SURVEY METHODOLOGY AND PERFORMANCE CHARACTERISTICS
FOR THE NATIONAL SURVEYS OF WORKSITES AND EMPLOYEE ASSISTANCE PROGRAMS

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1. Introduction

The objectives of the National Survey of Worksites and Employee Assistance Programs (NSWEAP) were to:

- estimate the prevalence of employee assistance programs (EAPs) in small-, medium-, and large-sized worksites in the U.S. during 1993 and 1995

- determine the characteristics of existing EAPs in terms of type, location and sponsorship

- determine if the prevalence and characteristics of EAPs vary by industry and geographic region

- estimate the annual costs of EAPs by type

- describe changes in the prevalence and characteristics of EAPs over time

This paper describes the survey design for the NSWEAP including the sampling design and the computer-assisted telephone interviewing (CATI) data collection approach. We also present survey performance characteristics for the 1993 survey such as response rates and the number of attempts to achieve a completed interview and the average time to administer questionnaires.

Past national studies of EAP prevalence include the 1985 National Survey of Worksite Health Promotion Activities (NSWHPA) conducted by the Research Triangle Institute for the Department of Health and Human Services and 1988 Survey of Employer Anti-drug Programs conducted by the Bureau of Labor Statistics (BLS) with a follow-up of the same worksites in 1990. To ensure that our findings would be comparable to these surveys, we designed the NSWEAP target population and stratification to be similar to the BLS survey and the NSWHPA. Because the BLS used a sampling frame that was unavailable to nongovernment researchers (that is, the Unemployment Insurance Address file), we could not duplicate the BLS design exactly. The two remarkable distinctions between the target population for the 1988 BLS and the NSWEAP are the exclusion of worksites with fewer than 50 employees (because of data collection costs) and of nonprivate worksites (because of the lack of a comprehensive list) from the NSWEAP.

2. Sampling Design

In this section on sampling design, we describe the target population, sampling frame, stratification scheme, and sample selection and sizes for the NSWEAP.

2.1 Target Population

The target population for the 1993 NSWEAP consisted of all worksites with 50 or more full-time employees of private non-agricultural business enterprises in the U.S. during 1993. We expanded the 1995 survey to consider part-time employees. Private enterprises include for-profit and not-for-profit enterprises. This target population also included all worksites of business enterprises that operated solely at a single location as well as all worksites that were branches or subsidiaries of multi-location business enterprises. Publicly-owned worksites (that is, federal, state and local government worksites) were excluded from this target population.

2.2 Sampling Frame

We constructed the sampling frame of over 400,000 worksites using the Dun's Market Identifiers (DMI) database from Dun's Marketing Services (DMS), a subsidiary of Dun & Bradstreet (D&B). A worksite represents any business location with a unique, separate, and distinct operation, including headquarter units within an enterprise.

The type, location, and other characteristics of EAPs at the worksites of, say, a large, multi-location business enterprise may differ from worksite to worksite. Therefore, we constructed a sampling frame of worksites (as opposed to enterprises) for the NSWEAP. We felt that information about the presence and characteristics of EAPs was more likely to be located at the worksite so that sampling worksites provided the most direct access to the desired data.

2.3 Stratification

Thirty sampling strata were defined by the primary industry at the worksite (based on Standard Industrial Classification [SIC] codes) and the number of employees at the worksite as specified in the DMI database. The primary industry groupings used to form sampling strata were:

- Manufacturing (SIC 20-39)
- Wholesale (SIC 50-51) and Retail Trade (SIC 52-59)

■ Transportation, Communication, and Utilities (SIC 40-49)
  ■ Finance, Insurance, & Real Estate (SIC 60-67)
  ■ Services (SIC 70-89)
  ■ Mining (SIC 10-14) & Construction (SIC 15-17)

With few exceptions, these SIC code groupings are similar to those defined by the BLS for the 1988 Survey of Anti-drug Programs: the BLS did not combine wholesale and retail trade.

The stratification by worksite size used the number of employees at the establishment. However, the actual number of employees at a worksite may differ from that in the DMI database because of the aging of the data or respondent error when collected by D&B. Also, two or more establishments (as defined by DMS) may exist at a specific worksite, if multiple distinct operations occur at the worksite. If a worksite contained two or more establishments and each establishment had fewer than 50 employees, the worksite would not be included in the sampling frame. Since occurrences were expected to occur rarely, we have equated worksites and establishments for this survey.

To improve the coverage of the target population, we included establishments with 40 or more employees in the sampling frame. Thus, if any establishment with 40 to 49 employees (according to the DMI database) increased in size to at least 50 employees at the commencement of the NSWEAP data collection, this establishment would be eligible for the survey. Five establishment size groupings were used to define the strata for NSWEAP:

  ■ 40-49 employees
  ■ 50-99 employees
  ■ 100-249 employees
  ■ 250-999 employees
  ■ 1,000 or more employees.

Geographic location (that is, the four Census Regions) was used as a secondary stratification factor within the sample selection procedure.

2.4 Sample Selection

We selected the sample of worksites independently in each stratum. The sample was selected to obtain a proportional allocation of the sample within each sampling strata across the four geographic location strata and with equal probability within each stratum. We selected the sample using a probability minimal replacement procedure (Chromy 1981). Although larger than required, the initial sample was randomly partitioned into subsamples, called waves, where each wave represented a valid probability sample. The response and eligibility rates were monitored during data collection, and stratum-specific samples were supplemented (by releasing additional waves) to ensure an adequate sample size for estimates specific to worksite size

and primary industry stratum. Once a wave was released, we attempted interviews with all sample members in that wave; and another wave was not released until resolving the final status of all members of the previous wave. This resulted in a statistically valid national probability sample of worksites.

2.5 Sample Sizes

The target sample sizes were based on the number of eligible respondents (that is private, non-agricultural worksites reporting 50 or more full-time employees at the time of the survey) to achieve desired precision requirements. The initial sample contained 6,488 and 5,408 worksites for the 1993 and 1995 NSWEAP, respectively. Note that the 1995 survey included a cohort of worksites selected from 1993 NSWEAP eligible worksites. Table 1 contains the sample size for each stratum.

3. Survey Methodology

In this section, we describe the NSWEAP (1) data collection schedule including pretests and data collection, (2) survey operations and (3) response rates. Since we used our CATI system for the NSWEAP data collection, we begin with a brief desciption of this system. With CATI, the survey instrument is programmed so that questions are displayed on the terminal screen and read by the interviewer. The CATI program brings the interviewer through the appropriate routing, branching, and skip patterns. The interviewer enters the responses directly into the computer, and these responses appear simultaneously on the screen for verification. Range and consistency checks are performed immediately on the CATI data so that necessary corrections can be made during the interview, thus, improving the quality of the survey data.

In addition to the survey questionnaire, we developed a lead letter introducing the study, ensuring confidentiality, and preparing the recipient for the CATI contact. These were mailed to the director of human resources or the personnel department at the selected worksites for the 1993 survey. We then contacted these individuals for interviewing about two weeks after the mailing. Based on our 1993 experience, we limited our next mailing to members of the 1995 cohort.

3.1 Pretests

We pretested the NSWEAP data collection methodology at 251 worksites in December 1991 and during the first four months of 1992 and again in April 1995. Based on the pretest results, questions were reworded.

3.2 Survey Instrument

The 1993 survey instrument contained seven sections and 130 questions while the 1995 instrument contained eight sections. The introductory section of the survey

instrument confirmed that we contacted the correct worksite, that the worksite was eligible to participate in the survey (i.e., a private worksite with 50 or more employees), and that we were speaking with the person most knowledgeable about employee benefits (e.g., human resources or EAP department heads). We then determined whether the worksite had an EAP.

For worksites without an EAP, we collected information on the following:

■ availability of EAP services - past, present, and future availability of EAP services to the worksite's employees;

■ general worksite characteristics - characteristics of employees, worksite health promotion activities, and health insurance coverage;

■ respondent characteristics - current position or title, level of education achieved and licenses/certifications in health or social services delivery; and

■ in 1995, worksite characteristics about alcohol, drug and performance testing

For worksites with EAPs, we also administered questions about:

■ EAP characteristics - the structure of the EAP, demographics of employees who use the EAP, and why employees use the EAP and how often;

■ EAP costs and outcomes - who pays for the company's EAP, total operating budget or contract cost for the EAP and how this cost is determined, how management keeps track of EAP costs, percentage of EAP employees who return to work, how often the company evaluates its EAP and what is reported in the evaluation.

For worksites with internal EAPs, we additionally asked about:

■ EAP services provided - types of activities the EAP gets involved in (for example, training and treatment followup) and to what extent; and the level of EAP staff interaction with managers, labor leaders, and employees.

Frequently, the respondent was not knowledgeable about EAP costs and outcomes, requiring us to identify, contact, and interview another individual at the worksite or corporate headquarters for cost information.

3.3 Data Collection Procedures

Interviewing for the 1993 NSWEAP occurred in two phases (from mid-September to mid-December 1992 and from early January to mid-March 1993 to avoid contacting worksites during the holiday season. For the 1995 survey,

we interviewed worksites from April through July. Trained interviewers contacted the selected worksites to administer the questionnaire at least two weeks after the lead letter package was mailed. If a telephone number for the worksite were not available on the DMI frame or if the available number were wrong or disconnected, interviewers contacted Directory Assistance for a listing. There was no further tracing. We also contacted Directory Assistance when telephone numbers rang and were not answered. If no additional information was obtained, we classified these worksites as nonrespondents.

The interviewers made every effort to convert refusals. Furthermore, supervisors followed up on refusals. If the respondent hesitated to participate in the NSWEAP unless he/she received written materials (for example, another copy of the lead letter), interviewers frequently sent a facsimile copy of the desired documents.

To minimize respondent burden during the 1995 NSWEAP, we grouped sampled worksites from the same corporate family before assigning them to the telephone interviewers. Thus, worksite or EAP information common to multiple worksites could more easily be associated with the appropriate worksites.

According to the survey protocol, interviewers made up to 20 attempts to contact a selected worksite, scheduling these calls at different times of the day and on different days of the week. After the twentieth attempt, the CATI system would automatically assign the case a final result code of "unable to contact." The CATI system also automatically assigned final result codes to all completed interviews and ineligible cases. To maintain the scientific integrity of the 1993 NSWEAP, only the telephone supervisors assigned the remaining final result codes. Telephone supervisors were also responsible for implementing quality control procedures during interviewing, including silent monitoring of 10 percent of each interviewer's calls.

3.4 Response and Eligibility Rates

In this section, we present the response and eligibility rates for the 1993 NSWEAP - response rates for the 1995 NSWEAP are not yet available. We define the response rate as the weighted sum of eligible and ineligible sampling units divided by the weighted sum of eligible, ineligible, and nonresponding units. Since the numerator of this rate contains the total number of sampling units that we were able to completely characterize, this metric aptly describes the potential for nonresponse bias. The weights were used because of the highly variable selection probabilities across the sampling strata.

The response rate for the 1993 NSWEAP ranged from 80 to 96 percent across the 30 sampling strata with an overall response rate of 90 percent as shown in Table 2. These response rates indicate a strong willingness on

the part of worksite staff to provide information related to EAPs. The overall refusal rate was only 10 percent. Worksites with fewer than 100 employees and worksites in the Services and Mining/Construction industries refused less frequently than other industries.

Among the 6,488 worksites selected for the 1993 NSWEAP, 5,828 worksites responded. Of these, 3,204 worksites were eligible for the survey. Ineligible worksites included: nonprivate worksites, worksites with fewer than 50 full-time employees, and closed worksites.

4. Performance Characteristics

4.1 CATI Time Needed to Resolve a Case

On average, our CATI staff required 38 minutes to complete an NSWEAP interview with a responding eligible worksite (that is, to resolve a case). This time includes total time spent on all contacts with that worksite. Given the structure of the questionnaire, it is not surprising that the average time needed to resolve a case was greater for worksites with EAPs (58 minutes) compared to worksites without EAPs (28 minutes). Furthermore, the average length of the contact increased with size of the worksite: 33 minutes for worksites with 50 to 99 employees; 37 minutes, 100 to 249 employees, 47 minutes, 250 to 999 employees; and 56 minutes for 1,000+ employees. This relationship is explained, in part, by the fact that the prevalence of EAPs at worksites increases with worksite size.

We also explored a linear regression model (see Table 3) to predict time to resolve a case. The predictors in this model were indicator variables for such factors as the availability of cost data, the presence of an EAP (and, if so, whether the EAP was internal or external), CATI startup, if the EAP served multiple worksites, corporate structure of the worksite, reported worksite industry, and reported worksite size. The model findings are summarized below.

The contact time for worksites with EAPs was about 23 minutes more than that for worksites without EAPs. If the worksite had an internal EAP, the contact time increased about 15 minutes over that for a worksite with an external EAP—only internal EAPs were asked about core technologies. Unexpectedly, the estimated regression coefficient for the availability of cost data was negative (and significant), suggesting a decrease of about 7 minutes in the contact time if cost data were available from the worksite. A possible explanation for this phenomenon is that when we were able to obtain cost data, these data were readily available. However, we spent more time trying to get cost data that ultimately were unavailable. This model also suggested a shorter contact time for worksites that were headquarters or single location establishments (about 5 and 6 minutes,

respectively)—perhaps the internal structure of these worksites was less complex, thus, enabling the interviewer to more quickly locate the appropriate respondent at the worksite. Finally, when the cost data provided by the respondent reflected other worksites in addition to the selected worksite, the time to resolve such cases required about 10 more minutes, reflecting the additional complexity of this case.

4.2 Number of Telephone Calls to Resolve a Case

There were, on average, 4.3 telephone calls per NSWEAP eligible responding worksite. These calls included those to identify the most appropriate respondent, call backs, and actual interview calls. The average number of calls to an eligible responding worksite increased to 5.3 for worksites with an EAP and decreased to 3.7 for worksites without EAPs. The average number of calls increased with worksite size from 3.9 for small-sized worksites (that is, 50-99 employees) to 5.4 for large-sized worksites (that is, 1,000+ employees). The average time to resolve a case also increased with worksite size - thus, not only did we spend more CATI time with the larger worksites, but we also had to make more calls to these worksites.

As above, we modeled via linear regression the number of CATI calls to an eligible responding worksite to complete an interview. Worksites with EAPs required about 1.1 more calls than worksites without EAPs. As in the above model, the estimated regression coefficient for the cost data indicator was negative and for the multiple worksite indicator, positive. Explanations of these results similar to those provided above are feasible here.

References

Chromy JR. (1981). Sequential sample selection methods. In Proceedings of the American Statistical Association, Section on Survey Research. Washington, DC.

Table 1. Sample Sizes for the 1993 NSWEAP by Industry and Worksite Size.

Industry Type		Employees at Worksite (From DMS)				
	Total	40-49	50-99	100-249	250-999	1,000 Or More
Total	6,488	707	1,700	1,664	1,619	798
Manufacturing	968	116	298	228	210	116
Wholesale/ Retail Trade	1,215	120	269	307	376	143
Utilities/ Transportation	1,036	117	299	253	231	136
Finance/Real Estate/Insurance	941	115	255	229	212	130
Services	1,172	120	300	345	272	135
Mining/ Construction	1,156	119	279	302	318	138

Table 2. Response Rates for the 1993 NSWEAP by Industry Type and Number of Employees at Worksite.

Industry Type		Employees at Worksite				
	Total	40-49	50-99	100-249	250-999	1,000+
Total	89.8	92.9	93.5	88.6	86.2	89.1
Manufacturing	91.0	92.2	92.6	89.5	89.0	92.2
Wholesale/Retail Trade	87.2	91.7	89.6	87.6	83.2	88.8
Utilities/Transportation	87.5	93.2	92.3	83.0	83.5	86.8
Finance/Real Estate/Insurance	87.7	90.4	94.5	86.0	80.2	86.9
Services	93.3	95.0	96.0	92.5	90.8	93.3
Mining/Construction	91.9	95.0	95.7	91.4	89.9	87.0

Table 3. Regression Analysis of Number of Minutes and Calls to
Resolve a Case for the 1993 NSWEAP.

Independent Variables	Estimated Regression Coefficients	
	CATI Time (min.) to Resolve a Case	No. of Calls to Resolve a Case
Cost Data Available	-6.6*	-0.7**
EAP Present	22.8*	1.1*
Internal EAP	14.8*	0.3
CATI Startup	13.4*	1.8*
Multiple Worksites Served	10.4*	1.0*
Corporate Structure: Single Location	-5.4**	-0.4
Head Quarters	-4.5**	-0.3
Branch	0.9	0.5
Industry: Manufacturing	-0.8	0.4
Wholesale/Retail Trade	-0.6	0.2
Utilities/Trans.	3.9	0.6
Finance/Real Est./Insurance	2.2	0.6**
Services	1.9	0.5**
Worksite Size: 50-99	-5.8**	-0.5
100-249	-4.9**	-0.3
250-999	-1.2	-0.1

*: P-value for testing the null hypothesis that the estimated regression coefficient = 0 is less than 0.05.
**: P-value for testing the null hypothesis that the estimated regression coefficient = 0 is between 0.05 and 0.10.