

University of California Equity in Mental Health Funding Evaluation

Narrative Description of Existing Behavioral Health and Wellness Data
across the University of California



UC SANTA BARBARA

Executive Summary

Background

Under the Equity in Mental Health funding plan, University of California (UC) campuses submitted funding proposals to support the strengthening and expanding of student behavioral health and wellness services, focusing on improving health equity. Allocated funds supported three distinct tiers of services, including universal prevention strategies (Tier III services), early intervention and collaborative well-being programs (Tier II services), and holistic treatment and recovery support programs (Tier I services).

In the following deliverable, we summarize the Behavioral Health and Wellness (BH&W) data collected across the UC to inform efforts to understand the BH&W of UC students. This report includes a description of BH&W measures collected across each service Tier, with attention to measurements collected across the UC system. Assessments collected at UC campuses and UC system-wide are summarized. This summary includes a description of the significant surveys used, the original survey sources, and research evidence supporting the measures. Additional critical documentation examines their use across campuses (e.g., administration frequency, response rates).

Main Findings

All 10 UC Campuses currently administer the National College Health Assessment (NCHA) to inform Tier 3 services to support early intervention and collaborative well-being programs. The content of the NCHA was not designed to align with stated EMH objectives; it will be critical to examine if this survey provides adequate information to inform EMH aims and priorities. The NCHA content primarily focuses on symptom-level data (e.g., anxiety, depression), with fewer details on student resilience and assets. Additionally, due to the low response rates, infrequent survey administration, and the lack of a representative sample the NCHA data only provide a limited understanding of student BH&W.

In addition to the NCHA, the only other assessment consistent across each UC is the College Counseling Center Assessment of Psychological Screener (CCAPS). This measure primarily informs Tier 1 services. Several additional assessments gather BH&W information on various campuses but not UC-wide. Overall, the current sources of the BH&W indicators are not coordinated across the UC system, and a strategy to integrate and analyze data on UC students as a whole does not exist. Data collection efforts may benefit from coordination across campuses to support system-wide EMH efforts if there is interest in examining UC-wide student BH&W.

Conclusions

The Equity in Mental Health funding plan presents an opportunity to reconfigure the behavioral health and wellness landscape across the UC system. Significant gaps exist in the current BH&W assessment data collected and infrastructure across the UC, which may limit the ability to examine how services across each Tier benefit UC students. The subsequent steps involve articulating the purposes of gathering information from UC students, with an explicit focus on improving health equity.

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Equity in Mental Health Project Description

The California Budget Act of 2021 included \$15 million in ongoing funds to support the behavioral health and wellness (BH&W) needs of University of California (UC) students. This funding led to the development of the Equity in Mental Health funding plan, whereby the 10 UC campuses were invited to submit proposals to address key unmet BH&W needs of their student community.

The Equity in Mental Health Funding Plan focuses on supporting a holistic approach to addressing BH&W concerns, considering intrapersonal, interpersonal, institutional, community, and public policy issues to promote a culture of health and wellbeing within each campus. By including an explicit focus on improving health equity, the funds represent an essential mechanism to support some of the most vulnerable, marginalized, and historically underserved student community members. In doing so, the Equity in Mental Health funding plan aims to address inequities and improve the student BH&W campuswide. Given the direct link between student wellness and academic success, such enhancements to the system are integral to reaching the UC's stated goals of improving student wellbeing, retention, academic success, and graduation. This report describes the activities completed to date as part of the research project funded as part of the UCOP Equity in Mental Health. The overarching aim of this report is to inform UC efforts to better understand and support the behavioral health and wellness of UC students.

Equity in Mental Health Research Project

Three-Year Project Overview

Researchers at the University of California, Santa Barbara (UCSB) and the University of California, Davis (UCD) co-lead this project to understand how the UC system could better support the students' behavioral health and wellness needs. To this end, the project comprises three distinct objectives:

1. Identify UC population-level behavioral health and wellness needs and strengths.
2. Develop a detailed conceptual framework of current UC behavioral health and wellness resources across campuses.
3. Explore how these programs can best meet the needs and priorities of the population they serve and provide recommendations for systemwide services, resources, and programs to advance student behavioral health and wellness priorities.

Summary of Activities in Support of EMH Research Project

This is a multiyear project with the overarching goal of contributing to improving UC students' behavioral health and wellness (BH&W). This current examination had the overarching purpose of informing deeper thinking and consideration of campuswide BH&W indicators that advance and promote mental health equity within the UC system.

To achieve the stated objectives, the UCSB team consulted with various stakeholders to solicit information about the student behavioral health and wellness data currently collected by UC campuses.

Each campus website was examined for BH&W data. Following this report, interviews with campus partners identified additional sources of BH&W information collected by UC campuses, and key questions to consider when determining the optimal path forward.

The UCSB team examined which BH&W data have been collected by UC campuses and (a) identified the original survey sources; (b) summarized survey-related research evidence; (c) identified who originally collected the data; and (d) summarized survey administration frequency, response rates, and time elapsed since data collection. The quality of existing surveys and data collection methods were examined to inform considerations of the need for additional BH&W needs-assessment data.

Information in this report includes a description of the measures collected across the UC system and an analysis of which campuses are using which measures. Although this report is not exhaustive of all efforts across all campuses, a description of the major surveys being used is provided along with a description of their intended purposes. Research summaries of the evidence for the major measures used are provided.

Sources of Behavioral Health & Wellness Data across the UC

Various surveys have been used within the UC system to compile BH&W information. These surveys are organized according to the three service tiers of the EMH funding supports. Tier 1 services and assessments are designed to inform comprehensive treatment and recovery support programs. Tier 2 services and assessments are designed to inform early intervention and collaborative well-being programs. Tier 3 services and assessments are designed to inform comprehensive universal prevention and wellness programs. As such, Tier 3 assessments are designed to be administered universally to all UC students or to provide broad information on the functioning of UC students as a whole. Tier 2 assessments would be completed by the students participating in early intervention and wellbeing programs, whereas Tier 3 assessments would be reserved for students participating in more intensive programming, such as treatment or recovery support programs. In addition to organizing this report by tiers of services, the BH&W surveys are described and organized by those collected throughout the UC system and those specific to campuses. This section describes sources of BH&W information collected across the UC system.

UC-Wide BH&W Information

In support of Tier 1, all UC campuses use the Counseling Center Assessment of Psychological Symptoms (CCAPS). In support of Tier 3, all UC campuses use the National College Health Assessment (NCHA). These primary resources available UC-wide are reviewed in more depth below. The aim is to help UC campuses determine how these primary BH&W sources align with EMH objectives and if they sufficiently inform needs assessment and service effectiveness interests.

UC Campus-Specific BH&W Information

In addition to these two surveys employed UC-wide, a variety of additional assessments gather BH&W information on various campuses. These campus-specific resources could provide valuable information to campuses but are not used UC-wide. For example, in support of Tier 3, UC Merced once administered

the Healthy Minds Survey, which provides information on students' flourishing, anxiety, depression, loneliness, suicidality, mental health diagnoses, treatment, and treatment barriers indicators. At Tier 2 with regard to campus specific efforts, some prominent examples are the e-checkup at UC Riverside, STAR wellness check at UC Los Angeles, and Mindwise at several UC campuses. However, these campus-specific resources are often not operated by UC campuses, but instead, by outside entities whereby campus personnel are not responsible (or able to) respond to specific student self-screening information.

Figure 1 depicts the various sources of BH&W information available both UC-Wide and at specific UC Campuses. This figure provides an organizational framework for this report, detailing surveys across the three primary service tiers.

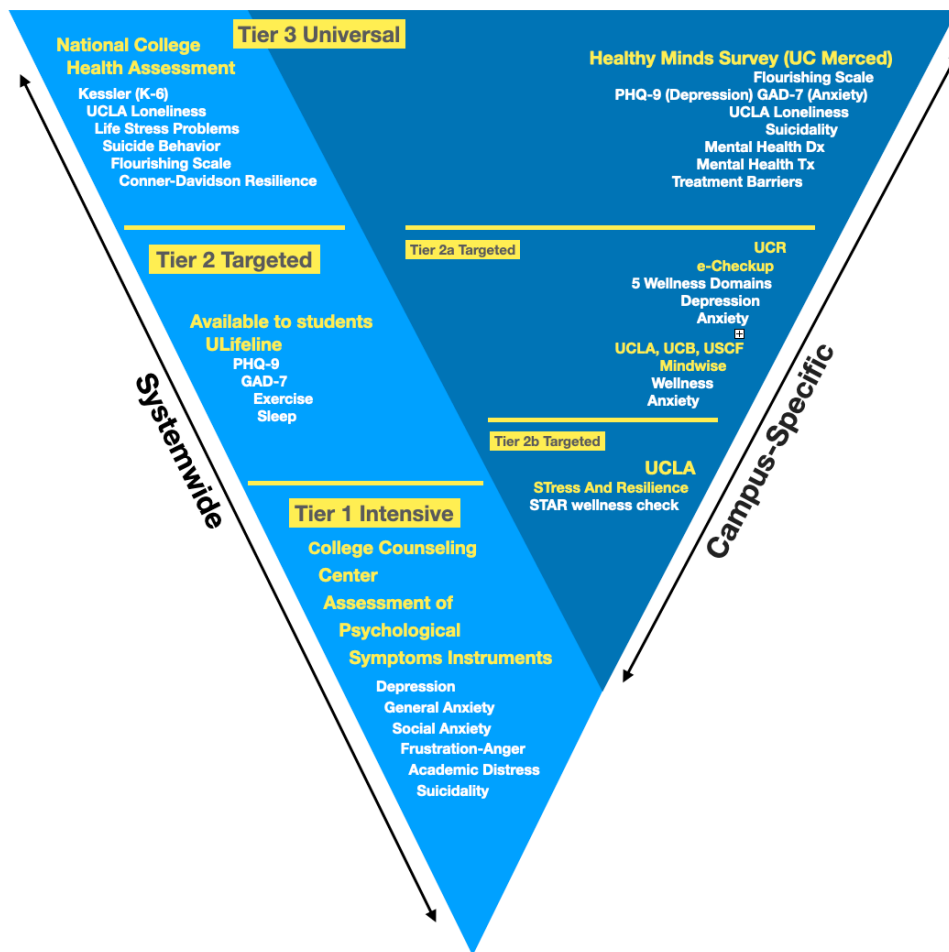


Figure 1: UC-Wide and UC Campus-Specific BH&W Information. PHQ = Patient Health Questionnaire, GAD = Generalized Anxiety Disorder, PTSD = Post Traumatic Stress Disorder.

Tier 3: UC-Wide Behavioral Health & Wellness Information

The sources of BH&W-related items added to the American College Health Association-National College Health Assessment (NCHA) survey were examined to provide information about their types and quality

of data. The UCSB team completed summaries of other BH&W measures embedded within the NCHA and used by UC campuses. The following section reviews these measures.

National College Health Assessment (NCHA)

The NCHA contains approximately 300 questions. It assesses health status and health problems, risk and protective behaviors, access to health information, impediments to academic performance, and perceived norms across various content areas. Each participating institution receives a raw data file. An Institutional Report summarizes frequency distributions for each variable across all responders and by gender. (See: ACHA NCHA: https://www.acha.org/NCHA/NCHA_Home)

The American College Health Association created the NCHA in 2000. The original questionnaire content focused on physical health and substance use and was most relevant for campus student health centers. Questionnaire modifications occurred in 2008, 2011, and 2015. The current version (ACHA-NCHA III) was revised and rewritten in 2019 and is only available in a web-administered format. The current version (dated April 26, 2022) includes COVID-19-related items. (See: https://www.acha.org/documents/ncha/ACHA-NCHA_III_Spring_2022_Codebook_4_26_2022.pdf)

NCHA Content Coverage

As a general health surveillance survey, the NCHA, since its creation, has asked about substance use (alcohol, tobacco, and other drugs), sexual health, physical health (weight, nutrition, and exercise), and personal safety/violence. Since 2019, the NCHA-III version has added items addressing mental health and wellness.

In addition to demographic (see Appendix) and stand-alone content items, the questionnaire includes the following validated measures:

Physical Health Related

- Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)
- USDA ERS Food Security 6-Item Short Form

Psychological and Emotional Distress

- Kessler 6 (K6) – screening for serious mental illness
- UCLA Three-Item Loneliness Scale (Hughes, et. al. 2004)
- The Suicide Behaviors Questionnaire – Revised (SBQ-R)

Flourishing Wellbeing and Coping

- Diener Flourishing Scale – Psychological Well-Being (PWB)
- Connor-Davison Resilience Scale (CD-RISC2)

NCHA Administration

The ACHA-NCHA survey uses Qualtrics with embedded skip logic to limit the number of non-relevant items presented. ACHA manages all survey reminders, provides a link to a real-time report of survey

responses, and manages incentives as needed. Each institution has a unique URL link. Administration involves an institution submitting a customized introduction/invitation letter (this can include the institution's logo) and an Excel list of emails of students selected to receive the invitation letter. Information about IRB approval is also required. ACHA reports that the survey takes about 30 minutes to complete. (See: https://www.acha.org/documents/ncha/Surveyor_instructions_Web_6_29_22.pdf).

NCHA Cost

The administration costs are \$0.43 per surveyed student for ACHA institutional members and \$0.86 for non-ACHS members. There are fees for additional response reminders, customized thank you statements, report packages, customized items, side-by-side reports of two variables, among other processing fees. (See: https://www.acha.org/documents/ncha/ACHA-NCHA_Participation_Processing_Fees_2022_excluding_paper_survey.pdf)

NCHA Survey Item Customization Options

The core survey items cannot be modified. However, various other customization options are available for each institution, which include the following considerations:

- Three standardized items focused on student gun/firearm possession can be added at no cost.
- One unique variable (variable = responses coded as a unique SPSS field, e.g., a check "all that apply" item with five response options = 5 variables) can be added to a custom report at no charge but with a custom report charge of \$300/\$500.
- Five custom variables can be added for \$700/\$1000. These variables are included in the institution response frequency report and the SPSS file.
- Five additional items can be added with the charge based on the number of unique variables (SPSS fields) the items generate (fee-based on the number of SPSS variables: < 15 = \$700/\$1000...76-100 = \$3000/\$4000). These variables are not reported in the institution frequency report. However, they are included in the raw SPSS file for local evaluation and reporting.

NCHA Merging Survey Responses with Institutional Data

Most often, the survey administration honors student confidentiality. The institution provides student emails to invite them to respond and to monitor nonresponse follow-ups. Student emails are not included in the raw SPSS file. Hence, there is limited capacity to merge responses with institutional information, such as persistence/progress indicators and behavioral indicators of belonging and connectedness. Interest in linking other information to student responses, such as participation in the Educational Opportunity Program (EOP), requires adding custom items to the survey and campus-generated special reports using the raw SPSS file.

NCHA Use by UC Campuses

All UC campuses administered the NCHA survey in 2021. Some campuses have administered the survey since 2010 (e.g., UCLA). NCHA is scheduled to be administered by UC's in 2023. Analyzing the use of the NCHA across each campus highlights that in 2021 the response rates varied across campuses. However,

most campuses had less than 10% of the student population respond to the survey, with the largest number of responses collected at UC Santa Barbara ($n = 2,235$) due to efforts to universally collect these data. It will be critical to evaluate if the low response rate and the biennial administration are sufficient and cost-effective to inform EMH efforts. Table 2 shows the number of usable responses, response rates, and approximate cost per usable response for the 2021 administration on all 10 UC campuses.

Table 2: NCHA 2021 Response Rates and Cost to Campuses

Campus	UCSD	UCR	UCI	UCLA	UCSB	UCSC	UCM	UCB	UCD	UCSF
Undergrad Responses	909	613	1441	929	2235	1594	522	579	1008	496
Response Rate	9.6%	6.1%	8.8%	15.5%	9.3%	8.8%	10.4%	9.0%	10.0%	16.0%
@ Response	\$4.78	\$7.05	\$4.89	\$2.77	\$4.62	\$4.88	\$4.13	\$4.78	\$4.96	\$2.69

UC Systemwide Reference Group $N = 10,918$. Mean response proportion = 10%, median response proportion = 9%. Cis Female responders = 65.5%, male responders = 27.9%, Transgender/non-conforming = 5.1% ($N = 545$). UCLA's posting of past NCHA response rate are: 2012 = 9%, 2014 = 22%, 2016 = 15%, 2019 = 32%, 2021 = 16%.

Some UC campuses post the standard ACHA-NCHA survey frequency report online. A few campuses maintain websites with past ACHA-NCHA survey and specialized reports. For example, UCLA posted a LGBTQ+ Fact Sheet using on ACHA-NCHA survey (see: <https://sairo.ucla.edu/by-survey/ncha>).

NCHA Embedded Measures

Within the NCHA, there are a variety of embedded measures. These measures are also widely used independent of the NCHA. To further understand the content of the measures within the NCHA, a brief overview, along with the items in each scale, is provided below. Please see the Appendix for additional information on these measures, key studies describing their development and psychometrics, along with information on these measures used specifically with college-age students.

Kessler 6 (K-6) Symptom Screener

K-6 Description

The Kessler screening measures (K6/10) are used worldwide in research and clinical settings. The original article (Kessler et al., 2003) is cited 3,456 citations in PsycINFO. This scale was developed to provide a brief measure or screener for mental illness. The K6 has six items, two of which assess anxiety-related symptoms and four which assess depression symptoms.

K-6 Items

During the last 30 days about how often did you feel?

...nervous

...hopeless

...restless or fidgety

...that everything was an effort

...so depressed that nothing could cheer you up
...worthless

UCLA Loneliness Scale

UCLA-LS Description

Interest in loneliness emerged from the recognition that subjective loneliness is associated with various social problems: alcoholism, low self-esteem, shyness, boredom, unhappiness, and other non-optimal life experiences. The UCLA-LS is a 20-item measure developed to assess people's subjective emotions with too few social relationships. Two psychometric studies describe its initial development (Russell et al., 1978, 1980). A third study (Russell, 1996) evaluated the psychometrics of modifications to item wording for clarity and to support its use across age groups. This instrument has wide research applications, mentioned in the abstracts of 834 peer-reviewed articles in PsycINFO. A few studies have evaluated the psychometrics of a two-item UCLA-LS short form (see Elphinstone, 2018).

UCLA-LS Items

Indicate how often each of these statements is descriptive of you.

Response options: Never Rarely Some Often

-
1. I feel in tune with other people around me
 - 2. I lack companionship**
 3. There is no one I can turn to
 4. I do not feel alone
 5. I feel part of a group of friends
 6. I have a lot in common with people around me
 7. I am no longer close to anyone
 8. My interest and ideas are not shared by those around me
 9. I am an outgoing person
 10. There are people I feel close to
 - 11. I feel left out**
 12. My social relationships are superficial
 13. No one really knows me well
 - 14. I feel isolated from others**
 15. I can find companionship when I want it
 16. There are people who really understand me
 17. I am unhappy being so withdrawn
 18. People are around me but not with me
 19. There are people I can talk to
 20. There are people I can turn to

Bold items are in the three-item version used in the NCHS and the Healthy Minds Survey (described below)

Suicide Behavior Questionnaire-Revised (SBQ-R)

SBQ-R Description

The Suicide Behavior Questionnaire-Revised (SBQ-R) is a psychological self-report questionnaire. It identifies suicide risk factors in adolescents and adults in under five minutes. The SBQ-R has four items. Item 1 addresses lifetime suicidal ideation and/or suicide attempt. Item 2 assesses the frequency of suicidal ideation over the past 12 months. Item 3 assesses the threat of suicide attempts. Item 4 evaluates the self-reported likelihood of suicidal behavior in the future, with scores ranging from 3-18. Concerning psychometric properties, the general adult population has a cut score greater than or equal to 7, 93% sensitivity, and 95% specificity. For adult psychiatric inpatients, the cutoff score is greater than or equal to 8, 80% specificity, and 91% specificity.

SBQ-R Items

1. Have you ever thought about or attempted to kill yourself? (Check one only)
 - Never
 - It was just a brief passing thought
 - I have had a plan at least once to kill myself but did not try to do it
 - I have had a plan at least once to kill myself and really wanted to die
 - I have attempted to kill myself, but did not want to die
 - I have attempted to kill myself, and really hoped to die
2. How often have you thought about killing yourself in the past year? (Check one only)
 - Never
 - Rarely (1 time)
 - 3. Sometimes (2 times)
 - 4. Often (3-4 times)
 - 5. Very Often (5 or more times)
3. Have you ever told someone that you were going to commit suicide, or that you might, do it? (Check one only)
 - No
 - Yes, at one time, but did not really want to die
 - Yes, at one time, and really wanted to die
 - Yes, more than once, but did not want to do it
 - Yes, more than once, and really wanted to do it
4. How likely is it that you will attempt suicide someday? (Check one only)
 - Never
 - No chance at all
 - Rather unlikely
 - Unlikely
 - Likely
 - Rather likely
 - Very likely

Diener Flourishing Scale (DFS)

DFS Description

Previously called the Psychological Well-being Scale, Diener’s Flourishing Scale (DFS) has eight items designed to measure psychosocial well-being ranging from positive relationships to finding meaning and purpose in life (Diener et al., 2009, 2010). Research provides acceptable reliability and validity evidence as a measurement of psychosocial well-being. The DFS has acceptable psychometric properties for U.S. undergraduate students (Diener et al., 2009, 2010; Howell & Buro, 2015). Additionally, the DFS is adapted for cross-cultural contexts, and research provides psychometric support for non-US samples.

DFS Items

Below are eight statements with which you may agree or disagree. Using the 1–7 scale below, indicate your agreement with each item by indicating that response for each statement.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Slightly disagree	Mixed or neither agree nor disagree	Slightly agree	Agree	Strongly agree

- I lead a purposeful and meaningful life.
- My social relationships are supportive and rewarding.
- I am engaged and interested in my daily activities.
- I actively contribute to the happiness and well-being of others.
- I am competent and capable in the activities that are important to me.
- I am a good person and live a good life.
- I am optimistic about my future.
- People respect me.

Connor-Davidson Resilience Scale (CD-RISC)

CD-RISC Description

The 25-item Connor-Davidson Resilience Scale (CD-RISC) measures resilience, which is the personal quality that supports thriving when faced with adversity. Since its development in 2003, the CD-RISC has taken on two abridged versions: the CD-RISC-10 and the CD-RISC-2. The CD-RISC-10 was created in response to an unstable factor structure while assessing the original 25-item CD-RISC. The CD-RISC-2 was created as a shorter version to save time and increase scale usage. The CD-RISC website lists the location and samples of all studies utilizing each CD-RISC version. The NCHS includes two CD-RISC items.

CD-RISC Items

- Able to adapt to change.
- Tend to bounce back after illness or hardship.

NCHA Summary

The NCHA content primarily focuses on symptom-level data. For example, information on student symptoms of anxiety, depression, and suicidality. The item content compiles valuable information about students' current or past symptomology. However, less information on student resilience, assets, and flourishing wellbeing is available. See Figure 2 which depicts the BH&W content in the NCHA.

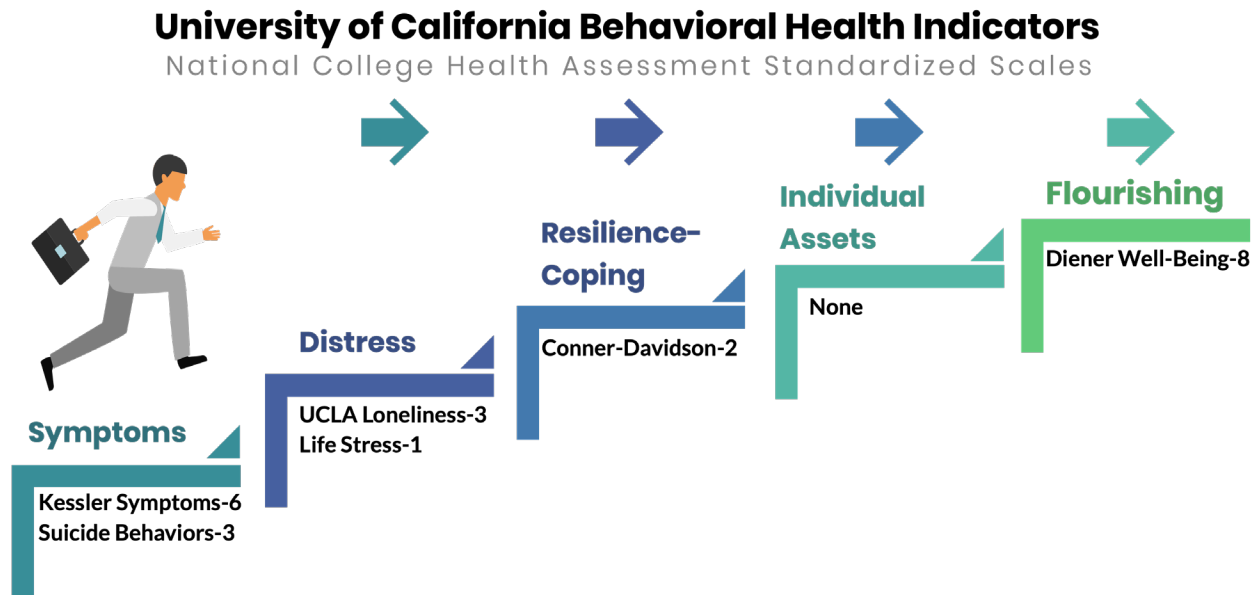


Figure 2. This figure shows the Behavioral Health Item Content in the National College Health Assessment (numerals show the number of items in each measure, 23 in total).

Tier 3: UC Campus-Specific Behavioral Health & Wellness

The UCSB team analyzed each UC website to gather information on the BH&W. We note that limited organization and documentation regarding Tier 3 sources of BH&W information used on each campus are available. However, additional sources likely exist on each campus, and each campus is engaged in efforts that align with its unique needs and student populations. One Tier 3 broad, comprehensive survey widely used across the U.S. is the Healthy Minds Study (HMS). As such, it is described here, and additional information on this survey is available in the Appendix. This MHS survey was administered once at UC Merced. More generally, a limited number of other Tier 3 measures used by specific campuses could be considered part of a systemwide effort to gather BH&W information.

Healthy Minds Study – Student Survey (HMS)

HMS Description

Created at the University of Michigan in 2007, the Healthy Minds Study - Student Survey (HMS) is an online survey available for implementation within the U.S. and international post-secondary institutions (e.g., four-year universities, community colleges, technical schools). The HMS examines the prevalence of mental health outcomes, knowledge, and attitudes surrounding mental health, and utilization of mental health services. HMS items address help-seeking behavior, stigma, and potential barriers to seeking mental health care. The HMS seeks to inform policy and practice at post-secondary institutions across the U.S. and internationally. HMS data are used for basic research and advocacy for mental health services and programs. It is also used to evaluate existing mental health programs, identify new service needs, and raise awareness of mental health and campus resources. Recently the HMS research network has partnered with the JED Foundation and produced a [College Student Mental Health Action Toolkit](#) using HMS data.

HMS Content

The HMS has three core behavioral health modules:

- Demographics
- Mental Health Status
- Mental Health Survey Utilization/Help-Seeking

Other modules focus on the following behavioral health areas:

- Substance Use
- Sleep
- Eating and Body Image
- Sexual Assault
- Overall, Health
- Knowledge and Attitudes about Mental Health and Mental Health Services
- Upstander/Bystander Behaviors
- Campus Mental Health Climate
- Climate for Diversity and Inclusion
- Academic Competition, Persistence, and Retention
- Resilience and Coping
- Financial Stress
- Student Athletes
- Peer Support
- Public Safety and Policing

As is evident when analyzing the content of the Healthy Minds, there are significant sources of overlapping information on the NCHA, CCAPS, and the Healthy Minds. See Table 3.

Table 3: Survey content for UC BH&W Information

Item Content	UC-Wide Behavioral Health Information Sources		UC Merced Only
	National College Health Assessment	Counseling Center Assessment of Psychological	Healthy Minds Network-JED
Academic Impediments	18 items Past 12 months		Mental Health
Anxiety	Kessler-6 Nonspecific (4 wks)	General (6) & Social Anxiety (5)	GAD-7 (2 wk)
Chronic Medical and Dx	Mental, Physical, 109 Items		Mental DX (19)
Covid	23 items		X
Demographic	26 items		13 Items
Depression	Kessler-6 Nonspecific (4 wks)	Depression (6)	PHQ-9 (2 wk)
Eating, Body Image	Weight, Nutrition	Eating Concerns	SCOFF (5)
Exercise	X		1 Item
Externalizing		Frustration-Anger (6)	
Food Security, Nutrition	5 items		
Loneliness	UCLA-3 (no time referent)		UCLA-3
Medical Services	Past Year, 26 items		Mental Health Tx, formal informal, Meds
Mental Health Attitudes			X
PTSD Trauma	Stress, Life Problems, 30 days	Academic Distress (4)	
Racial Trauma			X
Resilience	Conner Davidson (past month)		
Safety Habits	23 Items, Helmets, Campus, Firearms		
Self-Injury	Cutting		10 Items
Services Satisfaction			Tx Barriers
Sexual Health	12 items		
Sleep	9 Items		X
Substance Use Consequences	Social, Legal, Financial		
Substances	66 Items, Alcohol, Cannabis, Opioids, Stimulants, Sedatives, Injection, Lifetime, 3 months	Alcohol (4)	30-day, Multiple, Binge
Suicidality	X	X	3 Items
Violence	Physical, Sexual, Sexual		Emotional, Physical, Sexual
Well-Being	Diener-8 Flourishing		Diener-8 Flourishing
Format	Anonymous Survey	Screeners and Intake & Treatment Monitor	Anonymous Survey
Number of Items	429 possible Item, skip logic	34 & 62 Versions	Standard 136-197 skip logic (See Note)
Cost	\$15,000 A + campus time, etc.		?

Note. There are 136 to 197 standard HMS module items fielded at all participating institutions. The standard modules include a limited number of questions spanning the majority of the elective module topics, in addition to providing rich data on students' demographics, mental health status, and mental health service utilization and help-seeking behaviors. There are 240-338 modules in the 15 current modules.

Tier 2: Behavioral Health & Wellness Information

In addition to the broader Tier 3 assessment available at various UC campuses, some anonymous screeners or self-awareness evaluations are used on UC campuses in support of Tier 2 efforts. These

assessments have two primary purposes. The first use of these assessments is to screen for various problems/concerns/distress to help students seeking behavioral health services. An additional purpose is that these assessments promote students' self-awareness and self-improvement. Upon completing the assessment, students can learn more about themselves and use the information for self-development.

Tier 2 Systemwide

ULifeline

Developed by Duke University Medical Center, ULifeline is an anonymous, confidential, online resource center for college students that tracks emotional health information through various screeners. ULifeline is also a project of the JED Foundation, an organization working to protect the emotional health of America's college students. The JED Foundation provides ULifeline to over 1,500 colleges and universities for free. To be screened, a student must enter their university or institution and select the PHQ-9 (depression), GAD-7 (anxiety), SCOFF (eating disorder), or the CAGE-AID (alcohol and substance misuse) screener. Via the JED website, all UC students can access this self-evaluator and, if they enter a UC campus, would be linked to the campus mental health resources. We note that the 2006 UCOP Student Mental Health Committee report suggested to, *utilize national organizations such as Jed Foundation (a nonprofit public charity committed to reducing the young adult suicide rate and improving mental health support provided to college students) and models such as ULifeline, which provides students with a link to their respective college's mental health center* (p. 15). However, this does not provide UC-wide information about the concern's students expressed.

The PHQ-9 depression screener asks the respondent how often they have been bothered by a list of problems during the past two weeks. For example, "feeling down, depressed, or hopeless" with answers ranging from not at all, several days, more than half the days, to nearly every day. The GAD-7 anxiety screener asks how often a person was bothered by problems like "feeling nervous, anxious, or on edge," with the same answer format as the PHQ-9. The SCOFF eating disorder screener has a yes/no format. An example item is, "Do you make yourself sick (induce vomiting) because you feel uncomfortably ill." Lastly, the CAGE-AID alcohol and substance misuse screener uses a yes/no format, with an example item being, "Have you ever felt bad or guilty about your drinking or drug use."

Counseling Center Assessment of Psychological Symptoms (CCAPS)

The Counseling and Psychological Services developed the Counseling Center Assessment of Psychological Symptoms (CCAPS) at the University of Michigan in 2001 is the only resource available systemwide that could support behavioral health screening and monitoring. CCAPS aims to provide an affordable and clinically helpful instrument to screen students needing college counseling center services; for example, UCLA uses this measure as part of its request for services. The CCAPS's 2019 norms form a sample of 448,904 students seeking college and university counseling services in the U.S.

The CCAPS has two versions: CCAPS-62 and CCAPS-34. The CCAPS-62 was released in June 2009 and updated in 2012. The 62-item survey has eight subscales relating to psychological symptoms and

distress in college students: depression, generalized anxiety, social anxiety, academic distress, eating concerns, family distress, frustration/anger, and substance use. The CCAPS-62 takes about 7-10 minutes to complete. It is comprehensive, sensitive to low-range distress, and includes family-related questions. It is used for initial and post-treatment assessments to check for treatment effects. The CCASP could provide Tier 2 anonymous behavioral health self-awareness assessment related to student self-referrals for campus counseling services; however, it is not used universally for this purpose.

Tier 2 Campus-Specific

Tier 2a. Anonymous Resources

There are several Tier 2 self-assessment screeners, for example, ULifeline (JED Foundation), that are anonymous and direct the students only to campus Tier 1 mental health resources. These links could be helpful; however, they are one step removed from having more direct involvement with students on campus. They might help links students to campus services, but they do not provide consolidated behavioral and mental health information.

e-Checkup to Go

e-Checkup to Go is a personalized, online behavior intervention program with screening instruments created by counselors and psychologists at San Diego State University (SDSU) and used at UC Riverside. e-Checkup is used by 600+ universities in four countries. The program is most known for its alcohol and cannabis interventions, but it has programs relating to nicotine usage, sexual violence prevention, well-being, and screeners. Based on motivational interviewing and Social Norms theory, the intervention motivates individuals to reduce utilization of alcohol/cannabis and associated personal and community harms. Each program takes about 20-30 minutes to complete and is wholly self-guided with no face-to-face meetings with a counselor or administrator.

The e-Checkup to Go wellness assessment explores major domains that impact well-being and identifies growth, exploration, and attention areas. Additionally, the program supports students in creating a personalized well-being plan to transform insight into tangible actions for positive behavior change. Lastly, the e-Checkup to Go explores diagnoses such as depression, anxiety, bipolar disorder, disordered eating, PTSD, alcohol, cannabis, and opioids. It is possible to track behavior trends by completing the screener multiple times.

Mindwise

Based in Massachusetts, Mindwise is an online training program that offers a comprehensive approach to mental health, substance use, and suicide prevention. Mindwise also offers a comprehensive suicide prevention program called Signs of Suicide for Grades 6-12. Mindwise on Campus uses video and interactive learning to teach college students how to ACT (Acknowledge, Care, Tell) if a student is worried about a friend. Within these modules, students learn how to recognize signs of suicide risk, encourage peers to seek help, build strong peer connections, and foster positive mental well-being. The modules are delivered in 30-minute, self-guided or 60-minute, peer-led training formats.

Table 4: Survey content for UC-Specific Tier 2 BH&W Information

Item Content	CCAPS Penn State	ULifeline JED	E-check SDSU	Mindwise
Anxiety	General (6) & Social Anxiety (5)	GAD-7(2 wk)	X	(10 items, 6 months)
Bipolar			X	
Depression	Depression (6)	PHQ-9 (2 wk)	X	
Eating, Body Image	Eating Concerns	SCOFF	X	
Exercise		X		
Externalizing	Frustration-Anger (6)			
Food Security, Nutrition		X		
PTSD Trauma	Academic Distress (4)		X	
Substances	Alcohol (4)	CAGE-AID	Alcohol, Cannabis, Opioids	
Suicidality	X			
Well-Being			5 domains	(10 items, no time)
Format-Purpose	Anonymous Screen, Intake & Treatment Monitor	Anonymous Screen	Anonymous Screen	Anonymous Screen
Cost		Free	\$1500-2000 A	\$1500-2000 A
Maximum Number Items	34 & 62 Versions	25		

Tier 2b. Resources with Direct Links to Campus Services

Stress And Resilience wellness check-STAR

UC Los Angeles has a viable wellness system which can provide a bridge between the various tiers of service delivery. The STAR (STress And Resilience wellness check) involves students registering for the program and accessing various screening services, which will then provide links directly to psychoeducational information and other specific pre-CAPS referral services on campus. The Screening & Treatment for Anxiety and Depression (STAND) Program is a study in which UCLA students screen, track, and treat their anxiety and depression. They complete a short symptom screening self-evaluation and enroll in mood tracking, treatment studies, or personalized psychoeducation resources. These resources include those designed to help students cope during the pandemic. STAR is not a universal screen for all students. Still, it allows students to explore their mental health and wellness concerns and

be linked directly to campus services. The Depression Grand Challenge at UCLA was a campus-wide initiative “to cut the burden of depression in half by 2050 and to eliminate the disease by the end of the century.” The Depression Grand Challenge involved multiple studies identifying genetic, biological, cognitive, social, and environmental factors associated with depression. Additionally, the studies enhance public awareness about depression and help the population better understand the condition, recognize its symptoms, and reduce barriers to treatment. There are multiple online treatment studies; some aimed directly at UCLA students and others at the public.

Tier 1: UC-Wide Behavioral Health & Wellness Information

Counseling Center Assessment of Psychological Symptoms & Monitor

The CCAPS-34 was created in September 2009 and updated in 2012. Based on the CCAPS-62, it includes seven subscales related to psychological symptoms and distress (it excludes the family distress items). Instead of a substance use subscale, the CCAPS-34 uses an alcohol use subscale. It takes about 2-3 minutes to complete, making it a brief assessment instrument for any point in treatment (e.g., every session, specific interval, calendar basis). UCLA uses the CCAPS-34 in its online counseling center self-referral form. Most campuses use the CCAPS (short and/or long versions) to inform Counseling and Psychological Services and it is routinely used during intake and to monitor treatment progress.

Summary of UC-Specific BH&W Information Across 3 Tiers

The Equity in Mental Health funding plan represents a new approach to reconfiguring the BH&W landscape across the UC system. First, by allocating funds to address early intervention, prevention, and wellness efforts, the initiative has the potential to support a more holistic approach to improving student population health outcomes. Second, by including an explicit focus on improving health equity, the funds represent an essential mechanism to support some of the most vulnerable, marginalized, and historically underserved student community members. Third, committing that the funds will be available to campuses on an ongoing basis can support a more sustainable approach to service development.

Overall, a limited number of Tier 2 assessments are available on UC campuses and listed on campus websites. A few notable exceptions are Mindwise, ULifeline, and e-Checkup to Go. As is evident when analyzing the content of these Tier 2 UC-Campus Specific sources of information, the UC campus-specific assessments are most often problem/symptom/diagnosis focused, with the interest of providing prevention and early intervention BH&W services.

This in-depth analysis of the existing BH&W data contributes to determining how to serve UC students best. Several critical areas for consideration emerged through an analysis of the current data sources.

Observation 1

*The current assessment data gathered are **not aligned** with stated EMH UC objectives and may not be maximally beneficial to users.*

Consideration: Consider if the assessments provide the optimal information necessary to assess the BH&W needs as aligned with the stated goals of the Equity in Mental Health funding. Equity-related information that respects the range of student identities and experiences is needed. Consider how to align assessment with EMH efforts including, for example, assessment of social determinants of mental health, adverse childhood experiences, and race-based trauma and stress to enhance equity efforts.

Consider an ongoing system to monitor the relevance of the surveys and existing content to ensure that the system is continuously responsive to students ongoing experiences. Consider what is most relevant to students and their campus life experiences, which data are being used across campuses, and what services the data are helping to inform. Consider alignment with K12 California Healthy Kids Survey content if there is a desire to engage in comprehensive state-level efforts to ensure a healthy student population. Consider the primary goals of the survey data and if they will be used for surveillance (epidemiology), entry to treatment, program monitoring, and/or evaluating effectiveness of EMH programs.

Observation 2

*The current surveillance data collection system is **not coordinated**, with few assessment instruments provided across the UC system and a system to integrate and analyze data on UC students does not exist.*

Consideration: Consider approaches that would allow for merging UC system-level data for more in-depth analysis of all UC students and to enhance coordination of care. Consider some assessments at each tier of service that are similar across all UC campuses. Few assessments, across each Tier, are consistent across the UC system and few Tier 2 assessments are currently in use. Consider how to develop a network where the various systems and programs supporting student BH&W can inform, and be informed by, other systems.

Observation 3

*The current **frequency** (i.e., max biennially) of survey administration does not allow for a sufficient analysis of trend patterns to evaluate the behavioral health and wellness of UC students.*

Consideration: Consider annual survey or alternative mechanisms (e.g., one annual survey, survey at entry to college) for gathering information to inform longitudinal and any emerging trends to evaluate UC campus or systemwide efforts.

Observation 4

*The current **percentage** of large survey responses is low (i.e., max 16%), limited in the diversity of student responses, and allows for limited population-level Tier 3 understanding of student behavioral health and wellness.*

Consideration: Consider approaches to obtain a more representative sample. Oversampling subpopulations may be needed to ensure equity goals are met (e.g., Disabled Students Programs students, transfer students). Random sampling may be helpful to not overburden the entire student population. Review outreach methods (e.g., raffles, emails) that may enhance survey responses and what methods (e.g., use of cell phones) may be used to engage more students in this process.

Observation 5

*The current surveillance surveys are **lengthy** and time-consuming.*

Consideration: Consider which constructs are most critical to meet EMH goals and which data are currently being used effectively to inform intervention and wellness planning. It will be important to weigh the balance of fewer, more targeted items with the desire for in-depth information on additional constructs. Consider the need for additional health equity measures and variables, and if they can be administered with other existing surveys currently used.

Observation 6

*The current surveys are skewed towards **distress, symptom** indicators.*

Consideration: In line with EMH goals, consider gathering information on student strengths and health and behavioral *wellness* indicators (e.g., how UC students see themselves as competent, connected, and caring). Analyzing the critical student non-cognitive factors related to well-being and successful progress and persistence within the UC system is needed to inform EMH efforts. These non-cognitive factors “include a range of attitudes, behaviors, beliefs, and dispositions within the individual student and that may also be influenced by college environments and contexts” National Academies of Sciences, Engineering, and Medicine, 2017, p. 2). Examples of these factors or competencies are behaviors related to conscientiousness, academic self-efficacy, growth mindset, intrinsic goals and interests (self-awareness), positive future self (optimism), prosocial goals and values, sense of belonging (peer, family, and institutional), utility goals and values, and gratitude. Additionally, with the current symptom-focused indicators, little information is gathered to inform prevention and early intervention efforts and to incorporate measures that measure balanced complete mental health. Balancing BH&W measures for optimal and suboptimal mental health indicators would provide meaningful information to support students with substantial mental health symptoms and enhance the well-being of students who do not have acute needs for therapeutic services.

Summary Considerations

It will be important for the EMH programs to examine the current surveys administered to the student body to see if they adequately match EMH aims and priorities. Do the surveys administered provide sufficient relevant information that it warrants continued use of the surveys? Are there any UC-wide priorities that are aligned with these surveys, and is their use critical and informative? In particular, the NCHA is administered on each campus. If there is sufficient alignment that it warrants continuation of the NCHA, what other strategies may be used to fill the gaps of information that exist on campuses? What additional information is needed as it relates to student BH&W objectives and to inform the possible impacts and effectiveness of programs designed to improve student wellness with a specific lens toward equity? Some additional UC questions could be added if it is deemed that this survey provides adequate information to inform EMH efforts. However, if the questions and content are so misaligned, then decisions should be made about what BH&W information is needed. A needed next

step is to articulate the purposes of gathering information from students and to align data collection efforts accordingly to be maximally beneficial, relevant, efficient, and informative.

Equity in Mental Health Data Interests

Based on conversations with campus representatives using this report as the catalyst for conversation, the following questions emerged as potentially useful to guide discussions about the data-needs across the UC to inform EMH efforts.

What is the path forward?

Core Questions to Address

- Is there sufficient awareness of the incidents, trends, and range of symptom patterns among UC students and understanding of how this relates to UC's mental health equity interests?
- Is there sufficient information about flourishing student indicators in incidence and trends?
- Is there an optimal balance of information across symptoms and positive indicators of student wellbeing?
- Do we have a systemwide understanding/perspective of how students experience campus life daily, not limited primarily to biannual snapshots?
- Are past survey samples adequate to create a reliable understanding of student-centric and institutional-centric factors associated with student mental health symptoms, student flourishing, and their successful persistence and progress toward degree completion?
- Is there a consensus on essential indicators of student flourishing: social, psychological, emotional, academic? Is some agreement/consensus desirable to guide the purposeful, aligned selection of measures and other information sources? What is the systemwide shared understanding of the core features of students' positive mental health and well-being?
- Is there a need for more information about symptoms associated with mental health disorders? (e.g., surveillance of students presenting mental health symptoms that would set a baseline to know the range and types of mental health challenges of UC students)
- Is there a need to understand better the specific equity concerns, particularly among students who may enter the UC system with mental health service needs?
- Does a program like UCLA's star initiative provide a model for what might be useful system wide?
- What is the need for more information about non-cognitive factors associated with students' positive campus life experiences and successful academic pursuits?
- What is the steering committee's guidance about linking UC's equity and mental health initiative objectives and obtaining credible and valid information about student mental health and well-being?
- What is the balance of interest concerning assessing mental health symptoms that students may experience and the need to identify those students and link them with appropriate services and supports on campus?
- What information is needed to understand the need for services on campus in a way that identifies current conditions and anticipates emerging student needs?

- What is the relative balance of "data" information needed across the three tiers? Is there any priority? How are systemwide data information needs balanced against campus-specific interests, conditions, and preferences?
- What information is needed to understand students from a positive wellness perspective better? What are the vital indicators of student flourishing in various domains? How are these indicators linked to student success as a human being and as it relates to their success as a UC student academically, personally, and socially?
- What are sentiments, and considerations, about the path forward concerning data and information needs?
- Is there a desire to use/modify established national resources (ACHA, Mindwise, JED) or to develop UC-specific data resources for campus and systemwide information interests?
- Is there an interest in adapting UC resources to include relevant equity and mental health indicators (UCUES, campus incoming student surveys)?
- Who accesses services and who does not?
- How is the appropriateness and impact of services considered?
- What is the optimal balance of service-centric versus student/person-centric information needs?

References & Appendix

National Academies of Sciences, Engineering, and Medicine (2017). *Supporting students' college success: The role of assessment of intrapersonal and interpersonal competencies*. The National Academies Press. <https://doi.org/10.17226/24697>.

Additional information is presented here on each of the main indicators of BH&W being used across the tiers. This information may be helpful as the UC community evaluates the EMH initiatives to evaluate the adequacy of these instruments to meet the desired outcomes.

TIER 3: Additional Information on NCHA and Tier 3 Measures Embedded in NCHA

National College Health Assessment

Resources

The data sets generated by the NCHA survey have supported wide-ranging research with 1,679 PsycINFO scholarly journal citations. As an illustration, the following journal articles appeared since 2020:

Albers, L. D., Grigsby, T. J., Benjamin, S. M., Rogers, C. J., Unger, J. B., & Forster, M. (2022). Adverse childhood experiences and sleep difficulties among young adult college students. *Journal of Sleep Research, 9*. <https://doi.org/10.1111/jsr.13595>

Edwards, B., & Froehle, A. (2021). Examining the incidence of reporting mental health diagnosis between college student athletes and non-athlete students and the impact on academic performance. *Journal of American College Health*. <https://doi.org/10.1080/07448481.2021.1874387>

Gonzalez, P. D., & Vaughan, E. L. (2022). Substance use among Latino international and domestic college students. *Journal of Ethnicity in Substance Abuse, 21*(1), 230–252. <https://doi.org/10.1080/15332640.2020.1747037>

Lin, H., Li, M., Stevens, C., Pinder-Amaker, S., Chen, J. A., & Liu, C. H. (2021). Self-harm and suicidality in US college students: Associations with emotional exhaustion versus multiple psychiatric symptoms. *Journal of Affective Disorders, 280*, 345–353. <https://doi.org/10.1016/j.jad.2020.11.014>

Miller, L. M. S., Falbe, J. L., Rico, T. E., Chodur, G. M., & Kemp, L. C. (2021). Associations between campus climate perceptions and food insecurity among undergraduates at a public university. *Journal of American College Health*, <https://doi.org/10.1080/07448481.2021.1947830>

Oswalt, S. B., Lederer, A. M., Chestnut-Steich, K., Day, C., Halbritter, A., & Ortiz, D. (2020). Trends in college students' mental health diagnoses and utilization of services, 2009–2015. *Journal of American College Health, 68*(1), 41–51. <https://doi.org/10.1080/07448481.2018.1515748>

Pilar, M. R., Cunningham-Williams, R., & Williams Woodson, S. L. (2020). Does the Andersen behavioral model of health services use predict college students' use of on-campus mental health services? *Journal of American College Health, 68*(6), 631–643. <https://doi.org/10.1080/07448481.2019.1583665>

NCHA Web Version Frequently Asked Questions

https://www.acha.org/documents/ncha/ACHA-NCHA-WEB_FAQ_FINAL_JUNE_2022.pdf

NCHA Score Interpretation Guidance

https://www.acha.org/documents/NCHA/Interpreting_Scores_in_the_ACHA-NCHA_III_Sept2021.pdf

NCHA Demographic Items

Item	Options
What sex were you assigned at birth?	1 Female 2 Male 3 Intersex
Do you identify as transgender?	1 No 2 Yes
Which term do you use to describe your gender identity?	1 Woman or female 2 Man or male 3 Trans woman 4 Trans man 5 Genderqueer 6 My identity is not listed 7 Agender 8 Genderfluid 9 Non-binary 10 Intersex
What term best describes your sexual orientation?	1 Asexual (from write-ins) 2 Bisexual 3 Gay 5 Pansexual 6 Queer 7 Questioning 9 Straight/Heterosexual 10 My identity not listed above
How old are you?	1 18 Years 2 19 Years 3 20 Years 4 21 Years 5 22 Years 6 23 Years 7 24 Years 8 25 Years 9 26 to 30 Years 10 31 to 40 Years 11 41 or More Years
What is your weight in pounds?	1 51 to 100 Pounds 2 101 to 150 Pounds 3 151 to 200 Pounds 4 201 to 250 Pounds 5 251 to 300 Pounds 6 301 or More Pounds
What is your year in school?	1 1st year undergraduate 2 2nd year undergraduate

	3 3rd year undergraduate 4 4th year undergraduate 5 5th year or more undergraduate 6 Master's (MA, MS, etc.) 7 Doctorate (PhD, EdD, MD, JD, etc.) 8 Not seeking a degree 9 Other (please specify):
What is your enrollment status?	1 Full-time 2 Part-time 3 Other
Do you have a visa (for example: F-1, J-1, or M-1) to study or work in the United States?	1 No 2 Yes
How do you usually describe yourself? (Please select ALL that apply) American Indian or Native Alaskan Asian or Asian American Black or African American Hispanic or Latino/a/x Middle Eastern/North African (MENA) or Arab Origin Native Hawaiian or Other Pacific Islander Native White Biracial or Multiracial Another Identity	For each option 0 Not selected 1 Selected
Are you? (Please select ALL that apply) (only includes students that describe themselves as Hispanic or Latino/a/x) Mexican, Mexican American, Chicano Puerto Rican Cuban Another Hispanic, Latino/a/x, or Spanish origin	0 Not selected 1 Selected
Are you? (Please select ALL that apply) (only includes students that describe themselves as Asian or Asian American) East Asian (for example: Chinese, Japanese, or Korean) Southeast Asian (for example: Cambodian, Vietnamese, Hmong, or Filipino) South Asian (for example: Indian, Pakistani, Nepalese, or Sri Lankan) Other Asian	For each option 0 Not selected 1 Selected
What is your relationship status?	1 Not in a relationship 2 In relationship not married/partnered 3 Married/partnered
Do you have any of the following? Attention-Deficit/Hyperactivity Disorder (ADD or ADHD) Autism Spectrum Disorder Deaf/Hearing loss Learning disability	For each option 1 No 2 Yes

Mobility/Dexterity disability Blind/Low Vision Speech or language disorder	
What is the highest level of education completed by either of your parents (or guardians)?	1 Did not finish high school 2 High school diploma or GED 3 Attended college but no degree 4 Associate's degree 5 Bachelor's degree 6 Master's degree 7 Doctoral or professional degree (PhD, EdD, MD, JD, etc.) 8 Don't know
Height in inches	1 36 or Less Inches 2 37 to 48 Inches 3 49 to 60 Inches 4 61 to 72 Inches 5 73 to 84 Inches 6 85 or More Inches

Kessler 6 Symptom Screener

Kessler 6 Original Study

Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C., Hiripi, E., ... Zaslavsky, A. M. (2003). *Archives of General Psychiatry*, 60(2), 184–189. <https://doi.org/10.1001/archpsyc.60.2.184>

This article describes the Kessler screening skills as nonspecific measures of psychological distress related to serious mental illness (SMI). In this investigation, 155 respondents completed the K6. These individuals also completed the World Health Organization disability assessment schedule to assess its predictability. They completed the 12-month structured clinical interview for the DSM IV and the global assessment of functioning scale. To provide a clinical criterion, SMI was defined by any 12-month DSM IV disorder, a substance use disorder, accompanied by a GAF score of less than 60. Receiver operating characteristic analysis then evaluated how the Kessler screening form total score predicted the presence of SMI (1 = SMI present, 0 = SMI not present). The rock analysis showed that the K6 Was significantly associated with SMI within an AOC of .87 (sensitivity = .36, specificity = .96). The article concludes that in addition to screening for SMI, the K6 provides a valid broad-gauged screener for psychological disorders. It has usage in health risk appraisal in primary care settings or contexts such as colleges.

Kessler 6 Studies Relevant to College Students

Knowlden, A. P., Sharma, M., Kanekar, A., & Atri, A. (2012). Sense of coherence and hardiness as predictors of the mental health of college students. *International Quarterly of Community Health Education*, 33(1), 55–68. <https://doi.org/10.2190/IQ.33.1.e>

The contribution this study made was exploring and offering a way to integrate the Kessler 6 distressed greener with other measures of behavioral health, particularly the sense of coherence scale and the college student hardiness measure. The sample included 202 college student-age Australian individuals.

The K6 scale had internal consistency reliability of .83 in this sample. The analysis examined how traits such as comprehensibility, manageability, meaningfulness, and hardiness were associated with student mental health as assessed by K6. Overall, these four positive indicators accounted for 43% of the variation in students' expressed mental health.

Prochaska, J. J., Sung, H. Y., Max, W., Shi, Y., & Ong, M. (2012). Validity study of the K6 scale as a measure of moderate mental distress based on mental health treatment need and utilization. *International journal of methods in psychiatric research*, 21(2), 88–97. <https://doi.org/10.1002/mpr.1349>

Many researchers cite this study as the source of information about relevant cut points for the K6 Screener to identify thresholds for mild and moderate mental disorders. The sample included in this study was taken from the California health interview survey and included 50,880 adult participants. This included individuals in the adult transition ages from 18 to 25. Based on the responses of these individuals the author completed receiver operation curve analysis to identify the threshold cut points. The analysis indicated that using the case six 8.6% of California adults could be identified as having a serious mental illness. Another 27.9% of individuals could be considered to fall into the moderate mental distress range. The criterion variable included in this point was whether respondents indicated needing mental health treatment if they reported either use of prescription medication or seeing a physician or other professional for mental health problems or feeling the need for help for emotional mental health problems in the past 12 months.

Bessaha, M. L. (2017). Factor structure of the Kessler Psychological Distress Scale (K6) among emerging adults. *Research on Social Work Practice*, 27(5), 616–624. <https://doi.org/10.1177/1049731515594425>

This article provides a helpful overview of previous validation studies of the K6 and the K10. This study's contribution was to examine the factor structure of the K6 for a sample of emerging-age adults ages 18 to 29 years. The study sample included 20,699 individuals who participated in the 2013 National Survey of Drug Use and Health. In this large sample, the internal reliability of the K6 was .87. Various confirmatory factor analyses compared one-factor, two-factor, and second-order factor structures. The results of the CFA analysis showed that the one-factor solution was acceptable but that the two-factor solutions offered better fit statistics overall. The correlated two-factor CFA model and the higher order CFA model produce essentially the same fit statistics. When interpreted as two factors, the depression and anxiety factors were highly correlated ($r = .83$). These findings support the observation that assessments of depression and anxiety represent distinct psychological domains, but they are highly correlated.

Ferro, M. A. (2019). The psychometric properties of the Kessler Psychological Distress Scale (K6) in an epidemiological sample of Canadian youth. *The Canadian Journal of Psychiatry*, 64(9), 647–657. <https://doi.org/10.1177/0706743718818414>

This study contributed by comparing the responses of youth ages 15 to 19 years old with adults (ages 20 and above) who responded to the Canadian Community Health Survey. This study evaluated past year's psychiatric disorders using the World Health Organization's Composite International Diagnostic Interview 3.0 (WHO-CIDI). This essential study examined the K6 internal consistency, and a confirmatory

factor analysis assessed measurement invariance. In addition, area ROC analysis assessed the K6's capacity to predict different diagnoses from the WHO-CIDI survey. The results confirmed substantial J-shaped distributions, with more than 50% of the youth scoring less than four on the K6. Internal consistency was high (.86), and the confirmatory factor analysis showed full measurement invariance for age and gender. The K6 predicted depressive symptoms, generalized anxiety disorder, and bipolar disorder (all ROC AUCs = .85).

Becerra, M. B., & Becerra, B. J. (2020). Psychological distress among college students: Role of food insecurity and other social determinants of mental health. *International Journal of Environmental Research and Public Health*, 17(11), 4118. <https://doi.org/10.3390/ijerph17114118>

This study involves students attending one of the University of California campuses. It asked a sample of 302 students about their emotional distress experiences, other mental health outcomes, and their experience of food insecurity. An important finding was that students who expressed higher levels of food insecurity reported higher odds of experiencing psychological distress, suggestive average to very poor self-perceived mental health.

Hunt, C., Gibson, G. C., Vander Horst, A., Cleveland, K. A., Wawrosch, C., Granot, M.... Hughes, J. W. (2021). Gender diverse college students exhibit higher psychological distress than male and female peers during the novel coronavirus (COVID-19) pandemic. *Psychology of Sexual Orientation and Gender Diversity*, 8(2), 238–244. <https://doi.org/10.1037/sgd0000461>

This study surveyed Kent University students during the early stages of the COVID-19 pandemic. An attempt was made to survey all students on campus, undergraduate, and graduate, with the resulting sample of 5,547, a response rate of 17.8%. The main contribution of this study was to examine the Kessler 6 responses of gender-diverse students vis-a-vis their campus peers. Note that students responded to their past seven-day experiences compared to the past 30-day experiences in the original Kessler 6 scale. The results show that the small sample of students who identified as gender diverse reported substantially higher K6 distress scales than their male and female identifying peers. They also reported lower scores on a measure of resilience.

Balaraman, K. K., Dan, S., Ortega, N., Srinivasan, M., Palaniappan, L., Singh, J.,... Joshi, S. V. (2022). Psychological distress and mental health service utilization disparities in disaggregated Asian American populations, 2006–2018. *Asian American Journal of Psychology*, <https://doi.org/10.1037/aap0000294>

This study used individuals' responses to the National Health interview survey conducted between 2006 and 2018. It compared the K6 screening inventory responses of 282,382 Asian Indians, Chinese, and Filipino respondents to non-Hispanic Whites. The analyses revealed that all Asian groups reported less distress than their non-Hispanic White peers. Focusing on the 18–25-year-old age group, 9% to 13% of Asian respondents' responses were in the moderate or severe response ranges, compared to over 15% of the non-Hispanic White students.

Mewton, L., Kessler, R. C., Slade, T., Hobbs, M. J., Brownhill, L., Birrell, L., ... Andrews, G. (2016). The psychometric properties of the Kessler psychological distress scale (K6) in a general population sample of adolescents. *Psychological Assessment*, 28(10), 1232–1242. <https://doi.org/10.1037/pas0000239>

This study did not include a college student age sample but focused on a large general population of adolescents ($N = 4,434$, mean age 13.5 years). This study's contribution was to examine the factor structure of the K6 with a younger adolescent sample. The youth participating in the study completed case 6 and the strengths and difficulties questionnaire. The result showed high internal consistency ($\alpha = .84$ for males, $\alpha = .85$ for females). Exploratory and confirmatory factor analysis indicated that the one-factor model fit statistics were marginal. Additional analysis suggested that a two-factor solution was a better fit for the data, comprising one factor comprised of the hopeless, depressed, and worthless items, and the second factor comprised the nervous, restless, and effort items. Invariance was examined for the two-factor model. The invariants analysis substantiated week invariants indicating that the factor loadings in prespecified correlated residuals were invariants across gender. However, support for strong invariance was not found, which suggested that the response thresholds were not invariants across genders. The analysis suggested that given similar levels of psychological stress, males were less likely to endorse each of the K6 items when compared to females. The findings of this study point to the importance of further evaluating the psychometric characteristics of the K6 for use with diverse University of California student samples.

Kessler 6 Score Interpretation

Range = 0-24

5–12 = moderately distressed

≥ 13 = elevated distress and potential need for mental health treatment

Kessler 6 Response options

None of the time (0)	A little of the time (1)	Some of the time (2)	Most of the time (3)	All the time (4)
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Kessler-6 Resources

National Comorbidity Survey: https://www.hcp.med.harvard.edu/ncs/k6_scales.php

UCLA Loneliness Scale (UCLA-LS)

UCLA-LS Key Studies

Russell, D., Peplau, L. A., & Ferguson, M. L. (1978). Developing a measure of loneliness. *Journal of Personality Assessment*, 42(3), 290–294. https://doi.org/10.1207/s15327752jpa4203_11

Twenty-five items representing less severe loneliness statements were taken from a doctoral dissertation study by Sisenwin (1964). Using item-total score correlations, 20 items with correlations of .50 or higher were retained. The alpha reliability was .96 based on the responses of 239 UCLA students. A sample of 102 University of Tulsa University students provided a two-month test-retest coefficient of .73. Student's global report of subjective loneliness correlated .79 with the Loneliness Scale total score. Student responses were correlated in the predicted direction with related constructs such as happiness (-.40) and depression (.38).

Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA loneliness scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, 39(3), 472–480. <https://doi.org/10.1037/0022-3514.39.3.472>

This article reports on two studies that revised the UCLA Loneliness Scale. In the first study, 162 UCLA students completed original scale and 19 new items to measure social relationship satisfaction. This was undertaken because the original 20 items all had a negative focus, which was thought to bias responses. Other validity measures assessed depression, anxiety, and positive and negative emotions. The revised UCLA Loneliness scale included 10 original negatively worded items and 10 new positively worded items that correlated .40 or higher with a self-labeled loneliness composite score. The revised scale had an alpha of .94. A four-item form was also suggested (items 1, 13, 15, and 1; alpha = .75) with two negatively worded items and two positively worded items. Study 2 involved 237 undergraduates and presented concurrent validity information. For example, higher UCLA-LS correlated with time spent studying alone ($r = .41$), number of times eating dinner alone ($r = .34$), having fewer closer relationships ($r = -.44$), a self-labeled loneliness index ($r = .71$), and depression (.51).

Russell, D. W. (1996). UCLA loneliness scale (version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment*, 66(1), 20–40. https://doi.org/10.1207/s15327752jpa6601_2

This study evaluated revisions to the UCLA Loneliness Scale that simplified wording, revised and double negative items. Sample of undergraduates, nurses, teachers, and elderly individuals completed the revised measure and several validity scales. Reliability was .89 to .94 across the subsamples with a one-year stability coefficient of .73. A confirmatory factor analysis was provided acceptable fit with a bipolar (positive-negative) loneliness factor. This is the 20-item UCLA-LS version that is used now.

UCLA-LS Studies Relevant to College Students

Elphinstone, B. (2018). Identification of a suitable short-form of the UCLA-Loneliness Scale. *Australian Psychologist*, 53(2), 107–115. <https://doi.org/10.1111/ap.12285>

This article examined the internal structure and construct validity of UCLA-LS forms with a sample of Australian undergraduate students. It is reported that the 10-item version, compared to the 20-item version, was as reliable and valid. The internal structure of various short forms was evaluated. A 10-item short form proposed by Russell (1996) had the best fit when evaluated with three-factors. Construct validity coefficients were favorable for life satisfaction (e.g., $r = -.58$ with the Diener's Flourishing Scale and $r = -.74$ with Ryff's psychological Well-Being measure).

Bruce, L. D., Wu, J. S., Lustig, S. L., Russell, D. W., & Nemecek, D. A. (2019). Loneliness in the United States: A 2018 national panel survey of demographic, structural, cognitive, and behavioral characteristics. *American Journal of Health Promotion*, 33(8), 1123–1133. <https://doi.org/10.1177/0890117119856551>

This article examined the UCLA-LS (20-item form) responses of more than 20,000 U.S. adults ages 18–65+. The 18–25 college age subsample ($n = 1989$) reported the highest loneliness levels. Lower loneliness levels were associated with positive well-being indicators. Associations between loneliness and

demographics (e.g., family size and income) and behaviors (e.g., daily user of Facebook and social anxiety) were presented.

Hickin, N., Käll, A., Shafran, R., Sutcliffe, S., Manzotti, G., & Langan, D. (2021). The effectiveness of psychological interventions for loneliness: A systematic review and meta-analysis. *Clinical Psychology Review, 88*, 102066. <https://doi.org/10.1016/j.cpr.2021.102066>

This meta-analysis reported the effectiveness of 28 randomized control clinical studies of loneliness interventions. College students were included in the 25–64-year age group for review purposes. These studies employed various intervention strategies: cognitive-behavioral, integrative, mindfulness-based, social skills programs, interpersonal theory, gratitude-based, social identity, and reminiscence therapy. Nineteen studies used the UCLA-LS as an outcome measure (20-, 10-, or 8- item version). The overall moderate intervention effect size was .43 (95% CI = 0.18, 0.68).

Alsubheen, S. A., Oliveira, A., Habash, R., Goldstein, R., & Brooks, D. (2021). Systematic review of psychometric properties and cross-cultural adaptation of the University of California and Los Angeles Loneliness scale in adults. *Current Psychology, 1–15*. <https://doi.org/10.1007/s12144-021-02494-w>

This article identified 81 studies that examined the psychometrics of various UCLA-LS versions (e.g., full 20-item form and nine short forms, including the 3-item form used in NCHS and the HMS). High-quality evidence supported the internal structure of the 4, 6, 7 and, 10-item versions. Low to moderate-quality evidence supported the construct validity of the 3, 4, 6, 8, and 20-item forms. Generally, good test-retest reliability was reported. Cross-cultural adaptations were reviewed. The article concludes that the 10, 7, 6, and 4 item short forms are preferred.

Matthews-Ewald, M. R., & Zullig, K. J. (2013). Evaluating the performance of a short loneliness scale among college students. *Journal of College Student Development, 54*(1), 105–109. <https://doi.org/10.1353/csd.2013.0003>

This study reported on the psychometric characteristics of the three item UCLA loneliness scale that is included in the National College health survey and the healthy mind survey: relational connectedness item, collective connectedness item, and general isolation item). The sample was comprised of 1300 undergraduate students ages 18 and older Enrolled in a Midwestern State University. The findings indicated that the three UCLA items were all highly correlated ranging from point 512.70, Which a factor analysis indicated assess one factor with loadings between .63 and 80. The total score on the three item UCLA-LS total score were correlated in the expected direction with other indicators of emotional well-being, such as overall global life satisfaction $r = -.51$.

Clark, D. M. T., Loxton, N. J., & Tobin, S. J. (2015). Declining loneliness over time: Evidence from American colleges and high schools. *Personality and Social Psychology Bulletin, 41*(1), 78–89. <https://doi.org/10.1177/0146167214557007>

This article reports on the results of two studies and two analyses that examined students' self-reported loneliness across the years. The literature search identified 48 studies of American College students who responded to the UCLA 20-item rating scale. These studies included a total sample of 13,041 students who completed the loneliness scale between 1978 and 2010. the results of this first analysis indicated

that college students' average level of loneliness over this period had a modest decrease and effect size of $-.26$ when comparing 1978 to 2009 respondents. During this time, females showed more of a decline than males. A second analysis examined the responses of 326,432 students from the Monitoring the Future study. The results also indicated that between 1991 and 2012, high school students (Grades 8, 10, 12) loneliness scores declined.

Yung, S. T., Chen, Y., & Zawadzki, M. J. (2021). Loneliness and psychological distress in everyday life among Latinx college students. *Journal of American College Health*, 1–10. <https://doi.org/10.1080/07448481.2021.1927051>

This study made a unique contribution in two ways. Most previous research evaluated loneliness as a trait, a more stable condition. This paper provides a complementary way to think about the UCLA-LS scale because it evaluated whether students' moment-to-moment loneliness experiences were related to their mental well-being. A second contribution was to examine the loneliness experiences of Latinx college students. The interest was to learn more about how Latinx students, who may identify more closely with a collectivist culture, are affected by loneliness when they leave homes and attend college. A particular interest was to evaluate the moderating effects of familism on the students' loneliness experience as it relates to their mental well-being indicators. This study used an experience sampling monitoring approach, asking students at randomly selected times during the day to report on their levels of loneliness and mental well-being. The study sample included 220 Latinx undergraduate students from a central valley California university (175 females and 45 males, mean age of 19.8 years). Prompts sent to the students' smartphones asked them to periodically assess their level of loneliness, depression, stress, and anxiety. The students completed two experience sampling monitoring surveys each day for two weeks. The first push notification was sent randomly between 12:00 and 4:00 PM, and the second was sent randomly between 6:00 and 10:00 PM. The results showed that students who reported higher than usual levels of loneliness on a given day also reported higher sadness, stress, and anxiety. The study did not find a moderating effect for familism. This study provided an example of extending the assessment of students' loneliness to include moment-to-moment or state experience as a complement to trait-level loneliness assessments such as the UCLA-LS.

Schmidt, R. D., Feaster, D. J., Horigian, V. E., & Lee, R. M. (2022). Latent class analysis of loneliness and connectedness in US young adults during COVID-19. *Journal of Clinical Psychology*, 1–15. First published: 07 February 2022. <https://doi.org/10.1002/jclp.23326>

One of the effects of the COVID-19 pandemic was to limit the amount of social interaction among college students, which may have impacted their sense of loneliness and social connections. To better understand the effects of this experience on college students, this study examined the association between students' responses to the UCLA loneliness scale and a social connectedness scale to evaluate loneliness and connectedness profiles or subtypes. The latent class analysis examined the responses of 1008 young adults, ages 18 to 35 years old, whom we recruited through various social media sources. The study also included the GAD-7, a drug abuse screening test, and the Center for Epidemiologic Studies Depression Scale (CESDS). The latent class analysis conducted using the 35 UCLA loneliness scale and school connectedness items identified four latent class profiles: connected and not lonely (17.1%), Ambivalent (19.6%), moderate lonely and disconnected (57.0%), and lonely and disconnected (6.3%).

When comparing the students in each of the latent class profiles on their responses to the GAD-7 and CESDS, only the students in the connected-and-not-lonely class were more likely than not to report low depression and anxiety levels. The overall implication of this study is that students reporting moderate levels of loneliness and social disconnection have some risk for related social and emotional challenges.

UCLA-LS Scoring

Items 1, 5, 6, 9, 10, 15, 16, 19, 20 are all reverse scored.

UCLA-LS Resources

- Anne Peplau, PhD (Distinguished Professor of Psychology Emerita, UCLA)
- UCLA Loneliness Information and Resources
- Daily Bruin (02-09-11). UCLA Loneliness Scale Measures How Lonely People Are
- Fetzer Institute
- Stanford SPARQ, Department of Psychology

Flourishing Scale

Flourishing Scale Key Studies

[Diener, E., Wirtz, D., Biswas-Diener, R., Tov, W., Kim-Prieto, C., Choi, D., & Oishi, S. \(2009\). New measures of well-being. *Social Indicators Research*, 39, 247–266.](#)

Diener et al. (2009) investigated the psychometric properties of a brief measure of psychological well-being (PWB) to supplement longer well-being scales. The sample included undergraduates from the U.S. and Singapore. This new scale's advantages were its brevity compared to other measures and several well-being facets not included in existing measures. The PWB exhibited high internal and temporal reliabilities and high convergence with similar scales. Additionally, it correlated strongly with other psychological well-being scales (.80 and .69). The 8-item Psychological Well-Being scale was later branded as the Flourishing Scale.

[Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. \(2010\). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, 97, 143–156. <https://doi.org/10.1007/s11205-009-9493-y>](#)

This article assessed 689 English-speaking North American undergraduate students' psychological flourishing and feelings using the 8-item Flourishing Scale (DFS). The DFS items assess social relationships, life purposeful and meaningful, and feelings of competency and capacity to execute activities of personal importance. Psychometrically, the DFS exhibits high reliability and high convergence validity with similar scales. Additionally, it correlates strongly with the summed scores of other psychological well-being measures (.78 and .73). The DFS validly assesses general psychological well-being but does not assess individual components of social-psychological well-being.

[Howell, A. J., & Buro, K. \(2015\). Measuring and predicting student well-being: Further evidence in support of the Flourishing Scale and the Scale of Positive and Negative Experiences. *Social Indicators Research*, 121, 903–915. \[doi:10.1007/s11205-014-0663-1\]\(https://doi.org/10.1007/s11205-014-0663-1\)](#)

This study examined the Flourishing Scale (DFS) and the Scale of Positive and Negative Experiences (SPANE) within an English-speaking undergraduate student sample. It evaluated associations between these scales and potential predictors of eudemonic and hedonic aspects of well-being. Confirmatory factor analysis showed that three latent factors, flourishing, positive, and negative feelings, all had an acceptable fit in a three-factor model. Reliability coefficients were like those found in the Diener et al. (2010) paper. Women scored slightly higher on the DFS and SPANE than men.

Flourishing Scale Psychometric Studies

The Flourishing Scale's psychometric properties for U.S. undergraduate students are reported in Diener et al. (2009, 2010) and Howell and Buro (2014). However, various DFS studies report on its psychometric properties and cultural adaptability with non-U.S. samples: Chinese (Tang et al., 2016; Xiaoqing et al., 2016; Tong & Wang, 2017; Duan & Xie, 2019; Oingsong et al., 2021), Dutch (Schotanus-Dijkstra et al., 2016), Egyptian (Salama-Younes et al., 2017), French (Villieux et al., 2016), French-Canadians (Daigle et al., 2022), Indian (Singh et al., 2016; S. & Deb, 2019), Japanese (Sumi, 2014), New Zealand (Hone et al., 2013), Portuguese (Silva & Caetano, 2013), Spanish (Pozo-Munoz et al., 2016; Ramirez-Maestre et al., 2017; De la Fuente et al., 2017; Checa et al., 2018), South African (Eloff et al., 2020), Turkish (Senol-Durak & Durak, 2019), and Urdu (Choudhry et al., 2018) samples.

Flourishing Scale Studies Relevant to College Students

Checa, I., Perales, J., & Espejo, B. (2018). Spanish validation of the Flourishing Scale in the general population. *Current Psychology*, *37*, 949–956. <https://doi.org/10.1007/s12144-017-9581-0>

Choudhry, F. R., Al-Worafi, Y. M., Akram, B., Ahmed, M. A., Haw, M., Khan, T. M., Rehman, I. U., Barki, N., Munawarm K., Kamal, A., Kassab, Y., Bakrin, F. S., & Holden, K. J. (2018). Factor structure of the Urdu version of the Flourishing Scale. *Frontiers of Psychology*, *9*. <https://doi.org/10.3389/fpsyg.2018.01513>

Daigle, E., Guitard, J., & Roy-Charland, A. (2022). Exploration of the Flourishing Scale's psychometric properties for French-Canadians and its relationship with HEXACO personality traits. *Canadian Journal of Behavioural Science*, *54*(1), 79–84. <https://doi.org/10.1037/cbs0000288>

De La Fuente, R., Parra, A., & Sanchez-Queija, I. (2017). Psychometric properties of the Flourishing Scale and the measurement invariance between two samples of Spanish university students. *Evaluation & the Health Professions*, *40*(4), 409–424. <https://doi.org/10.1007/s12144-021-01754-z>

Duan, W., & Xie, S. (2019) Measuring adolescent flourishing: Psychometric properties of Flourishing Scale in a sample of Chinese adolescents. *Journal of Psychoeducational Assessment*, *37*(1), 131–135. <https://doi.org/10.1177/0734282916655504>

Eloff, I., & Graham, M. (2020). Measuring mental health and well-being of South African undergraduate students. *Global Mental Health*, *7*, E34. <https://pubmed.ncbi.nlm.nih.gov/33489249/>

Hone, L., Jarden, A., & Schofield, G. (2014). Psychometric properties of the Flourishing Scale in a New Zealand sample. *Social Indicators Research*, *119*, 1031–1045. <https://doi.org/10.1007/s11205-013-0501-x>

Munoz, C. P., Umerenkova, A. G., Nieto, B. B., & Charry, C. (2016). Psychometric properties and dimensionality of the “Flourishing Scale” in Spanish-speaking population. *Electronic Journal of Research in Educational Psychology*, *14*(1), 175–192. <https://doi.org/10.14204/ejrep.38.15044>

Qingsong, T., Zhang, L., Li, W., & Kong, F. (2021). Longitudinal measurement invariance of the Flourishing Scale in adolescents. *Current Psychology*, 40(6), 1–6. <https://doi.org/10.1007/s12144-021-01754-z>

Ramirez-Maestre, C., Correa, M., Rivas, T., Lopez-Martinez, A. E., Serrano-Ibanez, E. R., & Esteve, R. (2017). Psychometric characteristics of the Flourishing Scale-Spanish Version (FS-SV). The factorial structure in two samples: Students and patients with chronic pain. *Personality and Individual Differences*, 117, 30–36. <https://doi.org/10.1016/j.paid.2017.05.035>

Aswini, S. A., & Deb, A. (2019). Connor Davidson Resilience Scale and Flourishing Scale: Translation and cultural adaptation in Malayalam language. *Journal of Psychosocial Research*, 14(2), 275–283. <https://doi.org/10.32381/JPR.2019.14.02.4>

Salama-Younes, M. (2017). Psychometric properties of the Psychological Flourishing Scale in an Egyptian setting. *Journal of Psychology in Africa*, 27(4), 310–315. <https://doi.org/10.1080/14330237.2017.1347749>

Schotanus-Dijkstra, M., ten Klooster, P. M., Drossaert, C. H. C., Pieterse, M. E., Boiler, L., Walburg, J. A., & Bohlmeijer, E. T. (2016). Validation of the Flourishing Scale in a sample of people with suboptimal levels of mental well-being. *BioMed Central Psychology*, 4(12). <https://doi.org/10.1186/s40359-016-0116-5>

Senol-Durak, E., & Durak, M. (2019). Psychometric properties of the Turkish version of the Flourishing Scale and the Scale of Positive and Negative Experience. *Mental Health, Religion & Culture*, 22(10), 1021–1032. <https://doi.org/10.1080/13674676.2019.1689548>

Silva, A. J., & Caetano, A. (2013). Validation of the Flourishing Scale and Scale of Positive and Negative Experience in Portugal. *Social Indicators Research*, 110, 469–478. <https://doi.org/10.1007/s11205-011-9938-y>

Singh, K., Junnarkar, M., & Jaswal, S. (2016). Validating the Flourishing Scale and the Scale of Positive and Negative Experience in India. *Mental Health, Religion & Culture*, 19(8), 943–954. <https://doi.org/10.1080/13674676.2016.1229289>

Sumi, K. (2014). Reliability and validity of Japanese versions of the Flourishing Scale and the Scale of Positive and Negative Experience. *Social Indicators Research*, 118(2), 601–615. <https://doi.org/10.1007/s11205-013-0432-6>

Tang, X., Duan, W., Wang, Z., & Liu, T. (2016). Psychometric evaluation of the simplified Chinese version of Flourishing Scale. *Research on Social Work Practice*, 26(5), 591–599. <https://doi.org/10.1177/1049731514557832>

Tong, K. K., & Wang, Y. Y. (2017). Validation of the Flourishing Scale and Scale of Positive and Negative Experience in a Chinese community sample. *PLoS ONE*, 12(8). doi:10.1371/journal.pone.0181616

Villieux, A., Sovet, L., Jung, S., & Guilbert, L. (2016). Psychological flourishing: Validation of the French version of the Flourishing Scale and exploration of its relationships with personality traits. *Personality and Individual Differences*, 88, 1–5. doi:10.1016/j.paid.2015.08.027

Flourishing Scale Resources

- *Ed Diener* <https://eddiener.com/scales/9>
- *Flourishing Scale* https://ggsc.berkeley.edu/images/uploads/The_Flourishing_Scale.pdf

Flourishing Scale Scoring

Add the responses, varying from 1 to 7, for all eight items. The possible range of scores is from 8 (lowest possible) to 56 (highest PWB possible). A high score represents a person with many psychological resources and strengths.

Connor-Davidson Resilience Scale (CD-RISC)

Connor-Davidson Resilience Scale Key Studies

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety, 18*, 76–82. doi:10.1002/da.10113

When faced with adversity, resilience is the personal quality that helps an individual thrive. The 25-item Connor-Davidson Resilience Scale (CD-RISC) was created as a brief self-rated measurement to quantify resilience. To assess the psychometric properties of the CD-RISC, Connor and Davidson (2003) utilized subjects from the general population and clinical samples. The CD-RISC exhibited sound psychometric properties and good internal consistency ($\alpha = .89$) and test-retest reliability ($\alpha = .87$).

An exploratory factor analysis was conducted which generated a five-factor solution with the following factors: “personal competence, high standards, and tenacity,” “trust in one’s instincts, tolerance of negative affect, and strengthening effects of stress,” “positive acceptance of change and secure relationships,” “control,” and “spiritual influences.”

Campbell-Sills, L., & Stein, M. B. (2007). Psychometric analysis and refinement of the Connor-Davidson Resilience Scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress, 20*(6), 1019–1028. doi:10.1002/jts.20271

This study examined the CD-RISC internal structure and further validated its construct validity. Three undergraduate samples provided data for two exploratory factor analyses (EFA) and one confirmatory factor analysis (CFA). The two EFA analyses produced unstable factor structures, causing the authors to reconstruct the original scale into a 10-item unidimensional scale. The 10-item CD-RISC indicated good reliability ($\alpha = .85$) and internal validity, with scores highly correlated ($r = .92$) with the original 25-item scale.

Vaishnavi, S., Connor, K., & Davidson, J. R. T. (2007). An abbreviated version of the Connor-Davidson Resilience Scale (CD-RISC), the CD-RISC2: Psychometric properties and applications in psychopharmacological trials. *Psychiatry Research, 152*, 293–297. doi:10.1016/j.psychres.2007.01.006

This study evaluated a shortened version of the original CD-RISC consisting of only two items (CD-RISC2). A two-item scale would decrease the time needed to administer the scale and can increase usage of the scale. The two items taken from the CD-RISC were “Able to adapt to change” and “Tend to bounce back after illness or hardship.” The authors were interested in the reliability, validity, and the extent to which the CD-RISC2 scores change over time. Results showed good test-retest stability, convergent validity, and divergent validity. The CD-RISC2 significantly correlated with the CD-RISC as well as with each item.

Kuiper, H., van Leeuwen, C. C. M., Stolwijk-Swuste, J. M., & Post, M. W. M. (2019). Measuring resilience with the Connor-Davidson Resilience Scale (CD-RISC): Which version to choose? *The International Spinal Cord Society, 57*, 360–366. <https://doi.org/10.1038/s41393-019-0240-1>

This study compared the psychometric properties of the CD-RISC 25, CD-RISC 10, and CD-RISC 2 within a sample of spinal cord injury (SCI) patients. Results showed no floor or ceiling effects, and all versions of

the CD-RISC contained good to moderate internal consistency. The CD-RISC 10 only showed good convergent validity. The agreement was highest between CD-RISC 25 and CD-RISC 10. Internal consistency was best for the CD-RISC 10. Based on these results, the authors concluded that the CD-RISC 10 showed the best combination of reliability, validity, and practicality for patients with SCI.

Coates, E. E., Phares, V., & Dedrick, R. F. (2013). Psychometric properties of the Connor-Davidson Resilience Scale 10 among low-income, African American men. *Psychological Assessment, 23*(4), 1349–1354. <https://doi.org/10.1037/a0033434>

This study's contribution was to increase resilience research amongst low-income African American men and add to existing research regarding the validity of the CD-RISC 10. The authors also examined the resilience-spirituality relationship and how these constructs are related to African American men's psychological distress. Results showed a unidimensional factor structure underlying the CD-RISC 10 items. Resilience was positively related to spirituality and negatively related to psychological distress. Additionally, the CD-RISC 10 exhibited good construct validity amongst this population.

Madewell, A. N., & Ponce-Garcia, E. (2016). Assessing resilience in emerging adulthood: The Resilience Scale (RS), Connor-Davidson Resilience Scale (CD-RISC), and Scale of Protective Factors (SPF). *Personality and Individual Differences, 97*, 249–255. <http://dx.doi.org/10.1016/j.paid.2016.03.036>

Madewell and Ponce-Garcia (2016) were interested in the measurement models and reliability of commonly used resilience scales in assessing resilience in emerging adulthood (EA). The three scales examined in this study were the Connor-Davidson Resilience Scale (CD-RISC-25; CD-RISC-10), the Resilience Scale (RS-25; RS-10), and the Scale of Protective Factors (SPF-24). Four hundred twenty-one college students reporting significant stress or trauma participated in the study. Results showed that the CD-RISC-10 and the SPF-24 were psychometrically sound measures when examining overall resilience in EA. The CD-RISC-25 did not achieve a good model fit, but the CD-RISC-10 did.

Debb, S. M., Colson, D., Hacker, D., & Park, K. (2018). Applying the Connor-Davidson Resilience Scale for use with third-year African American college students. *The Journal of Negro Education, 87*(1), 73–89. <https://doi.org/10.7709/jnegroeducation.87.1.0073>

By analyzing the CD-RISC internal consistency and underlying internal structure, the authors wanted examined resilience in a sample of 218 third-year African American students attending an HBCU. Results showed good CD-RISC internal consistency within the CD-RISC, assessing resilience consonant with the measure's development.

Connor-Davidson Resilience Scale Resources

User Guide: <http://www.connordavidson-resiliencescale.com/#>

TIER 3: Additional Information on Tier 3 UC-Campus Specific Measures

Healthy Minds Survey

Healthy minds website: <https://healthymindsnetwork.org/hms/>

Healthy minds interest form: https://umich.qualtrics.com/jfe/form/SV_6XtScJwGiAPgjRQ

U of Michigan: <https://caps.umich.edu/article/healthy-minds-studies/>

Healthy Minds Survey Example Studies

Horigian, V. E., Schmidt, R. D., & Feaster, D. J. (2021). Loneliness, mental health, and substance use among US young adults during COVID-19. *Journal of Psychoactive Drugs*, 53(1), 1–9. <https://doi.org/10.1016/j.psychres.2021.114362>

Loneliness and psychotic experiences (PEs) are common in university students. Despite this, little information is available on the association between loneliness and PEs in this population. The purpose of this study was to examine the relationship between loneliness and psychotic experiences (PEs) in college students. Data were collected from the 2020 cohort of the Healthy Minds survey. Multivariable logistic regression analyses were used to evaluate associations between loneliness (exposure) and PEs (outcome). Loneliness was significantly associated with increased odds of any PEs (odds ratio, 1.32; 95% CI, 1.29–1.36), adjusting for age, gender identity, race/ethnicity, sexual orientation, and international student status. This relationship was consistent across the subtypes of PEs, i.e., delusions (odds ratio, 1.32; 95% CI, 1.29–1.36) and hallucinations (odds ratio, 1.27; 95% CI, 1.21–1.34), adjusting for the same covariates. We found that loneliness is consistently associated with PEs across different subtypes in a university population sample.

Oh, H., Banawa, R., Lee, J. O., Zhou, S., & Huh, J. (2021). Vaping and psychotic experiences among college students in the United States. *Drug and Alcohol Dependence*, 227, 5. <https://doi.org/10.1016/j.drugalcdep.2021.108987>

Using data from the 2020 Healthy Minds Survey, this study examined the relationship between vaping and psychotic experiences. Multiple logistic regression models were used to examine the associations between vaping over the past 30 days and psychotic experiences over the past 12 months, controlling for age, gender, race/ethnicity, cigarette, and marijuana use, depression, and anxiety. Results showed that roughly 14 % of students in the sample reported psychotic experiences over the past year, and around 14–15 % reported vaping over the past month. Vaping was significantly associated with psychotic experiences (OR 1.88). The association remained significant after adjusting for cigarette and marijuana use and depression and anxiety.

Oh, H., Banawa, R., Zhou, S., DeVlyder, J., & Koyanagi, A. (2022). The mental and physical health correlates of psychotic experiences among us college students: Findings from the healthy mind study 2020. *Journal of American College Health*, <https://doi.org/10.1080/07448481.2022.2058879>

This study examined the relationship between psychotic experiences and mental and physical health status in university populations using the 2020 cohort of the Healthy Minds Survey. Multivariable logistic regression examined the associations between several mental and physical health conditions and psychotic experiences, adjusting for age, gender, sexual orientation, race/ethnicity, and international student status. The counts of mental and physical health conditions were associated with greater odds of lifetime psychotic experiences in a dose-dependent fashion. Regarding mental health status, all conditions were associated with greater odds of having lifetime psychotic experiences. Having at least

one mental health condition was associated with 2.18 times greater odds of having lifetime psychotic experiences. Regarding physical health status, having at least one physical health condition was associated with 1.37 times greater odds of having lifetime psychotic experiences. However, only four conditions were associated with greater odds of lifetime psychotic experiences: asthma, gastrointestinal disease, HIV/AIDS, and other chronic diseases.

Oh, H., Marinovich, C., Jay, S., Marsh, J., Zhou, S., & DeVlyder, J. E. (2022). Covid-19 factors and self-injurious behaviors among us college students: Findings from the healthy minds study 2020. *Journal of American College Health*, <https://doi.org/10.1080/07448481.2022.2081059>

Using data from the Fall 2020 Cohort of the Healthy Minds Survey, this study examined self-injurious behavior amongst college students during the COVID-19 pandemic. A quarter of the sample (n = 6999) reported engaging in non-suicidal self-injury (NSSI), 12.4% reported suicidal ideation, 5.0% reported making a suicide plan, and 1.1% reported a suicide attempt over the past 12 months. COVID-19-related concerns, COVID-19-related discrimination, financial distress, and infection were significantly associated with NSSI, suicidal ideation, and suicide plan; caregiving was significantly associated with lower odds of engaging in non-suicidal self-injury. None of the factors were associated with a suicide attempt.

Oh, H., Marinovich, C., Rajkumar, R., Besecker, M., Zhou, S., Jacob, L., Koyanagi, A., & Smith, L. (2021). COVID-19 dimensions are related to depression and anxiety among US college students: Findings from the Healthy Minds Survey 2020. *Journal of Affective Disorders*, 292, 270-275. <https://doi.org/10.1016/j.jad.2021.05.121>

Using multivariable logistic regression, this study examined the associations between COVID-19 dimensions (concern, racial/ethnic discrimination, financial distress, infection, illness of loved one, death of loved one, caregiving) and mental health outcomes (depression, anxiety), adjusting for age, gender, race/ethnicity, and international student status. Data were collected from the 2020 cohort of the Healthy Minds Survey. Nearly a fifth of the sample reported moderately severe or severe depression, and nearly a third reported moderately severe or severe anxiety over the past two weeks. When accounting for all COVID-19 dimensions in the same model, COVID-19 concern, racial/ethnic discrimination, financial distress, and infection were significantly associated with moderately severe or severe depression; COVID-19 concern, financial distress, and infection were significantly associated with moderately severe or severe anxiety.

Oh, H., Nagendra, A., Besecker, M., Smith, L., Koyanagi, A., & Wang, J. S. (2021). Economic strain, parental education, and psychotic experiences among college students in the United States: Findings from the healthy minds study 2020. *Early Intervention in Psychiatry*, <https://doi.org/10.1111/eip.13221>

This study examined how various socioeconomic-related circumstances (e.g., economic strain and intergenerational transfer of resources) were associated with psychosis among college students. Using data from the Healthy Minds Survey (September 2020–December 2020), multivariable logistic regression models examined the associations between five SES indicators and 12-month psychotic experiences, adjusting for age, gender, and race/ethnicity. The count of predictors and psychotic experiences were also examined. Each indicator of economic strain was associated with greater odds of psychotic experiences. Increasing levels of financial stress (current, childhood, and pandemic-related)

were associated with greater odds of psychotic experiences in a dose-response fashion. Food insecurity was associated with double the odds of psychotic experiences. In terms of intergenerational transfer of resources, having either one or no parents who attended college was associated with significantly greater odds of having psychotic experiences when compared with having both parents who attended college. Examining all predictors in the same model, only childhood and current financial stress and food insecurity were significantly associated with psychotic experiences. The count of predictors was significantly associated with greater odds of having psychotic experiences in a dose-dependent fashion.

Duffy, M. E., Twenge, J. M., & Joiner, T. E. (2019). Trends in mood and anxiety symptoms and suicide-related outcomes among US undergraduates, 2007–2018: Evidence from two national surveys. *Journal of Adolescent Health, 65*(5), 590–598.

Mood, anxiety, and suicide-related outcomes among U.S. college students from 2007 to 2018 were examined across two large national datasets: (1) the National College Health Assessment (n = 610,543; mean age = 21.25 years; 67.7% female; and 72.0% white) and (2) the Healthy Minds Study (n = 177,692; 86% students aged 18-22 years; 57% female; and 74% white). In both samples, rates of depression, anxiety, nonsuicidal self-injury, suicidal ideation, and suicide attempts increased over the years, doubling in many cases. Anger, low flourishing, and suicide plans also exhibited upward trends. Findings depict worsening mental health among U.S. college students over the past decade.

Lipson, S. K., Lattie, E. G., & Eisenberg, D. (2019). Increased rates of mental health service utilization by US college students: 10-year population-level trends (2007–2017). *Psychiatric services, 70*(1), 60–63.

This study documented population-level trends in mental health service utilization by college students using Healthy Minds Study data over 10 years. Analyses focused on past-year mental health treatment and lifetime diagnoses of a mental health condition. Changes in symptoms of depression and suicidal ideation and levels of stigma were hypothesized as potential explanatory factors. Rates of treatment and diagnosis increased significantly. The treatment rate increased from 19% in 2007 to 34% by 2017, while the percentage of students with lifetime diagnoses increased from 22% to 36%. The prevalence of depression and suicidality also increased, while stigma decreased.

Examples of Universities Informing Campus Communities about the HMS

University of Nevada

<https://www.unr.edu/nevada-today/news/2022/healthy-minds-study-survey>

Stanford University

<https://news.stanford.edu/report/2022/04/04/healthy-minds-study-first-step-boosting-campus-mental-health-services/>

University of Wisconsin Madison

<https://www.uhs.wisc.edu/healthy-minds/>

Vanderbilt University

<https://news.vanderbilt.edu/2021/04/05/students-invited-to-participate-in-healthy-minds-study-2/>

TIER 3: Additional Information on Tier 3 Measures

Embedded in UC-Specific Healthy Minds Survey

The Healthy Minds survey has some overlapping content with the NCHA. Specifically, it includes the Flourishing Scale and the Loneliness Scale (reviewed above). The following section includes additional information on measures that are specific to the Healthy Minds Survey.

Patient Health Questionnaire – 9 (PHQ-9)

PHQ-9 Overview

The Patient Health Questionnaire (PHQ), a shorter alternative to the Primary Care Evaluation of Mental Disorders (PRIME-MD), is an instrument for making criteria-based diagnoses of depression and other mental disorders found in primary care. The PHQ-9 is the 9-item depression module from the full PHQ. The PHQ-9 has shown good psychometric properties in several settings, age samples, and regions. However, there are limited studies involving college student samples..

PHQ-9 Key Studies

Spitzer, R. L., Kroenke, K., & Williams, J. B. (1999). Validation and utility of a self-report version of PRIME-MD: The PHQ primary care study. *Journal of the American Medical Association, 282*(18), 1737–1744. doi:10.1001/jama.282.18.1737

The Primary Care Evaluation of Mental Disorders (PRIME-MD) was the first screening instrument to diagnose specific disorders using criteria designated by the Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition (DSM-III-R). The self-administered PRIME-MD Patient Health Questionnaire (PHQ) was created in response to the administration time and limited clinical usefulness of the original PRIME-MD. The study aimed to determine the validity and utility of the PHQ for diagnosing mental disorders in primary care compared to the PRIME-MD. Results indicated that the PHQ exhibited good criterion and construct validity compared to the PRIME-MD, demonstrated by agreement with independent mental health professionals and strong association of PHQ diagnoses with indices of functional impairment and health care use ($k = 0.65$; overall accuracy, 85%; sensitivity, 75%; specificity, 90%). Lastly, physicians reported far less time to administer the PHQ than the PRIME-MD (<3 minutes for 85% compared to 16% of cases).

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*, 606–613. doi:10.1046/j.1525-1497.2001.016009606.x

The PHQ-9 is a nine-item depression module from the full PHQ. This study examined the psychometric properties of the PHQ-9 in 6,000 patients in eight primary and seven obstetrics-gynecology clinics. Results indicated that as PHQ-9 depression severity, sick days, symptom-related difficulty, and health care utilization increased, a substantial decrease in functional status was assessed by the 20-item Short-Form General Health Survey, indicating good construct validity. Criterion validity was established by independent reinterviews by mental health professionals. Internal reliability of the PHQ-9 was excellent

($\alpha = .89$, PHQ Primary Care study; $\alpha = .86$, PHQ Ob-Gyn study). Correlations between PHQ-9 completion at the clinic exhibited excellent test-retest reliability compared to telephonically ($r = .84$).

PHQ-9 Psychometric Studies

Manea, L., Gilbody, S., & McMillan, D. (2012). Optimal cut-off score for diagnosing depression with the Patient Health Questionnaire (PHQ-9): A meta-analysis. *Canadian Medical Association Journal*, *184*(3), E191-E196. doi:10.1503 /cmaj.110829

This article summarizes 18 PHQ-9 validation studies ($n = 7,180$) diagnostic properties for optimal cut-scores to detect depression. Results showed high levels of between-study heterogeneity for psychometric attributes ($I^2 = 82.4\%$), pooled sensitivity for a cut-score of 10 was .85%, and pooled specificity was .89. There were no significant differences in the diagnostic properties of the PHQ-9 for cut-scores between 8 and 11.

Patel, J. S., Oh, Y., Rand, K. L., Wu, W., Cyders, M. A., Kroenke, K., & Stewart, J. C. (2018). Measurement invariance of the Patient Health Questionnaire-9 (PHQ-9) depression screener in U.S. adults across sex, race/ethnicity, and education level: NHANES 2005-2016. *Anxiety and Depression Association of America*, *36*, 813–823. doi:10.1002/da.22940

This study examined the measurement invariance of the PHQ-9 with 31,366 respondents across several sociodemographic factors. A two-factor model was proposed because of the multifaceted nature of depression and research utility. Single-group CFAs indicated close model-data fit for all five models, with RMSEAs falling within the .01-.05 range and the TLIs and CFIs falling within the .95-.99 range. As for measurement invariance, the PHQ-9 cognitive/affective and somatic factors carried the same meaning across sex, race/ethnicity, and education level groups in U.S. adults. Additionally, PHQ-9 observed means and variance/covariances could be compared across sociodemographic groups. Lastly, using a two-factor solution can compare PHQ-9 cognitive/affective and somatic subscale scores across groups.

Keum, B. T. H., Miller, M. J., & Inkelas, K. K. (2018). Testing the factor structure and measurement invariance of the PHQ-9 across racially diverse U.S. college students. *Psychological Assessment*, *30*(8), 1096–1106. doi:10.1037/pas0000550

This study conducted a confirmatory factor analysis to assess the measurement invariance of the PHQ-9 across racially and ethnically diverse U.S. college students. Analyses supported a one-factor model for U.S. college students across racial and gender groups. The one-factor model accounted for 70% ($R^2 = .58$ to .82, Asian American), 64% ($R^2 = .49$ to .73, African American), 59% ($R^2 = .44$ to .81, White American), and 56% ($R^2 = .46$ to .64, Latino/a American) of the variance. Additionally, the model accounted for 73% ($R^2 = .62$ to .81, Female) and 62% ($R^2 = .52$ to .76, Male). Its scores were compared to mental health indicators to assess the PHQ-9's construct validity. PHQ-9 scores were negatively associated with mental well-being and positively related to greater alcohol use.

PHQ-9 Items

Over the last two weeks, how often have you been bothered by the following problems?

0 = Not at all, 1 = Several days, 2 = More than half the days, 3 = Nearly every day

1. Little interest or pleasure in doing things.
2. Feeling down, depressed or hopeless.
3. Trouble falling asleep, staying asleep, or sleeping too much.
4. Feeling tired or having little energy.
5. Poor appetite or overeating.
6. Feeling bad about yourself – or that you're a failure or have let yourself or your family down.
7. Trouble concentrating on things, such as reading the newspaper or watching television.
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.
9. Thoughts that you would be better off dead or hurting yourself in some way.

PHQ-9 Score Interpretation

Score range: 0–27

0-4 None, 5-9 = Mild, 10-14 = Moderate, 15-19 = Moderately Severe, 20-27 = Severe

From Kroenke K., & Spitzer, R. L. (2002). The PHQ-9: A new depression diagnostic and severity measure. *Psychiatric Annals*, 32, 509–521.

PHQ-9 Resources

Patient Health Questionnaire-9 (PHQ-9) [online administration and scoring](#)

All About the PHQ-9: Components, Scoring, and Accuracy

Generalized Anxiety-7 (GAD-7)

GAD-7 Overview

The GAD-7 was created as a brief measure of generalized anxiety disorder symptoms in an adult patient sample within a primary care setting. Since it was created, the measure has been studied across various clinical settings, age samples, and countries. When conducting a search on the GAD-7, over 50 studies populate on PsycINFO. However, the information provided here describes the few studies regarding the psychometric properties of the GAD-7 amongst U.S. college student samples.

GAD-7 Key Study

Spitzer R. L., Kroenke, K., Williams, J. B. W., & Lowe, B. (2006). A brief measure for assessing Generalized Anxiety Disorder: The GAD-7. *Archives of Internal Medicine*, 166, 1092–1097.
[doi:10.1001/archinte.166.10.1092](https://doi.org/10.1001/archinte.166.10.1092)

This study developed a seven-item measure to identify generalized anxiety symptoms (GAD-7). The sample included adult patients ($N = 2,740$) from 15 primary care clinics. The GAD-7 showed strong construct validity in which GAD-7 scores were strongly associated with multiple aspects of functional impairment and disability days (i.e., number of days that the patients' symptoms interfered with their usual activity). Strong criterion validity was exemplified through sensitivity, specificity, predictive values,

and likelihood ratios between cut scores and mental health professional (MHP) diagnoses. Factor analysis found that some patients reported both anxiety and depressive symptoms but these symptoms still represented two distinct dimensions.

GAD-7 Studies Relevant to College Students

Byrd-Bredbenner, C., Eck, K., & Quick, V. (2020). Psychometric properties of the Generalized Anxiety Disorder-7 and Generalized Anxiety Disorder-Mini in United States university students. *Frontiers in Psychology, 11*. doi:10.3389/fpsyg.2020.550533

This study examined the psychometric properties of the GAD-7 and the GAD-mini version (2 items). Data from three unrelated cross-sectional studies of college students ($N = 4,128$; 18-26 years) were utilized in secondary analyses. Exploratory and confirmatory principal components analysis supported a single factor structure with strong loadings across data sets (range = .73 to .90), reliability (α range = .85 to .93) and stability. The GAD-7 and GAD-mini also had good construct validity exemplified through comparison by sex. Good convergent validity was represented by comparing an anxiety measure to the GAD-7 and GAD-Mini. Validity coefficients between the GAD-7 and PHQ-2 ranged from .45 to .65 across three samples. These results supported the GAD-mini's psychometric properties and its use as a universal screening for clinical practice in higher education.

Byrd-Bredbenner, C., Eck, K., & Quick, V. (2021). GAD-7, GAD-2, and GAD-mini: Psychometric properties and norms of university students in the United States. *General Hospital Psychiatry, 69*, 61–66. <https://doi.org/10.1016/j.genhosppsych.2021.01.002>

Using the same sample as the previous study, the purpose was to determine the factor structure for both males and females, assess construct and convergent validity, and establish U.S. college norms. Exploratory and confirmatory principal components analyses supported a unidimensional structure for males ($n = 1,601$) and females ($n = 2,527$) with strong loadings (range = .72 to .95) and high Cronbach alpha internal consistency coefficients (female range .85 to .91, male range .89 to .92). Good construct validity was represented by comparing total scores of the GAD-7, GAD-2, and GAD-Mini by gender. Good convergent validity was shown through Spearman rank-order correlations between GAD scale scores and depression, measured by the PHQ-2. Normative data indicated that three-quarters of men and two-thirds of women scored below the GAD-7 screening cut score.

Sriken J., Johnsen, S. T., Smith, H., Sherman, M. F., & Erford, B. T. (2022). Testing the factorial validity and measurement invariance of college student scores on the Generalized Anxiety Disorder (GAD-7) scale across gender and race. *Measurement and Evaluation in Counseling and Development, 55*(1), 1–16. doi:10.1080/07481756.2021.1902239

This study examined the internal structural validity, measurement invariance, and external validity of the GAD-7 with a sample of 414 university undergraduates. Confirmatory factor analyses showed that the unidimensional GAD-7 model fit the data well. Measurement invariance was established for men and women and White and nonwhite participants, indicating that the GAD-7 can be used for cross gender and White/nonwhite sample comparisons. Internal consistency was strong ($\alpha = .91$; comparable to other samples) with scores mostly demonstrating expected convergent and divergent validity with other measures (e.g., Center for Epidemiologic Studies Depression Scale – Revised, $r = .66$).

Stocker, R., Tran, T., Hammarberg, K., Nguyen, H., Rowe, H., & Fisher, J. (2021). Patient Health Questionnaire 9 (PHQ-9) and General Anxiety Disorder 7 (GAD-7) data contributed by 13,829 respondents to a national survey about COVID-19 restrictions in Australia. *Psychiatry Research, 298*, 1–8. <https://doi.org/10.1016/j.psychres.2021.113792>

The study describes gender- and age-specific PHQ-9 and GAD-7 item and summary data for a sample of Australian adults during the COVID-19 restrictions. Data were collected from 13,829 individuals over the age of 18. Results indicated that the sample had thoughts that they would be better off dead or of hurting themselves on several days (7.8%), more than half the days (2.6%) or nearly every day (1.9%). In each gender and age group, the sample experienced the full spectrum of severity of symptoms of depression and anxiety. This study provides perspective on the usage of the PHQ-9 and the GAD-7 as both are used in the Healthy Minds survey.

GAD-7 Items

During the last 2 weeks, how often have you been bothered by the following problems?

Not at all Several Days More than Half the Days Nearly Every Day

1. Feeling nervous, anxious, or on edge
2. Not being able to stop or control worrying
3. Worrying too much about different things
4. Trouble relaxing
5. Being so restless that it is hard to sit still
6. Becoming easily annoyed or irritable
7. Feeling afraid as if something awful might happen

GAD-7 Interpretation

Range = 0-21

5-9 = mild anxiety

10-14 = moderate anxiety

15-21 =severe anxiety

Item Coverage for NCHA, HMS, UCUES, and Grad Survey

UC Behavioral Health Information Sources: Item Content-3

National College Health Survey Survey Structure

Overall Health and Community
 Covid-19 Exposure
 Weight, Nutrition, Exercise
 USDA Food Security
 Sleep
 Safety
 ASSIST Substance Use
 Alcohol, Tobacco, and Other Drugs
 Sexual Health
 Mental Health
 Health Services Used (past year)
 Chronic Medical Conditions
 Impediments to Academic Performance
 Demographic Items
 Firearm Items

Here are some of the big changes:

- **Enhanced display logic and skip patterns** to bypass students through sections that are not applicable to them.
- Questions on mental health diagnoses with physical health diagnoses to **reduce stigma** surrounding mental health.
- New language and gender identity terms to **address inclusivity**.
- There are also a number of established scales, including:
 - Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)
 - The Connor-Davison Resilience Scale (CD-RISC2)
 - Diener Flourishing Scale – Psychological Well-Being
 - USDA ERS Food Security 6-Item Short Form
 - Kessler 6 (K6) – screening for serious mental illness
 - UCLA Three-Item Loneliness Scale
 - The Suicide Behaviors Questionnaire – Revised

New questions were added to measure a variety of other health and well-being topics including:

- Food insecurity and homelessness
- Hours of sleep
- Utilization of various on- and off-campus services, including mental health, physical health, and gynecologic services

UCUES Content

- ▶ Academic Engagement
- ▶ Time Allocation
- ▶ Educational Experiences
- ▶ Campus Climate for Diversity and Inclusiveness
- ▶ Evaluation of the Major
- ▶ Co-Curricular Experience
- ▶ Academic and Personal Development
- ▶ Satisfaction
- ▶ Plans and Aspirations
- ▶ Background and Personal Characteristics
- ▶ Academic Experience & Globalization
- ▶ Student Life and Development
- ▶ Community and Civic Engagement
- ▶ Basic Needs
- ▶ COVID-19 (for 2020 survey administration only)

Healthy Minds Survey Survey Structure

The Healthy Minds Study consists of three *core* modules, which are included in all survey administrations:

- Demographics
- Mental Health Status
- Mental Health Survey Utilization/Help-Seeking

HMS has a number of elective modules, noted below. The availability of these modules will depend on the size of your school and cohort participation.

The three standard modules have present 136 to 197 items. They include extensive demographic items and selected items from the 15 elective module content domains.

1. Substances
2. Sleep
3. Eating and Body Image
4. Sexual Assault
5. Overall Health
6. Knowledge and Attitudes about Mental Health and Mental Health Services
7. Upstander/Bystander Behaviors
8. Mental Health Climate
9. Climate for Diversity and Inclusion
10. Academic Competition, Persistence and Retention
11. Resilience and Coping
12. Financial Stress
13. Student Athletes
14. Peer Support
15. Public Safety and Policing

Campuses may add up to 10 custom questions to the survey.

Graduate Survey

- ▶ Academic Engagement
- ▶ Time Allocation
- ▶ Educational Experiences
- ▶ Campus Climate for Diversity and Inclusiveness
- ▶ Evaluation of the Major
- ▶ Co-Curricular Experience
- ▶ Academic and Personal Development
- ▶ Satisfaction
- ▶ Plans and Aspirations
- ▶ Background and Personal Characteristics
- ▶ Academic Experience & Globalization
- ▶ Student Life and Development
- ▶ Community and Civic Engagement
- ▶ Basic Needs
- ▶ COVID-19 (for 2020 survey administration only)