Health-Care Use Survey for Enduring Freedom and Operation Iraqi Freedom (OEF/OIF) Veterans

OMB 2900-XXXX
VA Form 10-0478

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

1. Provide a numerical estimate of the potential respondent universe and describe any sampling or other respondent selection method to be used. Data on the number of entities (e.g., households or persons) in the universe and the corresponding sample are to be provided in tabular format for the universe as a whole and for each strata. Indicate expected response rates. If this has been conducted previously include actual response rates achieved.

	Male	Female	Total
Respondent universe	1,340,526	165,683	1,506,209
Corresponding sample	700	700	1,400

The respondent universe includes all individuals who were deployed to Iraq or Afghanistan since 2001. An estimated response rate of 70% is expected, so an initial sampling frame of 2,000 individuals will yield 1,400 participants (700 male and 700 female participants). ~~In addition, we will conduct cognitive interviews with an additional sample of 5 men and 5 women, resulting in a total of 705 male and 705 female veterans.~~

2. Describe the procedures for the collection of information, including:

- **Statistical methodology for stratification and sample selection**
- **Estimation procedure**
- **Degree of accuracy needed**
- **Unusual problems requiring specialized sampling procedures**
- **Any use of less frequent than annual data collection to reduce burden**

Statistical methodology for stratification and sample selection

The study will involve administering the survey instrument to a stratified national random sample of 1,400 OEF/OIF veterans. Women will be oversampled relative to their representation in the population to provide a sufficient sample size for analyses of gender differences (Nunnally & Bernstein, 1994). Relative to women's proportion in the population (11% based on DMDC figures; C. Park, personal communication, May 2, 2006), women will be oversampled to yield a 50% female-50% male gender distribution. Racial/ethnic minorities will be sampled relative to their proportion in the larger population (68% Caucasian, 33% racial/ethnic minorities according to Defense Manpower Data Center figures; C. Park, personal communication, May 2, 2006) to facilitate supplemental analyses aimed at exploring potential differences for these groups.
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Estimation procedure and Degree of accuracy needed

The sample size in Phase II was selected so that we would have sufficient power for planned analyses of item and scale characteristics and for regression-based analyses for hypothesis testing. According to Nunnally (1978), among others, item analyses should proceed using a 10-to-1 respondents-to-items ratio (per construct). This ratio is considered sufficient to achieve stable estimates of item characteristics, especially item-total correlations and internal consistency reliability coefficients. With item sets for newly developed barriers-to-care scales averaging approximately 15-20 items, the minimum sample size needed for these analyses is 200 (maximum number of items (20) x 10 = 200 respondents). We will have a total of 700 men and 700 women, more than enough to examine item and scale characteristics.

With regard to hypothesis testing, the analyses that are most prone to Type 2 errors (i.e., low power) are those addressing relationships between sets of barriers-to-care variables and VA health-care use. Of these, the analysis that would be most prone to low power is Hypothesis 2, which suggests that stigma-related factors will contribute unique variance in the prediction of VHA use above and beyond personal/individual and structural/institutional factors. For this analysis, only those variables that are significant predictors in previous analyses will be included. Assuming up to 14 variables across the three barrier domains, with the proposed sample size of 700 for each gender, the probability of a Type 1 error (alpha) set at two tailed .05, estimating a moderate effect size based on prior findings in the barriers literature (Vogt et al., 2006), and using Cohen, Cohen, West, & Aiken's (2003) recommended value of $f^2 = .15$ for partial coefficients (p. 95), power exceeds .99. Estimating an effect half this size ($f^2 = .07$), power exceeds .95.

While this analysis suggests that power will be sufficient, there might be some concern that reduced dispersion on VA use will contribute to small effects, which in turn will impact power to detect these effects. However, as discussed above, there are a number of reasons to expect that dispersion on this outcome will be higher than originally anticipated. However, should reduced dispersion be an issue, we will conduct analyses on a subsample of the full sample that includes 50% users and 50% non-users. Conservatively estimating that approximately 20% of the respondents will have used some form of VA care, we would include all 280 users (20% of 1400), as well as a randomly selected subset of 280 users from the remaining non-users). This sample of 560 would provide greater than .99 to detect a moderate effect ($f^2 = .15$), and higher than .80 power to detect an effect half this size ($f^2 = .07$). Considering the genders separately (n = 280) would provide greater than .95 power to detect a moderate effect and .60 power to detect an effect half this size. Therefore, we believe that we will have adequate power to conduct proposed study analyses.

Unusual problems requiring specialized sampling procedures

There are no unusual problems anticipated for the current study. Sampling procedures used to enhance response rates are described in the next section.

Any use of less frequent than annual data collection to reduce burden

This data collection activity will occur one time only.

3. Describe methods to maximize response rate and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling, a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.

As with any study using a survey technique, there are several potential limitations, most of which center on the ability to achieve acceptable response rates. Several steps will be taken to maximize response rates. Perhaps the greatest constraint is the amount of time that one can reasonably expect a respondent to contribute to a study. In this regard, the estimated time burden associated with completing the survey will not exceed ~~45~~ 35 minutes and, thus, it is not anticipated that the length of the survey will be a problem. Also included in the budget is $15 to offer all potential participants as a token of our appreciation.

In addition to survey-length sensitivity, the application of a widely-accepted multi-stage mailing procedure that was used with success in prior research should further enhance response rates. A modification of Dillman's (2007) and Mangione (1998) well-regarded mail survey procedure will be applied data collection. Specifically, for each wave of data collection, a letter will be mailed as an invitation to participate in the study. The letter will explain the purpose of the study, assure the confidentiality of all responses provided, emphasize the voluntary nature of participation, state an estimated time to complete the survey instrument, provide a mechanism to withdraw prior to receiving the questionnaire, emphasize that the interest is in group data and not a particular person's individual standing, provide information on risks and benefits, and otherwise conform to standards for the protection of human subjects. A postcard that can be returned to indicate that an individual does not want to be contacted again will also be included in this mailing. The Approximately two weeks later, all potential participants will receive the assessment package with a cover letter that reiterates the points included in the introductory letter. A cover page detailing all elements of consent will be appended to the beginning of the questionnaire. A brief demographic sheet will also be included to obtain data on background and military characteristics for the purpose of describing the sample and making group comparisons. Consistent with Dillman's (2007) recommendations for repeated contacts with targeted respondents, a reminder postcard will be mailed two weeks later, followed by a second mailing of the assessment package to non-respondents two weeks after and a final reminder postcard two weeks later. Consistent with evidence that response rates are better when incentives are used, also included in the first mailing of the survey will be $15 as a token of our appreciation. Similar studies involving the administration of mail surveys to military veteran samples have resulted in quite reasonable response rates [i.e., up to 87% (M. Murdoch, personal communication, December 2, 2005)].

The sampling frame will be secured from DMDC. This procedure, the use of DMDC for national-level surveys of military and veteran populations, has been employed repeatedly by the research team and colleagues in the National Center for PTSD for studies of female military personnel, Gulf War I veterans, Bosnia veterans, Somalia veterans, and National Guard military personnel. Thus, it is a well-established method for reaching and obtaining the participation of military and veteran samples, and it is believed that it will be effective in gaining a national sample of OEF/OIF veterans for this project.

Once the sampling frame from DMDC is secured, names and social security numbers will be submitted to an Internal Revenue Service (IRS) address search, through a Department of Veterans Affairs Environmental Epidemiology Service (EES) interagency agreement with the IRS. This method will be extraordinarily effective in obtaining valid addresses for this project and enable the investigators to reach more participants than needed for the study.

Consistent with recommendations (e.g., Wilkinson & The APA Task Force on Statistical Inference, 1999), we will attend to both statistical significance and effect sizes for all analyses. The Bonferroni family-wise p value correction will be applied to protect against an inflated Type I error rate associated with multiple tests, and sample design weights will be employed to ensure that results are generalizable to the population. As noted earlier, women will be oversampled to allow for meaningful comparisons among subgroups, and racial/ethnic minorities and non-minorities will be sampled relative to their proportion in the population. Sample design weights will be used to adjust for oversampling and permit the projection of results to the larger population. Specifically, weights will be used to adjust responses of veterans so that the sum of the weights for cases in each group equals the number of cases in the reference population. We will also account for the stratified sampling design (i.e., 4 strata for gender and minority/non-minority racial/ethnic status) in our analyses. The application of sampling weights, combined with the recognition of stratification in the survey design, will allow for the computation of unbiased estimates and correct standard errors. All analyses will be conducted in STATA, which accommodates weights, and which the authors have used in other research involving complex sampling designs and weighting (Vogt et al., 2006). Finally, if incomplete data rates exceed 5%, we will apply a full-information maximum likelihood estimation procedure (Graham et al., 1997; Little & Rubin, 1987) to achieve reduced standard errors and more precise parameter estimates (Arbuckle, 1996; McArdle & Bell, 2000).

4. Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions of 10 or more individuals.

~~Pre-testing will be conducted of the survey with a small convenience sample of nine OEF/OIF veterans obtained by posting flyers at the VA Boston Healthcare facility. The purpose of pre-testing is to test the length of the instrument, ensure that the item content is appropriate and understandable for the target population, and identify any problems with the flow of the survey. Participants will be asked to time their completion of the measure, identify any items that are confusing or phrased inappropriately, and identify any other problems with the survey. Feedback will be used to revise the scales as needed.~~

~~**In addition, we will conduct cognitive testing with a sample of 10 OEF/OIF veterans following Wave I to evaluate the impact of revisions to the scales following psychometric analyses. These cognitive interviews will be conducted with a convenience sample of 10 OEF/OIF veterans (5 men and 5 women) who respond to fliers posted at the VA Boston Healthcare System. The primary goal of cognitive interviews will be to evaluate the extent to which respondents understood questions (i.e., items) consistently, easily, and as intended. Participants will be asked to identify any items that were problematic (e.g., badly worded, confusing, not important). Feedback from participants will be used to make further refinements to the stigma measure.**~~

A pre-test was conducted with 8 participants prior to receiving OMB approval. Given that fewer than 10 participants were run, OMB approval was not sought for this pre-testing.

5. Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.

Dr. Lynda King, a research psychologist at the Women's Health Sciences Division of the National Center for PTSD, and Dr. Daniel King, a research psychologist at the Behavioral Science Division of the National Center for PTSD, were consulted on all statistical aspects of the design. Their work telephone number is (857) 364-4938.

Dr. Dawne Vogt, a research psychologist at the Women's Health Sciences Division of the National Center for PTSD, will be responsible for directing collection and analysis of the data. Her telephone number is (857) 364-5976.

All data will be collected by the research team at the Women's Health Sciences Division of the National Center for PTSD in the VA Boston Healthcare System.