



COLUMBIA UNIVERSITY

*College of Physicians
and Surgeons*

Understanding and addressing the mental health needs of people with TB

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LEARNING OBJECTIVES

Understand the interplay
between TB & mental health

Identifying mental disorders
among people with TB

Addressing mental health
conditions among people with TB

TUBERCULOSIS AND MENTAL HEALTH

*WHY IS THIS
IMPORTANT?*

High comorbidity

Associated with poor TB and post-TB treatment outcomes

Associated with TB related disability & lower quality of life

Treating mental health conditions can improve TB outcomes

TUBERCULOSIS AND MENTAL HEALTH

WHY NOW?

Political will

Effective, scalable, and feasible options exist

Technical guidance is forthcoming

Fundable under Global Fund Strategy 2023-2028



IMPLEMENTING
THE END TB
STRATEGY:
THE ESSENTIALS

THE
END TB
STRATEGY



PILLAR 1

**INTEGRATED,
PATIENT-
CENTERED TB
CARE AND
PREVENTION**

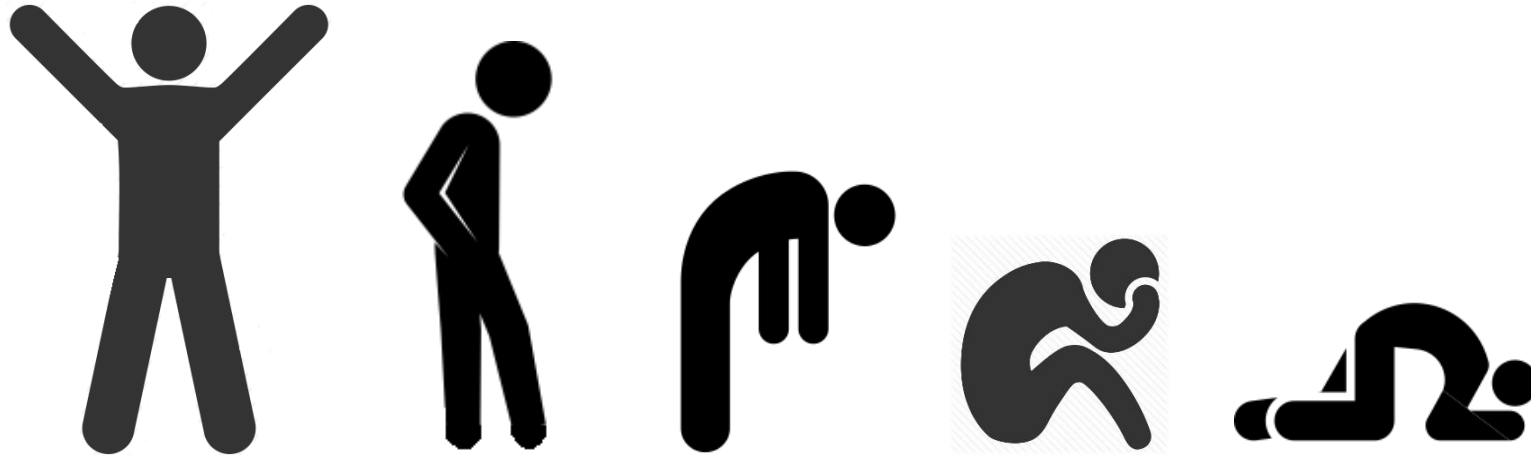
PILLAR 2

**BOLD
POLICIES AND
SUPPORTIVE
SYSTEMS**

PILLAR 3

**INTENSIFIED
RESEARCH AND
INNOVATION**

What is clinical depression?



Severity

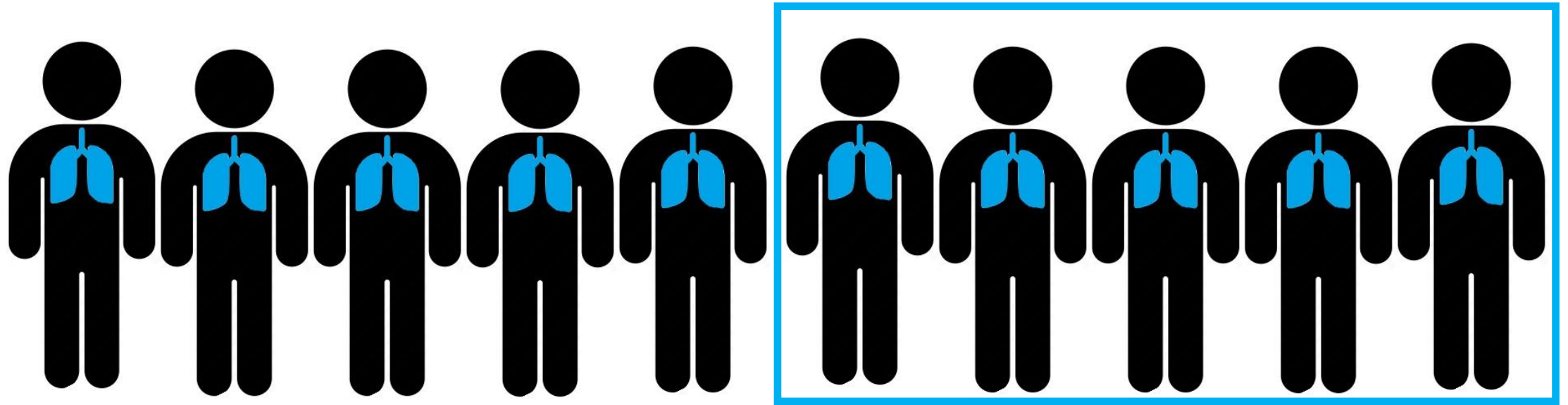
Duration

Impairment

Depression is a leading cause of disability worldwide

People with severe mental illness die an average of 10-25 years earlier

As many as **half** of all individuals with TB experience depression



20-80% prevalence of depression in 31 studies from 11 countries
(pooled weighted average of 48%)*

TB-DEPRESSION SYNDEMIC

TUBERCULOSIS

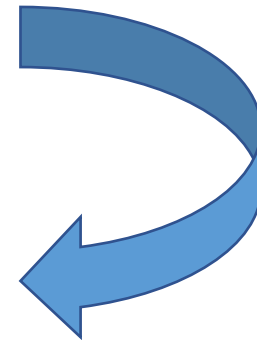
3.6 times greater risk for depression

Koyanagi et al, 2017, *BMC Med*

DEPRESSION

2.6 times greater risk for TB

Oh et al. (2017); *Int J Tuberc Lung Dis*



Social stigma

Catastrophic costs

Social isolation

Psychiatric
(cycloserine)

PSYCHOSOCIAL STRESS

Physical

SIDE EFFECTS

Discrimination

Inability to work

Dermatological
(clofazamine)

RISK FACTORS

Malnutrition

Incarceration

HIV coinfection

Cytokines

SOCIAL VULNERABILITY

PHYSIOLOGICAL

Substance abuse

Inflammation

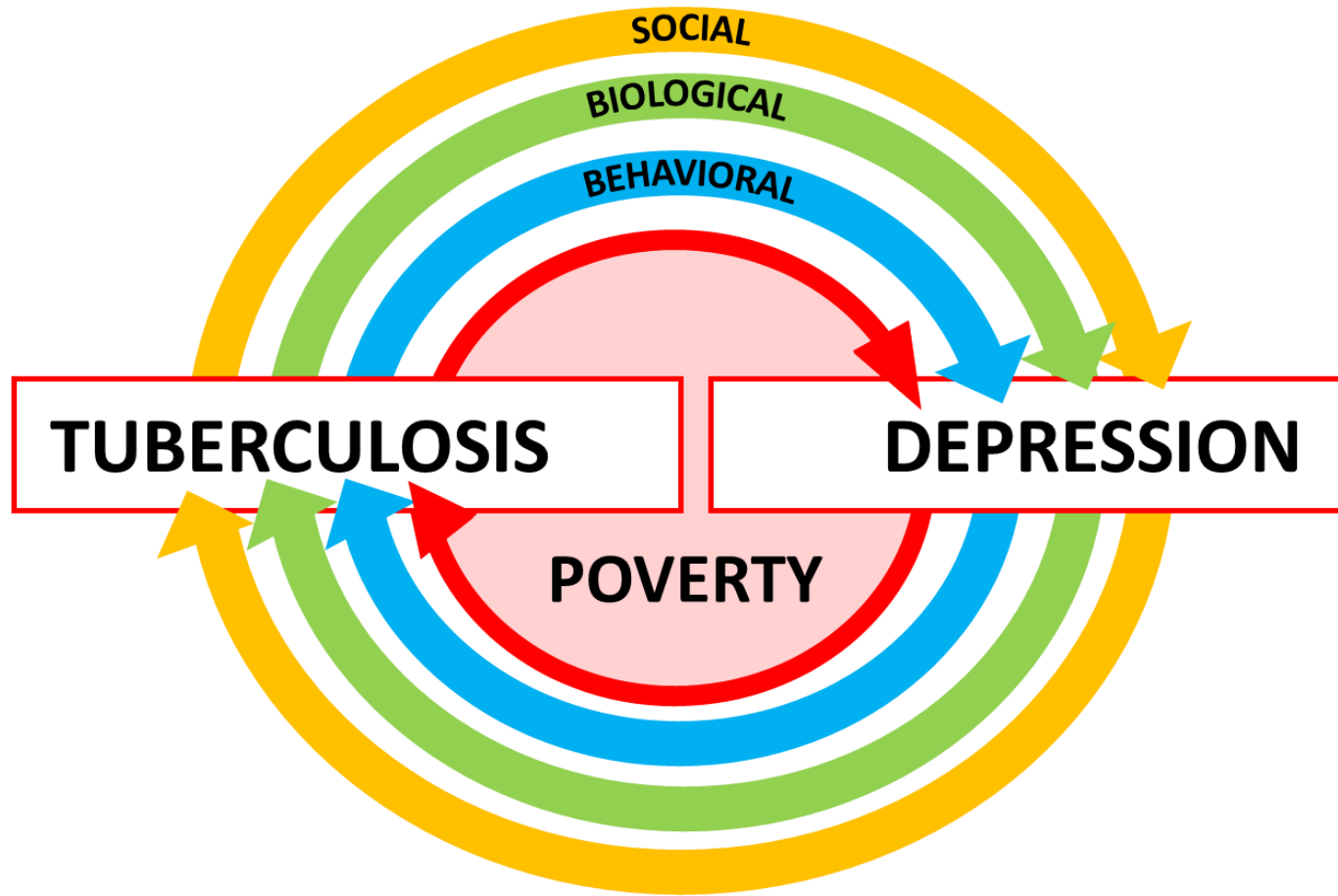
Severe mental illness

Immunosuppression

Poverty

Homelessness

TB-MENTAL HEALTH SYNDEMIC



4X any poor outcome

9X loss to follow up

3X death

LINKED TO TB-RELATED DISABILITY

Alene et al. *BMC Medicine* (2021) 19:203
<https://doi.org/10.1186/s12916-021-02063-9>

BMC Medicine

RESEARCH ARTICLE

Open Access

Tuberculosis related disability: a systematic review and meta-analysis

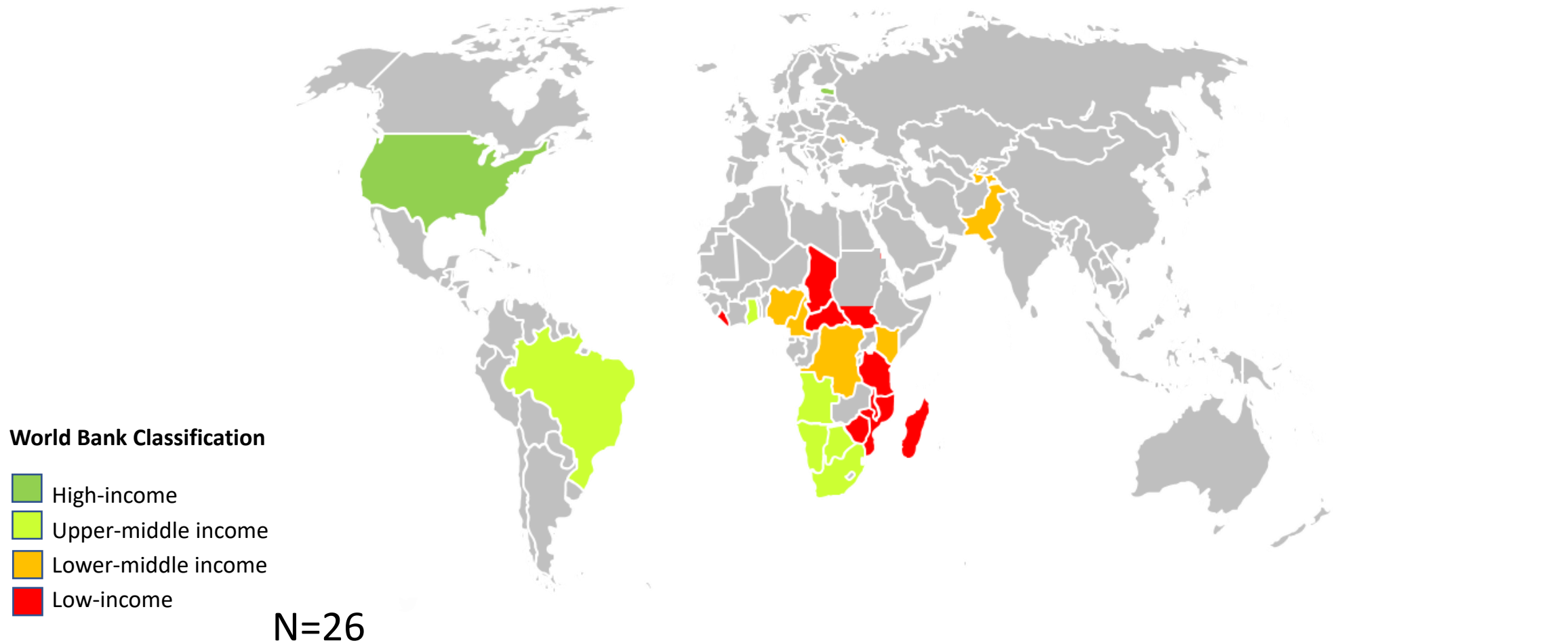


Kefyalew Addis Alene^{1,2,3†}, Kinley Wangdi^{3†}, Samantha Colquhoun^{3*}, Kudakwashe Chani³, Tauhid Islam⁴, Kalpeshsinh Rahevar⁴, Fukushi Morishita⁴, Anthony Byrne^{5,6}, Justin Clark⁷ and Kerri Viney^{3,8,9}

- ✓ 131 studies from 49 countries
- ✓ Most common disability: mental disorders (23.1%)
- ✓ Prevalence of mental disorders (42.0%) was highest in low-income countries (compared to LMICs)
- ✓ Drug-resistant TB was associated with 26% mental disorders

POLITICAL WILL

TB and mental disorder treatment integration: Receptivity of National TB Programs



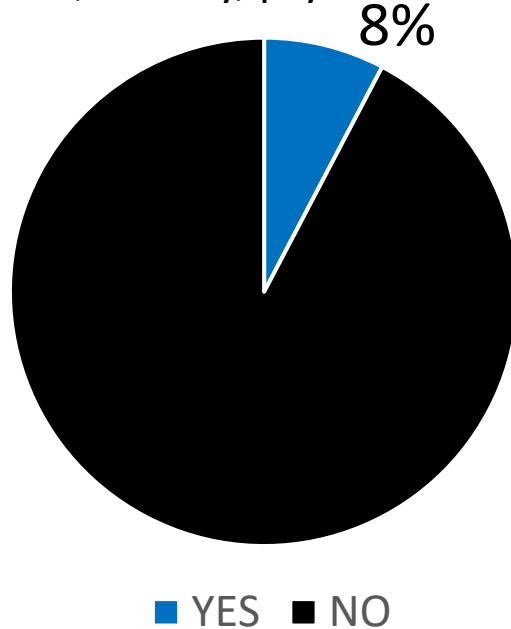
POLITICAL WILL

TB and mental disorder treatment integration: Receptivity of National TB Programs

What are current **PRACTICES** and **PROTOCOLS**?

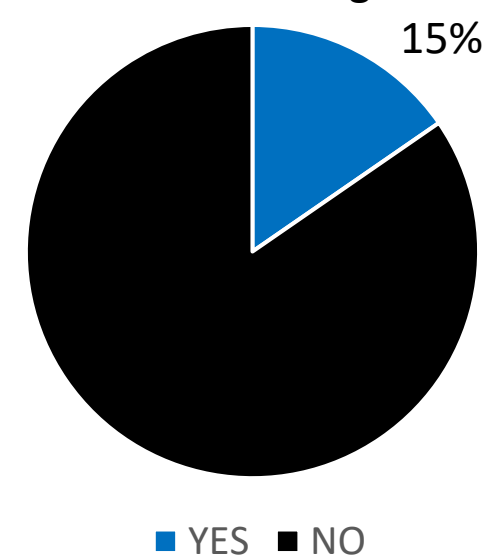
ROUTINE SCREENING

depression, anxiety, psychosis and/or trauma



ROUTINE SCREENING

alcohol and drug use



N=26

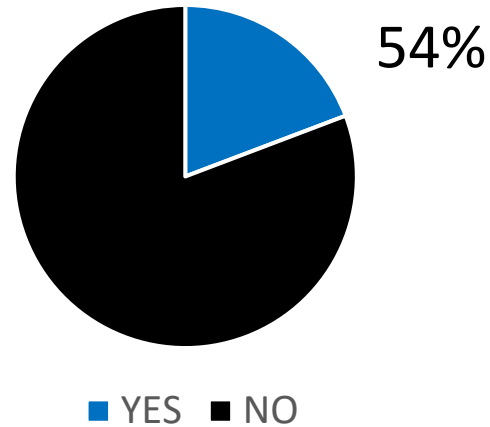
POLITICAL WILL

TB and mental disorder treatment integration: Receptivity of National TB Programs

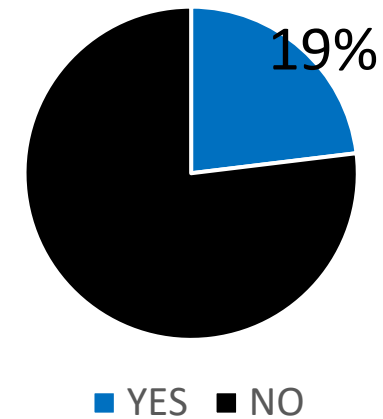
What are current **PRACTICES** and **PROTOCOLS**?

PSYCHOLOGICAL SERVICES ROUTINELY PROVIDED

Mental health counseling



Psychiatric referral



POLITICAL WILL

TB and mental disorder treatment integration: Receptivity of National TB Programs

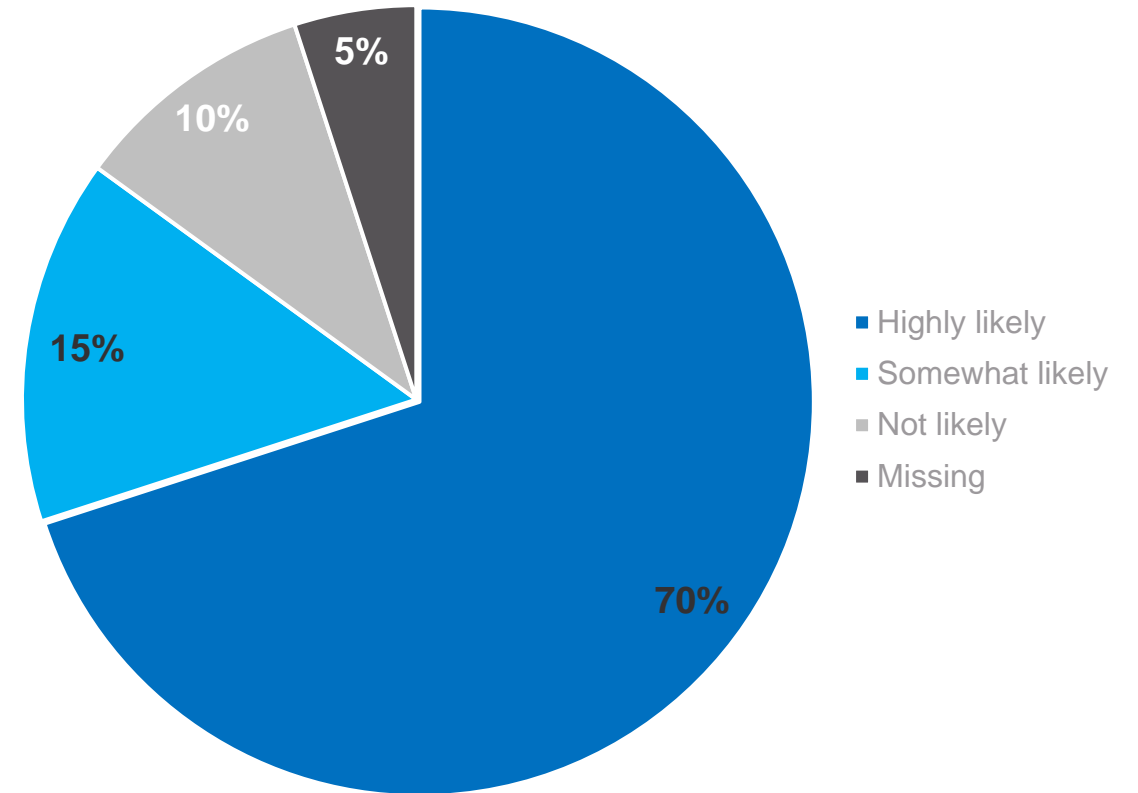
Top 3 barriers to TB/mental health service integration

- ✓ Not enough capacity (70%)
- ✓ Not enough resources/funding (50%)
- ✓ Lack of awareness/not recognized as a problem (50%)

POLITICAL WILL

TB and mental disorder treatment integration: Receptivity of National TB Programs

“If effective and low-cost interventions were available in [COUNTRY], what is the likelihood that it would be integrated into standard TB care?”



TREATING DEPRESSION AND ANXIETY CAN IMPROVE TB OUTCOMES

- Randomized controlled trial in Pakistan
- Approximately 1000 TB patients with depression/anxiety participated in a brief counseling intervention delivered by lay counselors
- Over 50% reported no symptoms after four to six sessions.
- Individuals who completed at least four counseling sessions had higher rates of TB treatment completion than those who did not (92.9% vs 75.1%; $p < 0.0001$).



OpenWHO.org

Access essential knowledge for
managing public health emergencies

Open to all,
anytime, from anywhere



OpenWHO e-course: TB and mental health

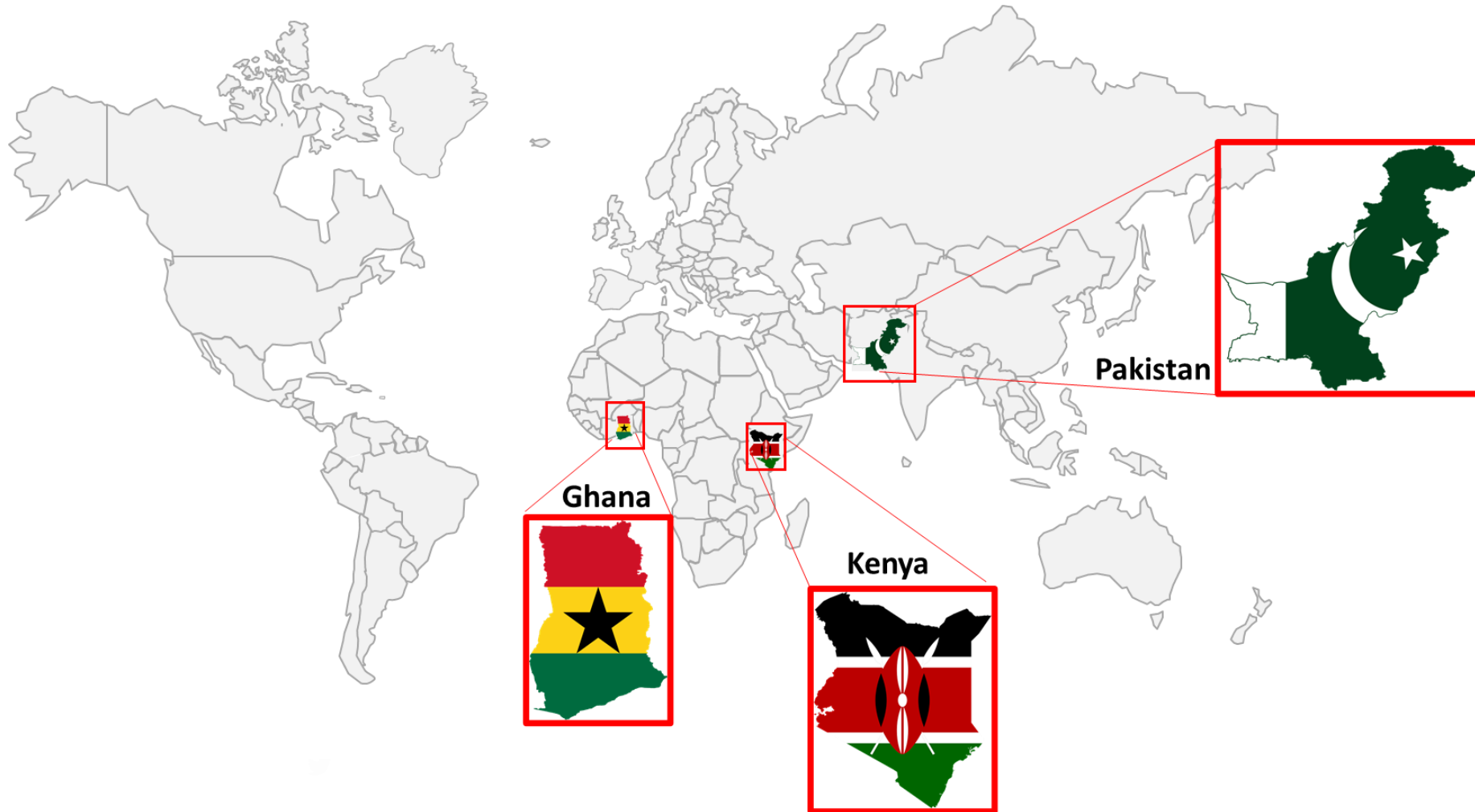
[COMING SOON...]



New e-learning course: TB & Mental Health

1. Introduction
2. Assessment
3. Interventions
4. Special considerations
5. How to get started

TB & Mental Health Feasibility Demonstration Projects



TB & Mental Health Feasibility Demonstration Projects 2022

4 stage process:

- 1) Exploration:** Choose and engage implementation sites (WHO headquarters/regional/country and Ministries of Health)
- 2) Preparation:** Rapid inventory of existing mental health activities, resources and potential synergies
- 3) Implementation & Evaluation:** In person workshops/trainings with various stakeholders (TB/MH and national/regional/local)
- 4) Sustainment:** iterative quality improvement



Screening for mental disorders

- Depression
- Anxiety
- Alcohol use
- Drug use
- Psychosis
- PTSD
- Suicide risk

Screening for depression

| PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9) | | | | |
|---|--|--------------|-------------------------|------------------|
| Over the <u>last 2 weeks</u> , how often have you been bothered by any of the following problems? (Use "✓" to indicate your answer) | Not at all | Several days | More than half the days | Nearly every day |
| | 1. Little interest or pleasure in doing things | 0 | 1 | 2 |
| 2. Feeling down, depressed, or hopeless | 0 | 1 | 2 | 3 |
| 3. Trouble falling or staying asleep, or sleeping too much | 0 | 1 | 2 | 3 |
| 4. Feeling tired or having little energy | 0 | 1 | 2 | 3 |
| 5. Poor appetite or overeating | 0 | 1 | 2 | 3 |
| 6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down | 0 | 1 | 2 | 3 |
| 7. Trouble concentrating on things, such as reading the newspaper or watching television | 0 | 1 | 2 | 3 |
| 8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual | 0 | 1 | 2 | 3 |
| 9. Thoughts that you would be better off dead or of hurting yourself in some way | 0 | 1 | 2 | 3 |

} Depression pre-screen (PHQ-2)

Total score range: 0-27

Probable depression (PHQ-9 ≥ 10)

0-4: No depression

5-9: Mild depression

10-14: Moderate depression

15-19: Moderate-severe depression

≥ 20: Severe depression

Screening for anxiety

| GAD-7 | | | | |
|--|------------|--------------|-------------------------|------------------|
| Over the <u>last 2 weeks</u> , how often have you been bothered by the following problems? <i>(Use "✓" to indicate your answer)</i> | Not at all | Several days | More than half the days | Nearly every day |
| 1. Feeling nervous, anxious or on edge | 0 | 1 | 2 | 3 |
| 2. Not being able to stop or control worrying | 0 | 1 | 2 | 3 |
| 3. Worrying too much about different things | 0 | 1 | 2 | 3 |
| 4. Trouble relaxing | 0 | 1 | 2 | 3 |
| 5. Being so restless that it is hard to sit still | 0 | 1 | 2 | 3 |
| 6. Becoming easily annoyed or irritable | 0 | 1 | 2 | 3 |
| 7. Feeling afraid as if something awful might happen | 0 | 1 | 2 | 3 |

(For office coding: Total Score T___ = ___ + ___ + ___)

Anxiety pre-screen (GAD-2)

Generalized Anxiety Disorder 7 (GAD-7)

Total score range: 0-21

Probable anxiety (GAD-7 \geq 10)

Screening for harmful alcohol use

One drink equals:



12 oz.
beer



5 oz.
wine



1.5 oz.
liquor
(one shot)

| | | | | | |
|--|-------|-------------------|-------------------------------|--------------------|------------------------|
| 1. How often do you have a drink containing alcohol? | Never | Monthly or less | 2 - 4 times a month | 2 - 3 times a week | 4 or more times a week |
| 2. How many drinks containing alcohol do you have on a typical day when you are drinking? | 0 - 2 | 3 or 4 | 5 or 6 | 7 - 9 | 10 or more |
| 3. How often do you have five or more drinks on one occasion? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily |
| 4. How often during the last year have you found that you were not able to stop drinking once you had started? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily |
| 5. How often during the last year have you failed to do what was normally expected of you because of drinking? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily |
| 6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily |
| 7. How often during the last year have you had a feeling of guilt or remorse after drinking? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily |
| 8. How often during the last year have you been unable to remember what happened the night before because of your drinking? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily |
| 9. Have you or someone else been injured because of your drinking? | No | | Yes, but not in the last year | | Yes, in the last year |
| 10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down? | No | | Yes, but not in the last year | | Yes, in the last year |
| | 0 | 1 | 2 | 3 | 4 |

AUDIT pre-screen

Alcohol Use Disorders Identification Test (AUDIT-10)

| Score | Zone | Explanation | Action |
|-------|---------------|--|---|
| 0-3 | I – Low Risk | “Someone using alcohol at this level is at low risk for health or social complications.” | Positive Health Message – describe low risk drinking guidelines |
| 4-9 | II – Risky | “Someone using alcohol at this level may develop health problems or existing problems may worsen.” | Brief intervention to reduce use |
| 10-13 | III – Harmful | “Someone using alcohol at this level has experienced negative effects from alcohol use.” | Brief Intervention to reduce or abstain and specific follow-up appointment (Brief Treatment if available) |
| 14+ | IV – Severe | “Someone using alcohol at this level could benefit from more assessment and assistance.” | Brief Intervention to accept referral to specialty treatment for a full assessment |

Screening for drug use

Drug Abuse Screening Test (DAST-10)

| In the past 12 months... | | Circle | |
|--|--|---------------|----|
| 1. | Have you used drugs other than those required for medical reasons? | Yes | No |
| 2. | Do you abuse more than one drug at a time? | Yes | No |
| 3. | Are you unable to stop abusing drugs when you want to? | Yes | No |
| 4. | Have you ever had blackouts or flashbacks as a result of drug use? | Yes | No |
| 5. | Do you ever feel bad or guilty about your drug use? | Yes | No |
| 6. | Does your spouse (or parents) ever complain about your involvement with drugs? | Yes | No |
| 7. | Have you neglected your family because of your use of drugs? | Yes | No |
| 8. | Have you engaged in illegal activities in order to obtain drugs? | Yes | No |
| 9. | Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs? | Yes | No |
| 10. | Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding)? | Yes | No |
| Scoring: Score 1 point for each question answered "Yes," except for question 3 for which a "No" receives 1 point. | | Score: | |

} DAST pre-screen

| Interpretation of Score | | |
|-------------------------|----------------------|------------------------------------|
| Score | Degree of Problems | Suggested Action |
| 0 | No problems reported | None at this time |
| 1-2 | Low level | Monitor, re-assess at a later date |
| 3-5 | Moderate level | Further investigation |
| 6-8 | Substantial level | Intensive assessment |
| 9-10 | Severe level | Intensive assessment |

Screening for psychosis

Psychosis Screening Questionnaire (PSQ)

Response options: yes/no

| Questions |
|--|
| Hypomania/Mania 1. Over the past year, have there been times when you felt very happy indeed without a break for days on end? 1a. Was there an obvious reason for this? 1b. Did people around you think it was strange? |
| Thought control 2. Over the past year, have you ever felt that your thoughts were directly interfered with or controlled by some outside force or person? 2a. Did it come about in a way that many people would find hard to believe, for instance, through telepathy? |
| Paranoia 3. Over the past year, have there been times when you felt that people were against you? 3a. Have there been times when you felt that people were deliberately acting to harm you or your interests? 3b. Have there been times when you felt that a group of people was plotting to cause you serious harm or injury? |
| Strange experience 4. Over the past year, have there been times when you felt that something strange was going on? 4a. Was it so strange that other people would find it very hard to believe? |
| Auditory hallucination 5. Over the past year, have there been times when you heard or saw things that other people could not? 5a. Did you at any time hear voices saying quite a few words or sentences when there was no one around that might account for it? |

Total items 5-12

Total Score Range 0-12

Screening for PTSD

PC-PTSD-5

Sometimes things happen to people that are unusually or especially frightening, horrible, or traumatic. For example:

- a serious accident or fire
- a physical or sexual assault or abuse
- an earthquake or flood
- a war
- seeing someone be killed or seriously injured
- having a loved one die through homicide or suicide

Have you ever experienced this kind of event? (Check box)

YES

NO

If no, screen total = 0. Please stop here.

If yes, please answer the questions below.

In the past month, have you:

1. Had nightmares about the event(s) or thought about the event(s) when you did not want to?

YES

NO

2. Tried hard not to think about the event(s) or went out of your way to avoid situations that reminded you of the event(s)?

YES

NO

3. Been constantly on guard, watchful, or easily startled?

YES

NO

4. Felt numb or detached from people, activities, or your surroundings?

YES

NO

5. Felt guilty or unable to stop blaming yourself or other for the event(s) or any problems the event(s) may have caused?

YES

NO

Screening for suicide risk

Columbia Suicide Severity Risk Scale (CSSRS)

| Always ask questions 1 and 2. | Past Month | |
|--|------------|---------------|
| 1) Have you wished you were dead or wished you could go to sleep and not wake up? | | |
| 2) Have you actually had any thoughts about killing yourself? | | |
| If YES to 2, ask questions 3, 4, 5 and 6. If NO to 2, skip to question 6. | | |
| 3) Have you been thinking about how you might do this? | | |
| 4) Have you had these thoughts and had some intention of acting on them? | High Risk | |
| 5) Have you started to work out or worked out the details of how to kill yourself? Did you intend to carry out this plan? | High Risk | |
| Always Ask Question 6 | Life-time | Past 3 Months |
| 6) Have you done anything, started to do anything, or prepared to do anything to end your life? <i>Examples: Took pills, tried to shoot yourself, cut yourself, tried to hang yourself, or collected pills, obtained a gun, gave away valuables, wrote a will or suicide note, took out pills but didn't swallow any, held a gun but changed your mind or it was grabbed from your hand, went to the roof but didn't jump, etc.</i> If yes, was this within the past 3 months? | | High Risk |

Passive suicidal thoughts

Suicide plan & access

Suicide attempt

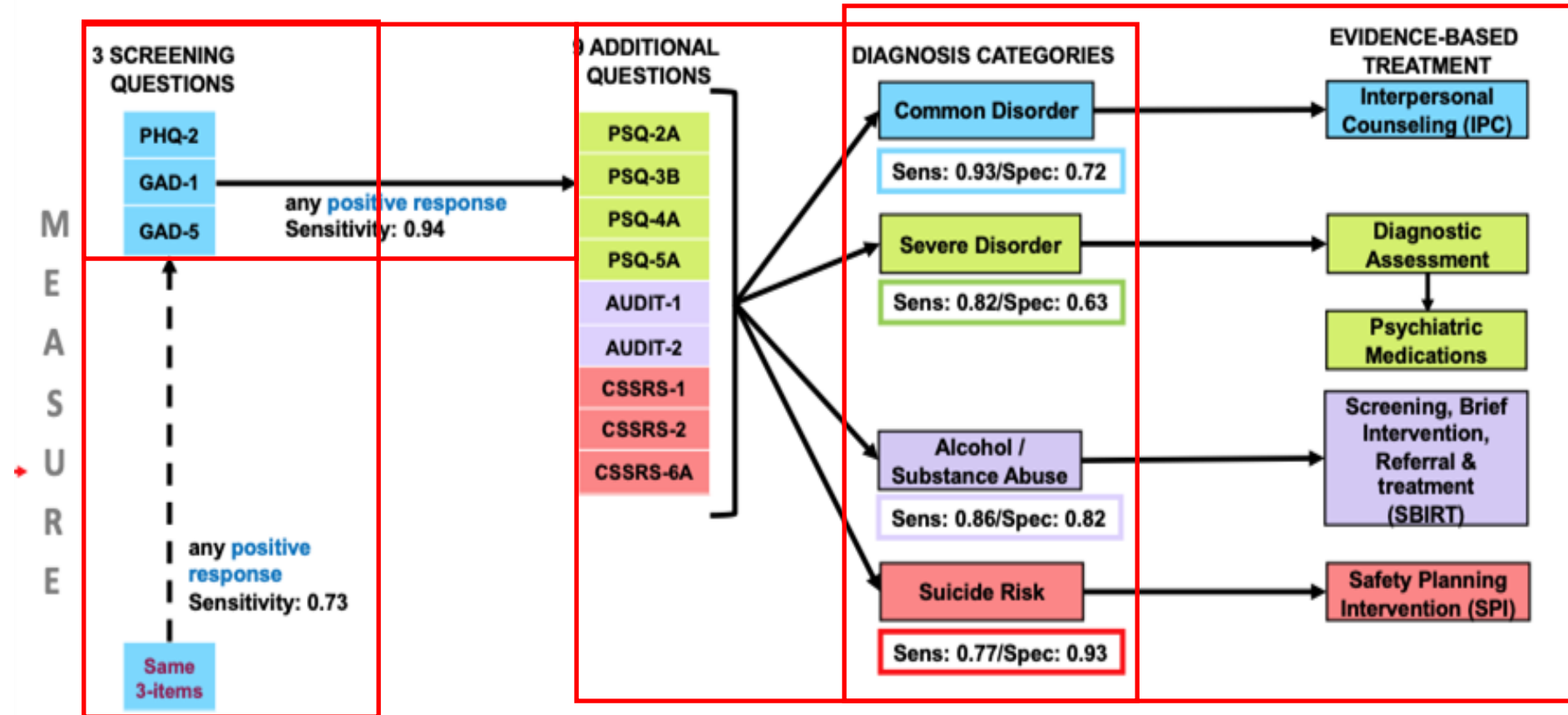
Screening for all disorders

| | |
|---------------|---------------------------|
| Depression | 2 items + 7 (PHQ-9) |
| Anxiety | 2 items + 5 (GAD-7) |
| Alcohol risk | 1 item + 9 (AUDIT-10) |
| Drug use | 1 item + 9 (DAST-10) |
| Psychosis | 5 item + 7 (PSQ) |
| Suicide risk | 3 item + 3 (CSSRS) |
| PTSD | 1 item + 5 (PC-PTSD) |
| All disorders | 14 items + 46 (ALL TOOLS) |

ALL DISORDERS

14-59 ITEMS

The Electronic Mental Wellness Tool (E-mwTool) – Determine Best Evidence-Based Treatments: 2-step strategy for comprehensive MH screening and care using tablets



Household (family) assessment:
3-step strategy for comprehensive MH screening
interviewing one household informant

PHQ – Patient Health Questionnaire
GAD – Generalized Anxiety Disorder Scale
PSQ – Psychosis (and Mania) Screening Questionnaire
CSSRS – Columbia Suicide Severity Rating Scale

mwTool US Validation: Demographics

| Characteristic | N = 252 |
|------------------------------------|----------------------|
| Age Mean (SD), Range | 39.8 (16.9), 18 - 93 |
| Gender | |
| Female | 132 (52.4%) |
| Male | 120 (47.6%) |
| Race/Ethnicity | |
| Hispanic or Latino | 121 (48.0%) |
| White | 59 (23.4%) |
| Black or African American | 43 (17.1%) |
| Multiracial | 14 (5.6%) |
| Asian | 7 (2.8%) |
| Other/Unknown | 8 (3.2%) |
| English as a first language | 166 (66.1%) |

mwTool US Validation: Diagnoses

| Disorders | N = 252 |
|---|-------------|
| Common Disorders | 125 (49.6%) |
| Major Depressive Episode | 113 (44.8%) |
| General Anxiety Disorder | 14 (5.6%) |
| Panic Disorder | 2 (0.8%) |
| Obsessive Compulsive Disorder | 1 (0.4%) |
| PTSD | 18 (7.1%) |
| Severe Disorders | 109 (43.3%) |
| Hypomania or Manic Episode | 23 (9.1%) |
| Any Psychotic Disorder | 90 (35.7%) |
| Suicide Risk | 56 (22.2%) |
| Alcohol / Substance Disorders | 60 (23.8%) |
| Alcohol Abuse or Dependence | 26 (10.3%) |
| Recreational/Illegal Drug Abuse or Dependence | 46 (18.3%) |

mwTool US Validation: Tool Performance

N=252

| Categories of Disorders | Sensitivity | Specificity |
|------------------------------------|--------------------------------|--------------------------|
| <i>Any Disorder</i> | 0.9473 (0.9099, 0.9275) | 0.0427 (0.0011, 0.2112) |
| Common Disorder | 0.9680 (0.9201, 0.9912) | 0.6693 (0.5803, 0.7502)* |
| Severe Disorders | 0.6514 (0.5542, 0.7401) | 0.7203 (0.6391, 0.7921) |
| Suicide | 0.9286 (0.8271, 0.9802) | 0.5000 (0.4279, 0.5721) |
| Alcohol/Substance Disorders | 0.8000 (0.6767, 0.8922) | 0.5833 (0.5102, 0.6539) |
| Alcohol | 0.8462 (0.6513, 0.9564) | 0.5310 (0.4637, 0.5975) |
| Substance | 0.7826 (0.6364, 0.8905) | 0.5534 (0.4827, 0.6225) |

*Hierarchical Specificity

Screening for all disorders

Mental Wellness Tool-13

| QUESTIONS | NEGATIVE | POSITIVE | | | GROUP |
|---|------------|--------------|-------------------------|------------------|--|
| 1. In the last 2 weeks, how often have you been feeling down, depressed, or hopeless? | Not at all | Several days | More than half the days | Nearly every day | Common Mental Disorder |
| 2. In the last 2 weeks, how often have you been feeling nervous, anxious, or on edge? | Not at all | Several days | More than half the days | Nearly every day | Does not inform a specific disorder (continue) |
| 3. In the last 2 weeks, how often have you been so restless that it's hard to sit still? | Not at all | Several days | More than half the days | Nearly every day | Common Mental Disorder |

If POSITIVE to questions 1 or 2 or 3, CONTINUE SCREENING. If NEGATIVE for all three, STOP.

If POSITIVE to question 2, but NEGATIVE to questions 4-14, refer to self-help.

| | | | | | | |
|--|--------|-----------------|-------------------------------|------------------------------|--------------------------|----------------------|
| 4. In the past year, how often do you have a drink containing alcohol? | Never | Monthly or less | Between 2 and 4 times a month | Between 2 and 3 times a week | 4 or more times per week | Alcohol Use Disorder |
| If "never", SKIP to question 6 | | | | | | |
| 5. In the past year, how many drinks containing alcohol do you have on a typical day when you are drinking? EXPLAIN "STANDARD DRINK" | 1 or 2 | 3 or 4 (Women) | 5 or 6 (Men) | 7 to 9 | 10 or more | |

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| | | | | | | |
|--|-------|---------------|---------|--------|-----------------------|------------------------|
| 6. In the past year, how many times you used a recreational drug or used a prescription medication for non-medical reasons? | Never | Once or twice | Monthly | Weekly | Daily or almost daily | Substance Use Disorder |
|--|-------|---------------|---------|--------|-----------------------|------------------------|

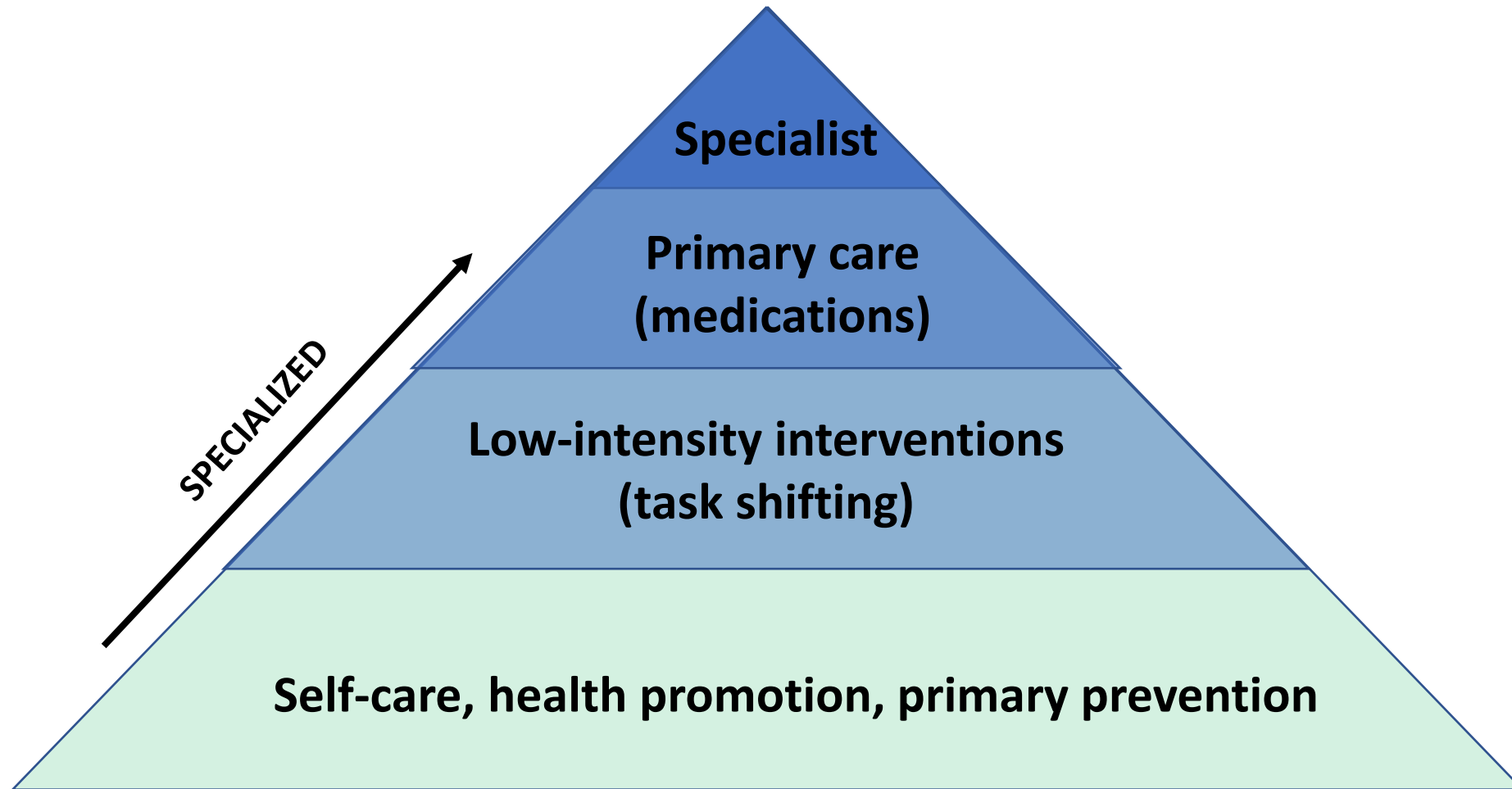
| | | | | |
|---|----|----------|-----|------------------------|
| 7. In the past year, have you ever felt that your thoughts were being directly interfered with or controlled by some outside force or person in a way that many people would find hard to believe (for instance, through telepathy)? | No | Not Sure | Yes | Severe Mental Disorder |
| 8. In the past year, have there been times when you felt that a group of people was plotting to cause you serious harm or injury? | No | Not Sure | Yes | |
| 9. In the past year, have there been times when you felt that something so strange was going on that other people would find it very hard to believe? | No | Not Sure | Yes | |
| 10. In the past year, did you at any time hear voices saying quite a few words or sentences when there was no one around that might account for it? | No | Not Sure | Yes | |

| | | | |
|--|----|-----|--------------|
| 11. In the past month, have you wished you were dead or wished you could go to sleep and not wake up? | No | Yes | Suicide Risk |
| 12. In the past month, have you had any actual thoughts of killing yourself? | No | Yes | |
| 13. In the past 3 months, have you ever done anything, started to do anything, or prepared to do anything to end your life? | No | Yes | |

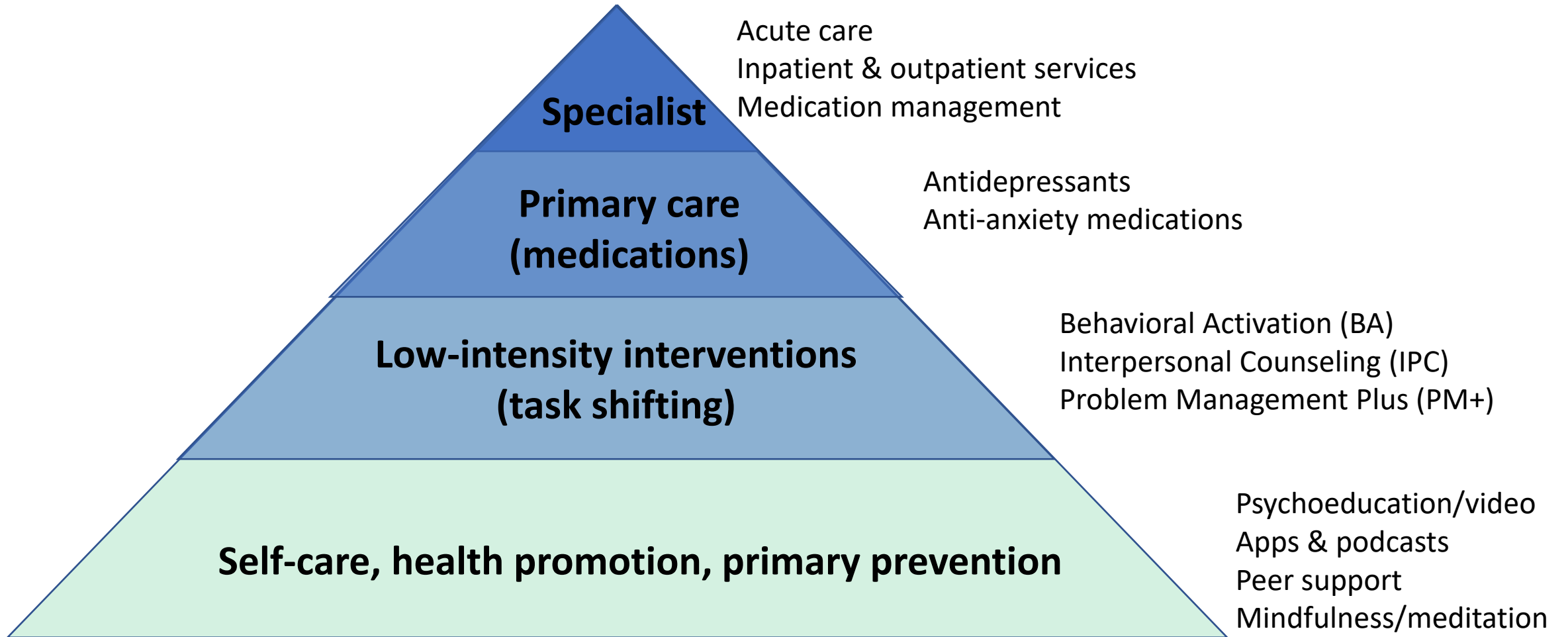
ALL DISORDERS

3 + 10 ITEMS

MENTAL HEALTH STRATIFIED/STEPPED-CARE



MENTAL HEALTH STRATIFIED/STEPPED-CARE



headspace | ginger

Headspace Health

ing forces to create
world's most accessible,
ensive digital mental
orm



11 Times of Stress: An Illustrated Guide



World Health

talkspace

Talkspace online therapy now available

Start feeling better today



Self-care, guided-self
care, primary prevention


betterhelp