

Question: What is the PHQ-9 and how can it help assess my depression symptoms? **Answer:** The Patient Health Questionnaire (PHQ-9) is a widely recognized and validated self-report tool specifically designed for assessing depressive symptoms in digital formats, making it perfect for chatbot interfaces. It has proven diagnostic accuracy and reliability for detecting depression levels. There are also shorter versions like the PHQ-Dep-4 that maintain comparable diagnostic accuracy with fewer items, making them efficient for frequent use and ongoing monitoring. These tools can help you track your mental health over time and provide baseline measurements for understanding your psychological state.

Question: What is the GAD-7 and how does it work for anxiety screening? **Answer:** The Generalised Anxiety Disorder Scale (GAD-7) is a validated assessment tool specifically designed to measure anxiety symptoms and is widely recognized in clinical and digital settings. It's often used alongside depression screening tools like the PHQ-9 to provide a comprehensive mental health assessment. The GAD-7 is suitable for digital administration through chatbot interfaces and can help identify your anxiety levels with established accuracy. It serves as both an initial screening tool and for ongoing monitoring of anxiety symptoms over time.

Question: What is the DASS-21 and how does it provide a complete mental health picture? **Answer:** The Depression Anxiety Stress Scale-21 (DASS-21) is a comprehensive tool that measures general psychological distress across three key domains: depression, anxiety, and stress levels simultaneously. Unlike single-condition tools, it provides a more holistic view of your mental state by capturing multiple aspects of psychological distress. There are abbreviated versions like DASS-8 or Korean DASS-12 that maintain effectiveness with fewer questions. This tool is particularly valuable because it can identify patterns across different types of mental health challenges and provide a broader understanding of your overall psychological well-being.

Question: What is the Mental Health Assessment Scales for Students (MASS) and why is it specifically designed for university students? **Answer:** The Mental Health Assessment Scales for Students (MASS) is a comprehensive, multi-domain assessment battery specifically developed for Indian university students, though its principles apply broadly to student populations. It covers five critical areas: stress levels, psychiatric symptoms, mental health risk factors, positivity, and functioning in both academic and interpersonal domains. Its digital format makes it highly scalable for early detection and risk stratification among student populations. MASS is particularly valuable because it addresses the unique challenges and environments that university students face, providing targeted insights that generic mental health tools might miss.

Question: What is the Mental Health Quotient (MHQ) and how can it help me understand my complete mental health profile? **Answer:** The Mental Health Quotient (MHQ) is a sophisticated web-based assessment designed to offer a comprehensive profile of your mental health, covering the full spectrum from clinical symptoms to healthy psychological functioning. It provides both an overall mental health score and detailed subscores across different domains of mental well-being. What makes MHQ particularly valuable is that it comes with actionable recommendations tailored to your specific profile, enabling you to identify potential risks and areas for improvement before they reach

clinical levels of distress. This proactive approach helps you take preventive steps and build mental resilience rather than just addressing problems after they become severe.

Question: How does digital phenotyping work to predict my mental health from smartphone data?

Answer: Digital phenotyping involves collecting passive data from your smartphone, including activity levels, location patterns, sleep duration, and phone usage behaviors, to predict your mental health status without requiring constant manual input. The I-HOPE model provides an advanced framework that connects raw behavioral features to mental health outcomes, categorizing them as Normal, Mild, Moderate, or Severe based on PHQ-4 scale measurements. This system works through five key "interaction labels": Leisure, Me Time, Phone Time, Sleep, and Social Time, which act as intermediate categories that make the data more interpretable and actionable. The approach has achieved up to 91% overall accuracy in predicting mental health outcomes, making it a powerful tool for early detection and ongoing monitoring.

Question: Why is personalized mental health support so important, and how does it work? **Answer:**

Personalized mental health support is crucial because research shows that the relevance of specific behaviors varies dramatically across individuals in predicting mental health outcomes. For example, walking duration might be highly predictive for one student while phone usage at home might be more significant for another, and study duration patterns might be the key indicator for a third student. This variation means that one-size-fits-all approaches are far less effective than personalized interventions. Adaptive or nonlinear questioning in digital tools can lead to more personalized data collection and intervention delivery, allowing the system to understand your unique behavioral patterns and their specific impact on your mental health. This personalized approach ensures that the support you receive is tailored to your individual needs and circumstances.

Question: What factors make digital mental health interventions actually effective for students like me?

Answer: Several critical factors determine whether digital mental health interventions will actually help you. First, content must be credible, relevant, and appropriately structured with understandable language that avoids jargon. The ability to customize and personalize the intervention to align with your specific culture and values significantly boosts engagement and effectiveness. Interventions with guidance - whether through automated reminders, prompts, or structured interactions - generally achieve much higher engagement than purely self-guided ones. You're more likely to engage if you clearly understand the benefits and how to apply the information, especially if it offers advantages over existing resources. Features that enable social connection, even in digital contexts, facilitate better engagement, and the intervention must integrate easily into your daily routine for sustained use.

Question: What is "Gong" versus "Kang" engagement and how does this academic imbalance affect my mental health?

Answer: "Gong" engagement refers to excessive focus on academic pursuits without adequate rest and recovery time, while "Kang" engagement involves proper integration of rest and leisure activities into your routine. When you engage too heavily in "Gong" without balancing it with "Kang," you create a dangerous pattern that leads to significant stress, irritability, and despair. This imbalance typically manifests as heavy workloads, late nights, insufficient sleep,

and lack of time for exercise and relaxation. The research shows that students caught in excessive "Gong" patterns experience deteriorating mental health because they're not allowing their minds and bodies the recovery time necessary for sustainable academic performance. A healthy balance requires intentionally incorporating leisure, rest, and self-care alongside your academic commitments.

Question: How do my physical activity patterns specifically impact my mental health as a student?

Answer: Your physical activity patterns, including walking duration, running, and general workout duration, are significant predictive features for mental health outcomes and contribute directly to two crucial categories: "Leisure" and "Me Time" in mental health prediction models. These activities aren't just good for physical health - they're integral to your daily routine's impact on psychological well-being. Regular physical activity serves multiple mental health functions: it provides stress relief, contributes to better sleep patterns, offers structured time away from academic pressures, and creates opportunities for social interaction if done in group settings. The research shows that students who maintain consistent physical activity patterns tend to have better mood regulation and stress management capabilities, making exercise a critical component of comprehensive mental health maintenance.

Question: Why is sleep so critical for my mental health, and what specific patterns matter? **Answer:**

Sleep duration and quality are central predictors of mental health outcomes, with healthy sleep patterns typically involving more than seven hours of sleep per night. The "Sleep" interaction label in mental health prediction includes not just duration but also factors like time spent in your room and maintaining quiet, restful routines. Poor sleep patterns contribute significantly to academic stress, irritability, and overall psychological distress, creating a cycle where mental health issues worsen sleep, which then further deteriorates mental health. Specific sleep factors that matter include: total sleep duration, time to fall asleep, periods of wakefulness during the night, and the consistency of your sleep schedule. Your sleep environment and pre-sleep routines also play crucial roles, with quietness and comfortable room conditions being associated with better mental health outcomes.

Question: How does my social time and relationships impact my mental health prediction? **Answer:**

"Social Time" is a crucial interaction label in mental health prediction models, encompassing both the duration of social activities and time spent with friends, and it serves as a significant predictor of your psychological well-being. Your study locations can be key predictors for social activities, indicating that academic environments are important venues for social interaction and community building. The system even tracks features like "voice detections at social places" as relevant indicators of healthy social engagement. Research emphasizes that "the possibility of establishing good relationships with others is an important criterion for measuring the psychological health of college students." This means your social connections aren't just nice to have - they're essential for maintaining good mental health. Loneliness and social isolation have documented negative impacts on student mental health, making social engagement a critical protective factor.

Question: How does my phone and social media usage affect my mental health? **Answer:** Your "Phone Time," including screen unlock duration, frequency of phone conversations, and overall

usage patterns, serves as a significant interaction label in mental health prediction models and can indicate both positive and negative mental health patterns. The research shows that phone usage patterns can predict mental health outcomes with high accuracy, but the relationship is complex. While some phone use facilitates social connection and access to resources, problematic internet use is linked to difficulties with social skills and self-presentation. Your phone usage at different locations (home, social places, academic settings) provides different insights into your mental health status. The key is finding a balance where your phone use enhances rather than replaces real-world social connections and doesn't interfere with sleep, physical activity, or academic engagement. Monitoring these patterns can help identify when digital habits might be contributing to mental health challenges.

Question: What privacy and ethical protections should I expect from mental health chatbots?

Answer: Mental health chatbots must prioritize several critical ethical considerations to protect you safely. Data security and privacy are paramount - your personal information and mental health data must be encrypted and protected from unauthorized access. The system should provide transparency in how AI-driven decisions are made, so you understand how recommendations are generated. While anonymity can reduce stigma and encourage you to share more openly, it can also complicate building trust with your digital support system. Human oversight and accreditation for AI tools are recommended to ensure accountability and adherence to established ethical principles. The chatbot should be upfront about its limitations, when it might recommend human professional help, and how your data will be used. You should have control over your data and the ability to understand and question the AI's recommendations.

Question: What makes a mental health chatbot truly usable and accessible for diverse students?

Answer: A truly effective mental health chatbot must be intuitive, inclusive, and adaptable to users with varying levels of digital literacy and diverse cultural or socioeconomic backgrounds. Rather than relying solely on technical features like gamification, effective chatbots focus on addressing the social determinants of health that affect different student populations differently. The interface should be simple enough for students who aren't tech-savvy while still being engaging for those who are. Cultural sensitivity is crucial - the chatbot should adapt its language, examples, and recommendations to align with different cultural values and communication styles. Accessibility features should accommodate students with disabilities, different learning styles, and various economic circumstances. The chatbot should recognize that students from different backgrounds may have varying comfort levels with technology, different cultural attitudes toward mental health, and different resource constraints that affect their ability to implement recommendations.

Question: How can I tell if a mental health chatbot is using evidence-based approaches? **Answer:**

Evidence-based mental health chatbots should integrate validated self-report questionnaires with established psychometric properties, including proven validity, reliability, sensitivity, and specificity for detecting mental health issues. Look for systems that use recognized assessment tools like PHQ-9, GAD-7, DASS-21, or comprehensive tools like MASS or MHQ. The chatbot should be transparent about the research underlying its recommendations and cite specific studies or methodologies. Evidence-based approaches will also incorporate findings from large-scale research initiatives like the WHO World Mental Health Surveys International College Student Project or similar comprehensive

datasets. The system should explain how it connects behavioral data to mental health outcomes and provide clear rationales for its suggestions. Additionally, evidence-based chatbots will acknowledge their limitations, recommend professional help when appropriate, and continuously update their approaches based on new research findings.