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SURVEY METHODS

SURVEY INSTRUMENT DEVELOPMENT, SAMPLING,
DATA COLLECTION, DATA PROCESSING,
QUALITY CONTROL, DATA REDUCTION,
CODING, FUTURE PLANS

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INTRODUCTION

This report summarizes the University of Oregon Survey Research Laboratory's (OSRL's) survey methods for its tenth annual University Health Center (UHC) Survey. Working closely with UHC representatives, Gerald Fleischli, Anne Mattson and Paula Staight, OSRL planned, pre-tested, and implemented a telephone survey of 403 randomly selected University of Oregon (UO) students.

BACKGROUND

The UHC intends for the annual survey to assess its services and to track trends in student knowledge, attitudes, and behaviors in regards to their health. The UHC and OSRL have developed three broad groups of survey questions:

1. core questions asked annually,
2. periodic questions asked in either odd or even years, and
3. topical, *ad hoc*, once-only questions intended to tap issues of the moment.

SURVEY METHODS

This section describes OSRL's procedures for developing and implementing the telephone survey instrument and sample to conduct this representative study.

SURVEY INSTRUMENT DEVELOPMENT

In spring of this year UHC and OSRL staff collaborated in meetings and discussions to identify the periodic questions to include in the 2003 instrument, to ascertain and rectify problems with any core or periodic questions, and to distinguish key concepts for topical questions. The team endeavored to operationalize survey questions appropriate to the UO's needs, UHC's needs, comparable to relevant Oregon and national surveys, and as valid and reliable as possible, at reasonable data collection cost.

The UHC Survey 2003 included the following topics:

1. **Physical and mental health and wellness**, including overall assessments, pain, illness, height, weight, suicide thoughts, suicide attempts, and stress;
2. **Health maintenance** activities, including pap smear checks, exercise, and athletic participation;
3. **Tobacco, alcohol, drug, and herbal remedy use**, with special attention to marijuana;
4. **Safety behaviors**, including drunk driving, sex under the influence of alcohol or drugs, car safety belt use, motorcycle and bicycle helmet use, and the carrying of weapons;
5. **Sexual activity**, including contraception use, condom use, pregnancy, rape, sexual orientation, and sexually transmitted diseases;
6. **UHC use and knowledge**, specifically student satisfaction, reasons for non-use, and suggestions for improving services;
7. **Health insurance** coverage, who pays for it, medical expenses, and insurance opinions;
8. **Opinions** about fee increases; and
9. **Basic background and demographic characteristics**, such as age, sex, race/ethnicity, residence, GPA, marital status, and parental status.

All survey questions underwent OSRL's standard four-pronged pretest procedure, involving:

(a) interviews with potential members of the survey population,

(b) interviews with OSRL's Questionnaire Review Committee, comprising survey experts from our staff and university-wide advisory committee,

(c) potential data users from the UHC, and

(d) a software utility called "Timer" used to estimate average interview length in advance.

Individual questions were pretested for clarity, accuracy, validity, and variability of response. OSRL staff pretested the entire instrument for flow, comprehensiveness, length, and factors potentially affecting respondents' cooperation and attention.

Section 2 of this report provides a facsimile of the final telephone survey instrument, with embedded "topline" results and skip logic.

One week before data collection commenced, OSRL mailed a precontact letter to all 650 randomly sampled students. Section 3 of the report binder contains a facsimile letter. Due to certain survey questions' sensitive subject matter, UO's Committee for the Protection of Human Subjects requires OSRL to send this letter. The pre-contact letter introduced the study's goals and purpose, explained its importance, described how respondents were

selected, identified the potentially sensitive subject areas in the survey interview, assured confidentiality and voluntariness, and provided contact names, email addresses, and telephone numbers for respondents who had questions. Each precontact letter contained an original signature of OSRL's Director, signed on a soft surface with a ballpoint pen, in order to achieve indentation.

SAMPLING

OSRL randomly selected 650 currently enrolled UO graduate, law, and undergraduate students from the Registrar's records for the survey sample. As in prior years, we excluded Continuing Education Program students from the sample. Perforce, we also excluded students lacking local telephone numbers; they comprised 19% of the student body population. This report's concluding section addresses the growing problem of UO students' failure to supply local telephone numbers.

Sampling error for a study of this size is moderate to small. Survey sampling errors assist users of these data in assessing how much confidence to place in a particular survey result. Moderately large random samples, as in this study, reduce sampling error. Survey results with low variability also produce less sampling error; e.g., a variable with a 5/95 proportional split has narrower confidence intervals than a variable with a 50/50 proportional split.

For this study, the confidence interval is ±4.8 percentage points on variables with a 50/50 proportional split (at the 95% confidence level). This means analysts can be 95% sure that the true population figure lies between 45.2% and 54.8% (i.e., 50% ±4.8 percentage points). For variables with a 5/95 proportional split, the confidence interval is ±2.1, which means analysts can be 95% sure that the true population figure lies between 92.9% and 97.1% (i.e., 95% ±2.1 percentage points). For detail, see OSRL's "Sampler" at http://osrl.uoregon.edu/papers/sampler/.

DATA COLLECTION, DATA PROCESSING, AND QUALITY CONTROL

OSRL timed the survey to fall more than four weeks after the end of Spring Break (since students' Spring Break activities could artificially inflate certain behavior reports, such as alcohol consumption and sexual activity).

OSRL conducted interviewer training on Thursday, May 1, 2003; see Section 3 for interviewer instructions. Only experienced interviewers worked on this study. Interviewing commenced on Friday, May 2, and continued until Tuesday, May 13, when the target sample size was achieved, n=403. Interviewers called at all times of the day and all days of the week, with the exception of Sunday morning. Interviews averaged 14.4 minutes. On average, interviewers made over 12 telephone dial attempts for each completed interview, but made up to 31 calls to complete interviews. All interviews were conducted in English.

Altogether, OSRL interviewers made 5,001 telephone calls to complete 403 interviews. Among the original 650 telephone numbers chosen, 54 were unusable because the number was wrong, disconnected, non-working, nonresidential, or a fax/modem telephone number. In addition, three randomly-chosen students were gone for the study dates and, therefore, could not be interviewed.

OSRL routinely reports a CASRO-type response rate, according to the highest industry standards (source: Robert M. Groves, *Survey Errors and Survey Costs*, 1989). The formula for calculating this response rate requires interviewers to assign each telephone dial attempt a call disposition code. At the completion of the survey project, OSRL uses the final disposition code for each telephone number to calculate the response and refusal rates. This survey achieved an overall survey response rate of69% and a refusal rate of 4%[1]. Section 4 provides the study's complete sample, call disposition, and response rate report.

OSRL conducted the survey using a WinCATI system, which accomplishes sampling, interviewing, and data entry interactively and seamlessly. Interviews are pre-programmed and appear automatically at each workstation. The programmed survey instrument contains all survey questions, interviewer probes for consistency, and pre-coded answer categories. Skip logic is programmed into the system, preventing inappropriate or incorrect questions from being asked. The WinCATI system eliminates out-of-range responses and wild codes by validating each response interactively and disallowing the entry of inappropriate responses.

In administering the survey instrument, trained interviewers use telephone headsets in sound-reduced carrels at computer workstations connected by an NT network. Randomly-distributed telephone numbers appear automatically at each workstation and WinCATI mates them to the survey instrument. Interviewers place telephone calls with a computer keystroke, effectively preventing dialing errors. As respondents answer questions, interviewers enter the data into the WinCATI data file. The system automatically strips telephone numbers and names from interview records to ensure confidentiality. Thus, the WinCATI system eliminates many routine and error-prone coding and data entry tasks, enabling OSRL to maintain the highest quality standards.

Interviewer training is a key aspect of quality control at OSRL. We employ only highly trained, skilled and motivated interviewers. General interviewer training begins with an extensive program of broad interviewing skills, neutral probing, bias-free responses, telephone etiquette, practice interviews, role-playing and supervisor testing. We also completely train and test interviewers in WinCATI to ensure that they work the data collection system flawlessly. General training is followed by several hours of project-specific training for each survey. Project-specific training includes an overview of project goals and sample, unusual study features, respondents' commonly-asked questions

[1] Response rate was calculated in following manner. Completed interview / (Eligible sample + ((Eligible sample / (Eligible sample + Ineligible sample)) * Sample with unknown status)). See Section 4 for more detail.

revealed in pretesting and interviewers' scripted responses, as well as role-playing using both paper and WinCATI versions of the survey. Finally, at interviewing shift's start, Interviewer Supervisors hold a 5-10 minute mini-training to review and refresh interviewing techniques and to address any new developments in the survey process.

Project management and supervision is another key element to OSRL's quality control. Interviewer Supervisors continuously monitor the interface between respondents, interviewers, and the computer systems that record respondents' answers. Interviewer Supervisors routinely evaluate, test and provide Interviewers with constructive criticism. OSRL provides Interviewers pre-scripted answers to respondents' common objections and questions as part of their training, but supervisors also are always available to help should the need arise. Finally, OSRL's laboratory setting creates a valuable sense of teamwork among interviewers, which in turn provides peer monitoring and mutual helpfulness dedicated to quality.

DATA REDUCTION AND CODING

After data collection, a Project Director transfers the raw data from WinCATI into SPSS and Excel with appropriate variable and value labels and, if necessary, makes data corrections recorded by interviewers.

This instrument included several open-ended survey questions. OSRL interviewers record open-ended responses exactly as spoken by respondents, word for word. After data collection, experienced coders transform these open-ended responses into numerical categories to aid survey analysis. The study Project Director then merges the coded open-ended answers with the survey database.

Coders used previously developed open-ended code categories for this year's study to maximize compatibility with previous results. The code categories required only very slight modifications to accommodate this year's results. Section 7 provides these answer category codes.

FUTURE PLANS

Both OSRL and UHC staff believe this study could benefit by testing for "order effects" in certain questions. This year's study attempted respondent randomization across different combinations of question sequence to test order effects, but a software programming glitch failed to implement the tests. Instead, as in previous years, the instrument asked all respondents those key questions in the same order. OSRL Project Director Dan Burghart has already contacted the WinCATI software manufacturer to ensure that this study's potential order effects can be duly tested next year with the necessary programming and analysis.

In addition, before next year's annual survey and with UHC's support, OSRL needs to examine a growing potential study bias, namely students' failure to provide local telephone numbers to UO's Registrar. Roughly two years ago, UO made students

responsible for online updates to their university database information. Before then, a very small number of students lacked local telephone contact.[2] Over time, OSRL has periodically assessed this issue in the annual survey and found numbers too small to affect study generalizability.

In just 2-3 years, however, fully one-fifth of UO students lack local telephone numbers in UO's student database. Independently, OSRL sought to supplement the UO database with local telephone directory numbers, but with negligible success. We believe this problem results from students' unwillingness, inability, or ignorance of their responsibility to maintain their database information, combined with the proliferation of relatively cheap mobile telephones. The growth of unavailable student body telephone numbers – from none to one-fifth in just a few years – presents a potential study bias of unknown proportions.

To the extent this annual survey excludes students without local telephones from the sampled population, the study results will not generalize back to the population. As students increasingly fail to supply local telephone numbers, this study's reliability may fall. We urge UHC to join with OSRL in (1) examining the size and extent of the problem's possible dimensions before the next annual survey and (2) soliciting UO's Registrar Office to initiate requirements for students to maintain their online database information.[3]

[2] Even fewer UO students annually take advantage of the option to keep all directory information closed to research – historically, less than one half of one percent.
[3] For example, without a local telephone number, UO could disallow students from obtaining their grades online.