# Comparing Gamified and CBT in Treating Mental Health Disorder for Adolescents

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# Global Mental Health Context

**Problem**

- Globally, nearly one billion people experience mental health disorders (World Health Organization, 2025).

**Magnitude of the Problem**

- In 2021, approximately 727,000 lives were lost to suicide globally (World Health Organization, 2025).

**Population affected**

- Suicide ranks among the leading causes of death for young people worldwide (World Health Organization, 2025).
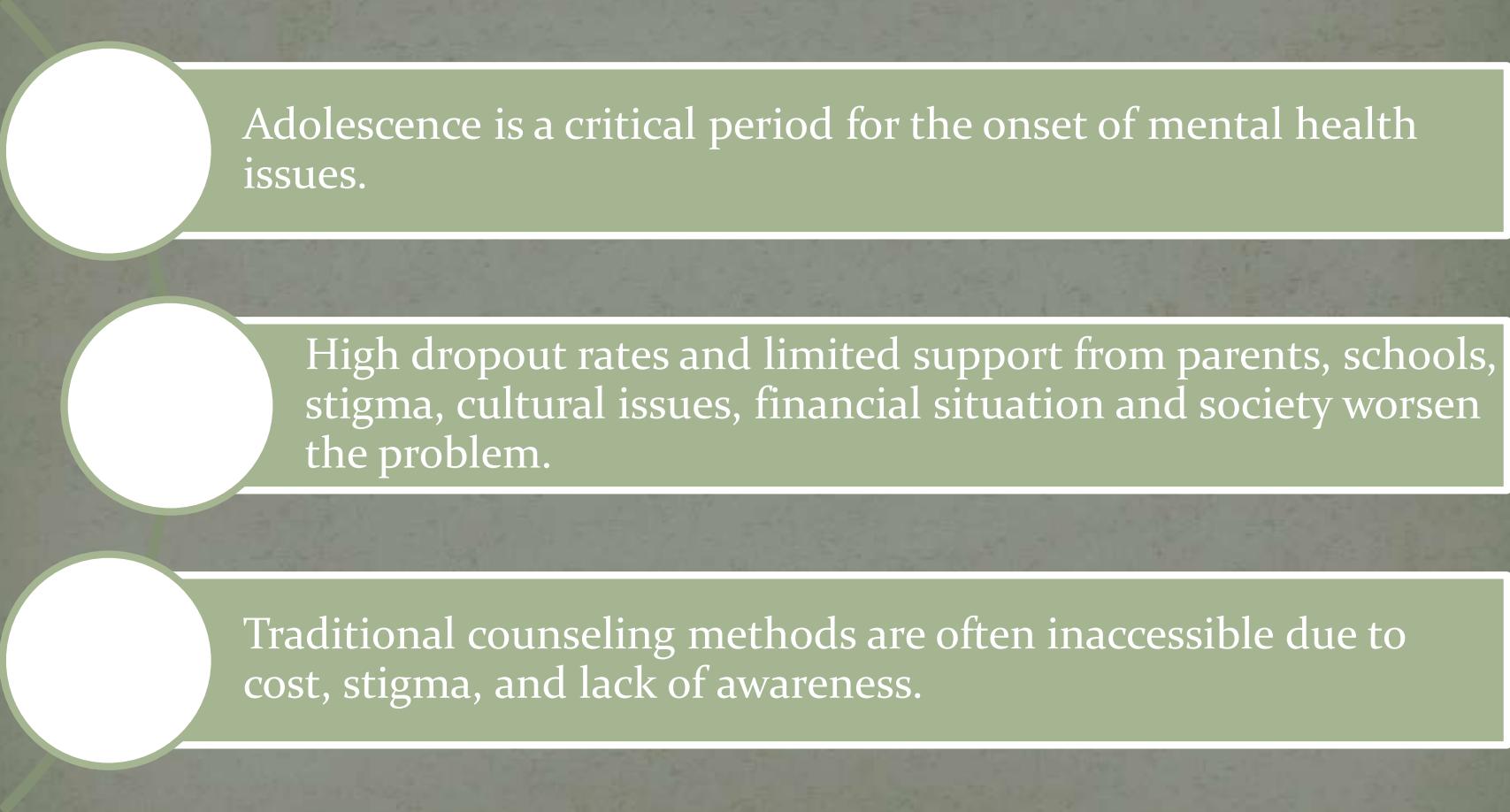
# Mental health of adolescents

Around 1 in 7 adolescents (ages 10–19) worldwide has a mental health condition, making up 15% of disease burden in this group .

Depression, anxiety, and behavioral disorders are the main causes of illness and disability among teenagers.

Suicide is the third leading cause of death for young people aged 15–29.

# Problem Statement

Adolescence is a critical period for the onset of mental health issues.

High dropout rates and limited support from parents, schools, stigma, cultural issues, financial situation and society worsen the problem.

Traditional counseling methods are often inaccessible due to cost, stigma, and lack of awareness.

# Key Challenges Adolescents Face

Stigma prevents adolescents from seeking help from counseling psychologists.

Conventional CBT techniques are less effective in underdeveloped countries due to low awareness.

High counseling fees make mental health support unaffordable for those who need it most.

# Proposed Solution

**Overcome Stigma and Adolescent Friendly**

- Introduce a computer-based Gamified CBT (GCBT) for teenagers and students.

**Overcome Financial Problem**

- Provide free, accessible mental health support to overcome cost and stigma barriers.

# Aim and Key Objectives
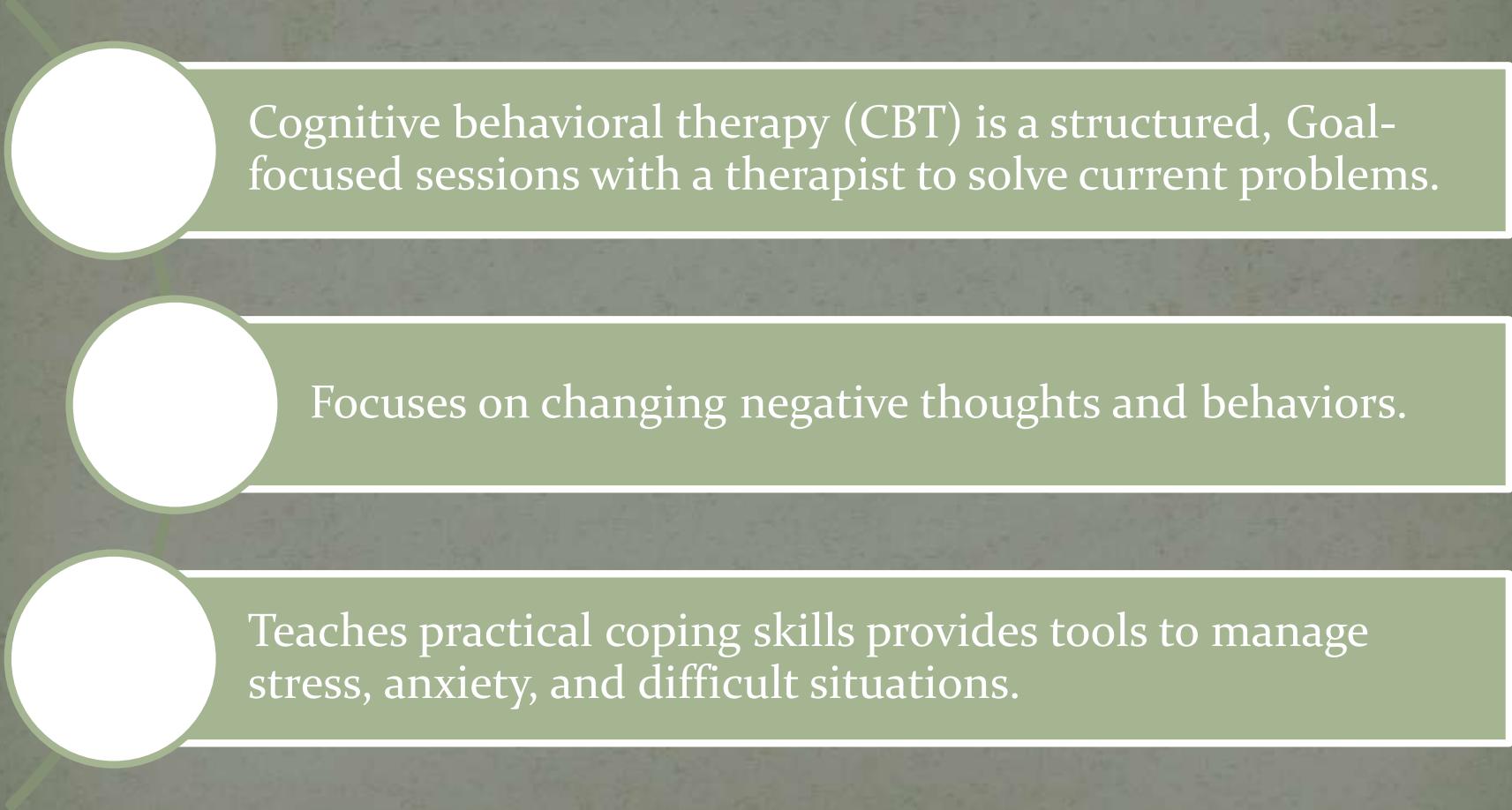
**Compare effectiveness**

- Evaluate how Gamified CBT (GCBT) and CBT (CBT) differ in reducing anxiety and depression symptoms in adolescents.

**Assess engagement and adherence**

- Examine differences in participation, completion rates, and dropout between GCBT and CBT.

**Understand user experience**

- Analyze acceptability, perceived benefits, limitations, and future research needs from adolescents' perspectives.

# What is CBT?

Cognitive behavioral therapy (CBT) is a structured, Goal-focused sessions with a therapist to solve current problems.

Focuses on changing negative thoughts and behaviors.

Teaches practical coping skills provides tools to manage stress, anxiety, and difficult situations.

# How CBT Helps & How to Access It

CBT effectively treats a wide range of clinical disorders like depression and anxiety, as well as common life challenges such as stress and grief.

It is a collaborative process where a trained therapist guides you to build self-awareness and develop practical, healthier coping skills.

Accessing proper care requires actively seeking qualified professionals and verifying their credentials and experience with your specific concerns.

# Limitations of Conventional CBT

High cost and limited availability of trained therapists.

Stigma associated with visiting mental health professionals.

Lack of awareness, family, and society support to overcome the disease in adolescents.
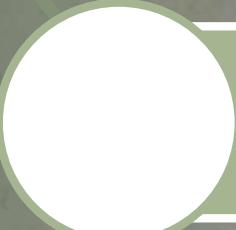
# What is Gamification?

- Gamification is the use of game design elements—like points, levels, badges, and leaderboards—in non-game contexts to increase user motivation, engagement, and participation.

- It is applied across many fields, including education, software engineering, and cybersecurity, to make learning and tasks more interactive and rewarding.

- Designing effective gamification requires balancing motivation, avoiding negative outcomes like user discouragement, and ensuring systems are tailored to diverse user needs and contexts.

# How Gamified CBT Work?

- Gamified CBT (GCBT) is a digital therapeutic approach that integrates the core principles of Cognitive Behavioral Therapy with Gamification elements, Large Language Model, Reinforcement technique to create an engaging, interactive, and accessible mental health intervention within adolscent day to day activities.

- Replaces traditional talk exercises with interactive modules, quests, or mini-games that allow users to practice CBT techniques like cognitive restructuring and behavioral activation in a safe, simulated environment.

- Uses game mechanics like progress tracking, achievement badges, and personalized rewards to motivate consistent use, reinforce positive behavior change, and reduce the stigma and dropout rates often associated with conventional therapy.
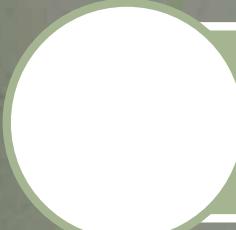
# Why Gamification for Adolescents?

Adolescents are more comfortable with digital and game-based tools.

Games increase motivation and sustained engagement.

Reduces fear and stigma associated with traditional therapy.

# Comparison: Gamified CBT (GCBT) vs CBT (CBT)

| | CBT | GCBT | GCBT Benefit |
|---|---|---|---|
| Mode of Delivery | Delivered through face-to-face or guided sessions with a therapist. | Delivered through digital or computer-based platforms using game elements. | Easy to access anytime and anywhere |
| Structure of Therapy | Follows structured sessions guided by a professional. | Uses predefined modules translated into interactive tasks and activities. | Simple, self-paced learning |
| Level of Human Interaction | High therapist–patient interaction. | Minimal or no direct therapist involvement. | Reduces dependency on therapists |

| | CBT | GCBT | GCBT Benefit |
|---|---|---|---|
| Engagement Method | Relies on discussion and homework assignments. | Uses points, rewards, avatars, and progress tracking. | Higher motivation and interest |
| Accessibility | Limited by location, appointment time, and therapist availability. | Accessible through computers or mobile devices. | Suitable for remote and low-resource settings |
| Cost | Often expensive due to professional fees. | Free of costs | Affordable for large populations |
| Privacy and Stigma | May cause discomfort due to in-person sessions. | Can be used privately and independently. | Reduces stigma and fear |

# Future Work

- **Include more existing literature review**
- **Study adolescent engagement metrics for both CBT and GCBT**
- **Evaluate psychiatrist / therapist involvement in gamified CBT to build GCBT system**
- **Explore long-term outcomes and scalability**
- **Develop system for Web and App accessible for all the adolescent free of costs**

# References

- World Health Organization. (2025, September 2). *Over a billion people living with mental health conditions – services require urgent scale-up*. WHO. Retrieved January 12, 2026, from https://www.who.int/news/item/02-09-2025-over-a-billion-people-living-with-mental-health-conditions-services-require-urgent-scale-up

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