Shatterproof
Stronger than addiction

The Shatterproof Addiction Stigma Index (SASI) Data User Guide

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Introduction

In 2021, Shatterproof initiated the national Shatterproof Addiction Stigma Index (SASI) – a cross-sectional online panel survey comprised of non-institutionalized adults (18 and older) residing in the United States. The SASI is conducted by Ipsos Public Affairs on behalf of Shatterproof, utilizing KnowledgePanel® - the most established online panel in the United States that relies on probability-based sampling methods for recruitment to provide a representative sampling frame for adults in the U.S. The SASI is used to assess addiction stigma and attitudes about substance use and substance use disorder (SUD). In addition to public perceptions of substance use, the SASI also measures internalized prejudice and fear of discrimination among those with a self-reported history of SUD. Respondent data are forwarded to Shatterproof to be aggregated and analyzed overall, for each SUD type, and for over-sampled populations.

This document is intended to provide a brief overview of the SASI to data users.

The SASI Process

Shatterproof developed the SASI survey instrument, alongside Dr. Brea Perry and Dr. Anne Krendl from Indiana University, by incorporating validated and unique stigma questions into one comprehensive survey. Data derived from the questionnaire provide information on the landscape of addiction stigma within the U.S., which can be used to inform establishment of addiction-related policies and priorities, as well as assess strategies to reduce addiction stigma.

Questionnaire Construction

The SASI leverages a vignette strategy similar to the 2018 National Stigma Studies-Replication II (NSS-RII) module of the General Social Survey (GSS) to measure five core aspects of stigma – labeling, causal attributions, competence, prejudice, and desire for social distance (Finch, J., 1987). The SASI utilizes a 5x2 vignette design targeting four substances: prescription opioid, heroin, methamphetamine, and alcohol, and describes an individual as being an active user, or in active recovery. The prescription opioid vignette has two versions with varying onsets, medical and recreational (See the SASI Questionnaire document for vignette narratives).

In total, the SASI questionnaire includes 91 items - 21 items adapted from the 2018 GSS NSS-RII (NORC, 2018), 14 items adapted from the Substance Abuse Self-Stigma Scale (Luoma et al., 2013), 8 items adapted from the Indiana Opioid Survey (Railey et al., 2023), 10 items adapted from the Internalized Stigma of Mental Illness (ISMI) Survey (Ritsher et al, 2023), 1 item adapted from the Perceived Devaluation and Discrimination Scale (PDD) (Link, B.G., 1987), and 37 unique items developed specifically for Shatterproof (Shatterproof & The Harford, 2021). Questionnaire items contain Likert response options ranging from 1 (lowest level of stigma) to 4 (highest level of stigma) (See the SASI Questionnaire and SASI Codebook documents).

2024 Questionnaire Modifications

The 2024 SASI utilizes a 6x2 vignette design targeting five substances: prescription opioid, heroin, methamphetamine, alcohol, and marijuana and describes an individual as being in active use, or in active recovery. The prescription opioid vignette has two versions with varying onsets, medical and recreational (See the SASI Questionnaire document for vignette narratives). Therefore, 4 additional unique items were added to address self-reported marijuana use and treatment for a total of 95 items.

Data Collection

Data is collected by Ipsos, who formats the dataset with appropriate variable and value labels and calculates post-stratification statistical weights. Ipsos delivers the fully formatted dataset to Shatterproof for analysis.

Survey Protocol

The SASI is conducted periodically by Ipsos Public Affairs on behalf of Shatterproof. It's a cross-sectional online panel survey comprised of non-institutionalized adults (18 and older) residing in the United States. To maintain consistency across survey waves, Ipsos sets standard protocols for data collection. These standards allow for data comparisons across time.

1. **Utilization of Address-based Sampling (ABS) Recruitment:** Ipsos relies on the latest version of the Delivery Sequence File (DSF) from the USPS to select address-based samples that are nationally representative of all households.

2. **Household Member Recruitment Process:** Adults from sampled households are invited to join KnowledgePanel® through a series of mailings, including an initial invitation letter, a reminder postcard, and a subsequent follow-up letter. Telephone refusal-conversion calls are made to all non-responding households if phone number matching is available.

3. **Survey Administration**: Panel members receive an email containing a link to the SASI questionnaire, which can also be accessed through a personalized member portal. Individuals are allotted approximately two weeks to complete the survey. Frequent reminders are sent to all non-responding panel members. Ipsos operates an incentive program to encourage panel participation.

4. **Survey Questionnaire:** Panel members randomly receive one of the ten vignettes followed by the 91-item questionnaire. All panel members complete the same questionnaire.
    - In 2024, modifications included two additional vignettes. Therefore, members randomly received one of twelve vignettes followed by the 95-item questionnaire.

Sampling Design

KnowledgePanel® (KP) is the largest online panel that relies on probability-based sampling techniques for recruitment; hence, it is the largest national sampling frame from which fully representative samples can be generated to produce statistically valid inferences for study populations. Panel members are randomly selected so that survey results can properly represent the U.S. population with a measurable level of accuracy.

KP's recruitment process is based on an Address-Based Sample (ABS) recruitment methodology via the U.S. Postal Service's Delivery Sequence File (DSF) to select address-based samples that are nationally representative of all households. Stratified random sampling is used to ensure the geodemographic composition of panel members accurately represents the U.S. adult population. Adults from sampled households are invited to join KnowledgePanel® through a series of mailings, including an initial invitation letter, a reminder postcard, and a subsequent follow-up letter. Additionally, telephone refusal-conversion calls are made to non-responding households for which a telephone number could be matched to a physical address. Invited households can join the panel by:

- Completing and mailing back a paper form in a postage-paid envelope
- Calling a toll-free hotline phone number maintained by Ipsos
- Going to a designated Ipsos website and completing the recruitment form online

Weighting

Data weighting is an important statistical process that attempts to remove bias in the sample. The SASI weighting process includes two steps: design weighting and iterative proportional fitting (also known as "raking" weighting). Design weighting involves weighting the pool of active KP members to geodemographic benchmarks from the U.S. Census Bureau's Current Population Survey (CPS). Benchmarks include:

- Gender (Male/Female)
- Age (18–29, 30–44, 45–59, and 60+)
- Race/Hispanic ethnicity (White/Non-Hispanic, Black/Non-Hispanic, Other/Non-Hispanic, 2+ Races/Non-Hispanic, Hispanic)
- Education (Less than High School, High School, Some College, Bachelor and beyond)
- Census Region (Northeast, Midwest, South, West)
- Household income (under $10k, $10K to <$25k, $25K to <$50k, $50K to <$75k, $75K to <$100k, $100K to <$150k, and $150K+)

- Home ownership status (Own, Rent/Other)
- Household size (1, 2, 3, 4+) **– 2024 benchmark only**
- Metropolitan Area (Yes, No)
- Hispanic Origin (Mexican, Puerto Rican, Cuban, Other, Non-Hispanic)
- Language Dominance (non-Hispanic and English Dominant, Bilingual, and Spanish Dominant Hispanic) when survey is administered in both English and Spanish **– 2024 benchmark only**

Using the resulting weights as measures of size, a probability-proportional-to-size (PPS) procedure is used to select study specific samples.

Study-specific post-stratification weighting variables for both the 2021 and 2024 datasets are outlined in Table 1 below. The specific weighting steps and procedures for each 2021 study population can be found in Appendix I. The specific weighting steps and procedures for each 2024 study population can be found in Appendix II.

Table 1. Weighting Variables Included in the National SASI Dataset, 2021 and 2024

Variable Name	Description
AZ_wt**	The final weight assigned to each respondent as part of the Arizona resident population. This weight should be used when analyzing responses among Arizona residents.
CT_wt*	The final weight assigned to each respondent as part of the Connecticut resident population. This weight should be used when analyzing responses among Connecticut residents.
DMV_wt**	The final weight assigned to each respondent as part of the DC, Maryland, Virgina (DMV) resident population. This weight should be used when analyzing responses among DMV residents.
Genpop_wt	The final weight assigned to each respondent as part of the general population. This weight should be used when analyzing overall responses.
HCP_wt	The final weight assigned to each respondent as part of the healthcare professional population. This weight should be used when analyzing responses among healthcare professionals
IL_wt**	The final weight assigned to each respondent as part of the Illinois resident population. This weight should be used when analyzing responses among Illinois residents.
MA_wt**	The final weight assigned to each respondent as part of the Massachusetts resident population. This weight should be used when analyzing responses among Massachusetts residents.
SUD_wt	The final weight assigned to each respondent as part of those who self-report having SUD. This weight should be used when analyzing responses among individuals with SUD.
WA_wt**	The final weight assigned to each respondent as part of the Washington state resident population. This weight should be used when analyzing responses among Washington state residents.

*2021 dataset variable only
**2024 dataset variable only

Using SASI Data Sets

There are three required steps to appropriately analyze the SASI raw dataset - manually clean the raw data, create the stigma scales and subscales, and set the survey weighting.

Data Cleaning

Questionnaire items are associated with a 4-point Likert response. Certain items require manual reverse coding to ensure that a response of "1" is associated with the lowest level of stigma and a response of "4" is associated with highest level of stigma. Reverse-coded items are noted within the SASI Codebook document.

Creating Stigma Scales

Four stigma scales are created from questionnaire items to assess addiction stigma and attitudes about substance use and SUD – public stigma, structural stigma, self-stigma, and medication for opioid use disorder (MOUD) stigma. These scales must be user generated, as there are no calculated variables within the dataset. The method for creating each scale variable is outlined below.

1. *Public stigma scale*: measures stigmatizing attitudes and beliefs about people with substance use disorders, including indicators of traditional prejudice and preference for social exclusion. This scale contains 14 items with response categories that range from 1-4 (Appendix II). Public stigma is further deconstructed into three subscales: traditional prejudice (4 items), home life social distancing (6 items), and workplace social distancing (4 items) (Appendix II). Overall scale and subscale items are averaged to achieve a mean scale score where higher scores indicate more stigmatizing attitudes and beliefs.

2. *Structural stigma scale*: measures support for discrimination against people with substance use disorders in major social institutions. It contains 5 items with response categories that range from 1-4 (Appendix II). Scale items are averaged to achieve a mean scale score where higher values indicate more support for discriminatory institutions.

3. S*elf-stigma scale* measures internalization of stigmatizing attitudes and beliefs about substance use and resulting negative emotions and opinions of oneself. It contains 15 items with response categories that range from 1-4 (Appendix II). Self-stigma is further deconstructed into two subscales: internalized self-stigma (7 items) and anticipated self-stigma (8 items) (Appendix II). Overall scale and subscale items are averaged to achieve a mean scale score where higher scores indicate more self-stigma.

4. *MOUD stigma scale*: measures prejudice and discrimination against medication assisted treatment (MAT) and those who rely on it for managing their opioid use disorder (OUD). It contains 4 items with response categories ranging from 1-4 (Appendix II). Scale items are averaged to achieve a mean scale score where higher values indicate less support for MOUD to manage OUD.

Stigma scales and subscales are calculated as the mean for all non-missing values of the composite stigma items by summing the responses for all scale items and dividing by the number of items comprising the scale. Respondents answering zero of the composite scale items should be excluded from analysis, while respondents answering at least one of the items should be included. This maintains a larger sample size without imputing values for respondents with some missing data. Additional missing responses are dropped on a model-by-model basis.

Setting Survey Weights

All SASI data should correct for / account for complex sampling procedures using post-stratification weights. The statistical procedures or modules of statistical software (e.g., SAS, SPSS, and STATA) include statements for stratification, clustering, and sample weight to account for complex sampling design of survey data. The following is an example for combining the general population weight with oversample weights, then setting the survey weight and strata:

STATA Example Syntax, 2021 Dataset

```
gen wt = Genpop_wt
replace wt = ct_wt if xsud==2
replace wt = HCP_wt if xsud==3
replace wt = SUD_wt if xsud==4
```

```
lab var wt "Sampling weights for combining general population with oversamples"

svyset [pw=wt], strata(xsud)
```

STATA Example Syntax, 2024 Dataset

```
gen wt = Genpop_wt
replace wt = HCP_wt if xsud==3
replace wt = SUD_wt if xsud==4
replace wt = AZ_wt if xsud==5
replace wt = WA_wt if xsud==6
replace wt = MA_wt if xsud==7
replace wt = DMV_wt if xsud==8
lab var wt "Sampling weights for combining general population with oversamples"

svyset [pw=wt], strata(xsud)
```

Comparison Limitation/s

In 2024, two additional vignettes highlighting active and recovery marijuana use were added to the Shatterproof Addiction Stigma Index; therefore, the 2024 SASI 12-Vignette sample cannot be compared to the 2021 SASI 10-vignette sample without removing marijuana vignettes from 2024 sample. Instead, comparisons can be made by pulling a 2024 SASI 10-Vignette sample (excluding individuals responding to the active/recovery marijuana use vignettes). In addition to adding new vignettes, the 2024 SASI vignettes highlight the substance type in red text, whereas there was no text color distinction for the substance type in the 2021 SASI vignettes. Highlighting the substance type in red text could inadvertently create respondent bias affecting their item responses. Therefore, comparisons of the 2021 SASI 10-Vignette sample with the 2024 SASI 10-vignette should be interpreted with caution with a noted methodological limitation.

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APPENDIX I: 2021 Study Population Weighting steps and Procedures

General Population (Genpop_wt)

Step 1: Design weights for all KP assignees from Genpop sample were computed to reflect their selection probabilities.

Step 2: The above design weights for KP respondents from Genpop sample were then raked to the following geodemographic distributions of age 18+ population, by balanced demos among 10 conditions. The needed benchmarks were obtained from the 2019 American Community Survey (ACS). Moreover, we used the 2020 Census Population Survey (CPS) to obtain Metro Status benchmarks.

Within condition:

- Age (18-34, 35-44, 45-54, 55-64, 65+) by Gender (Male, Female)
- Race (White, Black, Other, Hispanic, 2+ Races)
- Census Region (Northeast, Midwest, South, West)
- Metropolitan Status (Metro, Non-Metro)
- Education (LHS, HS, Some College, Bachelor or higher)
- Household Income (Under $25K, $25K-$49,999, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)
- ACS language (English Proficient, Bilingual/Spanish Proficient, Non-Hispanic)

The resulting weights are trimmed and scaled to sum to the sample size of total respondents per condition (this is called genpop_wt; n=7,051).

Connecticut Residents (CT_wt)

Step 1: Design weights for all KP Connecticut assignees from Genpop sample and Connecticut oversample were computed to reflect their selection probabilities.

Step 2: The above design weights for KP Connecticut respondents from Genpop sample and Connecticut oversample were then raked to the following geodemographic distributions of age 18+ Connecticut population. The needed benchmarks were obtained from the 2019 American Community Survey (ACS). Moreover, we used the 2020 Census Population Survey (CPS) to obtain Metro Status benchmarks.

- Age (18-44, 45-54, 55-64, 65+)) by Gender (Male, Female)
- Race (White, Black/Hispanic, Other/2+ Races)
- Education (LHS/HS, Some College, Bachelor or higher)

- Household Income (Under $25K, $25K-$49,999, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)

The resulting weights are trimmed and scaled to sum to the sample size of Connecticut respondents (this is called CT_wt; n=275).

Individuals Self-Reporting Substance Use Disorder (SUD_wt)

Step 1: Design weights for all KP assignees across all samples were computed by also adjusting pre-identified healthcare Professional (Yes, No, Refusal, Missing) and Area adjustment (CT, MI/NC/VA/WI, IA/MN/NM/WA, All Other States) to reflect their selection probabilities.

Step 2: The above design weights for KP respondents from Genpop sample, Connecticut oversample or SUD oversample, or qualified HCP oversample were then raked to the following geodemographic distributions of age 18+ population. The needed benchmarks were obtained from the 2019 American Community Survey (ACS). Moreover, we used the 2020 Census Population Survey (CPS) to obtain Metro Status benchmarks.

- Age (18-34, 35-44, 45-54, 55-64, 65+) by Gender (Male, Female)
- Race (White, Black, Other, Hispanic, 2+ Races)
- Census Region (Northeast, Midwest, South, West) by Metropolitan Status (Metro, Non-Metro)
- Education (LHS, HS, Some College, Bachelor or higher)
- Household Income (Under $25K, $25K-$49,999, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)
- ACS language (English Proficient, Bilingual, Spanish Proficient, Non-Hispanic)
- Connecticut (Yes, No)
- Healthcare Professional (Yes, No)

The resulting weights are trimmed and scaled to sum to the sample size of respondents (this is called SUD_screenwt; n=11,378).

Step 3: With the starting weights from SUD_screenwt, KP qualified SUD respondents across all sample with valid SUD were then raked to the following geodemographic distributions of SUD eligible benchmarks based on step 1 (across all sample with valid SUD).

- Age (18-34, 35-44, 45-54, 55-64, 65+) by Gender (Male, Female)
- Race (White, Black, Other, Hispanic, 2+ Races)
- Census Region (Northeast, Midwest, South, West) by Metropolitan Status (Metro, Non-Metro)
- Education (LHS, HS, Some College, Bachelor or higher)
- Household Income (Under $25K, $25K-$49,999, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)
- ACS language (English Proficient, Bilingual, Spanish Proficient, Non-Hispanic)
- Connecticut (Yes, No)
- Healthcare Professional (Yes, No)
- SUD (Opioid only, Stimulant only, Alcohol only, Opioid+Stimulant, Opioid+Alcohol, Stimulant+Alcohol, 3 SUD)

The resulting weights are trimmed and scaled to sum to the sample size of qualified Healthcare Professional respondents (this is called SUD_wt; n=1,269).

Healthcare Professionals (HCP_wt)

Step 1: Design weights for all KP assignees from Genpop sample, Connecticut oversample and HCP oversample were computed by also adjusting pre-identified healthcare professional (Yes, No, Refusal, Missing) and area adjustment (CT, MI/NC/VA/WI, IA/MN/NM/WA, All Other States) to reflect their selection probabilities.

Step 2: The above design weights for KP qualified Healthcare Professional respondents Genpop sample, Connecticut oversample, and HCP oversample were then raked to the following geodemographic distributions of age 18+ Healthcare Professional population. The needed benchmarks were obtained from the 2019 American Community Survey (ACS). Moreover, we used the 2020 Census Population Survey (CPS) to obtain Metro Status benchmarks.

- Age (18-34, 35-44, 45-54, 55+) by Gender (Male, Female)
- Race (White, Black, Other/2+ Races, Hispanic)
- Census Region (Northeast, Midwest, South, West)
- Metropolitan Status (Metro, Non-Metro)
- Education (LHS/HS/Some College, Bachelor, Master or higher)
- Household Income (Under $25K, $25K-$49,999, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)
- ACS language (English Proficient, Bilingual/Spanish Proficient, Non-Hispanic)
- HCP Job (Doctor, Nurse, All others)

The resulting weights are trimmed and scaled to sum to the sample size of qualified Healthcare Professional respondents (this is called HCP_wt; n=786).

APPENDIX II: 2024 Study Population Weighting steps and Procedures

General Population (Genpop_wt)

Step 1: Design weights for all KP assignees from Genpop sample were computed to reflect their selection probabilities.

Step 2: The above design weights for KP respondents from Genpop sample were then raked to the following geodemographic distributions of age 18+ population, by balanced demos among 10 conditions. The needed benchmarks were obtained from the 2019 American Community Survey (ACS). Moreover, we used the 2020 Census Population Survey (CPS) to obtain Metro Status benchmarks.

Within condition:

- Age (18-34, 35-44, 45-54, 55-64, 65+) by Gender (Male, Female)
- Race (White Non-Hispanic, Black, Non-Hispanic, Other/2+ Races, Non-Hispanic, Hispanic)
- Census Region (Northeast, Midwest, South, West)
- Metropolitan Status (Metro, Non-Metro)
- Education (LHS, HS, Some College, Bachelor or higher)
- Household Income (Under $25K, $25K-$49,999, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)
- ACS language (English Proficient, Bilingual/Spanish Proficient, Non-Hispanic)

The resulting weights are trimmed and scaled to sum to the sample size of total respondents per condition (this is called genpop_wt; n=7,130).

Illinois (IL_wt)

Step 1: Design weights for Illinois assignees from Genpop sample and Illinois oversample were computed to reflect their selection probabilities.

Step 2: The above design weights for Illinois respondents were raked to the following geodemographic distributions of age 18 and over Illinois population. The needed benchmarks were obtained from the 2022 American Community Survey (ACS).

- Age (18-34, 35-54, 55-64, 65+) by Gender (Male, Female)
- Race (White Non-Hispanic, Black Non-Hispanic, Other/2+ Races Non-Hispanic, Hispanic)
- Education (LHS/HS, Some College, Bachelor or higher)
- Household Income (Under $50K, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)

The resulting weights are trimmed and scaled to sum to the sample size of Illinois respondents (this is called IL_wt; N=263 cases).

Arizona (AZ_wt)

Step 1: Design weights for Arizona assignees from Genpop sample and Arizona oversample were computed to reflect their selection probabilities.

Step 2: The above design weights for Arizona respondents were raked to the following geodemographic distributions of age 18 and over Arizona population. The needed benchmarks were obtained from the 2022 American Community Survey (ACS).

- Age (18-34, 35-54, 55-64, 65+) by Gender (Male, Female)
- Race (White Non-Hispanic, Black Non-Hispanic or Hispanic, Other/2+ Races Non-Hispanic)
- Education (LHS/HS, Some College, Bachelor or higher)
- Household Income (Under $50K, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)

The resulting weights are trimmed and scaled to sum to the sample size of Arizona respondents (this is called AZ_wt; N=299).

Washington (WA_wt)

Step 1: Design weights for Washington assignees from Genpop sample and Washington oversample were computed to reflect their selection probabilities.

Step 2: The above design weights for Washington respondents were raked to the following geodemographic distributions of age 18 and over Washington population. The needed benchmarks were obtained from the 2022 American Community Survey (ACS).

- Age (18-34, 35-54, 55-64, 65+) by Gender (Male, Female)
- Race (White Non-Hispanic, Black Non-Hispanic or Hispanic, Other/2+ Races Non-Hispanic)
- Education (LHS/HS, Some College, Bachelor or higher)
- Household Income (Under $50K, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)

The resulting weights are trimmed and scaled to sum to the sample size of Washington respondents (this is called WA_wt; N=274).

Massachusetts (MA_wt)

Step 1: Design weights for Massachusetts assignees from Genpop sample and Massachusetts oversample were computed to reflect their selection probabilities.

Step 2: The above design weights for Massachusetts respondents were raked to the following geodemographic distributions of age 18 and over Massachusetts population. The needed benchmarks were obtained from the 2022 American Community Survey (ACS).

- Age (18-34, 35-54, 55-64, 65+) by Gender (Male, Female)
- Race (White Non-Hispanic, Black Non-Hispanic or Hispanic, Other/2+ Races Non-Hispanic)
- Education (LHS/HS, Some College, Bachelor or higher)
- Household Income (Under $50K, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)

The resulting weights are trimmed and scaled to sum to the sample size of Massachusetts respondents (this is called MA_wt; N=266).

Washington Core Based Area (DMV) (DMV_wt)

Step 1: Design weights for Washington Core Based Statistical Area (CBSA) assignees from Genpop sample and Washington CBSA oversample were computed to reflect their selection probabilities.

Step 2: The above design weights for Washington CBSA respondents were raked to the following geodemographic distributions of age 18 and over Washington CBSA population. The needed benchmarks were obtained from the 2022 American Community Survey (ACS).

- Age (18-34, 35-54, 55-64, 65+) by Gender (Male, Female)
- Race (White Non-Hispanic, Black Non-Hispanic, Other/2+ Races Non-Hispanic, Hispanic)
- Education (LHS/HS, Some College, Bachelor or higher)
- Household Income (Under $50K, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)

The resulting weights are trimmed and scaled to sum to the sample size of Washington CBSA respondents (this is called DMV_wt; N=271).

Individuals Self-Reporting Substance Use Disorder (SUD_wt)

Step 1: Design weights for all KP assignees from all sample groups (Gen Pop, Arizona, Washington, Massachusetts, Washington CBSA, healthcare professionals, and SUD augment samples) were computed to reflect their selection probabilities.

Step 2: The above design weights for respondents who answered the SUD screening questions were raked to the following geodemographic distributions of age 18 and over U.S. population. The needed benchmarks were obtained from the 2022 American Community Survey (ACS). Moreover, the metropolitan status benchmark within region was obtained from the 2023 March Supplement CPS. To account for the oversampling of the states and healthcare professionals within those who answered the SUD screening questions, additional adjustments for the oversampling states and healthcare professionals were included in weighting.

- Age (18-34, 35-44, 45-54, 55-64, 65+) by Gender (Male, Female)
- Race-ethnicity (White Non-Hispanic, Black Non-Hispanic, Other Non-Hispanic, Hispanic, 2+ Races Non-Hispanic)
- Census Region (Northeast, Midwest, South, West) by Metropolitan Status (Metro, Non-Metro)
- Education (LHS, HS, Some College, Bachelor or higher)
- Household Income (Under $25K, $25K-$49,999, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)
- Language proficiency (English Proficient Hispanic, Bilingual/Spanish Proficient Hispanic, Non-Hispanic)
- Oversample Area (Arizona, Washington, Massachusetts, Washington CBSA, Remaining Area)
- Healthcare Professionals (Yes, No)

The resulting weights are trimmed and scaled to sum to the sample size of SUD screened respondents (this is called SUD_screenwt; n=9,934).

Step 3: Respondents who met the criteria of having problems with opioid use, stimulant use, alcohol use or marijuana use as defined in the study were separated out and benchmarks for the qualified population with SUD were created using the screener weight (SUD_screenwt). With the starting weights from SUD_screenwt, KP qualified SUD respondents were raked to the following geodemographic distributions of the 18 and over population with SUD.

- Age (18-34, 35-44, 45-54, 55-64, 65+) by Gender (Male, Female)
- Race-ethnicity (White Non-Hispanic, Black Non-Hispanic, Other Non-Hispanic, Hispanic, 2+ Races Non-Hispanic)
- Census Region (Northeast, Midwest, South, West) by Metropolitan Status (Metro, Non-Metro)
- Education (LHS, HS, Some College, Bachelor or higher)
- Household Income (Under $25K, $25K-$49,999, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)
- Language proficiency (English Proficient Hispanic, Bilingual/Spanish Proficient Hispanic, Non-Hispanic)
- Oversample Area (Arizona, Washington, Massachusetts, Washington CBSA, Remaining Area)
- Healthcare Professionals (Yes, No)
- SUD Type (Opioid only, Stimulant only, Alcohol only, Marijuana only, Opioid + Stimulant, Opioid + Alcohol, Opioid + Marijuana, Stimulant + Alcohol, Stimulant + Marijuana, Alcohol + Marijuana, Opioid + Stimulant + Alcohol, Opioid + Stimulant + Marijuana, Opioid + Alcohol + Marijuana, Stimulant + Alcohol + Marijuana, 4 SUD)

The resulting weights are trimmed and scaled to sum to the sample size of qualified SUD respondents (this is called SUD_wt; n=1,441).

Healthcare Professionals (HCP_wt)

Step 1: Design weights for assignees from Genpop sample, Arizona, Washington, Massachusetts, Washington CBSA, and HCP oversample were computed to reflect their selection probabilities.

Step 2: The above design weights for healthcare professional respondents identified from field screenings were raked to the following geodemographic distributions of age 18 and over healthcare professional population. The needed benchmarks were obtained from the 2022 American Community Survey (ACS). Moreover, the metropolitan status benchmark was obtained from the 2023 March Supplement CPS.

- Age (18-34, 35-44, 45-54, 55+) by Gender (Male, Female)
- Race-ethnicity (White Non-Hispanic, Black Non-Hispanic, Other/2+ Races Non-Hispanic, Hispanic)
- Census Region (Northeast, Midwest, South, West)
- Metropolitan Status (Metro, Non-Metro)
- Education (LHS/HS/Some College, Bachelor or higher)
- Household Income (Under $25K, $25K-$49,999, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)
- Language proficiency (English Proficient Hispanic, Bilingual/Spanish Proficient Hispanic, Non-Hispanic)
- Healthcare professional job types (Doctor, Nurse, All other HCP)

The resulting weights are trimmed and scaled to sum to the sample size of qualified healthcare professional respondents (this is called HCP_wt; N=811).

APPENDIX III: Stigma Scales and Associated Items, Shatterproof Addiction Stigma Index

Scale	Description	Subscale/s	Item/s
Public Stigma	Measures stigmatizing attitudes and beliefs about people with substance use disorders, including indicators of traditional prejudice and preference for social exclusion.	**Home Life Social Exclusion**	How willing would you be to move next door to John?
			How willing would you be to spend an evening socializing with John?
			How willing would you be to have a group home for people like John opened in your neighborhood?
			How willing would you be to have John marry into your family?
			How willing would you be to have John as a close personal friend?
		Workplace Social Exclusion	How willing would you be to have John start working closely with you on a job?
			How willing would you be to hire John to do work for you?
			How willing would you be to have John as your supervisor at work?
			How willing would you be to have John as your co-worker?
		Traditional Prejudice	In your opinion, how able is John to make his own decisions about managing his own money?
			People like John are unpredictable.
			In your opinion, how likely is it John would do something violent toward other people?
			In your opinion, how likely is John to be trustworthy?
			In your opinion, how likely is John to be competent?
Scale	**Description**		**Item/s**
Structural Stigma	Measures support for discrimination against people with substance use disorders in major social institutions.		Employers should provide opportunities for John to seek treatment and stay employed.
			If John wanted to go to treatment, his health insurance should be required to cover it in the same way they would cover any other chronic illness.
			Healthcare providers should care for someone like John just as they would treat anyone else with a chronic illness.
			Schools should be allowed to expel someone like John if they found out about his problems.
			People who are addicted to drugs should receive treatment instead of being sentenced to prison for drug-related, non-violent crimes.
Scale	**Description**	**Subscale/s**	**Item/s**

Self-Stigma	Measures internalization of stigmatizing attitudes and beliefs about substance use and resulting negative emotions and opinions of oneself.	**Internalized Self-Stigma**	I feel inferior to people who have never had a problem with substances.
			I deserve the bad things that have happened to me.
			I feel out of place in the world because of my problems with substances.
			I feel ashamed of myself.
			I feel that a major reason for my problems with substances is my own poor character.
			I feel I cannot be trusted.
			I have the thought that I have permanently screwed up my life by using substances.
		Anticipated Self-Stigma	People think I'm worthless if they know about my substance use history.
			People around me will always suspect I have returned to using substances.
			If someone were to find out about my history of substance abuse, they would expect me to be weak-willed.
			If someone were to find out about my history of substance use, they would doubt my character.
			A job interviewer wouldn't hire me if I mentioned my substance use history in a job interview.
			People would be scared of me if they knew my substance use history.
			People will think I have little talent or skill if they know about my substance use history.
			People think the bad things that have happened to me are my fault.
Scale	**Description**		**Item/s**
MOUD Stigma	Measures prejudicial attitudes toward medication-assisted treatment for OUD and people who use MOUD in their recovery		MOUD just substitutes one drug for another.
			More healthcare providers should offer MOUD so it is easily accessible to people who want it.
			MOUD is an effective treatment for OUD.
			I would be willing to have a clinic that provided MOUD to people with OUD in my neighborhood.

MOUD – Medications for Opioid Use Disorder