Module 1: Introduction

Biopsychosocial model:

Biological – Genetics, exposure to environmental toxins, Age, Gender
Psychological – cognitive functions, beliefs, ideas, coping styles
Social Influences – Peer group, family structures and culture

The biopsychosocial model assists primary care doctors in better understanding the **interactions** between **the biological, psychological, and social components of illnesses, thereby improving the dyadic relationship between clinicians and** their patients and **multidisciplinary** approaches to patient care.

Biological

Evolution: (We adapt to the environment) (epigenetic - t refers to external modifications to DNA that turn genes "on" or "off → environment triggering genes)

Genetic Inheritance: Evolutionary theory explains how certain genetic traits have been selected to enhance survival and reproduction over time. These traits can influence disease susceptibility, physical health, and psychological conditions.

Life-course perspective:
- Age-related aspects of health and illness (illness and disease are more perceptible at different ages)
- Considers leading causes of death (Eg suicide 18-35 for men; target/health promotion more towards that group)
- Gender (Eg women/men - women only have breast cancer)

Physiological Adaptations: Human physiology has evolved to adapt to specific environments. For example, the fight-or-flight response is an evolutionary adaptation to danger. Understanding these adaptations can help explain why specific biological responses occur.

Psychological

Behavioural Adaptations: Evolutionary psychology investigates how behaviours beneficial to survival and reproduction in ancestral environments influence human behaviour today. For example, social bonding and cooperation were critical for early human survival and remain influential in modern social interactions.

Cognitive Functions: Abilities like problem-solving and memory have evolved in response to environmental challenges, explaining why some cognitive processes are structured the way they are.

Social

Sociocultural perspective: (focuses how social and cultural perspectives contributes to health and disease)
● Culture
● Peer group (Eg peer group really into healthy eating vs drugs)
● Ethnic group
● Socioeconomic status (SES) (studies link lower ses to lower health outcome)

Module 2: Research in Health

Big idea: Evidence-based practice (EBP) integrates **best evidence**, **clinical expertise**, and **patient values** to guide effective, ethical care.

Designs:

- **Descriptive** (cross-sectional, case series): profile **prevalence** and correlates; no causality.
- **Analytic epidemiology**: **cohort** (incidence, risk; temporal order), **case–control** (rare outcomes; OR).
- **RCTs**: random allocation, prespecified **primary outcomes**, adequate **power**, **follow-up**; assess with **risk-of-bias** tools.
- **When RCTs aren't feasible**: **natural experiments**, **interrupted time series**, **difference-in-differences**, **instrumental variables**.

Evidence syntheses: Systematic reviews answer focused questions with transparent methods; **meta-analyses** pool **effect sizes** (d, r, OR/RR, Hedges g). Use **protocol preregistration** and **reporting standards** to control bias.

Validity & bias: Map **question → design**; manage **confounding**, **selection**, **performance/detection**, **attrition**, **publication/reporting** biases. Always state **primary endpoint**, **analysis plan**, **effect size**, and **CI**.

Measurement: Reliability (internal consistency, test–retest), **validity** (construct, criterion, content), **responsiveness** to change. Choose measures fit for **population** and **setting**.

Quick apply: For a given claim, pick the **strongest feasible design**, name **one key bias** to mitigate, specify **sample size logic**, **primary outcome**, and the **effect size** you'll report.

Module 3: Health, Behaviour and Prevention

Big idea: Health behaviours reflect **beliefs**, **intentions**, **skills**, **environment**, and **social influence**. **Prevention** is more efficient than treatment.

Major models:

- **HBM:** action if **perceived susceptibility/severity** and **benefits > barriers**, plus **cues to action** and **self-efficacy**.
- **TPB: intentions** stem from **attitudes**, **subjective norms**, and **perceived behavioural control**.
- **TTM: precontemplation** → **contemplation** → **preparation** → **action** → **maintenance**; strategies must be **stage-matched**.
- **HAPA:** close the **intention–behaviour gap** with **action planning** (when/where/how), **coping planning** (if-then barriers), **recovery self-efficacy**.

Message framing: Gain-framed often best for **prevention** behaviours; **loss-framed** can motivate **detection** when **self-efficacy** is high. Always **tailor** to audience and literacy.

Multi-level levers:

- **Individual:** skills, self-efficacy, prompts, feedback.
- **Family/peers:** modelling, norms, accountability.
- **Health system:** reminders, **defaults** (opt-out), provider prompts.
- **Community/policy:** built environment, price/tax, access.

Quick apply: Pick a target (e.g., **HPV vaccination**). Map **HBM/TPB**, write one **gain-framed** and one **loss-framed** message, then add **HAPA** action + coping plan and a **system default** (e.g., auto-reminders).