course code: COM 205

Course title: Introduction to Medical Psychology

Course credit load: 1 Unit

Series 5: Fundamentals of Psychopathology

- **Part 5.1: Concepts and Classification in Psychopathology**

- Sub Part 5.1.1: Defining abnormal behaviour and mental disorder
- Sub Part 5.1.2: Classification systems: DSM and ICD
- Sub Part 5.1.3: Epidemiology of mental disorders in Nigeria

- **Part 5.2: Major Categories of Mental Disorder**

- Sub Part 5.2.1: Mood disorders: depression and bipolar disorder
- Sub Part 5.2.2: Anxiety disorders, PTSD, and psychotic disorders
- Sub Part 5.2.3: Substance use disorders and somatoform presentations

- **Part 5.3: Psychological Aspects of Physical Illness**

- Sub Part 5.3.1: Psychological responses to medical illness
- Sub Part 5.3.2: Psychosomatic medicine and liaison psychiatry
- Sub Part 5.3.3: Psychological interventions in medical settings

Introduction

Psychopathology is the scientific study of mental disorder: its nature, causes, manifestations, classification, assessment, and treatment; it is the direct meeting point of psychology and clinical



medicine, bringing the conceptual tools of psychology to bear on the identification and management of psychological suffering that is encountered in virtually every clinical setting; in Nigeria, as in all healthcare systems, psychological disorders are among the most prevalent, most disabling, and most undertreated conditions encountered in both primary and tertiary care, and every clinician regardless of their specialty will encounter patients whose physical presentations are complicated by co-existing psychological conditions, or whose psychological disorder manifests primarily as physical symptoms.

This final Series integrates the psychological knowledge accumulated across the course by applying it to the clinical reality of mental disorder; it introduces the conceptual and classificatory frameworks of psychopathology, examines the epidemiology of mental disorders in Nigeria, describes the major categories of mental disorder with emphasis on their clinical presentations and management principles as they affect general medical practice, and addresses the psychological responses to physical illness and the domain of psychosomatic medicine and liaison psychiatry, concluding with the psychological interventions that are available and effective in medical settings.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 5.1** define abnormal behaviour, describe the major classification systems for mental disorders, and explain the epidemiology of mental disorders in Nigeria,
- **SLO 5.2** describe the clinical features, aetiological factors, and management principles of mood disorders, anxiety disorders, psychotic disorders, substance use disorders, and somatoform presentations, and
- **SLO 5.3** explain the psychological responses to medical illness, describe the scope of psychosomatic medicine and liaison psychiatry, and identify the psychological interventions available in medical settings.



5.1 Concepts and Classification in Psychopathology

5.1.1 Defining abnormal behaviour and mental disorder

Defining abnormal behaviour is more complex than it might initially appear; several criteria have been proposed, none of which is individually sufficient: statistical infrequency (behaviour that deviates significantly from the statistical average of the population; useful for some conditions such as intellectual disability, but problematic because many statistically rare characteristics such as exceptional intelligence are not disorders, while some statistically common conditions such as depression are genuinely pathological); personal distress (behaviour or experience that causes significant suffering to the individual; captures an important dimension but fails to include conditions such as antisocial personality disorder in which the individual causes harm to others without experiencing personal distress); disability or dysfunction (impairment in occupational, social, or personal functioning; clinically important but not specific to mental disorder since physical illness also causes dysfunction); violation of social norms (behaviour that deviates from culturally expected norms; culturally sensitive but variable across cultures and times, and historically misused to pathologise socially deviant but not disordered behaviour); and dangerousness (risk of harm to self or others; relevant to a small minority of patients with severe mental disorder but not a general criterion for mental disorder as a whole).

The DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, fifth edition, American Psychiatric Association, 2013) and ICD-11 (International Classification of Diseases, eleventh revision, World Health Organization, 2019) define a mental disorder as a clinically significant disturbance in an individual cognition, emotion regulation, or behaviour that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning, and that is associated with significant distress or disability in social, occupational, or other important areas of functioning; this definition emphasises that the condition must reflect genuine dysfunction (not merely a culturally expected response to a stressor such as grief) and must cause significant impairment, two criteria that help to distinguish mental disorder from the normal variation in psychological experience that is part of everyday human life.



Fill in the blank: A mental disorder is defined as a clinically significant disturbance in cognition, emotion regulation, or behaviour reflecting a genuine _____ in psychological or biological processes, associated with significant distress or impairment in functioning.

5.1.2 Classification systems: DSM and ICD

The two major international classification systems for mental disorders are the DSM (Diagnostic and Statistical Manual of Mental Disorders, published by the American Psychiatric Association) and the ICD (International Classification of Diseases, published by the World Health Organization); both are categorical systems that classify mental disorders into discrete diagnostic categories defined by specific symptom criteria, duration thresholds, and functional impairment requirements; the DSM-5 (2013) organises mental disorders into chapters including neurodevelopmental disorders (ADHD, autism spectrum disorders, intellectual disability), psychotic disorders (schizophrenia spectrum), mood disorders (major depressive disorder, bipolar disorders), anxiety disorders, trauma-related disorders (PTSD), obsessive-compulsive and related disorders, somatic symptom disorders, feeding and eating disorders, substance-related disorders, neurocognitive disorders (dementia), and personality disorders; the ICD-11 (2019) is the WHO system adopted by most health ministries globally including Nigeria, and its classification of mental and behavioural disorders forms the legal and administrative basis for psychiatric diagnosis in most countries.

Both classification systems are based on the biomedical model of mental disorder and have been criticised for: cultural limitations (most diagnostic criteria were developed in Western populations and may not adequately capture the presentations of mental disorder in African and other non-Western cultural contexts; for example, depression in many Nigerian patients presents primarily with somatic symptoms such as bodily pain, fatigue, and crawling sensations rather than with the sad mood and cognitive symptoms that are central to Western diagnostic criteria); comorbidity (many patients meet criteria for multiple disorders simultaneously, raising questions about whether the categorical boundaries between disorders reflect genuine natural kinds or are arbitrary divisions of a continuous psychological spectrum); and stigma (psychiatric diagnostic labels carry heavy social stigma in Nigeria and other settings, influencing both patient willingness to accept a psychiatric diagnosis and clinician willingness to apply one).



Fill in the blank: The ICD-_____ (2019), published by the World Health Organization, is the international disease classification adopted by Nigeria and most countries globally as the legal and administrative basis for psychiatric diagnosis.

5.1.3 Epidemiology of mental disorders in Nigeria

Mental disorders are among the most prevalent and burdensome conditions in Nigeria, yet they are severely underdiagnosed and undertreated; the Nigerian Survey of Mental Health and Wellbeing (NSMHW, conducted in 2001-2003 and based on the World Mental Health Survey methodology) found that approximately 20 percent of the Nigerian adult population met criteria for at least one mental disorder in the previous 12 months, with common mental disorders (depression and anxiety) accounting for the majority of cases; however, only approximately 10 percent of those with a mental disorder received any treatment in the same period, reflecting one of the largest treatment gaps for mental illness in the world; this treatment gap reflects multiple interacting barriers: inadequate numbers of trained mental health professionals (Nigeria has fewer than 150 psychiatrists for a population of over 220 million), inadequate infrastructure (few dedicated mental health facilities outside major cities), stigma (the pervasive social shame associated with mental illness in most Nigerian communities), cultural explanatory models (mental illness widely attributed to spiritual causes, leading affected individuals to seek care from religious and traditional healers rather than mental health services), and poverty (which limits both the ability to pay for care and the social resources needed to sustain treatment).

The mental disorders of greatest public health significance in Nigeria include: depression (the leading cause of disability globally and highly prevalent in Nigeria, with estimated lifetime prevalence of approximately 5 to 10 percent of the adult population, substantially underdiagnosed particularly in primary care settings where it commonly presents with somatic symptoms), anxiety disorders (generalised anxiety, panic disorder, social anxiety disorder, and specific phobias collectively affecting approximately 5 to 8 percent of adults), post-traumatic stress disorder (particularly relevant in communities affected by conflict in the Northeast and by oil pollution and related displacement in the Niger Delta), substance use disorders (alcohol use disorder is the most prevalent, with approximately 5 percent of adults meeting diagnostic criteria, but khat, cannabis, and increasingly opioid analgesics and tramadol are significant problems



among young people), and schizophrenia and other psychotic disorders (affecting approximately 1 percent of the population but accounting for a disproportionate share of the psychiatric inpatient burden and of the visible mentally ill in Nigerian communities).

Fill in the blank: The Nigerian Survey of Mental Health and Wellbeing found that approximately _____ percent of the adult population met criteria for at least one mental disorder in the previous 12 months, but only approximately 10 percent of those affected received any treatment.

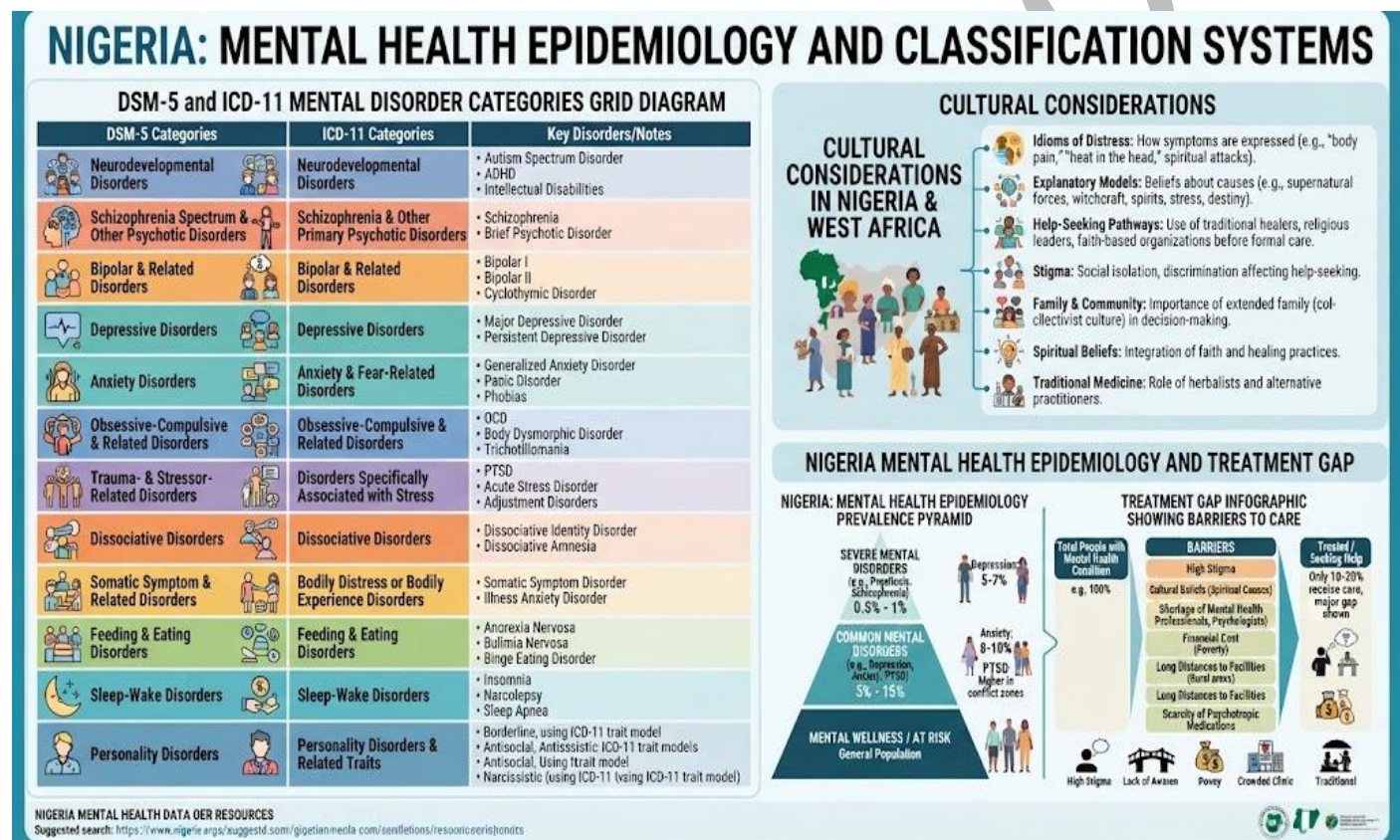


Figure 5.1: Classification and epidemiology of mental disorders in Nigeria

Pilot questions 5.1

1. Name five criteria for defining abnormal behaviour and explain why none is individually sufficient.
2. Distinguish between DSM-5 and ICD-11 as classification systems for mental disorders.
3. Describe the epidemiology of mental disorders in Nigeria and explain three barriers to treatment.



4. Explain why depression in Nigeria frequently presents with somatic symptoms rather than sad mood.

5.2 Major Categories of Mental Disorder

5.2.1 Mood disorders: depression and bipolar disorder

Major depressive disorder (MDD) is characterised by one or more major depressive episodes, each defined by the presence of either depressed mood or loss of interest and pleasure (anhedonia) for at least two weeks, accompanied by at least four of the following: significant weight change or appetite disturbance, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue and loss of energy, feelings of worthlessness or excessive inappropriate guilt, difficulty concentrating or making decisions, and recurrent thoughts of death or suicidal ideation; the episode must cause significant distress or functional impairment and must not be better explained by substances, a medical condition, or another mental disorder; depression has a complex, multifactorial aetiology involving genetic predisposition (heritability estimated at 30 to 40 percent), neurobiological factors (reduced monoamine neurotransmitter activity, particularly serotonin, noradrenaline, and dopamine; HPA axis dysregulation; neuroinflammation), psychological factors (cognitive vulnerability characterised by negative thinking patterns, dysfunctional beliefs, and rumination), and social factors (adverse life events, social isolation, poverty, and lack of social support).

Treatment of depression in medical settings involves pharmacotherapy (antidepressants, most commonly selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine and sertraline, which are first-line agents due to their efficacy, tolerability, and safety in overdose; tricyclic antidepressants are effective but cardiotoxic in overdose and have significant anticholinergic side effects), psychological therapy (cognitive-behavioural therapy is the most extensively evidence-based psychological treatment for depression, targeting the negative automatic thoughts, dysfunctional assumptions, and behavioural withdrawal that maintain depressive episodes), and combined treatment; bipolar disorder (characterised by episodes of mania or hypomania alternating with depression) requires mood stabilisers (lithium remains the most effective,



supplemented by valproate, lamotrigine, or atypical antipsychotics depending on the phase); all antidepressants carry a risk of inducing mania in bipolar patients and should not be used without a mood stabiliser in confirmed bipolar disorder.

Fill in the blank: The two core symptoms of a major depressive episode, of which at least one must be present, are depressed _____ lasting at least two weeks and loss of interest or pleasure (anhedonia) in activities previously enjoyed.

5.2.2 Anxiety disorders, PTSD, and psychotic disorders

Anxiety disorders share the feature of excessive, persistent, and functionally impairing fear or anxiety, but differ in the specific focus and pattern of that anxiety: generalised anxiety disorder (GAD) is characterised by excessive, uncontrollable worry about multiple domains (health, finances, family, work) most days for at least six months, accompanied by physical symptoms including muscle tension, fatigue, irritability, sleep disturbance, and difficulty concentrating; panic disorder involves recurrent unexpected panic attacks (intense surges of fear or discomfort reaching peak intensity within minutes, accompanied by physical symptoms including palpitations, shortness of breath, chest tightness, dizziness, and paraesthesiae) together with persistent concern about further attacks and behavioural changes to avoid situations associated with attacks; social anxiety disorder is excessive fear of negative evaluation in social or performance situations; specific phobias are intense, irrational fears of specific objects or situations; post-traumatic stress disorder (PTSD) follows exposure to actual or threatened death, serious injury, or sexual violence, and is characterised by intrusion symptoms (flashbacks, nightmares), avoidance, negative alterations in cognition and mood, and hyperarousal.

Schizophrenia is the prototypical psychotic disorder, characterised by positive symptoms (delusions: fixed, false beliefs held despite contradictory evidence, such as persecutory beliefs, grandiose beliefs, or delusions of reference; hallucinations: perceptions without external stimuli, most commonly auditory, such as hearing voices commenting on actions or conversing with each other; disorganised thinking and speech; and disorganised or catatonic behaviour), negative symptoms (diminished emotional expression, alogia, avolition, anhedonia, and social withdrawal), and cognitive symptoms (impairments in working memory, processing speed, and



executive function); the positive symptoms respond better to antipsychotic medication than do negative and cognitive symptoms; treatment involves antipsychotic medication (haloperidol, chlorpromazine, or atypical antipsychotics such as risperidone, olanzapine, and clozapine for treatment-resistant cases) combined with psychosocial interventions including family therapy, supported employment, and community mental health support.

Fill in the blank: Schizophrenia is characterised by positive symptoms (delusions, hallucinations, disorganised thinking), negative symptoms (diminished emotional expression, avolition, social withdrawal), and _____ symptoms (impairments in working memory, processing speed, and executive function).

5.2.3 Substance use disorders and somatoform presentations

Substance use disorder is defined by a maladaptive pattern of substance use leading to clinically significant impairment or distress, characterised by: impaired control (using more than intended, unsuccessful attempts to cut down, spending large amounts of time obtaining or using the substance), social impairment (failure to fulfil major role obligations, continued use despite interpersonal problems, withdrawal from social and occupational activities), risky use (use in physically hazardous situations, continued use despite known physical or psychological harm), and pharmacological criteria (tolerance: needing more of the substance to achieve the same effect; and withdrawal: characteristic physical symptoms when use is reduced or stopped); in Nigeria, alcohol use disorder is the most prevalent substance use disorder, but abuse of tramadol (an opioid analgesic increasingly used recreationally), cannabis, and volatile substances (including petrol sniffing) among young people in urban settings represents a growing public health challenge.

Somatic symptom disorder (previously called somatisation disorder or somatoform disorder) describes persistent, distressing physical symptoms for which no adequate medical explanation can be found after appropriate investigation, accompanied by excessive thoughts, feelings, or behaviours related to those symptoms; the condition is not feigned (it is not malingering or factitious disorder) but reflects a genuine psychological process in which emotional distress is expressed through bodily complaints; it is extremely common in general medical settings in



Nigeria, where estimates suggest that 20 to 40 percent of patients in general medical clinics have no organic explanation for their presenting complaints; these presentations are shaped by cultural norms around the acceptability of expressing psychological distress versus somatic symptoms, the language available for psychological versus somatic experience, and the relative stigma of psychiatric versus physical diagnoses in Nigerian communities; management requires a validating, non-dismissive clinical approach that acknowledges the reality of the patient suffering while gently introducing the concept of the mind-body connection.

Fill in the blank: Somatic _____ disorder describes persistent physical symptoms for which no adequate medical explanation can be found, accompanied by excessive thoughts and behaviours related to those symptoms; it is not feigned but reflects genuine psychological distress expressed through bodily complaints.

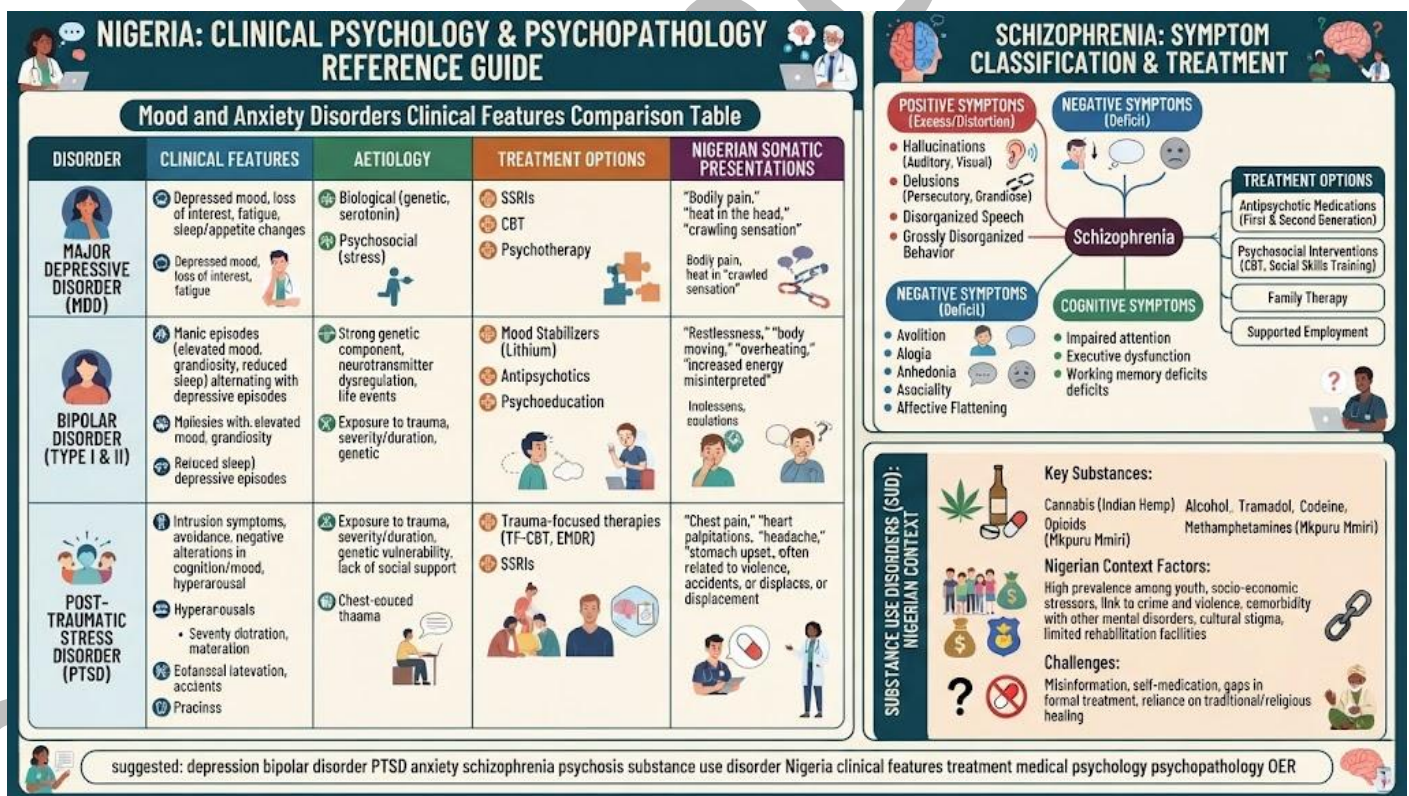


Figure 5.2: Major categories of mental disorder: clinical features and management



Pilot questions 5.2

1. State the two core symptoms of major depressive disorder and name four associated symptoms.
2. Distinguish between positive, negative, and cognitive symptoms of schizophrenia and explain which respond best to antipsychotic medication.
3. Define substance use disorder and name four criteria that characterise it.
4. Explain somatic symptom disorder and describe why it is particularly common in Nigerian general medical settings.

5.3 Psychological Aspects of Physical Illness

5.3.1 Psychological responses to medical illness

The experience of physical illness is profoundly psychological as well as biological; when a person receives a serious medical diagnosis, they typically undergo a complex sequence of emotional responses that has been described in multiple frameworks; Elizabeth Kubler-Ross described five stages of response to life-threatening illness (denial, anger, bargaining, depression, and acceptance), originally described in the context of terminal illness but applicable more broadly to any serious medical diagnosis; while these stages are not universally experienced in a fixed sequence and most people do not pass through all five, the framework draws attention to the emotional complexity of illness and the importance of the clinician responding to the emotional as well as the informational needs of patients; the cognitive appraisal process described by Lazarus (reviewed in Series 3) determines how a patient interprets their diagnosis (as catastrophic or manageable, as a challenge or a death sentence) and shapes their emotional response and coping behaviour.

Specific psychological responses to illness include: illness anxiety (excessive, persistent preoccupation with having or developing a serious illness, in the absence of significant somatic symptoms; previously called hypochondriasis; the patient repeatedly seeks reassurance and investigation despite negative findings); adjustment disorder (emotional or behavioural



symptoms in response to an identifiable stressor such as a medical diagnosis, that are disproportionate to the stressor and cause significant impairment, but do not meet full criteria for another specific mental disorder; extremely common in general medical settings and often underdiagnosed); acute stress reaction (a transient disorder developing within days of an exceptional stressor, including physical illness, and remitting within days to weeks; characterised by initial daze, disorientation, anxiety, and withdrawal); and grief and bereavement (the normal response to the loss of a significant relationship, health, function, or life expectation, which must be distinguished from pathological grief or major depressive disorder when it becomes prolonged or complicated).

Fill in the blank: _____ disorder describes emotional or behavioural symptoms developing in response to an identifiable stressor (such as a medical diagnosis) that are disproportionate to the stressor and cause significant impairment but do not meet criteria for another specific mental disorder.

5.3.2 Psychosomatic medicine and liaison psychiatry

Psychosomatic medicine is the field concerned with the interaction between psychological and biological processes in health and illness; it encompasses both the psychological consequences of physical illness (the impact of illness on mood, cognition, behaviour, and quality of life) and the physical consequences of psychological states (the mechanisms by which emotions, stress, and psychological disorder produce or exacerbate physical illness); the major mechanisms linking psychological states to physical health include: the HPA axis and sympathetic nervous system pathways (through which stress and negative emotion produce physiological changes that damage cardiovascular, immune, and metabolic systems, as reviewed in Series 3), the behavioural pathway (through which psychological states influence health behaviours including diet, physical activity, substance use, and treatment adherence), and the immune pathway (through which psychological states influence the activity of the immune system, with depression and chronic stress associated with both immunosuppression (increasing vulnerability to infection) and immune activation (increasing inflammatory cytokines associated with cardiovascular disease and depression itself, creating a bidirectional relationship)).



Liaison psychiatry (also called consultation-liaison psychiatry or psychosomatic medicine in North America) is the subspecialty of psychiatry that operates within general medical and surgical hospital settings, providing psychiatric assessment and management for patients with comorbid physical and psychological conditions; it addresses: psychiatric comorbidity in medical patients (identifying and treating depression, anxiety, delirium, and other disorders in patients admitted for physical illness; research consistently shows that psychiatric comorbidity worsens medical outcomes, lengthens hospital stays, and increases healthcare costs), medically unexplained symptoms (assessing and managing patients whose physical complaints cannot be explained by organic pathology), capacity assessment (evaluating whether a patient has the cognitive capacity to make an informed decision about their medical treatment, particularly in the context of cognitive impairment, severe mental illness, or altered consciousness), and end-of-life psychological care (supporting patients with terminal illness, their families, and the clinical team through the emotional and existential challenges of dying).

Fill in the blank: _____ psychiatry is the subspecialty operating within general hospital settings that provides psychiatric assessment for patients with comorbid physical and psychological conditions, medically unexplained symptoms, and capacity assessment.

5.3.3 Psychological interventions in medical settings

A range of psychological interventions can be applied in medical settings to address the psychological consequences of physical illness and the psychological factors that influence physical health outcomes; cognitive-behavioural therapy (CBT) is the most extensively evidence-based psychological intervention, effective for depression, anxiety disorders, PTSD, chronic pain, health anxiety, and adjustment to chronic illness; in CBT the clinician and patient collaboratively identify the maladaptive thoughts and behaviours that maintain psychological distress, test the accuracy of negative thoughts against evidence, and replace maladaptive coping behaviours with more adaptive alternatives; in a medical context, CBT for chronic pain addresses the catastrophising cognitions (exaggerating pain severity and expecting the worst), the avoidance behaviours (withdrawal from activity that is expected to cause pain but which actually maintains deconditioning and increases pain sensitivity), and the depression and anxiety that commonly accompany chronic pain.



Other evidence-based psychological interventions applicable in medical settings include: motivational interviewing (MI), a patient-centred, directive counselling approach developed by Miller and Rollnick that explores and resolves the patient ambivalence about behaviour change; particularly effective for substance use disorders, treatment adherence, and lifestyle change in chronic disease management; mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT), which cultivate non-judgmental present-moment awareness of thoughts, feelings, and bodily sensations, reducing anxiety, depression relapse, and chronic pain; supportive psychotherapy, which provides emotional support, empathic listening, and practical guidance without targeting specific cognitive or behavioural mechanisms; particularly useful in terminal illness and adjustment to chronic disease; and psychoeducation, the provision of structured information about a mental disorder and its treatment to patients and their families, which improves outcomes in schizophrenia, bipolar disorder, and depression by reducing expressed emotion, improving treatment adherence, and enhancing early recognition of relapse.

Fill in the blank: Motivational _____ is a patient-centred counselling approach developed by Miller and Rollnick that explores and resolves patient ambivalence about behaviour change; it is particularly effective for substance use disorders and treatment adherence in chronic disease management.



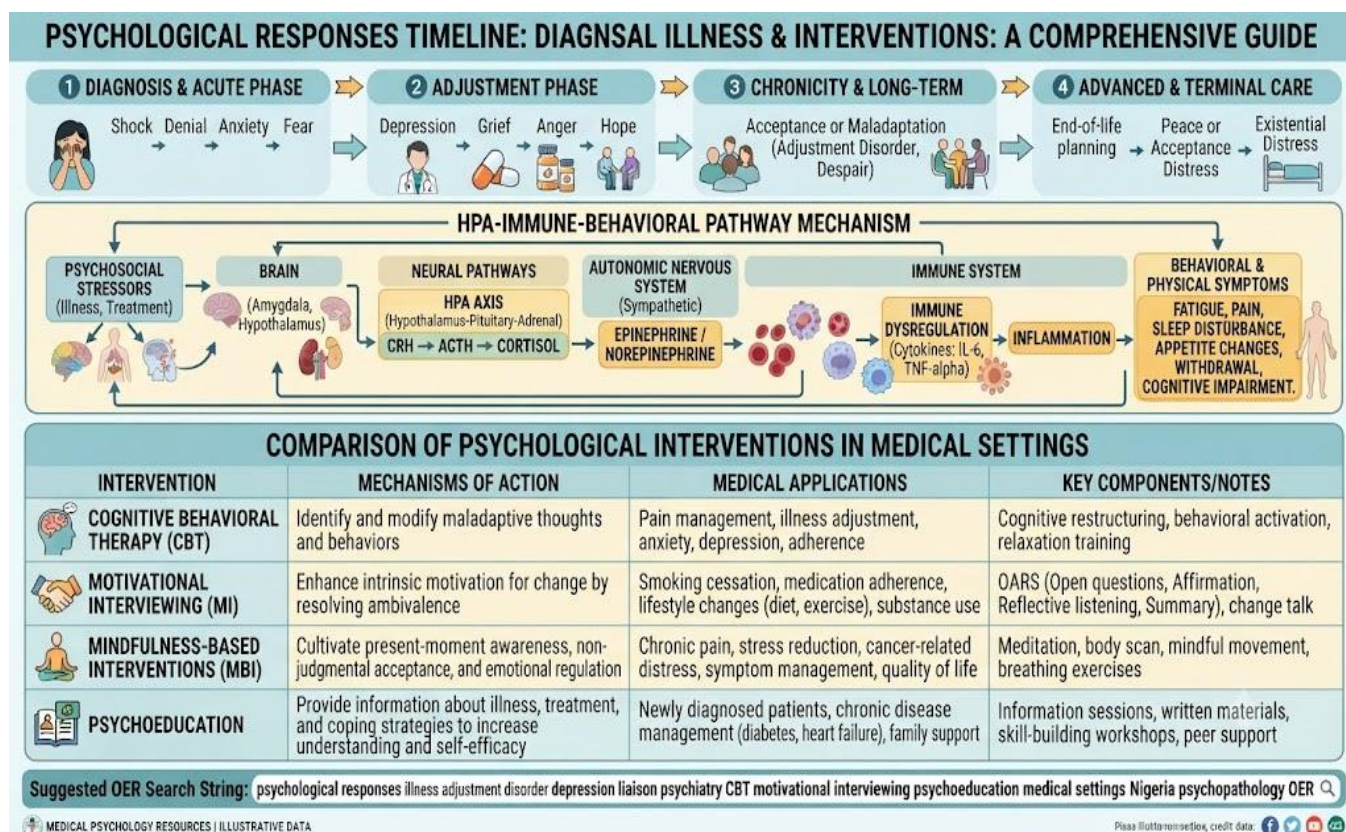


Figure 5.3: Psychological aspects of physical illness and psychological interventions

Pilot questions 5.3

1. Describe the major psychological responses to a serious medical diagnosis and explain how cognitive appraisal shapes these responses.
2. Explain the role of liaison psychiatry in a general hospital and describe four functions it serves.
3. Explain how CBT is applied to chronic pain management.
4. Explain motivational interviewing and describe its application to medication adherence in a patient with HIV.



Series Summary

This final Series completed the course by applying the accumulated psychological knowledge to the clinical reality of mental disorder and its interaction with physical illness. Psychopathology was introduced as the scientific study of mental disorder, with the complexity of defining abnormal behaviour acknowledged through five imperfect criteria: statistical infrequency, personal distress, disability, norm violation, and dangerousness; the DSM-5 and ICD-11 definition of mental disorder as a genuine dysfunction causing distress or impairment provided the operational standard. The Nigerian epidemiological picture was sobering: approximately 20 percent of adults meet criteria for a mental disorder, yet only 10 percent receive any treatment, a gap driven by the shortage of mental health professionals, inadequate infrastructure, pervasive stigma, cultural explanatory models favouring spiritual causation, and poverty.

The major disorder categories were examined with clinical precision: depression was described through its core and associated symptoms, its multifactorial aetiology, and its treatment with SSRIs and CBT, with the particular importance of recognising somatic presentations in Nigerian patients highlighted; anxiety disorders, PTSD, and schizophrenia were characterised through their distinguishing clinical features; substance use disorders and somatic symptom disorders were addressed in their Nigerian context. The Series concluded by establishing the psychological dimensions of physical illness as a core concern of medical practice: the emotional responses to diagnosis, the mechanisms of psychosomatic interaction, and the practical psychological interventions available in medical settings were all examined to equip the medical student with the understanding and skills needed to provide psychologically informed care to every patient, regardless of the primary presenting complaint.



Glossary of Terms

1. **Adjustment disorder:** emotional or behavioural symptoms developing in response to an identifiable stressor, disproportionate to the stressor and causing significant impairment but not meeting criteria for another specific mental disorder.
2. **Cognitive-behavioural therapy (CBT):** a psychological intervention that collaboratively identifies and modifies maladaptive thoughts and behaviours; the most extensively evidence-based psychological treatment for depression, anxiety, and chronic pain.
3. **Liaison psychiatry:** the subspecialty of psychiatry operating within general hospital settings, providing assessment and management for psychiatric comorbidity, medically unexplained symptoms, and capacity assessment.
4. **Major depressive disorder (MDD):** a mood disorder characterised by depressed mood or anhedonia plus associated symptoms for at least two weeks, causing significant distress or impairment.
5. **Motivational interviewing (MI):** a patient-centred counselling approach that explores and resolves ambivalence about behaviour change; effective for substance use disorders and treatment adherence.
6. **Negative symptoms (schizophrenia):** symptoms reflecting a decrease in normal functioning: flat affect, alogia, avolition, anhedonia, and social withdrawal.
7. **Positive symptoms (schizophrenia):** symptoms reflecting an excess of normal functioning: delusions, hallucinations, disorganised thinking, and abnormal motor behaviour.
8. **Psychoeducation:** structured provision of information about a mental disorder and its treatment to patients and families, improving adherence and reducing relapse.
9. **Psychosomatic medicine:** the field examining the interaction between psychological and biological processes in health and illness, including both psychological consequences of physical illness and physical consequences of psychological states.



10. **Somatic symptom disorder:** persistent physical symptoms without adequate organic explanation, accompanied by excessive health-related thoughts and behaviours; common in Nigerian general medical settings.



Concept Check Questions [Series 5]

Objective Questions

- A mental disorder is defined as a genuine _____ in psychological or biological processes causing significant distress or impairment in functioning. (Linked to SLO 5.1)
- The ICD-_____ (2019), published by the WHO, is the classification system adopted as the administrative basis for psychiatric diagnosis in Nigeria. (Linked to SLO 5.1)
- The two core symptoms of a major depressive episode are depressed _____ and loss of interest or pleasure (anhedonia). (Linked to SLO 5.2)
- _____ symptoms of schizophrenia (flat affect, alogia, avolition) respond less well to antipsychotic medication than positive symptoms. (Linked to SLO 5.2)
- _____ interviewing is a patient-centred counselling approach that explores ambivalence about behaviour change; effective for substance use disorders and treatment adherence. (Linked to SLO 5.3)

Short-Answer Questions

1. Describe the epidemiology of mental disorders in Nigeria and explain three barriers to treatment. (Linked to SLO 5.1)
2. Distinguish between positive, negative, and cognitive symptoms of schizophrenia and state the treatment for each. (Linked to SLO 5.2)
3. Explain the role of liaison psychiatry in a general hospital. (Linked to SLO 5.3)

Long-Answer Question

4. Discuss the fundamentals of psychopathology as they apply to medical practice, covering the classification, epidemiology, and clinical features of major mental disorders, and the psychological aspects of physical illness. (Linked to SLOs 5.1, 5.2, 5.3)



Answers to Concept Check Questions [Series 5]

Objective Questions

6. Dysfunction.
7. 11.
8. Mood.
9. Negative.
10. Motivational.

Short-Answer Questions

11. Approximately 20% of Nigerian adults meet criteria for at least one mental disorder in any 12-month period; only approximately 10% receive any treatment. Three barriers: (1) Inadequate workforce: Nigeria has fewer than 150 psychiatrists for over 220 million people; most primary care settings have no trained mental health professional, so the majority of mental disorders are never identified or treated. (2) Stigma: mental illness carries pervasive social shame in most Nigerian communities; families conceal affected members, affected individuals deny symptoms, and clinicians may avoid psychiatric diagnoses to protect patients from stigmatisation, all reducing treatment uptake. (3) Cultural explanatory models: mental illness is widely attributed to supernatural causes (witchcraft, spiritual attack, or divine punishment) leading affected individuals and families to seek care from religious and traditional healers first, delaying or preventing access to effective biomedical treatment.
12. Positive symptoms: excesses of normal function including delusions (fixed false beliefs: persecutory, grandiose, reference), hallucinations (perceptions without stimuli: most commonly auditory voices), disorganised thinking and speech, and abnormal motor behaviour; respond best to antipsychotic medication. Negative symptoms: reductions in normal function including flat affect (reduced emotional expression), alogia (poverty of speech), avolition (lack of goal-directed motivation), anhedonia, and social withdrawal; respond poorly to typical antipsychotics; atypical antipsychotics (particularly clozapine) show some benefit; psychosocial interventions are important. Cognitive symptoms:



impairments in working memory, processing speed, and executive function; poorly responsive to currently available medication; cognitive remediation therapy has modest evidence.

13. Liaison psychiatry operates within general hospitals to: (1) assess and treat psychiatric comorbidity in medical patients (identifying and managing depression, anxiety, delirium, and PTSD in patients admitted for physical illness, since comorbid psychiatric disorder worsens medical outcomes and lengthens admissions); (2) evaluate patients with medically unexplained symptoms (assessing somatic symptom disorder and functional neurological symptoms and providing management to reduce unnecessary investigations and procedures); (3) conduct capacity assessments (evaluating whether patients with cognitive impairment, severe mental illness, or delirium have the capacity to make informed decisions about their medical treatment); (4) provide end-of-life psychological care (supporting terminally ill patients, their families, and the clinical team through anticipatory grief, existential distress, and the decision-making demands of palliative care).

Long-Answer Question

14. Classification: DSM-5 (APA, USA) and ICD-11 (WHO, Nigeria) define mental disorder as genuine dysfunction causing distress or impairment; categories include mood disorders, anxiety disorders, psychotic disorders, substance use disorders, neurodevelopmental disorders, personality disorders, somatic symptom disorders, neurocognitive disorders; cultural limitations (somatic presentations of depression, spiritual explanatory models) reduce applicability in Nigerian contexts. Epidemiology: 20% 12-month prevalence; 10% treatment rate; major treatment gap; barriers: inadequate workforce (fewer than 150 psychiatrists), stigma, cultural/spiritual models, poverty, inadequate infrastructure; major disorders: depression (5-10% lifetime, somatic presentations common), anxiety (5-8%), PTSD (conflict-affected NE and Niger Delta), alcohol use disorder (5%), schizophrenia (1%). Depression: core symptoms (depressed mood or anhedonia + 4 associated for 2+ weeks); aetiology (genetic, neurobiological (serotonin, noradrenaline, HPA axis), psychological (negative cognitions), social); treatment: SSRIs first-line, CBT, combined; somatic presentation recognition critical in



Nigeria. Anxiety and PTSD: GAD (uncontrollable worry + physical symptoms), panic disorder (unexpected panic attacks + anticipatory fear), PTSD (intrusion, avoidance, negative mood/cognitions, hyperarousal; trauma-focused CBT or EMDR).

Schizophrenia: positive (delusions, hallucinations, disorganised thinking: antipsychotics), negative (flat affect, avolition: poor medication response), cognitive (memory, speed, executive function: cognitive remediation). Substance use: impaired control, social impairment, risky use, tolerance, withdrawal; alcohol most prevalent in Nigeria; tramadol, cannabis, volatile substances among youth. Somatic symptom disorder: 20-40% of general medical clinic patients; cultural acceptability of somatic versus psychological expression; non-dismissive validating approach required. Psychological responses to illness: Kubler-Ross stages (denial, anger, bargaining, depression, acceptance); adjustment disorder; illness anxiety; acute stress reaction; bereavement; cognitive appraisal shapes emotional response. Psychosomatic mechanisms: HPA axis and SNS pathways, immune dysregulation, behavioural pathways. Liaison psychiatry: psychiatric comorbidity assessment, medically unexplained symptoms, capacity assessment, end-of-life care. Psychological interventions: CBT (depression, anxiety, chronic pain, health anxiety), motivational interviewing (substance use, adherence), mindfulness (anxiety, depression relapse), psychoeducation (schizophrenia, bipolar), supportive psychotherapy (terminal illness).

Answers to Pilot Questions [Series 5]

Part 5.1

1. Statistical infrequency (behaviour deviating from the population average; limitation: many rare characteristics are not disorders and many common ones are). Personal distress (significant suffering to the individual; limitation: excludes conditions like antisocial personality disorder where the individual does not suffer but causes harm to others). Disability or dysfunction (impairment in occupational or social functioning; limitation: physical illness also causes dysfunction without being a mental disorder). Violation of



social norms (behaviour deviating from culturally expected norms; limitation: culturally relative and historically misused to pathologise non-conformity). Dangerousness (risk of harm to self or others; limitation: applicable to a small minority of patients and not a general criterion for mental disorder). None is individually sufficient because each criterion either includes conditions that are not mental disorders or excludes conditions that clearly are; the DSM-5 and ICD-11 combine dysfunction, distress, and impairment to provide a more adequate operational definition.

2. DSM-5: published by the American Psychiatric Association; primarily used in the USA and in research; fifth edition (2013); not officially adopted by Nigeria as its administrative classification system; uses categorical diagnosis with dimensional specifiers; culturally influenced by Western (particularly North American) clinical populations. ICD-11: published by the World Health Organization; the global standard used by most countries including Nigeria for both administrative (coding, statistics, legal) and clinical purposes; eleventh revision (2019); broader international input and intended for global applicability; used as the basis for Nigeria national health statistics and psychiatric reporting.
3. Approximately 20 percent of Nigerian adults meet criteria for at least one mental disorder in any 12-month period, yet only approximately 10 percent of those affected receive any treatment, constituting one of the largest treatment gaps for mental illness in the world; major disorders by prevalence: depression (5-10% lifetime), anxiety disorders (5-8%), PTSD (conflict-affected communities in Northeast and Niger Delta), alcohol use disorder (approximately 5%), schizophrenia (approximately 1%). Three treatment barriers: inadequate professional workforce (fewer than 150 psychiatrists for 220 million people; most primary care clinics have no trained mental health staff), pervasive stigma (mental illness associated with spiritual failure or family shame; families conceal affected members; individuals deny symptoms to avoid social consequences), cultural explanatory models (widespread attribution of mental illness to witchcraft, spiritual attack, or divine punishment leads families to seek traditional or religious healing first, delaying or preventing access to biomedical treatment).
4. In Nigeria, as in many sub-Saharan African settings, psychological distress is commonly expressed through somatic symptoms rather than the affective and cognitive symptoms



that dominate Western diagnostic criteria for depression; this is because: cultural norms make it more acceptable to complain of physical suffering than of emotional distress (somatisation is culturally sanctioned); languages may have richer vocabularies for bodily states than for psychological states; physical symptoms carry less stigma than psychological ones (presenting with headache and body pain is more acceptable than presenting with sadness or hopelessness); and the somatic symptoms of depression (fatigue, pain, sleep disturbance, and weight change) may genuinely predominate in patients with higher levels of chronic physical stress and lower baseline physical health; this means clinicians must actively screen for depression in patients presenting with persistent unexplained somatic complaints.

Part 5.2

6. Core symptoms: (1) Depressed mood (feeling sad, empty, or hopeless most of the day, nearly every day, for at least two weeks; in children and adolescents, irritability may substitute for depressed mood); (2) Anhedonia: loss of interest or pleasure in activities previously enjoyed. Four associated symptoms (of which at least four must accompany at least one core symptom): significant weight loss or gain, or appetite disturbance; insomnia or hypersomnia; psychomotor agitation or retardation; fatigue or loss of energy; feelings of worthlessness or excessive inappropriate guilt; difficulty concentrating or making decisions; recurrent thoughts of death or suicidal ideation.
7. Positive symptoms: excesses of normal function (delusions, hallucinations, disorganised thinking and speech, abnormal motor behaviour); these are the most dramatic and recognisable features of schizophrenia and respond best to both typical and atypical antipsychotic medications; antipsychotics block D2 (dopamine) receptors in the mesolimbic pathway. Negative symptoms: reductions in normal function (flat affect, alogia, avolition, anhedonia, social withdrawal); these respond poorly to typical antipsychotics and only partially to atypicals; they are associated with worse functional outcomes; psychosocial interventions (supported employment, social skills training) are more effective than medication. Cognitive symptoms: impairments in working memory,



attention, processing speed, and executive function; respond poorly to currently available antipsychotic medications; cognitive remediation therapy has modest evidence.

8. DSM-5 substance use disorder criteria: impaired control (using more than intended, unsuccessful efforts to cut down, spending large amounts of time on the substance, craving), social impairment (failure to fulfil role obligations, continued use despite interpersonal problems, giving up important activities), risky use (using in hazardous situations, continued use despite known harm), pharmacological criteria (tolerance: needing more for the same effect; withdrawal: characteristic symptoms when use is reduced); severity is graded as mild (2-3 criteria), moderate (4-5), or severe (6+).
9. Somatic symptom disorder describes persistent, distressing physical symptoms (pain, fatigue, gastrointestinal, neurological) for which thorough medical investigation does not reveal an adequate organic explanation; it is accompanied by excessive thoughts, feelings, or behaviours related to the symptoms (disproportionate worry about their seriousness, high anxiety about health, excessive time and energy spent on the symptoms); it is common in Nigerian general medical settings (estimated 20-40% of clinic patients) because: cultural norms make physical rather than psychological symptom expression more acceptable; physical complaints carry less stigma than psychiatric diagnosis; the language of bodily experience may be more accessible than the language of psychological distress; and the attribution of illness to spiritual causes may lead to somatisation as an expression of unacknowledged psychological distress.

Part 5.3

11. Major psychological responses: acute shock and disbelief (immediate response to diagnosis; normalised by empathic acknowledgment); denial (minimising or refusing to accept the diagnosis; often adaptive initially by allowing gradual assimilation but maladaptive if prolonged and interfering with treatment); anger (at the illness, the clinician, God, or life; natural response requiring empathic rather than defensive response from the clinician); bargaining (seeking additional opinions, alternative treatments, or spiritual intervention; reflects hope and should not be dismissed); depression (genuine



depressive episode or adjustment disorder in response to loss of health, function, or future plans; requires clinical assessment and treatment); acceptance (integration of the diagnosis into the self-concept and meaningful adaptation to the new reality). Cognitive appraisal shapes responses: primary appraisal (is this diagnosis catastrophic or manageable?) and secondary appraisal (what are my coping resources? what treatment is available?) together determine the specific emotional response; interventions targeting maladaptive appraisals reduce psychological distress without denying the reality of illness.

12. Liaison psychiatry in general hospitals serves four functions: (1) Psychiatric comorbidity assessment and treatment: identifying and managing depression (present in 20-30% of patients with major physical illness), anxiety, delirium, and PTSD in patients admitted for organic conditions; comorbid depression worsens medical outcomes (longer length of stay, poorer rehabilitation, increased mortality), making its identification and treatment a medical priority. (2) Medically unexplained symptoms: assessing patients whose physical complaints do not have adequate organic explanation after appropriate investigation (somatic symptom disorder, functional neurological disorder); providing management that reduces unnecessary investigations and iatrogenic harm and introduces a biopsychosocial understanding of symptoms. (3) Capacity assessment: evaluating whether patients (particularly those with delirium, dementia, severe mental illness, or altered consciousness) retain the cognitive capacity to make informed decisions about their medical treatment; a foundational ethical and legal function. (4) End-of-life psychological care: providing psychological assessment and intervention for patients with terminal illness, supporting anticipatory grief, existential distress, family communication, and the decision-making demands of palliative and end-of-life care.
13. CBT for chronic pain addresses three interconnected maintaining factors: cognitive (catastrophising: exaggerating pain severity, believing pain signals permanent damage, expecting the worst from any physical activity; CBT targets these with thought records, behavioural experiments, and cognitive restructuring to develop more balanced and evidence-based beliefs about pain); behavioural (avoidance: withdrawal from activities expected to cause pain, which actually worsens deconditioning, reduces function, and sensitises the pain system; CBT uses graded activity scheduling to progressively re-



engage the patient with avoided activities, demonstrating that function improves even when some pain persists); emotional (depression and anxiety commonly co-occur with chronic pain in a mutually worsening cycle; CBT for the mood disorder component improves both mood and pain experience simultaneously); combined, these components reduce pain catastrophising, improve functional capacity, reduce healthcare utilisation, and improve mood in patients with chronic pain.

14. Motivational interviewing (MI) is a patient-centred, collaborative, directive counselling approach that explores and resolves ambivalence about behaviour change; developed by Miller and Rollnick; based on the principle that people are more persuaded by their own arguments than by external pressure; core skills: OARS (Open-ended questions, Affirmations, Reflective listening, Summaries); principles: express empathy, develop discrepancy between current behaviour and stated values, roll with resistance rather than confronting it directly, support self-efficacy. Application to HIV medication adherence: the clinician explores the patient own reasons for taking ART (what matters to them about their health and their future), reflects and amplifies their own motivations for adherence, identifies and explores ambivalence (side effects, stigma of being seen taking medication, forgetting), collaboratively problem-solves specific adherence barriers, and affirms the patient capacity for sustained adherence; evidence shows MI significantly improves ART adherence compared to didactic information provision alone.



References and Attribution

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Figures, Plates, Tables, and Boxes

1. Figure 5.1: Classification and epidemiology of mental disorders in Nigeria Attribution: AI generated. Suggested OER search string: "DSM-5 ICD-11 mental disorder classification Nigeria epidemiology depression anxiety PTSD schizophrenia treatment gap mental health OER".
2. Figure 5.2: Major categories of mental disorder: clinical features and management Attribution: AI generated. Suggested OER search string: "depression bipolar disorder PTSD anxiety schizophrenia psychosis substance use disorder Nigeria clinical features treatment medical psychology psychopathology OER".
3. Figure 5.3: Psychological aspects of physical illness and psychological interventions Attribution: AI generated. Suggested OER search string: "psychological responses illness adjustment disorder depression liaison psychiatry CBT motivational interviewing psychoeducation medical settings Nigeria psychopathology OER".

