University of Oregon Health Center Survey
Key Results, May 1998 and Selected Trends, 1993-1998

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Introduction and Background

The University of Oregon Survey Research Laboratory (OSRL) conducts an annual student survey for the University of Oregon Health Center. Begun in 1993, these surveys are intended to assess Health Center services and track health-related trends in student attitudes, knowledge, and behavior.

The focus of the 1998 Health Center Survey was student alcohol use and student perceptions regarding alcohol use. The 1998 also included a series of questions concerning Attention Deficit Disorders, including prevalence of diagnosis and prescription drug use. Additional survey topics included:

- present and comparative physical and mental health and wellness including suicide thoughts and attempts;
- health maintenance including pap smear checks and athletic participation;
- drug use;
- safety behaviors including driving or riding in a car under the influence of alcohol, use of safety belts, motorcycle and bicycle helmets;
- sexual activity including use of contraception and condoms, pregnancy, sexually transmitted infections;
- use of the Health Center: satisfaction, reasons for non-use, cost comparison;
- health insurance coverage;
- opinions on potential expansions of Health Center services;
- basic background and demographic characteristics, including number of dependents.

Survey Methodology

Survey Instrument Development

The Health Center Survey includes three types of questions: questions asked annually, those asked at regular intervals, and those intended for inclusion only once. Health Center and OSRL staff work closely together each year to develop survey questions that are appropriate to the University and Health Center's needs, comparable to other major Oregon and national surveys, and as valid and reliable as possible. To accomplish this, the survey instrument incorporates questions derived from meetings and discussions between Health Center staff, OSRL, and members of the University, as well as past surveys.

All survey questions underwent OSRL's standard three-pronged pretest procedure, involving: (a) members of the survey population, (b) OSRL's Questionnaire Review Committee, comprised of survey experts from OSRL staff and its university-wide advisory committee, and (c) potential users of the data from the Health Center. Individual questions were pretested for clarity, accuracy, validity, and variability of response. The

entire instrument was pretested for flow, length, comprehensiveness, and factors that affect respondents' cooperation and attention.

After the survey instrument was developed and refined for this year, OSRL staff sent it to Health Center representatives for review. OSRL staff incorporated minor changes requested by the Health Center and pretested the instrument until each individual question item and the entire instrument provided the most valid and reliable data possible.

Sampling

OSRL randomly selected a random sample of 600 currently enrolled University of Oregon students from the Registrar's records. Continuing Education students were excluded from the sample. Because of the survey's sensitive nature, respondents were sent a pre-contact letter several days prior to interviewing. The letter introduced the goals and purpose of the study, explained how respondents were chosen, assured confidentiality, and provided contact names and telephone numbers for questions they might have. Interviewing was conducted using OSRL's Computer Aided Telephone Interviewing (CATI) system.

OSRL's sampling procedure is an integral part of the CATI system. Sampling is pre-programmed and accomplished without interviewer intervention. Call records for each student are distributed randomly by the computer and appear automatically on interviewers' computer screens. Telephone numbers are dialed automatically to avoid dialing errors.

Out of the 600 sample records, there were 401 completed interviews. The response rate was 74%, with a 6% refusal rate[1].

For a sample of this size, sampling error will be relatively small. Sampling errors are calculated to help users of the data assess how much confidence can be placed in a particular result from sample survey estimates in order to generalize back to the population. Sampling error is determined in part by sample size: the larger a sample is, the lower the sampling error. Sampling error is also determined by how much variability there is in a particular statistic; thus, a 50-50 proportional split on a variable will have a higher estimated sampling error than a 95-5 proportional split. For a student population of roughly 15,000, the sample of 401 provides a confidence interval of 4.8 percentage points, at the 95% confidence level, for any question resulting in an even 50-50 split. This means that we can be 95% certain that the "true" results of the question, if asked of every UO student, would fall between 45.2% and 54.8% (i.e., 50% $\pm$ 4.8 percentage points). On a question resulting in a 95-5 proportional split (e.g., 95% answering "yes"), the confidence interval is 2.1, which means that we can be 95% sure that the true population figure is between 92.9% and 97.1%.

Data Collection, Processing, and Coding

OSRL completed 401 interviews with currently enrolled University of Oregon students from May 13-19, 1998. The particular timing of this survey was intended to fall more than a month after the end of Spring Break (behavior during Spring Break could artificially inflate reports of certain types of reported behavior, such as alcohol consumption). Calls were made at all times of the day during all days of the week, with the exception of Sunday morning. In order to avoid potential biases of interviewing only easy-to-reach respondents, each randomly chosen telephone number was dialed at least 10 times or until the respondent was successfully contacted, which ever came first. For no answers, busy signals and answering machines, CATI automatically scheduled callbacks at different times of the day and different days of the week.

In OSRL's Computer Aided Telephone Interviewing system (CATI), sampling, interviewing and data entry are accomplished interactively and seamlessly. Trained interviewers used telephone headsets in sound-reduced carrels at computer workstations connected by a Novell network. Interviews were pre-

[1] For more detailed information on call dispositions, response rates and refusal rates, please see "Sample/Response Rate Report" in this volume.

programmed and appeared automatically at each workstation. Data were entered as the interviewer spoke with the respondent. The CATI system eliminates out-of-range responses and wild codes by validating each response interactively and prohibits inappropriate responses from being entered. To maintain respondents' anonymity, names and telephone numbers were automatically stripped from interview data.

Several survey questions are open-ended. Open-ended coders created new code categories for each question new to the survey, while questions used in previous surveys were coded to the customized code categories developed in prior years.

Survey Results

This report focuses on two sets of results. The first section presents the findings of this year's survey, highlighting the results of questions that are new to the survey. The second section of results presents yearly trends on a certain small subgroup of questions of special interest to the Health Center. Statistical tests were conducted to assess the significance of differences in answer patterns observed over five years of the survey, for variables considered by the Health Center to be important indicators of student health. Many of these are general descriptors of health, such as the number of days ill, stress, and number of times used Health Center in the previous academic year. Others variables analyzed for significant differences from 1993 to 1998 include health insurance, marijuana and alcohol use, sexual activity, condom use and type of contraception.

Key Results, May 1998

The following survey results are organized as follows: demographic overview of the sample; general physical and mental health and wellness; safety issues, including carrying a weapon and automobile safety; alcohol use and perceptions of alcohol use; tobacco use; drug use including the use of Ritalin; sexual behavior, reproductive health and sexual violence; use of and satisfaction with the Health Center, and extension of Health Center services to others.

Demographic Overview of the Sample

Fifty-five percent of all respondents were female; more than half were 21 years of age or younger. Twenty-four percent were Seniors, 20% Juniors, 14% Sophomores, and 17.5% Freshman. The remainder were primarily graduate students (15.5%). Seventy-seven percent were never-married, 11% married, 10% cohabiting, and only 8 respondents were either divorced or separated. Only seven percent reported having responsibility for children in their household: 3% cared for one child while 4% cared for two children or more.

Seventy-six percent reported their race or ethnicity as non-Hispanic white, 10% Asian/Pacific Islander, 1% black, .5% American Indian, 4% Hispanic origin, and 2% mixed race. Nine percent were international students.

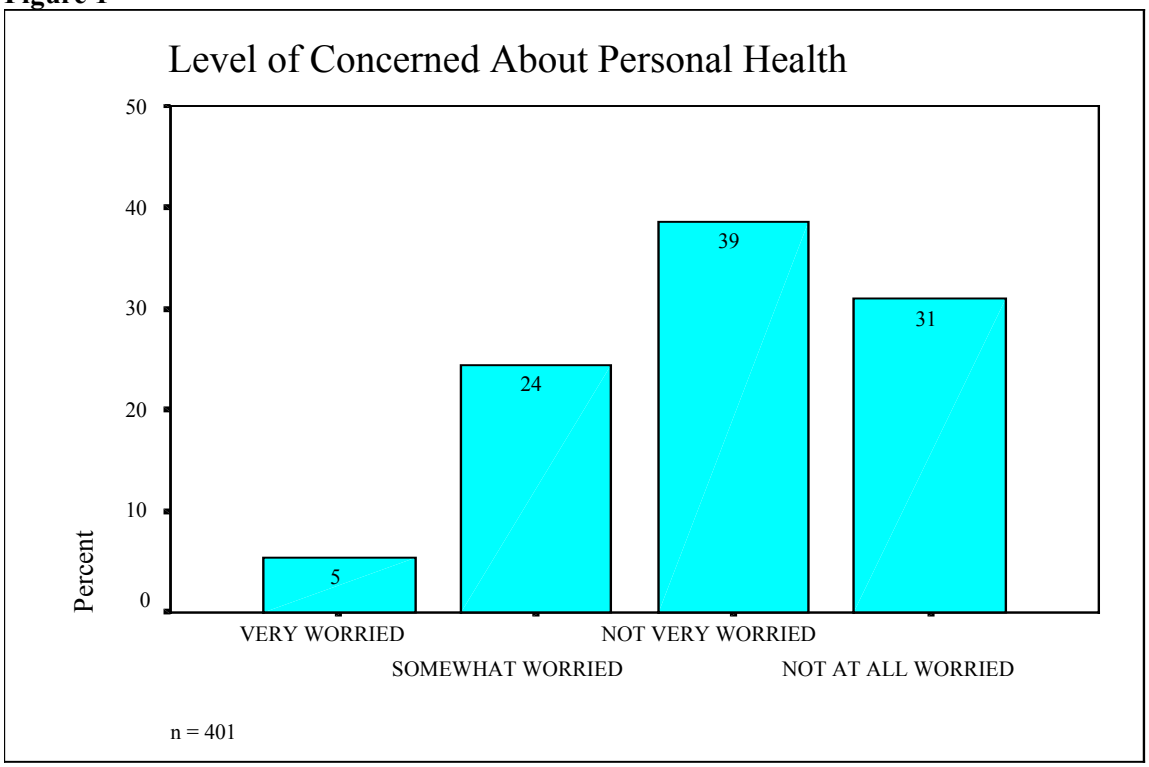
Twenty-eight percent of survey respondents reported living in University housing, 61% in off-campus housing, 1.5% in a fraternity or sorority, and 8% resided with parents, relatives, or someplace else. Nearly six percent reported fraternity or sorority membership, and 2.5% were intercollegiate athletes.

General Health and Wellness

Physical Health and Wellness
The survey began with a series of questions about physical and mental health in the recent past and present. Most students reported good health, with 49% indicating they were "very satisfied" with their current

health status and 70% indicating that they were either "not very" or "not at all" concerned about their current health status during the past month (Fig. 1). Males were somewhat more likely to be satisfied with their health status than females: 56% of males compared to 43% of females were very satisfied with their health; and only 21% of males, compared to 37% of females, indicated being "somewhat" or "very" worried about their personal health during the past month.

Figure 1



Nearly one-third (32%) had been sick enough to miss class or work in the previous month. Again, there was a notable difference between men and women: twenty-two percent of males compared to 40% of females had been ill during the past month.

Mental Health and Wellness

The instrument also included questions related to mental health, including happiness with personal life, how often life was full of interesting things, serious thoughts about suicide, and suicide attempts. Eighty-eight percent of respondents reported being somewhat or very happy in their personal lives in the past month, while the remaining 12% reported being not too happy or not at all happy. Thirteen percent reported life being full of interesting things "all of the time," 51% reported "most of the time," 35% indicated "some of the time," and only 4 respondents (1%) indicated that life was never full of interesting things.

Fourteen percent of those interviewed claimed to have ever seriously contemplated suicide at some point in their lives. Of these, 21% had considered suicide in the past twelve months; two respondents reported attempting suicide in the past twelve months.

Seventy-one percent of respondents claimed to do a good or excellent job handling stress in their life, twenty-five percent reported doing a fair job, and three percent poor. Sixteen percent had sought counseling for stress in the previous year. Unlike the questions relating to physical health, the response

patterns to the questions regarding mental health and wellness do not differ substantially between males and females.

Safety Issues

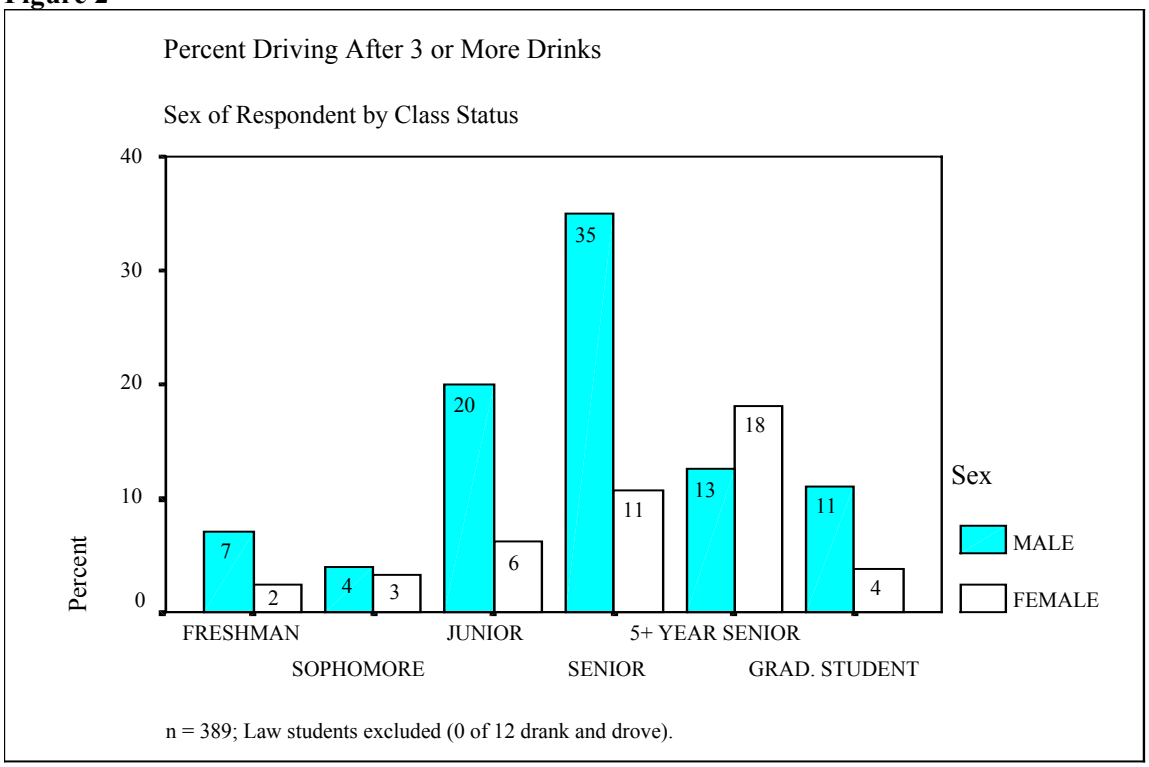
In 1998, the Health Center survey once again included nationally-normed questions regarding student safety to trace trends in correlates to accidental student mortality and morbidity. Subjects included: bearing weapons, use of motorcycle and bicycle helmets, use of automobile safety belts, and drinking and driving activities.

Students were asked two questions regarding the carrying of weapons. The first asked, "During the past 30 days, on how many days did you carry a weapon, such as a gun, knife, or club, excluding weapons carried as part of your job?" Interviewers were also instructed to exclude pocket knives, pepper spray, and guns used exclusively for hunting or sporting. Only 5 students (1.25%) indicated that they had carried a weapon during the past 30 days. The second question focused specifically on guns; two of the five respondents who had carried a weapon indicated that they had carried a gun during the past 30 days that was not used exclusively for hunting, sporting, or as part of a job.

Twenty-nine students (7%) had ridden a motorcycle in the past twelve months; of these, 25 reported "always" wearing a helmet, with the remaining 4 reporting "most of the time." Helmet-wearing patterns differed for bicycle riders: of the 75% of students who claimed to have ridden a bicycle in the past twelve months, only 20% used a helmet always or most of the time; 64% reported never wearing a bicycle helmet. Almost all (97%) respondents reported using a seat belt always or most of the time when traveling in an automobile.

Drinking and driving questions measured the extent of student exposure to drunk driving, both as a driver and a passenger. Eleven percent of respondents claimed to have driven at least once in the past month after having three or more drinks of alcohol and 26% reported riding in a car driven by someone who had been drinking. Sixteen percent of males and 6% of females reported ever drinking and driving, but females and males were approximately equal in their likelihood of reporting ever riding in a car driven by someone who had been drinking (28 and 25% respectively). Ninety percent of the respondents indicated living either in student housing or off campus (not including those living with a fraternity, sorority, or relatives); less than 3% of those in student housing reported drinking and driving whereas 15% of those off-campus drank and drove. Seniors were more likely to report drinking and driving: 21% of Seniors reported doing so compared to 15% of 5th year seniors, 11% of Juniors, 8% of Graduate Students, and roughly 4% of both Sophomores and Freshmen. A cross-tabulation of drinking and driving by sex of respondent and class status reveals that males in their senior year were much more likely to report drinking and driving than any other group (see Figure 2).

Figure 2



Alcohol Use and Perceptions of Alcohol Use

Eleven percent of survey respondents reported never drinking alcohol, another 31% reported a drinking frequency of less than one time per week, and 32% indicated drinking once per week. International students, were less likely to report drinking alcohol than their domestic counterparts: twenty-two percent of international students reported never drinking, compared with 10% of domestic students. Fourteen percent of those under 21 years of age reported never drinking, compared to 9% of those 21 or older.

Patterns of binge drinking were once again tracked through the questions, "On average how many days per week do you have 5 or more drinks per session?" and, "Thinking back over the last 2 weeks, how many times have you had 5 or more drinks at a sitting?" In response to the first question, 60% indicated that they never consumed 5 or drinks in one session, 20% indicated once per week, 6% indicated twice per week, just over 3% indicated doing so 3 or 4 days per week. The second question received similar responses: 69% indicated that they had not had 5 or more drinks in one session during the 2 weeks preceding the survey, 14% reporting one such session, and 10% indicated doing so two or three times.

Males were more likely to report engaging in binge drinking than females; 40% of males reported consuming 5 or more drinks at least one time per week, compared to 23% of females. Fourteen percent of both men and women reported consuming 5 or more drinks in a session one time during the two weeks preceding the survey; however, 8% of men indicated doing so 2 times, compared to 3% of women (see Figure 3). These patterns appear to have some association with class status, with the percent of females engaging in binge drinking peaking in the Sophomore year compared to the Junior and Senior years for males (see Figure 4).

Figure 3

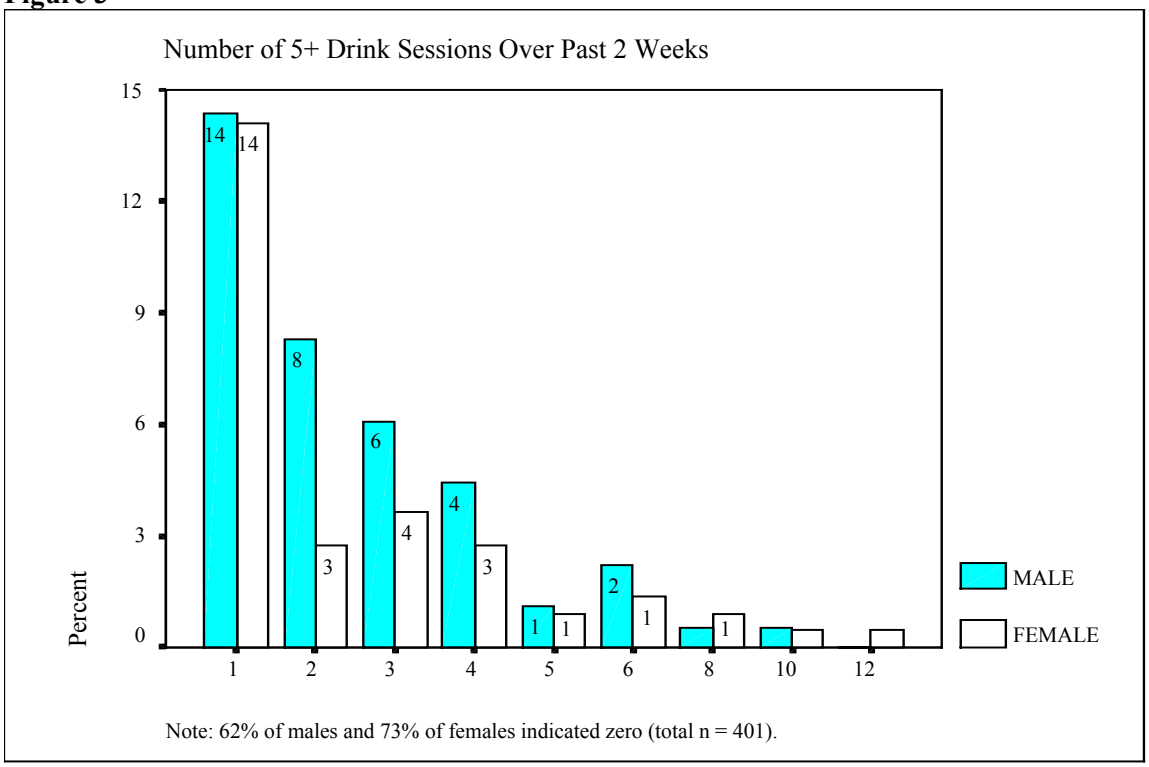
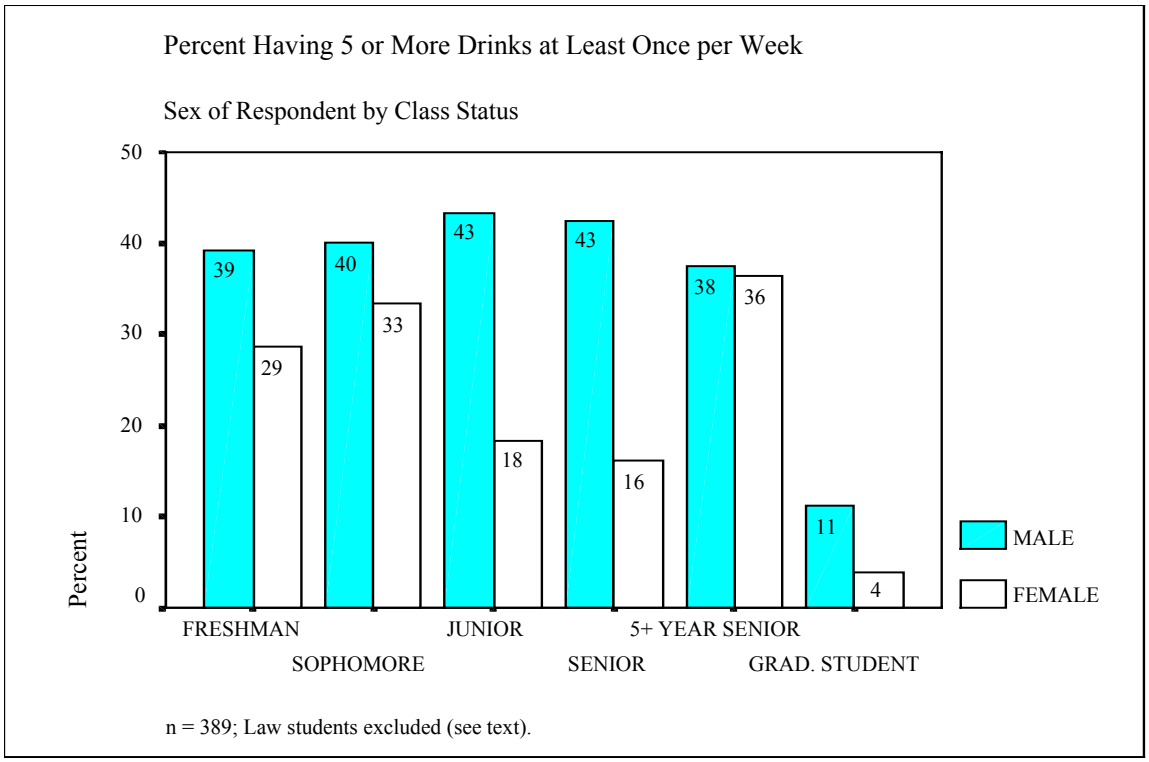


Figure 4 [2]

[2] Because of the small sample number of law students in this year's sample (12), law students excluded from this graph. Three of 6 male law students reported consuming 5 or more drinks at least once per week compared to 0 of 6 female law students.

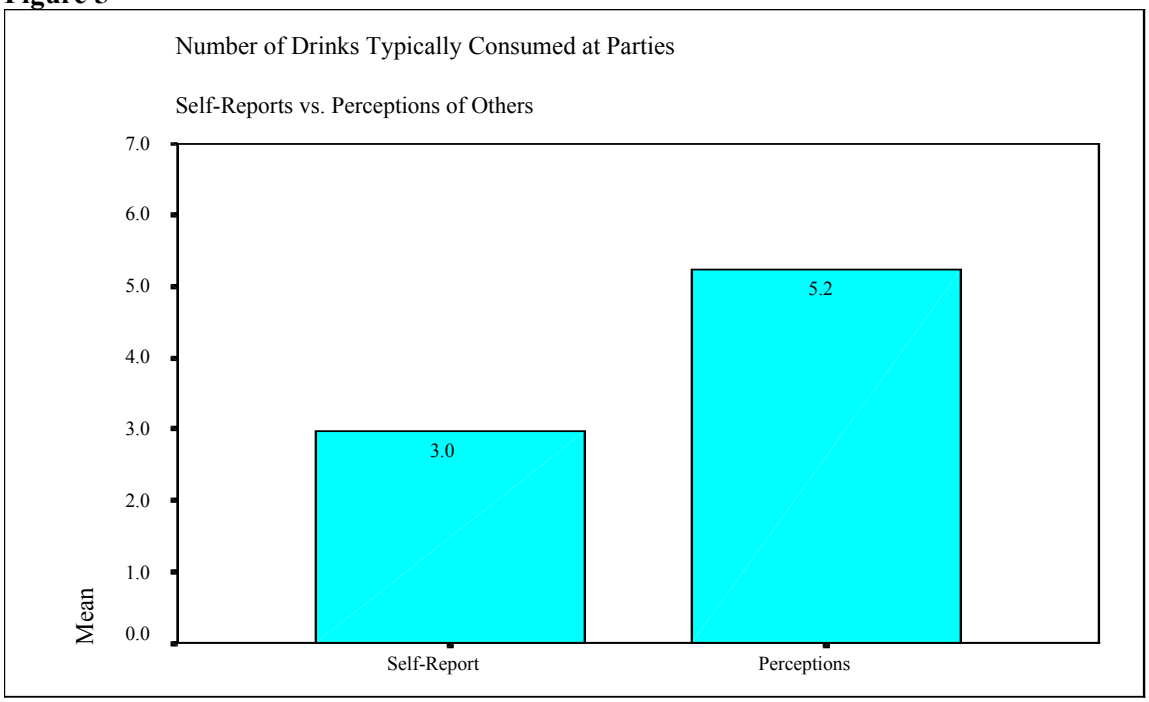


This year the Health Center Survey included six new questions regarding alcohol use; two that assessed student perceptions of alcohol usage and four that assessed dangerous behavior associated with drinking. In order to track perceptions of drinking, students were asked two questions: first, "When you go out drinking or to a party how many drinks do you typically have?" and then, "How many drinks do you think most students have when they go out drinking or to a party?" Interestingly student perceptions of drinking far exceeded the actual self-reports of drinking behavior. In response to the first question, *students reported consuming an average of 3 drinks when out at parties.*[3] *However, in response to the second question, students thought that other students drank and average of just over 5 drinks when at parties* (see Figure 5).[4]

[3] Median = 3, Mean = 2.89, Standard deviation = 2.39. When students who indicated they never drank alcohol (n = 44) are excluded, these figures change slightly: Median = 3.00, Mean = 3.25, Standard deviation = 2.29.

[4] Median = 5, Mean = 5.23, Standard deviation = 2.08.

Figure 5



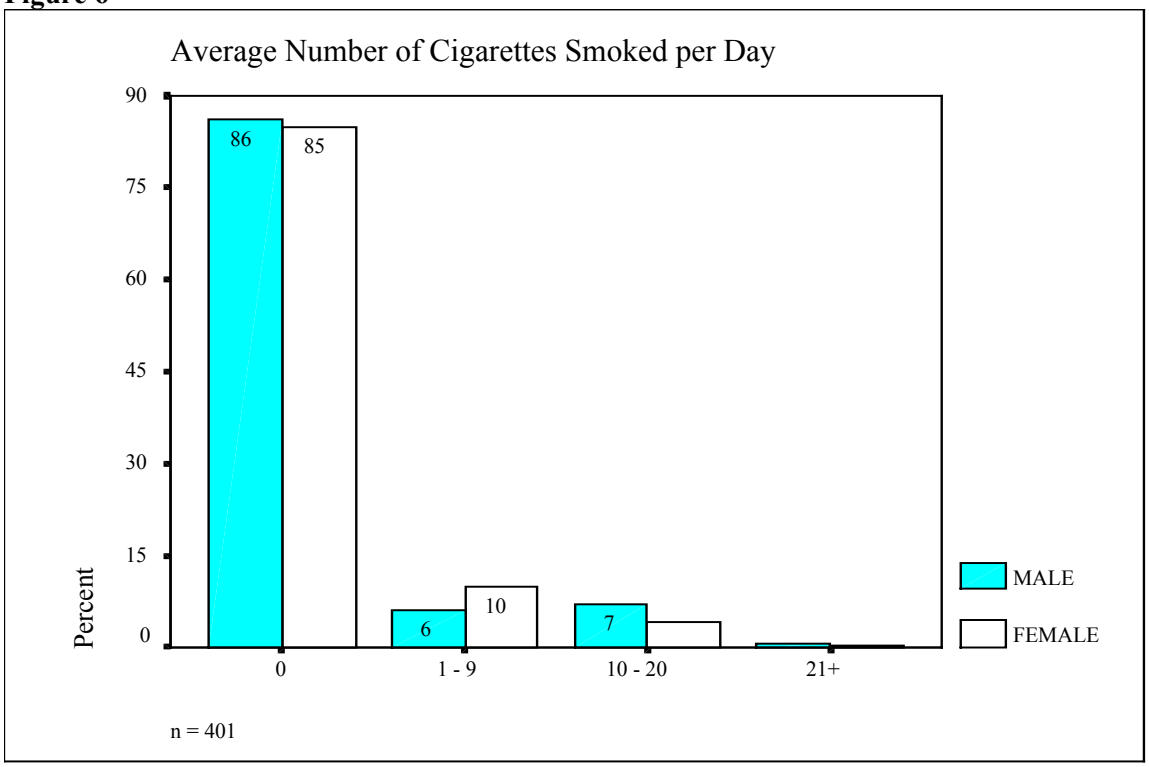
In addition to the questions regarding drinking and driving (see the section on safety, above), students were asked four question having to do with potential dangers associated with drinking. First, all students who reported drinking alcohol at least once per week were asked two questions regarding physical injuries: (1) whether they had injured either themselves and (2) whether they had injured others as a result of their drinking. Thirteen students, or over 5% of those who drink, reported physically injuring themselves as a result of drinking alcohol. Only 1 student reported injuring anyone else as a result of drinking alcohol.

The last two questions regarding potentially dangerous behavior associated with drinking alcohol had to do with establishing a baseline for the prevalence of alcohol over-consumption coinciding with the celebration of the 21st birthday. First all 256 students age 21 or older were asked, "How many drinks (of alcohol) did you have on the day that you celebrated your 21st birthday?" The average (mean) response was 5.69, the median was 4, and the range ran from 0 (18.5%), to 20 or more (3%). Fourteen respondents (5%) volunteered that they were too intoxicated on the day they celebrated their 21st birthday to remember how many drinks they consumed. The follow-up question asked of those who had at least one drink the day they celebrated their 21st birthday, was, "Did you have more drinks than you had planned on the day you celebrated your 21st birthday?" Twenty-five percent responded "yes."

Tobacco Use

Thirty-two percent reported *ever* having used tobacco regularly, 15% indicated that they were using tobacco regularly at the present time. Ninety-four percent of current tobacco users smoked cigarettes and 5% indicated using chewing tobacco. Most (57%) of the current cigarette smokers smoked less than one-half pack of cigarettes per day, 38% smoked "between a half and one pack," and 3% reported smoking "more than a pack a day" (see Figure 6). The median age at first tobacco use was seventeen. When smokers were asked, "If you could go back to the time when you first began to smoke, would you decide to smoke again?" thirty-six percent indicated "yes" and 55% indicated "no," the remaining 9% either refused or did not know.

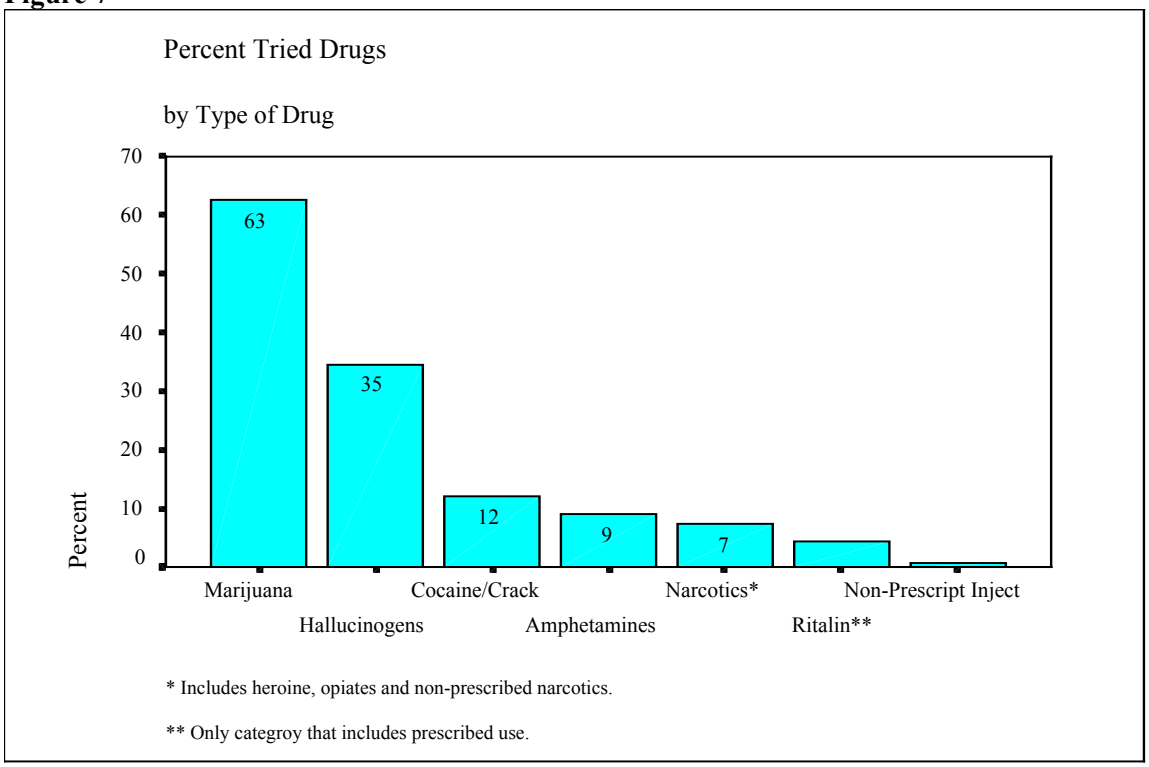
Figure 6



Drug Use

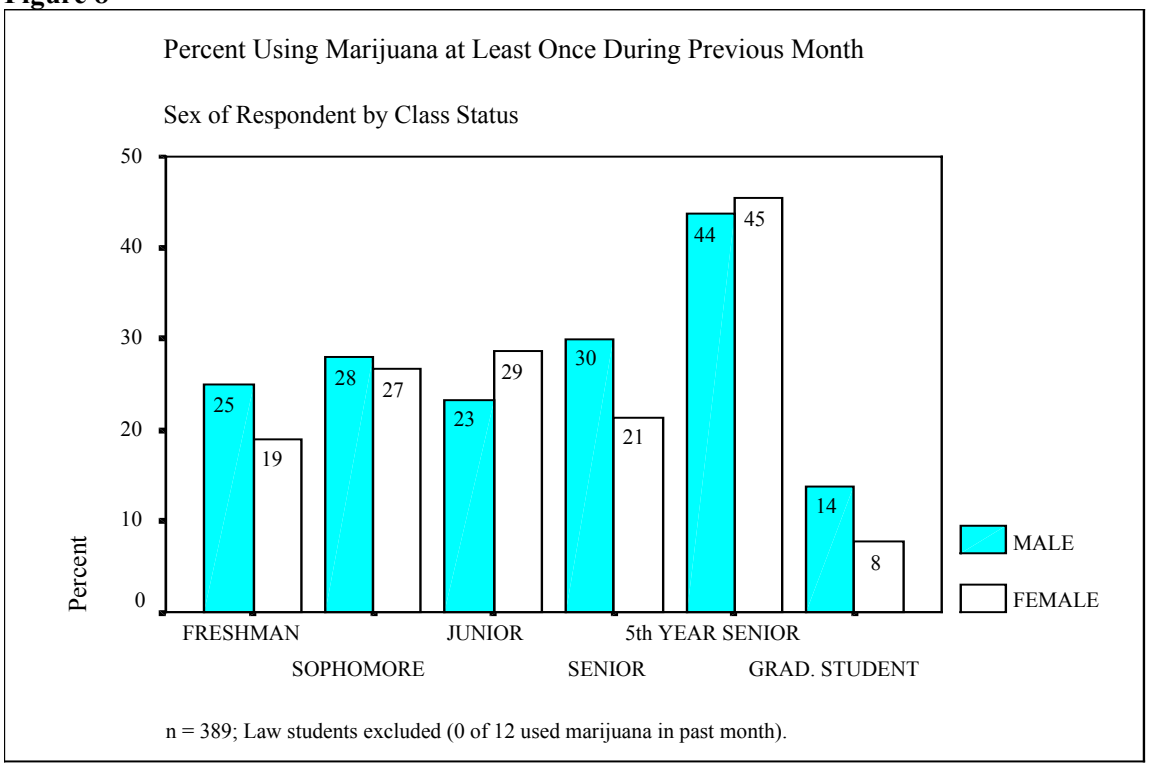
Complementary pairs of drug use questions inquired, first, if the respondent had ever tried the drug in question, and, if yes, how many times in the last month the respondent had used it. Drugs in question included marijuana, hallucinogens, cocaine, crack, amphetamines, heroine, opiates, non-prescribed narcotics, and non-prescribed injectables. Additionally, this year a series of questions regarding the use and abuse of Ritalin (and related drugs) were added in order to assess the prevalence of both prescribed and non-prescribed use (see Figure 7).

Figure 7



Marijuana was by far the most common drug tried by respondents: 60% reported ever using it. Men were somewhat more likely than women to have tried marijuana (67% compared to 59%), however, the percent of males and females who reported using marijuana at least once during the month preceding the survey was nearly equal (24% and 21%, respectively). The percent of students reporting that they had tried marijuana increases slightly with increasing class status: 53% of freshmen, 56% of sophomores, 58% of juniors, and 68% of seniors reported trying marijuana. The percent of students in these four classes who reported using marijuana during the month preceding the survey ranged from, 23% (freshmen) to 27% (sophomores). Fifth-year seniors were the most likely of any class status to have ever tried marijuana *or* to have used marijuana in the past month (78% and 42% respectively). Graduate students were the second most likely to have tried marijuana (71%), but were relatively unlikely to have used marijuana during the month preceding the survey (11%). A cross-tabular graph of marijuana use during the month preceding the survey by sex of respondent and class status is presented in Figure 8.

Figure 8



Use of Ritalin
Only seventeen respondents (4.2%) reported having tried Ritalin, whether prescribed or un-prescribed. In another part of the survey, four of these seven students reported that they had been professionally diagnosed with attention deficit hyperactivity disorder (ADHD), and two of the seven students reported that they were currently being treated for ADHD with a prescription drug.

Sexual Behavior

Sexual behavior questions included in the survey instrument concerned students' marital status, sexual orientation, engagement in sexual intercourse, age at first intercourse, number of sexual partners in past year, birth control usage, pregnancy, history of sexually transmitted disease contraction, and whether they had been forced into sexual activities against their will in the past year.

Seventy-seven percent of the respondents indicated that they had never been married, 11% were married, 10% were cohabiting, and 2% were divorced or separated. Ninety-three percent of the respondents indicated that they were heterosexual, 4% indicated bisexual, and 2% indicated homosexual. Respondents who had not been married asked if they had ever engaged in sexual intercourse. Seventy-four percent reported having engaged in sexual intercourse, including 82% of non-married males and 67% of non-married females. The median age at first sexual intercourse was seventeen.

Twenty-nine percent of the sample reported having no sexual partners in the past year, 50% had one sexual partner, 11% had two, and 10% had three or more partners. Seventy-eight of those who had ever been sexually active reported using contraceptives during their last intercourse. Far and away the most popular methods of birth control reported were condoms and birth control pills. Forty-five percent of the respondents who used contraception indicated they had used condoms during their last intercourse and 39% reported using birth control pills; 11% reported using condoms and birth control pills in combination. Ninety percent of those who were sexually active reported knowledge of the "morning after pill" and of the women who were familiar with the morning after pill 10%, or 16, had used it. Seventeen percent of those

who were sexually active had ever been or gotten someone pregnant; 31% of these pregnancies occurred while respondents were attending the U of O. Fifty-six percent of all reported pregnancies were accidental.

Twenty-three respondents, or 7.4% of those who had been sexually active, reported that they had ever contracted a sexually transmitted infection. Sexually active men were somewhat less likely to report sexually transmitted infection, at 4%, than were women, at 11%. These respondents were then asked to identify the disease(s) that they contracted; the most common responses were clamydia (9), herpes (7), and human papilloma virus (6).

Women were also asked whether they had undergone a PAP smear test in the past three years. Seventy-five percent indicated doing so. Respondents who had not had a PAP smear in the past three years were asked why they had not had the test. Thirty-six percent claimed not to need one yet, 30% said they had not had the opportunity, and 13% had not thought about it. Nine percent mentioned that the discomfort of the test deterred them from obtaining a PAP smear.

Eight respondents, or 2% of the sample, indicated that they had been forced to engage in sexual activity against their will during the past year. These respondents were asked a follow-up question that was new to the survey this year; "Were alcohol or drugs involved with the unwanted sexual activity?" Seven of eight respondents answered in the affirmative.

Health Center Use, Satisfaction with Services, and Insurance

A key goal of the Health Center survey is to assess student satisfaction with Health Center services. Respondents were asked the number of times they used the Health Center in the past year, the results of the visit, whether they would use the Health Center again, if services could be improved, and cost compared with other health providers. If the respondent had not used Health Center services in the past year, they were asked why they had not and if they were aware of Health Center services. Additional questions regarding insurance and ability to pay for health care allow the Health Center to determine its efficacy in providing services to all students in need of health care.

Seventy percent of respondents reported using the Health Center sometime within the past year. Sixty-six percent of males used the Health Center at least once in the past year, compared with 74% of females. Sixty-seven percent of those who had used the Health Center in the past year reported improved health as a result of the visit; 2% reported their health had sometimes improved, 26% reported no improvement, and 4% were not sure. Ninety-five percent indicated that they would use Health Center services again if necessary. Out of the 30% of all respondents who had not used the Health Center in the past year, 60% had not used Health Center services because they had not been ill and 21% cited having a private physician. No respondents indicated that the Health Center's reputation or an inability to schedule an appointment was their primary reason for avoiding the Health Center.

Both respondents who had used Health Center and those who had not used the Health Center but were aware of its services were asked if services could be improved. Thirty-eight answered "yes," 32% "no," and 29% "don't know." Those who indicated that the Health Center could improve its services were then asked how the Health Center could improve. The full text of these narrative responses can be found in another section of this report.

Respondents were also asked to compare the cost of health care services provided by the Health Center to other local providers: most (59%) recognized that the Health Center generally costs less, while 12% indicated that it costs "about the same," 3% thought that the Health Center was more expensive, and 25% indicated they did not know.

Respondents were asked about their health care insurance and whether they thought U of O students should be required to have health insurance. Eighty-six percent of respondents indicated that they were covered by some form of health insurance. Most of these respondents (69%) were covered by a parent, either out-

of-pocket or by the parent's employer. Eleven percent of insured students were covered through personal out-of-pocket expenditures and 9% indicated coverage through their employer. Eight percent claimed to often be unable to afford needed health care and 14% indicated they "sometime" were unable to afford needed health care.

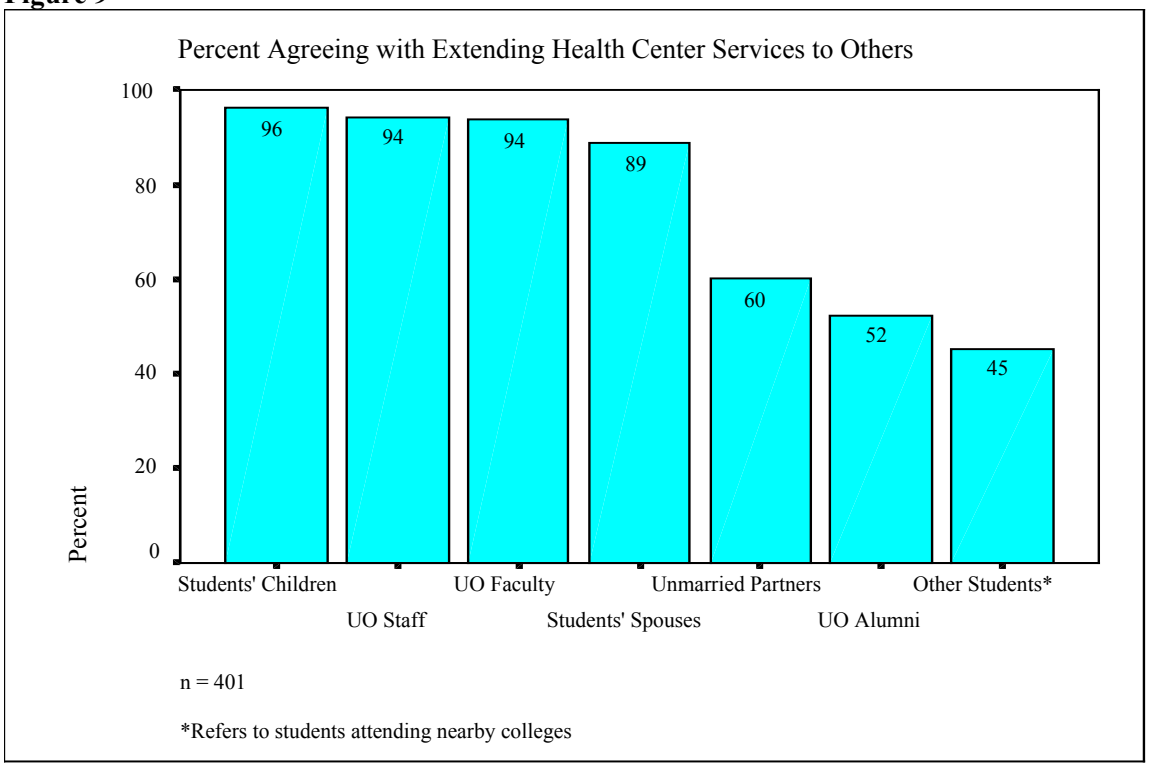
Fifty-five percent of respondents indicated agreement with the statement "All U of O students should be required to have health insurance." When asked to choose between two options for providing for increased costs of health center services, 37% indicated "increasing its prepaid fee for all students" and 58% preferred increased charges for those who made use of the Health Center services.

Opinions on Extension of Health Center Services to Others

The Health Center is considering extending its services to other groups in the community and therefore the survey instrument once again included a group of opinion questions to assess student support for inclusion of each of the following groups: spouses of U of O students, unmarried partners of U of O students, children of U of O students, faculty, staff, alumni, and students of other schools nearby (see Figure 9).

Ninety-six percent of respondents agreed with extending Health Center services to children of UO students, including 78% who "strongly" agreed. Ninety-four percent agreed with extending services to UO staff and faculty, including roughly 75% who strongly agreed with this idea. Eighty-nine percent agreed with extending services to husbands and wives of UO students (50% strongly agreed), and 60% agreed with extending services to unmarried partners of UO students (23% strongly agreed). Fifty-two percent agreed with the extension of Health Center Services to UO alumni (14% strongly agreed), and 45% agreed with extending services to students of nearby colleges (10% strongly agreed).

Figure 9



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Selected Trends, 1993-1998

By special request of the Health Center, the remainder of this report presents trends over the five years the Health Center has conducted its annual student survey. Chi-square tests, analysis of variance (commonly known as ANOVA) or, where required by data limitations, Kruskal-Wallis tests, were obtained for the following variables:

- NUSEHealth Center "How many times have you used the Health Center in the past academic year?";
- NDAYILL "How many days in the past month were you sick enough to miss class or work?";
- HAVEINS "Do you have health insurance?";
- HNDLSTR "How good of a job do you feel you are doing handling the stress in your life?";
- HCONCERN "What is your own personal major health concern right now?";
- DOUDRNK "On average, how many days per week do you drink alcohol?";
- NUSEPOT "In the past month, how many times have you used marijuana?";
- TESTPOT "Have you ever tried marijuana?";
- VIRGIN "Have you ever engaged in sexual intercourse?";
- BRTHCTL "During your last sexual intercourse, was a condom or other contraceptive method used?"; and
- HOWBCTRL "Which method was used during your last sexual intercourse?".

These variables serve as broad indicators of the health of the student body and the degree to which the Health Center is helping students meet their health-related needs. Tracking these variables may be considered part of the Health Center's mission to facilitate student wellness.

Before delving into the trends implied in the statistical analyses below, it is necessary to issue a disclaimer about the generalizability of the findings. The samples may share some overlap from year to year, as students who were randomly selected into the sample one year may also be selected the following year: there is no guarantee that the same respondents are not included in each year of the survey. Therefore any significant relationships found in the following over-time comparisons should be viewed with a grain of salt. This disclaimer should be kept in mind when reviewing the trend analyses below.

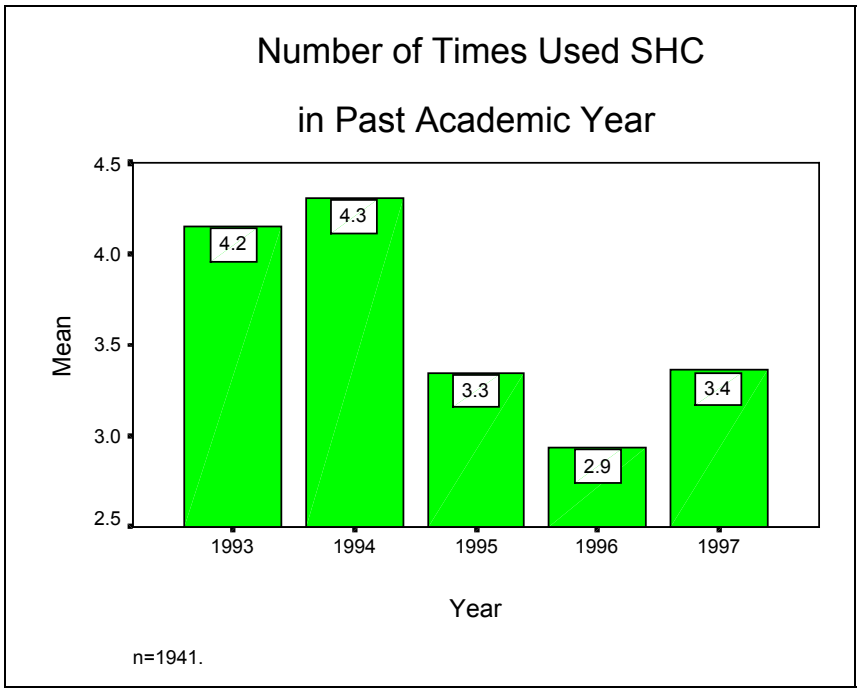
Health Center Use

Students have begun to use the Health Center less in the past five years (Figure 16). In 1993, students estimated using the Health Center an average of 4.2 times over the academic year. Usage peaked in 1994, with an average of 4.3 visits per year, and declined precipitously to 3.3 in 1995, 2.9 in 1996, and 3.4 in 1998. Due to sampling problems in 1996, it is likely that the sharp dip in this year represents an

understatement of usage for that year, as we oversampled Freshmen, who are less likely to use the Health Center than students who have been at the UO longer.

Statistical tests indicated that these apparent differences are not significant, however. The Kruskal-Wallis test[5] showed that group means were unlikely to be different by year (p=.062). Even using an admissible p-value of .1, additional non-parametric tests for significant differences between groups[6] indicated that the variance within groups was not significantly different from that between groups. Thus, the hypothesis that the mean number of times students used the Health Center was different in each year can not be supported.

FIGURE 16



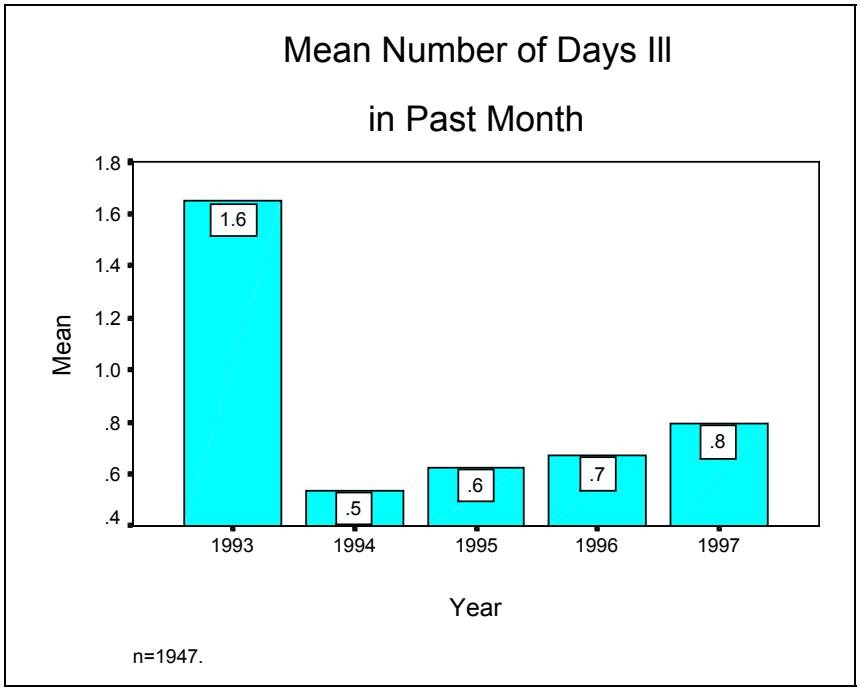
Illness

Part of the reason why the number of visits to the Health Center may have dropped from 1994 to 1995 is a decline in morbidity. Figure 17 depicts a steep decline in reported days of illness in the month preceding the survey from 1993 to 1994; students reported an average of 1.6 days ill in the previous month in 1993, while in 1994 the figure dropped to .5. Note the time lag of one academic year between incidence of illness and average number of visits to the Health Center.

[5] The Kruskal-Wallis test was used instead of the more customary ANOVA test due to variance differences between groups. The Levene test of homogeneity was rejected at p=.001.

[6] This refers to the Dunnett's C non-parametric test.

FIGURE 17

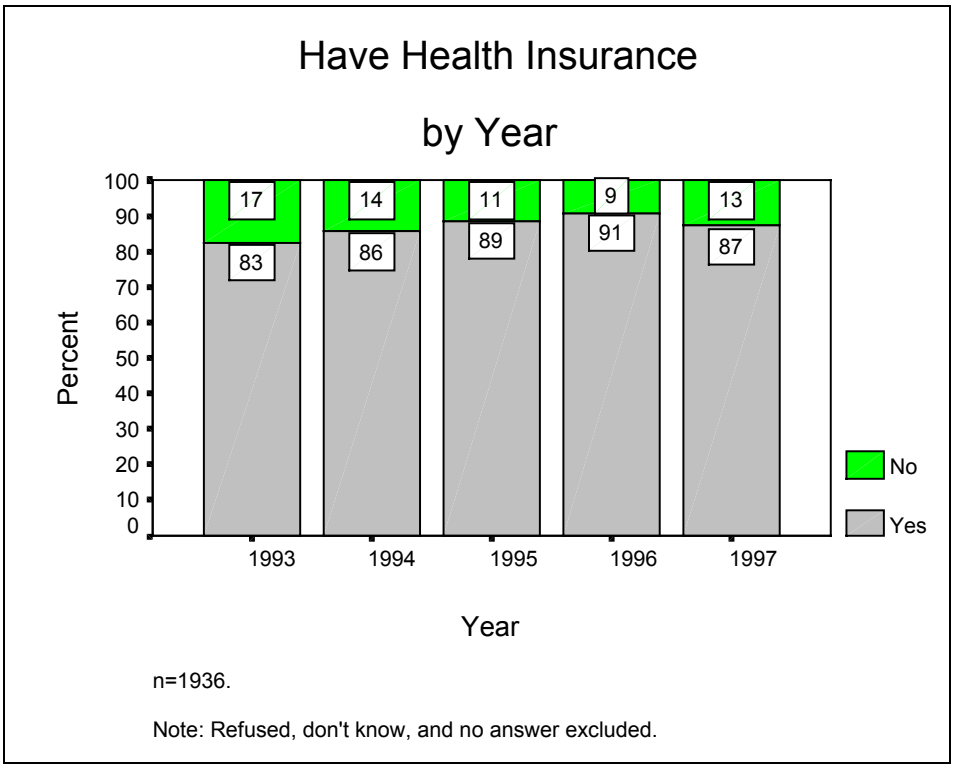

Mean Number of Days Ill
in Past Month
Mean
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
1.6
.5
.6
.7
.8
1993
1994
1995
1996
1997
Year
n=1947.

A Kruskal-Wallis test indicated significant differences between the years at p<.000[7]. As one might conclude from visually inspecting Figure 16, the number of days ill in the month prior to the survey in 1993 differs significantly (p=.05) from the remaining years.

Health Insurance

Respondents in 1993 were somewhat less likely to have health insurance than students in subsequent years (Figure 18). Eighty-three percent in 1993 reported having health insurance, compared with 86% in 1994, 89% in 1995, 91% in 1996, and 87% in 1998. The 91% figure for 1996 is likely a slightly inflated estimate of the true population mean, reflecting the overrepresentation of Freshmen in the sample, but is not significantly different from other years. Chi-square tests reveal a significant relationship between year and the proportion having heath insurance (p=.017). Goodman and Kruskal's tau indicates that this relationship is small but significant, with year reducing the error in predicting the proportion who have health insurance by .6%, p=.017.

FIGURE 18



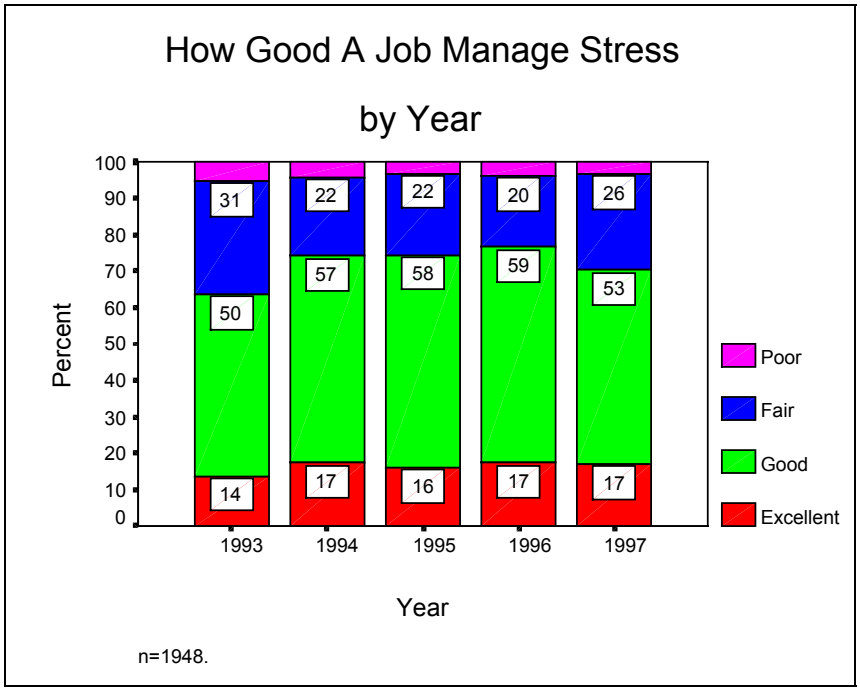
Stress Management

With the exception of 1993, the proportion of students reporting that they do an excellent or good job managing stress in their life has remained relatively stable from 1993 to 1998, ranging from 70%-76% (Figure 19). Nevertheless, reports of the quality of student stress management were not significantly different by year. Chi-square tests barely failed to reject the null hypothesis that stress management was independent of survey year at p=.059. An examination of Kendall's tau b lends support to the variables' relative independence, as the significance of tau b was also less than p=.05.[8]

[7] Again, the Kruskal-Wallis test was used because the requirement of equivalent group variances was not met. The Levene test of homogeneity was rejected at p=.000.

[8] p=.017.

FIGURE 19

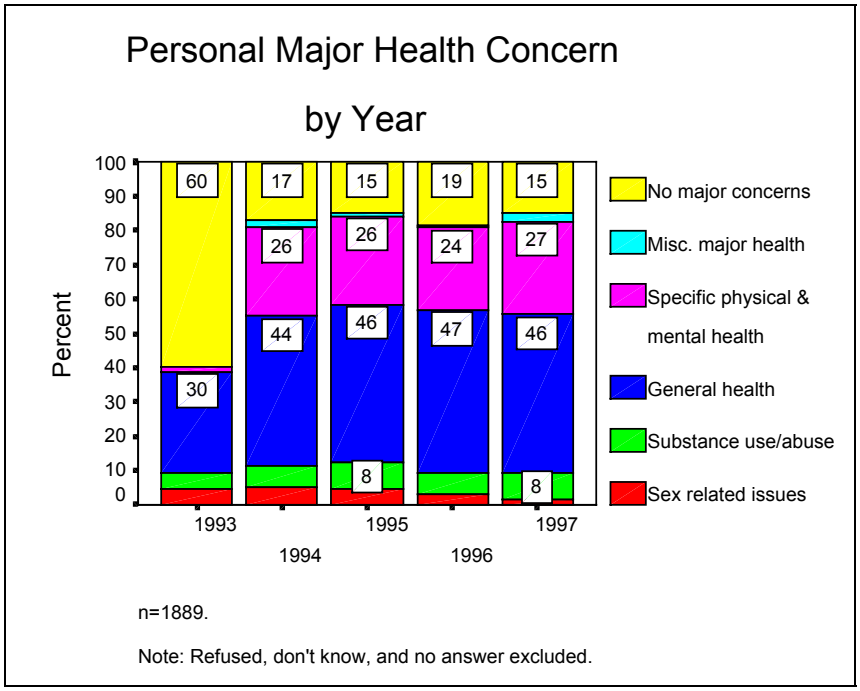


Health Concerns

Students' personal major health concerns have changed significantly over time, and the 1993 survey is the most radically different from the other years. First, note that data were recoded into general code categories to make useful comparisons over time. Respondents to the 1993 survey were far more likely to have cited no major heath concerns to the interviewer: 60% of respondents reported having no major health concerns in 1993, compared with 24% to 27% in the following years. Issues of substance use or abuse and sex related issues were the most similar to the other years (Figure 20). This difference may be due to instrumentation or coding changes from 1993 to 1994. Barring this explanation, however, the differences among groups is significant at $p<.000$[9], and lambda indicates that knowledge of the survey year aids in predicting major health concern by 7.4%, $p<.000$.

[9] Pearson chi-square = 288.877 for df=20.

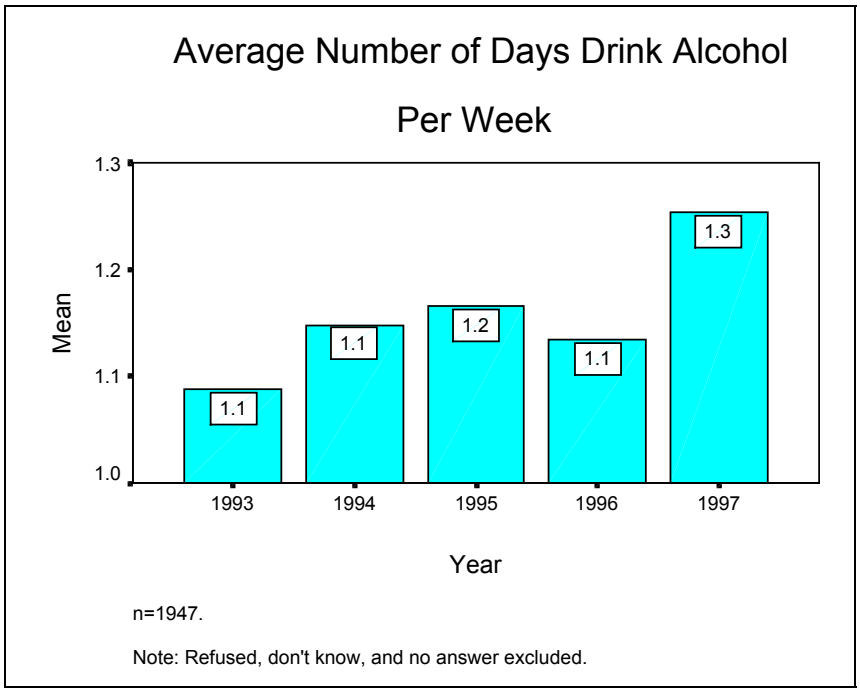
FIGURE 20



Alcohol and Marijuana Use

The average number of days respondents drink alcohol has been remarkably stable over time. In 1993, respondents reported drinking an average of 1.1 days per week, while in 1998 the reported average was 1.3 (Figure 21). ANOVA tests support this stability over time with an insignificant p-value of .520.

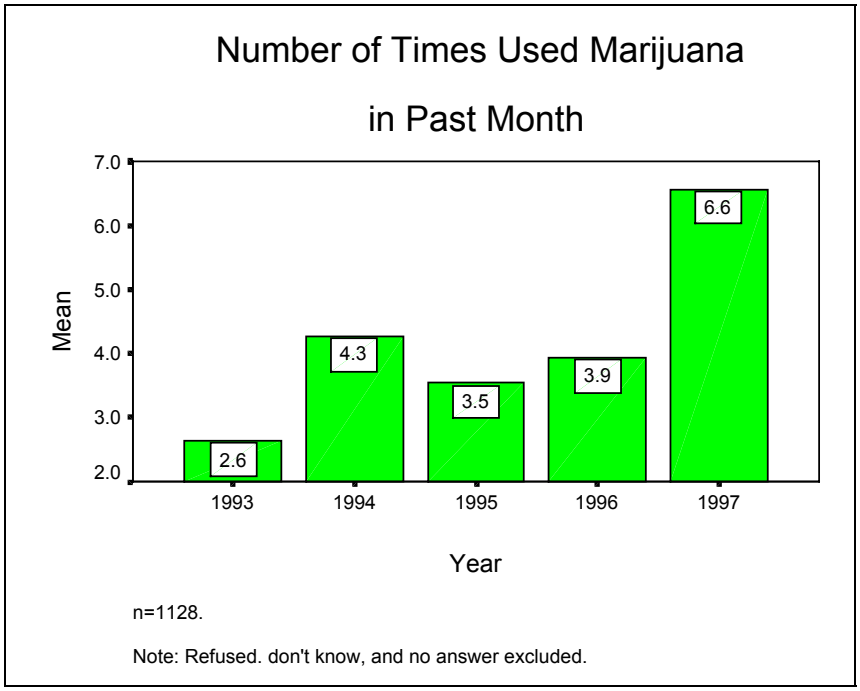
FIGURE 21



The mean number of times respondents reported using marijuana in the month preceding the survey has more than doubled, from 2.6 times per month in 1993 to 6.6 in 1998 (Figure 22). The Kruskal-Wallis[10] test for group differences indicate no significant difference in frequency of marijuana use by survey year (p=.075). However, using an admissible significance of $p < .1$, the number of times respondents used marijuana in the past month in 1993 was significantly different from 1998, with p=.05.[11]

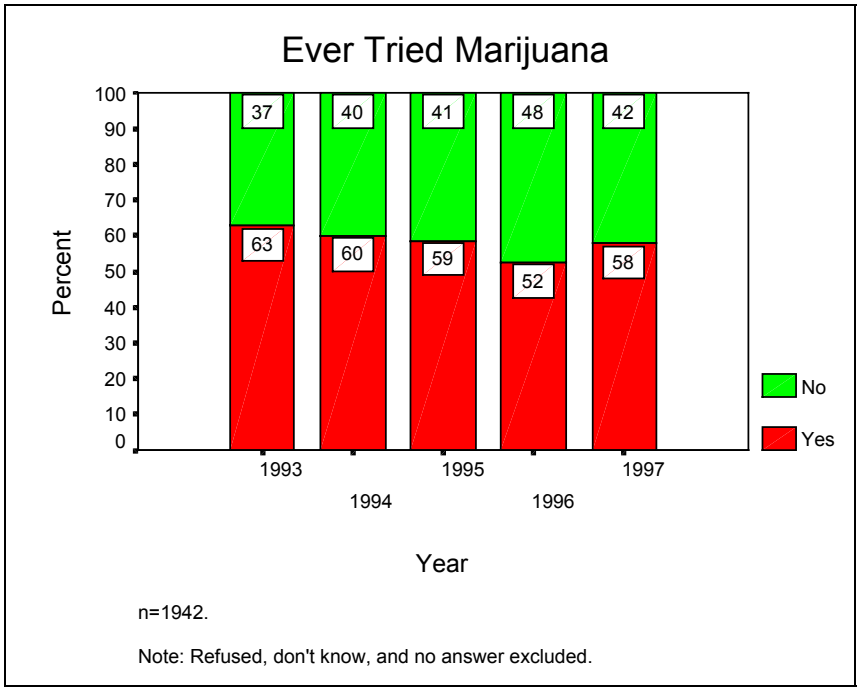
The proportion of students reporting ever having tried marijuana, however, has not changed significantly over time. Sixty-three percent of respondents to the 1993 survey and 58% of respondents to the 1998 survey reported ever having tried marijuana (Figure 23). Chi-square tests indicate little significant relationship between year and having tried marijuana (p=.077); what appears to have changed is the frequency of use, and not the proportion of users.

FIGURE 22



[10] Levene's test for homogeneity was rejected at p=.000, and thus the Kruskal-Wallis test was used.
[11] Using Dunnett's C non-parametric test.

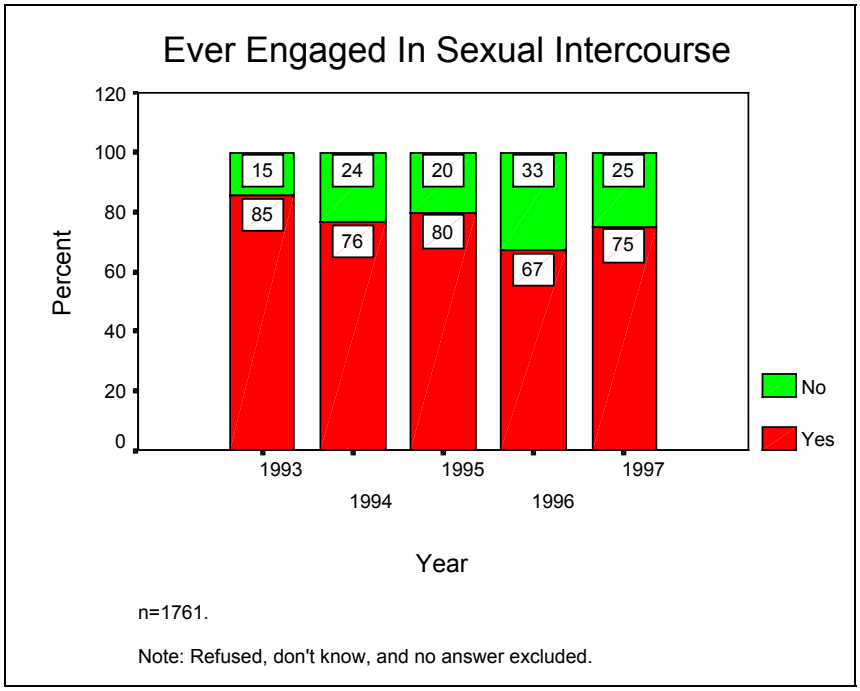
FIGURE 23



Sexual Activity and Contraceptive Use

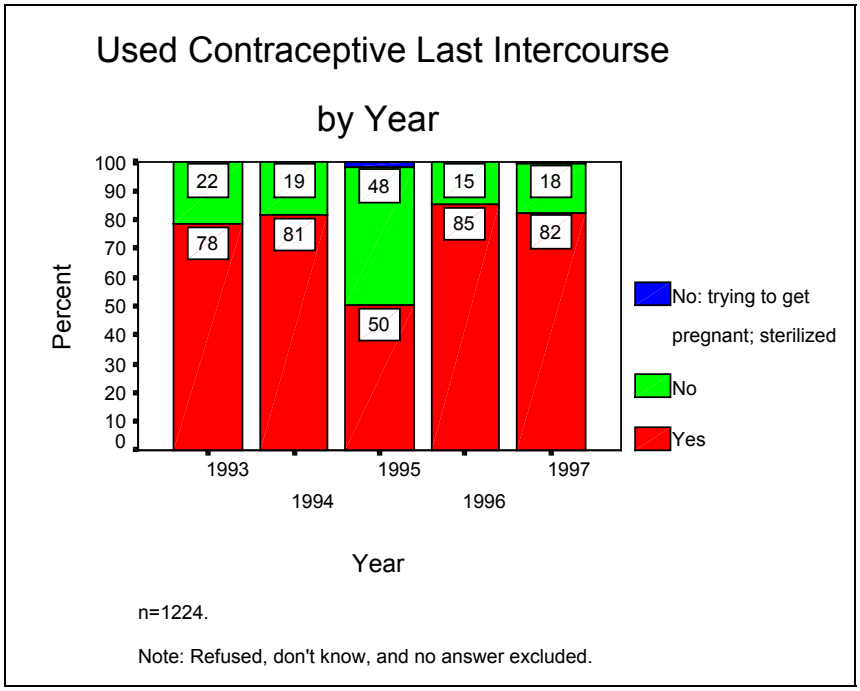
The proportion of respondents who have ever engaged in sexual intercourse has decreased from 1993 to 1998 (Figure 24). In 1993, 85% reported having ever engaged in sexual intercourse, dropping to 75% by 1998. The much lower 67% figure for 1996 probably reflects the young age of that sample, which oversampled Freshmen, and therefore understates the true population mean for that year. The Pearson chi-square statistic lends support for a relationship between sexual activity and survey year, $p<.000$, and lambda value of .022 ($p=.032$) indicates that the error is reduced by 2.2% if we use survey year to predict sexual activity, a relatively weak but statistically significant relationship.

FIGURE 24



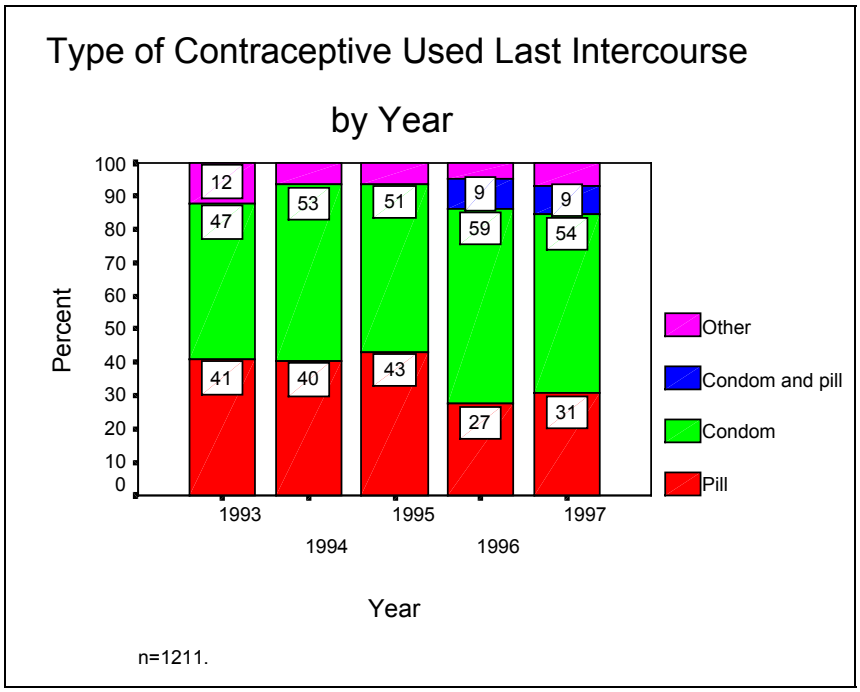
The percentage of respondents who used a contraceptive device during their last intercourse varies significantly by year (p<.000) (Figure 25). However, the apparent dramatic decline in contraceptive use in 1995 is an artifact of changes made to the questionnaire's skip logic in that year to a previous question that inquired: "With your most recent sexual partner, how often were condoms or other birth control methods used during sex?" Always, never, or sterilized or trying to get pregnant responses were skipped over the question on contraception during last sexual intercourse.

FIGURE 25



1995's skip logic changes have not affected the comparability of contraceptive methods used by year, which vary significantly (Figure 26). Although it was only possible to analyze the data in four broad categories, it appears that pill usage has diminished during the past two years. Forty to forty-three percent of respondents used the birth control pill during their last intercourse in 1993-95; by 1996 it had dropped to 27%, and in 1998, 31% claimed to have used this method of contraception. The 27% figure of 1996 may understate the prevalence of the pill as a contraceptive due to the oversample of Freshman respondents obtained in that survey. The Pearson chi-square indicates that type of contraceptive used is related to the survey year, although Goodman and Kruskal's tau indicates that this relationship is rather weak (tau=.014; p<.000).

FIGURE 26



Conclusion

The annual University of Oregon Health Center survey is a useful implement for providing annual data on student health-related attitudes, knowledge, and behavior. The 1998 survey's focus on tobacco use and safety issues provides critical insight into the health risks taken by UO students. Furthermore, 1998 constitutes that fifth year of consistent data-gathering effort by the Health Center and OSRL. Although the merged data set does not constitute an EPSEM[12] sample, there are some significant differences by year for some of the focus variables. The appearance of these "trends" suggest the possibility for new Health Center policies and programs to focus on these issues to provide the best possible care for all UO students.

[12] EPSEM stands for "equal probability of selection method," or a truly random sample in which each member of the population has exactly one chance of being selected into the sample.