

**Supplementary Table 1: Mental health screening battery used to develop mwTool.
Responses considered positive in LASSO analyses shaded in gray.**

WHODAS 2.0						
This questionnaire asks about difficulties due to health conditions. Health conditions include diseases or illnesses, other health problems that may be short or long lasting, injuries, mental or emotional problems, and problems with alcohol or drugs. Think back over the <i>past 30 days</i> and answer these questions, thinking about how much difficulty you had doing the following activities. For each question, please circle only one response.						
In the past <i>30 days</i> , how much difficulty did you have in:						
Domain 1: Understanding and communicating						
D1.1	Concentrating on doing something for ten minutes?	None	Mild	Moderate	Severe	Extreme or cannot do
D1.2	Remembering to do important things?	None	Mild	Moderate	Severe	Extreme or cannot do
D1.3	Analysing and finding solutions to problems in day-to-day life?	None	Mild	Moderate	Severe	Extreme or cannot do
D1.4	Learning a new task, for example, learning how to get to a new place?	None	Mild	Moderate	Severe	Extreme or cannot do
D1.5	Generally understanding what people say?	None	Mild	Moderate	Severe	Extreme or cannot do
D1.6	Starting and maintaining a conversation?	None	Mild	Moderate	Severe	Extreme or cannot do
Domain 2: Getting around						
D2.1	Standing for long periods such as 30 minutes?	None	Mild	Moderate	Severe	Extreme or cannot do
D2.2	Standing up from sitting down?	None	Mild	Moderate	Severe	Extreme or cannot do
D2.3	Moving around inside your home?	None	Mild	Moderate	Severe	Extreme or cannot do
D2.4	Getting out of your home?	None	Mild	Moderate	Severe	Extreme or cannot do
D2.5	Walking a long distance such as a kilometre [or equivalent]?	None	Mild	Moderate	Severe	Extreme or cannot do
Domain 3: Self-care						
D3.1	Washing your whole body?	None	Mild	Moderate	Severe	Extreme or cannot do
D3.2	Getting dressed?	None	Mild	Moderate	Severe	Extreme or cannot do
D3.3	Eating?	None	Mild	Moderate	Severe	Extreme or cannot do
D3.4	Staying by yourself for a few days?	None	Mild	Moderate	Severe	Extreme or cannot do
Domain 4: Getting along with people						
D4.1	Dealing with people you do not know?	None	Mild	Moderate	Severe	Extreme or cannot do
D4.2	Maintaining a friendship?	None	Mild	Moderate	Severe	Extreme or cannot do
D4.3	Getting along with people who are close to you?	None	Mild	Moderate	Severe	Extreme or cannot do
D4.4	Making new friends?	None	Mild	Moderate	Severe	Extreme or cannot do
D4.5	Sexual activities?	None	Mild	Moderate	Severe	Extreme or cannot do
Domain 5: Life activities						
D5.1	Taking care of your household responsibilities?	None	Mild	Moderate	Severe	Extreme or cannot do
D5.2	Doing most important household tasks well?	None	Mild	Moderate	Severe	Extreme or cannot do
D5.3	Getting all the household work done that you needed to do?	None	Mild	Moderate	Severe	Extreme or cannot do
D5.4	Getting your household work done as quickly as needed?	None	Mild	Moderate	Severe	Extreme or cannot do

D5.5	Your day-to-day work/school?	None	Mild	Moderate	Severe	Extreme or cannot do
D5.6	Doing your most important work/school tasks well?	None	Mild	Moderate	Severe	Extreme or cannot do
D5.7	Getting all the work done that you need to do?	None	Mild	Moderate	Severe	Extreme or cannot do
D5.8	Getting your work done as quickly as needed?	None	Mild	Moderate	Severe	Extreme or cannot do
Domain 6: Participation in society						
D6.1	How much of a problem did you have in joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?	None	Mild	Moderate	Severe	Extreme or cannot do
D6.2	How much of a problem did you have because of barriers or hindrances in the world around you?	None	Mild	Moderate	Severe	Extreme or cannot do
D6.3	How much of a problem did you have living with dignity because of the attitudes and actions of others?	None	Mild	Moderate	Severe	Extreme or cannot do
D6.4	How much time did you spend on your health condition, or its consequences?	None	Mild	Moderate	Severe	Extreme or cannot do
D6.5	How much have you been emotionally affected by your health condition?	None	Mild	Moderate	Severe	Extreme or cannot do
D6.6	How much has your health been a drain on the financial resources of you or your family?	None	Mild	Moderate	Severe	Extreme or cannot do
D6.7	How much of a problem did your family have because of your health problems?	None	Mild	Moderate	Severe	Extreme or cannot do
D6.8	How much of a problem did you have in doing things by yourself for relaxation or pleasure?	None	Mild	Moderate	Severe	Extreme or cannot do
H1	Overall, in the past 30 days, how many days were these difficulties present?	Record number of days				
H2	In the past 30 days, for how many days were you totally unable to carry out your usual activities or work because of any health condition?	Record number of days				
H3	In the past 30 days, not counting the days that you were totally unable, for how many days did you cut back or reduce your usual activities or work because of any health condition?	Record number of days				
PHQ-9						
Over the <i>last 2 weeks</i> , how often have you been bothered by any of the following problems?						
1	Little interest or pleasure in doing things	Not at all	Several days	More than half the days	Nearly every day	
2	Feeling down, depressed, or hopeless	Not at all	Several days	More than half the days	Nearly every day	
3	Trouble falling/staying asleep, sleeping too much	Not at all	Several days	More than half the days	Nearly every day	
4	Feeling tired or having little energy	Not at all	Several days	More than half the days	Nearly every day	
5	Poor appetite or overeating	Not at all	Several days	More than half the days	Nearly every day	
6	Feeling bad about yourself or that you are a failure or have let yourself or your family down	Not at all	Several days	More than half the days	Nearly every day	
7	Trouble concentrating on things, such as reading the newspaper or watching television.	Not at all	Several days	More than half the days	Nearly every day	
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.	Not at all	Several days	More than half the days	Nearly every day	
9	Thoughts that you would be better off dead or of hurting yourself in some way.	Not at all	Several days	More than half the days	Nearly every day	

GAD-7

Over the *last 2 weeks*, how often have you been bothered by any of the following problems?

1	Feeling nervous, anxious, or on edge	Not at all	Several days	More than half the days	Nearly every day
2	Not being able to stop or control worrying	Not at all	Several days	More than half the days	Nearly every day
3	Worrying too much about different things	Not at all	Several days	More than half the days	Nearly every day
4	Trouble relaxing	Not at all	Several days	More than half the days	Nearly every day
5	Being so restless that it's hard to sit still	Not at all	Several days	More than half the days	Nearly every day
6	Becoming easily annoyed or irritable	Not at all	Several days	More than half the days	Nearly every day
7	Feeling afraid as if something awful might happen	Not at all	Several days	More than half the days	Nearly every day

SSS-8

During the *past 7 days*, how much have you been bothered by any of the following problems?

1	Stomach or bowel problems	Not at all	A little bit	Somewhat	Quite a bit	Very much
2	Back pain	Not at all	A little bit	Somewhat	Quite a bit	Very much
3	Pain in your arms, legs, or joints	Not at all	A little bit	Somewhat	Quite a bit	Very much
4	Headaches	Not at all	A little bit	Somewhat	Quite a bit	Very much
5	Dizziness	Not at all	A little bit	Somewhat	Quite a bit	Very much
6	Chest pain or shortness of breath	Not at all	A little bit	Somewhat	Quite a bit	Very much
7	Feeling tired or having low energy	Not at all	A little bit	Somewhat	Quite a bit	Very much
8	Trouble sleeping	Not at all	A little bit	Somewhat	Quite a bit	Very much

PC-PTSD

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

If you have ever experienced this type of event, please answer the following:

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?	No	Yes
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)?	No	Yes
3	Been constantly on guard, watchful, or easily startled?	No	Yes
4	Felt numb or detached from people, activities, or your surroundings?	No	Yes
5	Felt guilty or unable to stop blaming yourself or others for the events(s) or any problems the event(s) may have caused?	No	Yes

ASSIST

Thank you for agreeing to take part in this brief interview about alcohol, tobacco products and other drugs. I am going to ask you some questions about your experience of using these substances across your lifetime and in the past three months. These substances can be smoked, swallowed, snorted, inhaled, injected or taken in the form of pills (show drug card). Some of the substances listed may be prescribed by a doctor (like amphetamines, sedatives, pain medications). For this interview, we will not record medications that are used as prescribed by your doctor. However, if you have taken such medications for reasons other than prescription, or taken them more frequently or at higher doses than prescribed, please let me know. While we are also interested in knowing about your use of various illicit drugs, please be assured that information on such use will be treated as strictly confidential.

1	(if completing follow-up please cross check the patient's answers with the answers given for Q1 at baseline. Any differences on this question should be queried)
---	--

In your life, which of the following substances have you ever used? (NON-MEDICAL USE ONLY)						
b	Alcoholic beverages (beer, wine, spirits, etc.)			Yes	No	
c	Cannabis (marijuana, pot, grass, hash, etc.)			Yes	No	
d	Cocaine (coke, crack, etc.)			Yes	No	
e	Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)			Yes	No	
f	Inhalants (nitrous, glue, petrol, paint thinner, etc.)			Yes	No	
g	Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)			Yes	No	
h	Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)			Yes	No	
i	Opioids (heroin, morphine, methadone, codeine, etc.)			Yes	No	
j	Other - specify:			Yes	No	
Probe if all answers are negative: "Not even when you were in school?" If "No" to all items, stop interview. If "Yes" to any of these items, ask Question 2 for each substance ever used.						
2	In the past three months, how often have you used the substances you mentioned (FIRST DRUG, SECOND DRUG, ETC)?					
b	Alcoholic beverages (beer, wine, spirits, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
c	Cannabis (marijuana, pot, grass, hash, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
d	Cocaine (coke, crack, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
e	Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
f	Inhalants (nitrous, glue, petrol, paint thinner, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
g	Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
h	Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
i	Opioids (heroin, morphine, methadone, codeine, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
j	Other - specify:	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
If "Never" to all items in Question 2, skip to Question 6. If any substances in Question 2 were used in the previous three months, continue with Questions 3, 4 & 5 for each substance used.						
3	During the past three months, how often have you had a strong desire or urge to use (FIRST DRUG, SECOND DRUG, ETC)?					
b	Alcoholic beverages (beer, wine, spirits, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
c	Cannabis (marijuana, pot, grass, hash, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
d	Cocaine (coke, crack, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
e	Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
f	Inhalants (nitrous, glue, petrol, paint thinner, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
g	Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
h	Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
i	Opioids (heroin, morphine, methadone, codeine, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
j	Other - specify:	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
4	During the past three months, how often has your use of (FIRST DRUG, SECOND DRUG, ETC) led to health, social, legal or financial problems?					
b	Alcoholic beverages (beer, wine, spirits, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
c	Cannabis (marijuana, pot, grass, hash, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
d	Cocaine (coke, crack, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
e	Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
f	Inhalants (nitrous, glue, petrol, paint thinner, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
g	Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
h	Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily

i	Opioids (heroin, morphine, methadone, codeine, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
j	Other - specify:	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
5	During the past three months, how often have you failed to do what was normally expected of you because of your use of (FIRST DRUG, SECOND DRUG, ETC.)?					
b	Alcoholic beverages (beer, wine, spirits, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
c	Cannabis (marijuana, pot, grass, hash, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
d	Cocaine (coke, crack, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
e	Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
f	Inhalants (nitrous, glue, petrol, paint thinner, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
g	Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
h	Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
i	Opioids (heroin, morphine, methadone, codeine, etc.)	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
j	Other - specify:	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
Ask Questions 6 & 7 for all substances ever used (i.e. those endorsed in Question 1)						
6	Has a friend or relative or anyone else ever expressed concern about your use of (FIRST DRUG, SECOND DRUG, ETC.)?					
b	Alcoholic beverages (beer, wine, spirits, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
c	Cannabis (marijuana, pot, grass, hash, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
d	Cocaine (coke, crack, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
e	Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
f	Inhalants (nitrous, glue, petrol, paint thinner, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
g	Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
h	Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
i	Opioids (heroin, morphine, methadone, codeine, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
j	Other - specify:	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
7	Have you ever tried and failed to control, cut down or stop using (FIRST DRUG, SECOND DRUG, ETC.)?					
b	Alcoholic beverages (beer, wine, spirits, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
c	Cannabis (marijuana, pot, grass, hash, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
d	Cocaine (coke, crack, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
e	Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		
f	Inhalants (nitrous, glue, petrol, paint thinner, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months		

g	Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months	
h	Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months	
i	Opioids (heroin, morphine, methadone, codeine, etc.)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months	
j	Other - specify:	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months	
8	Have you ever used any drug by injection? (NON-MEDICAL USE ONLY)	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months	
9.	With what frequency have you used injectable drugs?	One or fewer times per week	Less than 3 days in a row	More than once a week	3 or more days in a row

AUDIT

The Alcohol Use Disorders Identification Test: Interview Version

Read questions as written. Record answers carefully. Begin the AUDIT by saying "Now I am going to ask you some questions about your use of alcoholic beverages during this past year." Explain what is meant by "alcoholic beverages" by using local examples of beer, wine, vodka, etc. Code answers in terms of "standard drinks". Place the correct answer number in the box at the right.

1	How often do you have a drink containing alcohol?	Never [Skip to Qs 9-10]	Monthly or less	2 to 4 times a month	2 to 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?	1 or 2	3 or 4	5 or 6	7, 8, or 9	10 or more
3	How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily

Skip to Questions 9 and 10 if Questions 2 and 3 are "Never"

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 from 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 you had been drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9	Have you or someone else been injured as a result of your drinking?	No	Yes, but not in the last year	Yes, during the last year		
10	Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?	No	Yes, but not in the last year	Yes, during the last year		

PSQ

1	Over the past year, have there been times when you felt very happy indeed without a break for days on end?	Yes	Unsure	No
1a	Was there an obvious reason for this?	Yes	Unsure	No
1b	Did your relatives or friends think it was strange or complain about it?	Yes	Unsure	No
2	Over the past year, have you ever felt that your thoughts were directly interfered with or controlled by some outside force or person?	Yes	Unsure	No
2a	Did this come about in a way that many people would find hard to believe, for instance, through telepathy?	Yes	Unsure	No

3	Over the past year, have there been times when you felt that people were against you?	Yes	Unsure	No
3a	Have there been times when you felt that people were deliberately acting to harm you or your interests?	Yes	Unsure	No
3b	Have there been times you felt that a group of people was plotting to cause you serious harm or injury?	Yes	Unsure	No
4	Over the past year, have there been times when you felt that something strange was going on?	Yes	Unsure	No
4a	Did you feel it was so strange that other people would find it hard to believe?	Yes	Unsure	No
5	Over the past year, have there been times when you heard or saw things that other people couldn't?	Yes	Unsure	No
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?	Yes	Unsure	No
C-SSRS				
SUICIDE IDEATION DEFINITIONS AND PROMPTS:				
Ask questions that are in bold and underlined.				
Ask Questions 1 and 2				
1	Wish to be Dead: Person endorses thoughts about a wish to be dead or not alive anymore, or wish to fall asleep and not wake up? <i><u>Have you wished you were dead or wished you could go to sleep and not wake up?</u></i>	Past Month		
		Yes	No	
2	Suicidal Thoughts: General non-specific thoughts of wanting to end one's life/die by suicide, " <i><u>I've thought about killing myself</u></i> " without general thoughts of ways to kill oneself/associated methods, intent, or plan." <i><u>Have you had any actual thoughts of killing yourself?</u></i>	Yes	No	
If YES to 2, ask questions 3, 4, 5, and 6. If NO to 2, go directly to question 6.				
3	Suicidal Thoughts with Method (without Specific Plan or Intent to Act): Person endorses thoughts of suicide and has thought of a least one method during the assessment period. This is different than a specific plan with time, place or method details worked out. " <i><u>I thought about taking an overdose but I never made a specific plan as to when where or how I would actually do it....and I would never go through with it.</u></i> " <i><u>Have you been thinking about how you might do this?</u></i>	Yes	No	
4	Suicidal Intent (without Specific Plan): Active suicidal thoughts of killing oneself and patient reports having some intent to act on such thoughts , as oppose to " <i><u>I have the thoughts but I definitely will not do anything about them.</u></i> " <i><u>Have you had these thoughts and had some intention of acting on them?</u></i>	Yes	No	
5	Suicide Intent with Specific Plan: Thoughts of killing oneself with details of plan fully or partially worked out and person has some intent to carry it out. <i><u>Have you started to work out or worked out the details of how to kill yourself? Do you intend to carry out this plan?</u></i>	Yes	No	
6	Suicide Behavior Question <i><u>Have you ever done anything, started to do anything, or prepared to do anything to end your life?</u></i> Examples: 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; or actually took pills, tried to shoot yourself, cut yourself, tried to hang yourself, etc.	Lifetime		
		Yes	No	
	6a. If YES, ask: <i><u>Was this within the past 3 months?</u></i>	Past 3 Months		
		Yes	No	

Supplementary Table 2. Characteristics of participants excluded owing to partial or incomplete data.

	Development Sample (n = 77)		Validation Sample (n = 27)	
	Incomplete MINI (n = 23)	Incomplete Battery (n = 54)	Incomplete MINI (n = 7)	Incomplete Battery (n = 20)
Age (Mean, SD)	33.2 (10.4)	30.9 (10.4)	26.9 (6.9)	32.4 (14.1)
Female (No., %)	16 (69.6%)	36 (66.7%)	4 (57.1%)	14 (70.0%)
MINI Diagnoses		No. (%)		No (%)
Any Disorder	-	35 (64.8%)	-	8 (40.0%)
Severe Mental Disorder	-	22 (40.7%)	-	3 (15.0%)
Common Mental Disorder	-	23 (42.6%)	-	7 (35.0%)
Substance Use Disorder	-	9 (16.7%)	-	1 (5.0%)
Acute Suicide Risk	-	16 (29.6%)	-	1 (5.0%)

Abbreviations: SD, standard deviation

Supplementary Table 3. Results of LASSO analysis identifying 3, 5, 8, and 10 items most predictive of any mental disorder.

Any Mental Disorder					
Measure	Question	Response Options	Positive Response	Time Period	AUC (95% CI)
PHQ	2: How often have you been bothered by feeling down, depressed, or hopeless?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
GAD	1: How often have you been bothered by feeling nervous, anxious or on edge?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
GAD	6: How often have you been bothered by becoming easily annoyed or irritable?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	3-Item = 0.73 (0.69, 0.76)
PSQ	3b: Have there been times you felt that a group of people were plotting to cause you serious harm or injury?	Yes/No	Yes	Year	
CSSR	1: Have you wished you were dead or wished you could fall asleep and not wake up?	Yes/No	Yes	Month	5-Item = 0.76 (0.73, 0.79)
GAD	5: How often have you been bothered by being so restless that it's hard to sit still?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
GAD	7: How often have you been bothered by feeling afraid as if something bad might happen?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
PC-PTSD	2: Have you 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	Yes	Month	8-Item = 0.77 (0.75, 0.80)
PC-PTSD	5: Have you felt guilty or unable to stop blaming yourself or others for the events(s) or any problems the event(s) may have caused?	Yes/No	Yes	Month	
CSSR	2: Have you had any actual thoughts of killing yourself?	Yes/No	Yes	Month	10-Item = 0.78 (0.75, 0.81)

Blue shading indicates items included in the 13-item mwTool evaluated in the validation sample.

Supplementary Table 4. Results of LASSO analysis identifying 3, 5, 8, and 10 items most predictive of severe mental disorder.

Severe Mental Disorder					
Measure	Question	Response Options	Positive Response	Time Period	AUC (95% CI)
PHQ	1: How often have you been bothered by having little interest or pleasure in doing things?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
PSQ	3b: Have there been times you felt that a group of people were plotting to cause you serious harm or injury?	Yes/No	Yes	Year	
PSQ	5a: Did you hear voices saying quite a few words or sentences when there was no one around that might account for it?	Yes/No	Yes	Year	3-Item = 0.73 (0.69, 0.76)
PSQ	2a: (Have you ever felt that your thoughts were being directly interfered with or controlled by some outside force or person?) Did this come about in a way that many people would find hard to believe, for instance, through telepathy?	Yes/No	Yes	Year	
PSQ	4a. (Have there been times when you felt something strange was going on?) Did you feel it was so strange that other people would find it very hard to believe?	Yes/No	Yes	Year	5-Item = 0.75 (0.71, 0.78)
GAD	1: How often have you been bothered by feeling nervous, anxious or on edge?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
GAD	7: How often have you been bothered by feeling afraid as if something bad might happen?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
ASSIST	7c: Have you ever tried and failed to control, cut down or stop using cannabis?	No, never; Yes, past 3 months; Yes, but not in the past 3 months	Yes, past 3 months		8-Item = 0.76 (0.73, 0.79)
PHQ	6: How often have you been bother by feeling bad about yourself or that you are a failure or have let yourself or your family down?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
CSSR	1: Have you wished you were dead or wished you could fall asleep and not wake up?	Yes/No	Yes	Month	10-Item = 0.76 (0.73, 0.80)

Blue shading indicates items included in the 13-item mwTool evaluated in the validation sample.

Supplementary Table 5. Results of LASSO analysis identifying 3, 5, 8, and 10 items most predictive of common mental disorder.

Common Mental Disorder					
Measure	Question	Response Options	Positive Response	Time Period	AUC (95% CI)
PHQ	2: How often have you been bothered by feeling down, depressed, or hopeless?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
GAD	5: How often have you been bothered by being so restless that it's hard to sit still?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
GAD	7: How often have you been bothered by feeling afraid as if something bad might happen?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	3-Item = 0.76 (0.73, 0.79)
GAD	1: How often have you been bothered by feeling nervous, anxious or on edge?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
PC-PTSD	4. Have you felt numb or detached from people, activities, or your surroundings?	Yes/No	Yes	Month	5-Item = 0.78 (0.75, 0.82)
PC-PTSD	5: Have you felt guilty or unable to stop blaming yourself or others for the events(s) or any problems the event(s) may have caused?	Yes/No	Yes	Month	
PSQ	3b: Have there been times you felt that a group of people were plotting to cause you serious harm or injury?	Yes/No	Yes	Year	
CSSR	1: Have you wished you were dead or wished you could fall asleep and not wake up?	Yes/No	Yes	Month	8-Item = 0.80 (0.77, 0.83)
PHQ	4: How often have you been bothered by feeling tired or having little energy?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	
GAD	6: How often have you been bothered by becoming easily annoyed or irritable?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	10-Item = 0.80 (0.77, 0.83)

Blue shading indicates items included in the 13-item mwTool evaluated in the validation sample.

Supplementary Table 6. Results of LASSO analysis identifying 3, 5, 8, and 10 items most predictive of substance use disorder.

Substance Use Disorder					
Measure	Question	Response Options	Positive Response	Time Period	AUC (95% CI)
AUDIT	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	>= 2-4 times a month	Year	
AUDIT	2: How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2, 3 or 4, 5 or 6, 7-9, 10 or more	>= 3 or 4	Year	
AUDIT	10: Has a relative, friend or doctor ever worried about your drinking or suggested that you stop?	No; Yes, but not in the last year; Yes, during the last year	Yes, during the last year		3-Item = 0.83 (0.78, 0.86)
AUDIT	9: Have you ever injured yourself or anyone else after drinking?	No; Yes, but not in the last year; Yes, during the last year	Yes, during the last year		
ASSIST	2c: How often have you used cannabis?	Never, Once or twice, Monthly, Weekly, Daily or almost daily	>= Monthly	Three Months	5-Item = 0.83 (0.79, 0.87)
PSQ	3b: Have there been times you felt that a group of people were plotting to cause you serious harm or injury?	Yes/No	Yes	Year	
ASSIST	6c: Has a friend or relative or anyone else ever expressed concern about your use of cannabis?	No, never; Yes, past 3 months; Yes, but not in the past 3 months	Yes, past 3 months		
ASSIST	7c: Have you ever tried and failed to control, cut down or stop using cannabis?	No, never; Yes, past 3 months; Yes, but not in the past 3 months	Yes, past 3 months		8-Item = 0.84 (0.80, 0.88)
PC-PTSD	2: Have you 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	Yes	Month	
PHQ	2: How often have you been bothered by feeling down, depressed, or hopeless?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	10-Item = 0.85 (0.81, 0.89)

Blue shading indicates items included in the 13-item mwTool evaluated in the validation sample.

Supplementary Table 7. Results of LASSO analysis identifying 3, 5, 8, and 10 items most predictive of suicide risk.

Suicide Risk					
Measure	Question	Response Options	Positive Response	Time Period	AUC (95% CI)
CSSR	1: Have you wished you were dead or wished you could fall asleep and not wake up?	Yes/No	Yes	Month	
CSSR	2: Have you had any actual thoughts of killing yourself?	Yes/No	Yes	Month	
CSSR	3: Have you been thinking about how you might do this?	Yes/No	Yes	Month	3-Item = 0.90 (0.87, 0.95)
CSSR	5: Have you started to work out or worked out the details of how to kill yourself? Do you intend to carry out this plan?	Yes/No	Yes	Month	
PHQ	9: Have you been bothered by thoughts that you would be better off dead or of hurting yourself in some way?	Not at all, Several days, More than half the days, Nearly every day	>= Several Days	Two weeks	5-Item = 0.92 (0.88, 0.96)

Blue shading indicates items included in the 13-item mwTool evaluated in the validation sample. Because of the high performance of items identified to classify suicide risk, the model for this category became unstable (i.e., did not consistently return the same items) with the inclusion of 8 and 10 items; thus, only five items were considered in LASSO models.

Supplementary Table 8. 13-item mwTool performance by gender, age, and HIV status in the development sample.

Performance by Gender	Proportion with Diagnosis (n)		Sensitivity (95% CI)		Specificity (95% CI)	
	Female (n=570)	Male (n=341)	Female	Male	Female	Male
Any Disorder ^a	0.50 (282)	0.55 (188)	0.83 (0.78, 0.87)	0.84 (0.77, 0.89)	0.49 (0.43, 0.55)	0.48 (0.4, 0.57)
Severe Mental Disorder	0.27 (156)	0.31 (104)	0.64 (0.56, 0.72)	0.58 (0.48, 0.67)	0.72 (0.67, 0.76)	0.73 (0.67, 0.79)
Common Mental Disorder	0.37 (212)	0.35 (118)	0.83 (0.77, 0.88)	0.83 (0.75, 0.89)	0.80 (0.75, 0.84)	0.79 (0.73, 0.84)
Substance Use Disorder	0.08 (43)	0.24 (81)	0.65 (0.49, 0.79)	0.75 (0.64, 0.84)	0.85 (0.82, 0.88)	0.75 (0.69, 0.8)
Suicide Risk	0.10 (58)	0.08 (28)	0.84 (0.73, 0.93)	0.71 (0.51, 0.87)	0.89 (0.86, 0.92)	0.92 (0.88, 0.95)

Performance by Age	Proportion with Diagnosis (n)		Sensitivity (95% CI)		Specificity (95% CI)	
	18-24 (n=280)	25+ (n=631)	18-24	25+	18-24	25+
Any Disorder ^a	0.57 (160)	0.51 (310)	0.85 (0.79, 0.9)	0.82 (0.78, 0.86)	0.46 (0.37, 0.55)	0.50 (0.45, 0.56)
Severe Mental Disorder	0.34 (94)	0.26 (166)	0.69 (0.59, 0.78)	0.57 (0.49, 0.65)	0.68 (0.61, 0.75)	0.74 (0.70, 0.78)
Common Mental Disorder	0.43 (121)	0.33 (209)	0.84 (0.76, 0.9)	0.82 (0.76, 0.87)	0.79 (0.72, 0.85)	0.79 (0.75, 0.83)
Substance Use Disorder	0.12 (34)	0.14 (90)	0.71 (0.53, 0.85)	0.72 (0.62, 0.81)	0.85 (0.79, 0.89)	0.81 (0.77, 0.84)
Suicide Risk	0.14 (39)	0.07 (47)	0.82 (0.66, 0.92)	0.79 (0.64, 0.89)	0.89 (0.84, 0.92)	0.91 (0.88, 0.93)

Performance by HIV Status	Proportion with Diagnosis (n)		Sensitivity (95% CI)		Specificity (95% CI)	
	HIV+ (n=286)	HIV- (n=625)	HIV+	HIV-	HIV+	HIV-
Any Disorder ^a	0.47 (133)	0.54 (337)	0.80 (0.73, 0.87)	0.84 (0.80, 0.88)	0.47 (0.39, 0.55)	0.50 (0.44, 0.56)
Severe Mental Disorder	0.25 (70)	0.30 (190)	0.63 (0.50, 0.74)	0.61 (0.54, 0.68)	0.73 (0.66, 0.79)	0.72 (0.67, 0.76)
Common Mental Disorder	0.32 (92)	0.38 (238)	0.79 (0.70, 0.87)	0.84 (0.79, 0.89)	0.78 (0.71, 0.83)	0.80 (0.76, 0.84)
Substance Use Disorder	0.11 (31)	0.15 (93)	0.65 (0.45, 0.81)	0.74 (0.64, 0.83)	0.84 (0.79, 0.89)	0.81 (0.77, 0.84)
Suicide Risk	0.08 (23)	0.10 (63)	0.87 (0.66, 0.97)	0.78 (0.66, 0.87)	0.89 (0.85, 0.92)	0.91 (0.88, 0.93)

^a Calculated based on responses to the initial three items only.

Supplementary Table 9. 12-item mwTool performance by gender, age, and HIV status in the validation sample.

Performance by Gender	Proportion with Diagnosis (n)		Sensitivity (95% CI)		Specificity (95% CI)	
	Female (n=296)	Male (n=157)	Female	Male	Female	Male
Any Disorder ^a	0.40 (119)	0.38 (59)	0.97 (0.92, 0.99)	0.88 (0.77, 0.95)	0.32 (0.25, 0.40)	0.37 (0.27, 0.47)
Severe Mental Disorder	0.17 (50)	0.20 (32)	0.86 (0.73, 0.94)	0.75 (0.57, 0.89)	0.61 (0.55, 0.67)	0.67 (0.58, 0.75)
Common Mental Disorder	0.33 (97)	0.24 (37)	0.96 (0.90, 0.99)	0.95 (0.82, 0.99)	0.68 (0.61, 0.74)	0.72 (0.63, 0.80)
Substance Use Disorder	0.02 (6)	0.15 (23)	0.99 (0.54, 1.00)	0.83 (0.61, 0.95)	0.82 (0.77, 0.86)	0.83 (0.75, 0.89)
Suicide Risk	0.09 (27)	0.05 (8)	0.78 (0.58, 0.91)	0.75 (0.35, 0.97)	0.91 (0.87, 0.95)	0.97 (0.92, 0.99)

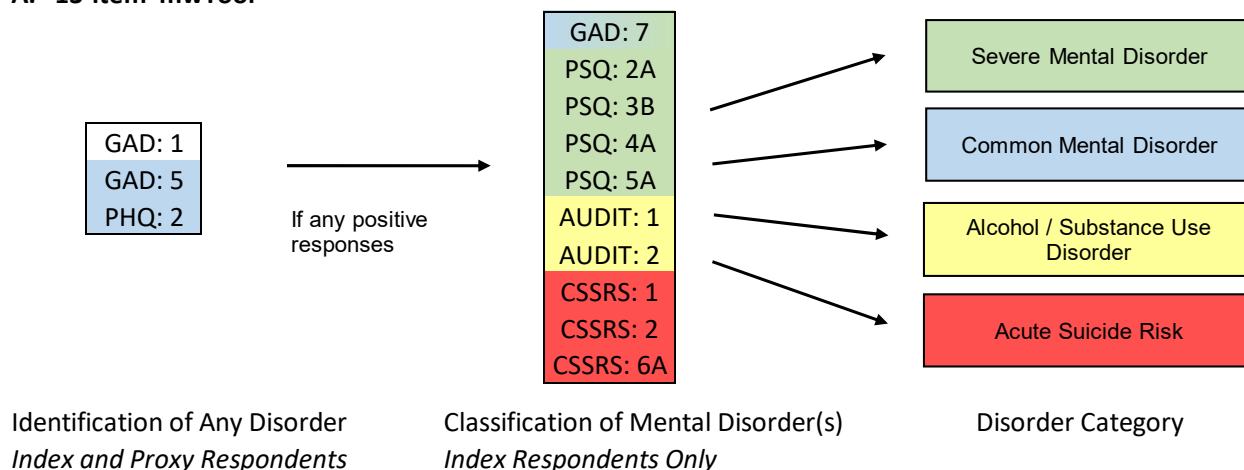
Performance by Age	Proportion with Diagnosis (n)		Sensitivity (95% CI)		Specificity (95% CI)	
	18-24 (n=163)	25+ (n=290)	18-24	25+	18-24	25+
Any Disorder ^a	0.41 (66)	0.39 (112)	0.95 (0.87, 0.99)	0.93 (0.86, 0.97)	0.33 (0.24, 0.43)	0.34 (0.27, 0.42)
Severe Mental Disorder	0.17 (27)	0.19 (55)	0.89 (0.71, 0.98)	0.78 (0.65, 0.88)	0.62 (0.53, 0.7)	0.64 (0.57, 0.7)
Common Mental Disorder	0.32 (52)	0.28 (82)	0.96 (0.87, 1.00)	0.95 (0.88, 0.99)	0.72 (0.63, 0.80)	0.68 (0.61, 0.74)
Substance Use Disorder	0.06 (9)	0.07 (20)	0.78 (0.40, 0.97)	0.90 (0.68, 0.99)	0.88 (0.82, 0.93)	0.79 (0.73, 0.83)
Suicide Risk	0.09 (15)	0.07 (20)	0.93 (0.68, 1.00)	0.65 (0.41, 0.85)	0.92 (0.86, 0.96)	0.94 (0.91, 0.97)

Performance by HIV Status	Proportion with Diagnosis (n)		Sensitivity (95% CI)		Specificity (95% CI)	
	HIV+ (n=104)	HIV- (n=349)	HIV+	HIV-	HIV+	HIV-
Any Disorder ^a	0.39 (41)	0.39 (137)	0.88 (0.74, 0.96)	0.96 (0.91, 0.98)	0.38 (0.26, 0.51)	0.33 (0.26, 0.39)
Severe Mental Disorder	0.24 (25)	0.16 (57)	0.76 (0.55, 0.91)	0.84 (0.72, 0.93)	0.62 (0.50, 0.73)	0.63 (0.58, 0.69)
Common Mental Disorder	0.32 (33)	0.29 (101)	0.97 (0.84, 1.00)	0.95 (0.89, 0.98)	0.73 (0.61, 0.83)	0.68 (0.62, 0.74)
Substance Use Disorder	0.02 (2)	0.08 (27)	1.00 (0.16, 1.00)	0.85 (0.66, 0.96)	0.84 (0.76, 0.91)	0.81 (0.77, 0.85)
Suicide Risk	0.07 (7)	0.08 (28)	0.57 (0.18, 0.90)	0.82 (0.63, 0.94)	0.94 (0.87, 0.98)	0.93 (0.90, 0.96)

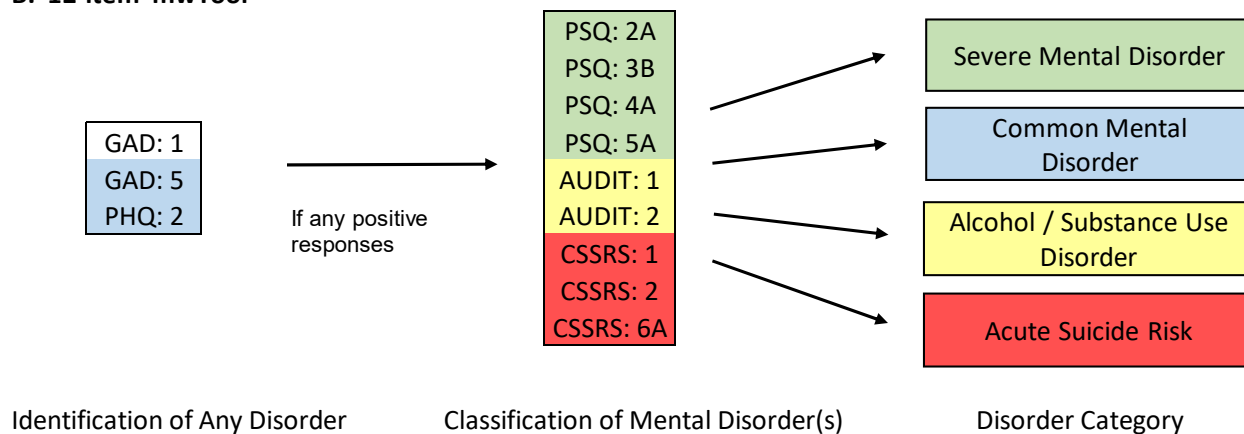
^a Calculated based on responses to the initial three items only.

Supplementary Diagram

A. 13-item mwTool



B. 12-item mwTool



C. mwTool items

Item	Question
GAD 1	Over the last 2 weeks, how often have you been feeling nervous, anxious, or on edge?
GAD 5	Over the last 2 weeks, how often have you been so restless that it's hard to sit still?
PHQ 2	Over the last 2 weeks, how often have you been feeling down, depressed, or hopeless?
GAD 7	Over the last 2 weeks, how often have you been feeling afraid as if something awful might happen?
PSQ 2A	Over 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)?
PSQ 3B	Over the past year, have there been times when you felt that a group of people was plotting to cause you serious harm or injury?
PSQ 4A	Over 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?
PSQ 5A	Over 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?
AUDIT 1	Over the past year, how often do you have a drink containing alcohol?
AUDIT 2	Over the past year, how many drinks containing alcohol do you have on a typical day when you are drinking?
CSSRS 1	Over the past month, have you wished you were dead or wished you could go to sleep and not wake up?
CSSRS 2	Over the past month, have you had any actual thoughts of killing yourself?

CSSRS 6A	Over the past three months, have you ever done anything, started to do anything, or prepared to do anything to end your life?
----------	---

Diagram. Identification of any mental disorder and classification into disorder categories by the mwTool. Items from the Patient Health Questionnaire (PHQ), Generalized Anxiety Disorder scale (GAD), Psychosis Screening Questionnaire (PSQ), Alcohol Use Disorders Intake Tool (AUDIT), and Columbia Suicide Severity Rating Scale (CSSRS) comprising the 13-item (A) and 12-item (B) mwTool. Colors indicate which disorder category is indicated by a positive response to the item. A positive response on the GAD-7 item indicates both Severe and Common Mental Disorders. Endorsement of only GAD1 and none of the classification items indicates no mental disorder.