

# Methodology Report for the 2013 Texas Survey of Substance Use Among College Students

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# 1 Introduction

College age students are a particularly important demographic when it comes to understanding substance use and abuse statewide. College attendees live in an environment where many substances are easily available and where some substances are ubiquitous components of the social environment. Moreover, this population is often living away from home for the first time, putting them beyond the reach of their parents during an important developmental phase.

The Public Policy Research Institute (PPRI), acting at the behest of the Department of State Health Services (DSHS), conducted this survey in 2013 to assess the state of drug and alcohol use amongst college age students in Texas. Similar surveys had previously been conducted in 2005 and 1997. Like those surveys, the study population has been limited to undergraduate students between the ages of 18 and 26 who are enrolled in more than four hours of classes.

Surveying college students presents several unique problems. Traditional random-digit dialing telephone methods may not be successful, since many students are exclusive cell phone users. Students who do have land lines may frequently change phone numbers as they move between dorms, or from on-campus housing to off-campus housing. Even if these problems could be overcome, students have unusual schedules, in that they may have classes or study commitments throughout the day, making it difficult to reach them at a specified time.

For all these reasons, this survey embraces online administration of the survey. In late 2012, we sampled 60 colleges in the state and requested emails from each of them. A total of 45 colleges provided addresses. Nearly 320,000 invitations to participate in the survey were sent out over the course of about five weeks and received about 11,300 valid and complete survey responses. Table 1 provides descriptive statistics of the survey sample.

The rest of this report details preparation and administration of the sur-

Table 1: Demographics of the sample, with raw  $n$  and weighted percentage.

<b>Gender</b>	$n$	Weighted	<b>Parent's Income</b>	$n$	Weighted
Male	4,219	39.85%	<20k	1,083	13.47%
Female	7,042	60.15%	20k-60k	2,865	29.19%
<b>Ethnicity</b>			60k-100k	2,544	20.14%
Hispanic/Latino	2,976	34.79%	>100k	2,793	18.02%
Not Hispanic/Latino	8,169	65.21%	Don't know	1,783	19.17%
<b>Race</b>			<b>Class Standing</b>		
White	9,167	85.08%	Freshman	2,524	25.77%
African Am./Black	603	5.60%	Sophomore	2,655	30.74%
American Indian	119	1.10%	Junior	2,934	22.94%
Asian	671	6.23%	Senior	3,360	20.44%
Pacific Islander	44	0.41%	Other	6	0.11%
Other	170	1.58%	<b>Grade Point Average</b>		
<b>Age</b>			A	4,661	40.96%
18-20	5,397	46.67%	B	4,592	40.63%
21-23	4,627	37.46%	C	1,401	11.19%
24-26	1,259	15.87%	D or F	83	0.88%
			Don't know	524	6.34%

vey. The next section discusses development of the survey instrument and the changes that were made between 2005 and 2013. The third section details the sampling procedure used and discusses delivery of the survey and the response we received. Finally, the weighting scheme is discussed.

## 2 Survey Instrument

The survey instrument was closely modeled after the 2005 survey instrument, which was in turn based on a survey conducted in 1997 by the Texas Commission on Alcohol and Drug Abuse. The instrument has undergone changes with each iteration, but in contrast to the 1997 and 2005 surveys, which are substantially different from one another, the 2005 and 2013 surveys are fairly similar, with only minor modifications.

First, respondents answer a number of screening questions. To be eligible, a student had to be college-aged, which we defined as between the ages of 18 and 26. Each student also had to be an undergraduate registered in more

than four hours of classes. Respondents who did not meet these eligibility requirements did not take the remainder of the survey and were instead directed to a page explaining the eligibility requirements and thanked them for their participation.

The remainder of the survey is divided into nine sections dealing with various thematic areas related to the target population. These sections are: ethnicity; student life (living situation, major, etc.); alcohol use; use of drugs other than alcohol; prescription drug use; other personal behaviors (drunk driving and sexual behaviors); mental health; campus policies; and background info, which covers the respondent's marital status, religion, and details about the respondent's parents.

Although there were 209 questions on the survey, no single respondent answered all these questions because some questions would be skipped depending on previous answers. Respondents who did not report drinking, for example, were not asked about their drinking habits. This approach represented a significant improvement on the 2005 survey, which had 287 questions and therefore took longer for respondents to complete.

Most of the changes made between 2005 and 2013 were minor, but a few questions were added and others were deleted. The bulleted list below describes the most significant changes. A considerably more detailed list of differences between the 2005 instrument and the 2013 instrument, with specific wording changes noted, is provided in Appendix A. These changes were made based on research of similar instruments in the nation and based on consultations with DSHS research and evaluation staff members.

- Eliminated questions asking who the respondent lives with (e.g. roommates, spouse, parents, etc.)
- Split questions on tobacco to separate use of cigarettes and use of cigars
- Previous category of “heroin and other opiates” split into a heroin category and a “narcotics other than heroin” category

- Deleted specific drug use questions for rohypnol and ketamine, added a question for synthetic marijuana
- Deleted questions asking if the respondent knows anyone who was given a drug without their knowledge and subsequently became ill, needed medical treatment, or was subject to sexual assault
- Removed all questions about gambling

### **3 Survey Development and Administration**

Prior to administering the survey, it was tested extensively by PPRI employees and survey lab members. Depending on a respondent's questions, certain parts of the survey could be skipped. For example, respondents who did not report having ever used marijuana were not asked how old they were when they started using marijuana. Rigorous pre-testing ensured that this survey logic was functioning correctly. Pre-testing was also necessary to ensure appropriate question wording. Collectively, PPRI research staff members have several decades of experience writing and administering surveys. Over the course of pre-testing by these employees, question wordings were subtly tweaked to adhere to good survey practice.

Additionally, the survey was tested for length. An online survey that takes half-an-hour or more to complete could suffer from very poor response rates and unreliable answers. Although the time necessary to complete the survey will vary considerably from respondent to respondent, PPRI staff consider the final survey instrument to be of an appropriate length.

The survey sample consists of three strata: two-year colleges, small four-year colleges, and large four-year colleges in Texas. Large four-year colleges in the sample are those with more than 10,000 students enrolled. Twelve large universities were sampled out of 20 identified in the state. We sampled 21 of 57 small universities and 27 of 77 2-year colleges. Sampled schools

Table 2: Dates of each wave of survey invites and number of invites sent.

Date	Invites Sent	Cumulative % of Total
2/28/2013	22,415	7.02%
3/4/2013	21,569	13.78%
3/5/2013	632	13.97%
3/6/2013	2,914	14.89%
3/7/2013	525	15.05%
3/12/2013	3,566	16.17%
3/18/2013	46,421	30.7%
3/21/2013	45,349	44.9%
3/22/2013	45,320	59.09%
3/25/2013	45,778	73.43%
3/26/2013	45,363	87.63%
4/5/2013	39,506	100%

were contacted and asked to provide student emails. Appendix B . The final sample consists of 45 schools: 10 large four-year universities, 12 small four-year universities, and 23 2-year colleges. Students were randomly sampled from directory listings provided by each school to receive invites to the survey. A few schools (primarily community colleges) provided directory information that did not identify the campus a student attended. In these cases, we merged all the campuses for that school. In one case, the school sampled students themselves.

Initially, about 50,000 students were contacted to participate in the survey. Two modifications were made to the initial IRB proposal, however, to allow for a larger sample. The first modification requested an expansion of the sample from 50,000 to 100,000. This was followed by one more modification to allow for 500,000 students. Both amendments approved by the Texas A&M IRB.

Table 2 shows when surveys were sent and how many surveys were sent

in each wave.<sup>1</sup> Students were emailed in groups over the course of about five weeks. Students also periodically received emails reminding them about the survey. Each student received up to four reminders if they had not completed the survey. The reminder emails were sent in 4 to 6 day intervals in order to ensure that students did not always get reminders on the same day of the week. After accounting for bad email addresses and bounced emails, about 319,000 invitations were sent out. Just under 20,000 surveys were completed, for a completion rate of about 6.2%. After removing ineligible responses, 11,283 of these were available for analysis, representing about 3.5% of all survey invitations sent out.

The 2005 version of this survey contacted participants via both email and telephone. One finding from that study was that administering the survey via telephone was considerably more expensive than online alternatives. Online administration of the survey continues to be a time efficient and cost effective alternative to administration by telephone.

## 4 Weighting

The weights for the sample are composed of two components: a weight based on the sampling design and sizes of the strata population and strata sample sizes, and an adjustment for gender.

The sample design involved sampling schools from within each stratum and then sampling students from each of the sampled schools. The design weight is shown below.

$$Weight_{ij} = (NSchool_i/nSchool_i)(NEnroll_{ij}/nSample_{ij})$$

Where:

- $i$ =strata

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<sup>1</sup>Some of the smaller waves were necessary due to problems with a school's email system that required a more drawn out schedule.

- $j$ =school
- $NSchool_i$  =Number of schools in the  $i^{th}$  strata
- $nSchool_i$  =Number of schools sampled in the  $i^{th}$  strata
- $NEnroll_{ij}$  =Number of students enrolled in the  $j^{th}$  school
- $nSample_{ij}$  =Number of students sampled in the  $j^{th}$  school

We then applied a post-hoc adjustment for gender. This weight was calculated as the percent of males/females in all sampled schools divided by the percent of males/females sampled. The weight for males was 0.431/0.375 and the weight for females was 0.570/0.625. We did not index the gender weight by school due to low response rates in certain schools that would have resulted in large weights. The variable “weight” is the final weight as calculated by the statistical software package Stata. It incorporates all of the above elements.

The 2013 study’s weight is very similar to the weight used in 2005. The 2005 survey was administered both online and by telephone, and an additional weight was necessary to account for the mixed delivery strategy. The weights are otherwise similar, and a comparison between weighted 2005 estimates and weighted 2013 estimates can be made with confidence. In the future, we hope to continue to use the weight as shown above.

## 5 Conclusion

The 2013 survey continues to improve upon the design of the previous college drug and alcohol surveys administered by PPRI. This time, the online survey administration made it possible to substantially increase the number of respondents while also keeping the cost per respondent reasonably low. This method of survey administration is uniquely suited to the college-age student population, because many of these students cannot be contacted via the traditional phone methods. In 2005, survey delivery was mixed between telephone and online administration and only about 4,300 respondents could be reached. This version of the survey reaches more than 11,000 students. The expanded survey respondent population



allows for more reliable and valid population estimates. Moreover, online delivery has proven to be considerably more cost effective than telephone delivery.

It is somewhat unfortunate that each iteration of the survey has seen changes to the survey instrument, the method of survey administration, and the weighting scheme used. These changes limit the analytical ability to make comparisons between the current survey and previous surveys. The changes from 2005 to 2013, however, were considerably more modest than those made from 1997 to 2005. Now that administration of the survey by telephone has been eliminated and the school sampling procedure has been rigorously tested, we believe that the future surveys can be conducted in a way that is largely identical to the 2013 methodology. These methodological developments will make comparisons between the years simpler and provide policy-makers with better and more reliable data. The survey instrument has also matured, and should require minimal adjustment in any future iterations of the survey.

The survey process has not been without challenges. Recruiting schools to participate in the survey turned out to be a time consuming, rigorous, and complicated process for which we did not budget sufficient staff time. It has been especially difficult to convince private schools to participate. The survey could be improved if more time was given on the front end, in the planning phase, to recruit schools. Ideally, schools need to be recruited in the Fall semester to allow plenty of lead time for the actual survey implementation in the Spring. Although this version of the survey was considerably shorter than the 2005 version, we continue to believe that participation in the survey and reliability of answers would be significantly improved with a shorter survey. Refining the survey instrument and paring away unnecessary questions needs to be an urgent priority for future surveys.

# A Survey Instrument Changes Between 2005 and 2013

The following list describes every change made to the 2005 instrument, organized by section.

## A.1 Screening Questions

- **SC3** Enrollment status: Wording change to current enrollment status instead of since last Fall
- **BI3 and subquestions** Hispanic Ethnicity: no wording change but moved from end of instrument to screening section

## A.2 Student Life

- **SL3 and subquestions** Are you living with...: Deleted

## A.3 Personal Alcohol Use

- **AL1** How many times have you had 5+ drinks: Added survey logic to only ask question of males
- **AL1** How many times have you had 4+ drinks: Added survey logic to only ask question of females
- **AL13** In the past 30 days, have you obtained alcohol...: Deleted “from someone who made it” option
- **HB1** Do you own a home brewing kit: Deleted
- **OA1** Have you ever obtained alcohol from an online source: Deleted
- **AL16** What reasons factored into your decision to stop or limit drinking: Removed “other” option

## A.4 Use of Drugs Other than Alcohol

- **T2** When was the last time you smoked cigarettes or cigars: Removed “or cigars” and added T3, which asks about cigars separately
- **D1 and subquestions** When was the last time you used any of the following drugs: Multiple Changes
  - Removed “uppers” from list of example stimulants
  - Removed “or other opiates” from heroin option. Added examples, “black tar, cheese, chiva, brown heroin”
  - Added new category for “narcotics other than heroin”
  - Deleted rohypnol
  - Deleted ketamine
  - Added synthetic marijuana
- **D2** How old were you when you first used...: Changed drug list to match D1
- **D4a** What drug do you typically use: Changed drug list to match D1
- **D10** How dangerous do you think it is for a person your age to use...: Changed drug list to match D1
- **D11 and subquestions** Do you personally know anyone who has been given a drug without his/her knowledge or permission: Deleted

## A.5 Other Personal Behaviors

- **G1** How many times have you placed a bet or gambled money: Deleted
- **G2** Have you bet or spent money on games at a casino: Deleted
- **G3** Have you bet or spent money on gambling online: Deleted
- **G4** Have you bet or spent money on the outcome of a sports event: Deleted

- **G5** Have you placed a bet with a bookie: Deleted
- **G8** Do you feel that you have a gambling problem: Deleted

## **A.6 Mental Health**

- **MH8** Have you seriously considered or attempted suicide in the past 12 months: Changed from “seriously considered or attempted suicide” to “seriously consider attempting suicide”

## **A.7 Background Information**

- **BI8** Were you primarily raised by...: Deleted
- **BI12** How many times have you moved to a different city or state: Deleted
- **BI16** During a typical day, how much time do you spend online: New question
- **BI16a** Where do you primarily connect to the internet: New question
- **BI17** How often do you use social media: New question

## **B Schools Sampled**

PPRI identified 154 eligible colleges in the state of Texas and sampled 60 to be solicited for participation in the survey. Of these, 45 agreed to provide the directory information necessary to contact students. Tables 3, 4, and 5, found below, list all sampled schools and give the number of respondents at each participating institution.

Table 3: List of sampled schools and participating schools, and number of surveys received from each school that participated, large 4-year universities.

Strata: Large, 4-year Universities		
Sampled Schools	Participated	<i>n</i>
Texas A&M University	Yes	2,711
University of North Texas	Yes	1,097
University of Houston	Yes	682
The University of Texas at Arlington	Yes	680
Sam Houston State University	Yes	568
The University of Texas at El Paso	Yes	500
The University of Texas at Dallas	Yes	321
Texas Women's University	Yes	303
Texas A&M University - Corpus Christi	Yes	272
Stephen F. Austin State University	Yes	239
Texas State University - San Marcos	No	–
Texas Tech University	No	–

Table 4: List of sampled schools and participating schools, and number of surveys received from each school that participated, small 4-year universities.

Strata: Small, 4-year Universities		
Sampled Schools	Participated	<i>n</i>
Abilene Christian University	Yes	494
West Texas A&M University	Yes	460
UT at Brownsville and Texas Southmost College	Yes	301
The University of Texas at Tyler	Yes	276
University of Houston - Clear Lake	Yes	151
Texas A&M University - Galveston	Yes	142
Texas Christian University	Yes	94
The University of Texas of the Permian Basin	Yes	93
Texas Wesleyan University	Yes	57
Texas A&M University - San Antonio	Yes	51
University of North Texas at Dallas	Yes	28
Sul Ross State University Rio Grande	Yes	11
Austin College	No	–
Dallas Baptist University	No	–
Midwestern State University	No	–
Rice University	No	–
St. Edward's University	No	–
St. Mary's University of San Antonio	No	–
Southwestern University	No	–
Tarleton State University	No	–
University of the Incarnate Word of SA	No	–

Table 5: List of sampled schools and participating schools, and number of surveys received from each school that participated, 2-year colleges.

Strata: 2-year Colleges		
Sampled Schools	Participated	<i>n</i>
Tarrant County College	Yes	495
San Jacinto College	Yes	141
Amarillo College	Yes	109
McLennan Community College	Yes	106
Southwest Texas Junior College	Yes	85
Temple College	Yes	80
Trinity Valley Community College	Yes	77
Del Mar College	Yes	76
Grayson County College	Yes	75
Lone Star College System - Kingwood	Yes	69
El Paso Community College	Yes	64
Alvin Community College	Yes	59
Weatherford College	Yes	57
Texas State Technica Colleges - Waco	Yes	55
Paris Junior College	Yes	53
North Central Texas Community College	Yes	33
Coastal Bend College	Yes	30
Northeast Texas Community College	Yes	20
Frank Philips College	Yes	18
Midland College	Yes	16
Panola College	Yes	14
Howard County Junior College	Yes	14
Galveston College	Yes	6
Alamo Community College - Northeast Lakeview	No	–
Alamo Community College - Northwest Vista	No	–
Dallas County Community College - El Centro	No	–
Dallas County Community College - Richland	No	–