

**National Agricultural Workers Survey**  
**Supplement on Work Organization**  
**And Psychosocial Factors:**  
**User's Guide**



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## Background and Overview of the Supplement

A supplemental module titled *Work Organization and Psychosocial Factors* was added to the National Agricultural Workers Survey (NAWS) survey in Federal Fiscal Years 2009 and 2010. The *Work Organization and Psychosocial Factors* supplement was developed to describe the prevalence of poor mental health symptoms among hired crop farm workers, the population sampled in the NAWS, along with important work organization, and workplace psychosocial risk factors that may contribute to poor mental health. The content of the supplement was based on recommendations from a national meeting of a multidisciplinary panel of experts convened in 2004. The supplement is available in Spanish and English.

This user's guide is intended to provide a description of the NAWS supplement and its development, including item selection, testing and piloting, psychometric properties, and an overview of data and previous research using the questionnaire. In addition, to assist with interpretation and analysis, the English and Spanish versions of the questions and response options, along with the number of valid responses to each question, are included in an accompanying codebook.

## Developing the Questionnaire

Based on recommendations from a national expert panel, and previous research, in developing the *Work Organization and Psychosocial Factors* supplement, the feasibility of using two instruments to measure mental health symptoms was explored. Work organization and workplace psychosocial factors that have been shown in previous research to be associated with mental health outcomes were also selected.

***Mental health symptoms.*** Two instruments were considered for assessing psychological distress and depressive symptoms: the K-6, a short form instrument designed to quantify levels of psychological distress (Kessler et al., 2002); and a 10-item version of the Center for Epidemiological Studies – Depression (CES-D) survey questionnaire, designed to assess depressive symptoms (Kohout, Berkman, Evans, & Cornoni-Huntley, 1993). As discussed below, based on cognitive testing, the 10-item CES-D was selected for inclusion in the supplement.

***General health.*** Self-rated physical health was assessed using the standard global health question, “In general, how would you describe your health?”

***Occupational stress.*** Items from the Job Content Questionnaire (Karasek & Theorell, 1990) were selected to assess several domains related to job stress: *job demands*, or the psychological stressors that arise while carrying out job tasks and responsibilities (2 items); *decision latitude or job control*, the degree of freedom workers have over which tasks are performed and how much control workers have in accomplishing these tasks (4 items); and *job insecurity* (2 items). These latter items were adapted to make explicit reference to participants' activities in farm work: concern over losing their job and ease of finding an equivalent job.

***Limitations.*** A series of items adapted from the 1994 Disability Supplement of the National Health Interview Survey (Adams & Marano, 1995) and the Medical Outcomes Study (MOS), 36-

item short form health survey (SF-36) (Ware & Sherbourne, 1992) were used to assess work limitations due to physical health, limitations due to mental health or emotional problems, and work-related absence because of illness or injury.

***Concerns or worries about family.*** A single item from the Migrant Farmworker Stress Inventory (Magaña & Hovey, 2003) was used to assess frequency of farm workers' concern or worry about family members from whom they are physically separated.

## **Translation, Cognitive Testing and Piloting**

Analysis of NAWS data on the demographic characteristics of farm workers found that approximately 75 percent identified as Latinos from Mexico, and on average they had completed about 6 years of education (Grzywacz et al., 2008; Grzywacz et al., 2010). As the majority of farm workers had little formal education, as well as distinct linguistic and cultural backgrounds, testing and piloting of the supplement were used to evaluate the appropriateness, internal reliability and validity of the questionnaire items for their use with immigrant Latino farm workers.

### **Translation**

The translation and testing was done using an expert team approach. The team assessed whether the items included in the supplement had cross-cultural equivalence, whether the original meanings of the concepts were captured in translation, and whether the translated concepts had similar meanings when administered to Latino farm workers. Expert team members, including native Spanish bilingual interviewers and researchers with expertise conducting surveys with farm workers, translated question items, reviewed the wording of the supplement, and developed a version for cognitive testing (See Grzywacz et al., 2009).

### **Cognitive Interviews and Focus Groups**

Cognitive interviews were used prior to piloting the instrument to determine if participants were able to understand and respond to the questions asked of them. Cognitive testing was conducted using 'one-on-one' interviews, with interviewers asking participants to 'think aloud' in answering questions. Participants were probed about their interpretation of each of the questions to find out whether participants understood them, whether they were able to respond, and the reasons for any misunderstanding or lack of response to an item.

Focus groups were also used for conducting cognitive testing to help obtain information that might not have been shared in one-on-one interviews. Cognitive testing was completed with a convenience sample of 40 migrant and seasonal farm workers (21 women, 19 men) through two focus groups, and 16 one-on-one interviews conducted with farm workers in Texas and Florida. The cognitive testing was iterative: some respondents received the initial version of the supplement, and others received revised versions of the supplement that incorporated results from earlier testing.

Testing results indicated that the K-6 was not suitable for use with immigrant farm workers due to the length and complexity of the items, and the cultural inappropriateness of several terms included in the instrument (Grzywacz et al., 2008). Items measuring job demand were interpreted inconsistently, and those measuring decision latitude were viewed by participants as

less relevant to farm workers, as they have little opportunity for personal control in farm work. Farm workers were able to understand and consistently and appropriately respond to the 10 items in the CES-D, indicating that this measure was suitable for use with immigrant Latino farm workers. As a result, the final revised version of the questionnaire dropped the K-6 and other problematic questions, substituted the 10-item CES-D, and added replacement questions as well. CES-D questions were reordered and response categories were changed slightly based on one of the expert's previous experience with administering the instrument to farm workers.

### **Nationwide Pilot Test**

A nationwide pilot test of the *Work Organization and Psychosocial Factors* supplement was conducted as part of the NAWS Spring 2007 cycle. The U.S. Department of Labor (DOL), Employment and Training Administration, which is responsible for the NAWS, obtained Office of Management and Budget approval to add the supplement to the questionnaire. Human Subjects approval was obtained as a surveillance activity through the Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health (NIOSH) Human Subjects Internal Review Board prior to testing and data collection.

### **Internal Reliability and Construct Validity**

Results of reliability and validity testing by Grzywacz et., al. (2014) indicated that the CES-D was effective in assessing depressive symptoms among farm workers. The internal consistency of the CES-D was acceptable at  $\alpha = 0.76$ , indicating acceptable reliability. The CES-D also demonstrated criterion validity, that depressive symptom scores differed across personal and job characteristics of farm workers in expected ways. Specifically, migrant farm workers and farm workers who were unmarried, and without documentation, reported more symptoms than those who were documented, married, and accompanied by their spouse.

Examination of the occupational stress items by Alterman et al (2014) indicated that Latino farm workers could understand and respond appropriately to items designed to measure decision latitude (job control). The internal consistency (reliability) of the decision latitude subscale was good (Cronbach's  $\alpha = 0.85$ ; 95% CI 0.72–0.99). This subscale also demonstrated criterion validity, that scores on the decision latitude subscale varied in expected ways based on farm workers' job characteristics (e.g., years working in U.S. agriculture). In contrast, the job demands subscale demonstrated lower internal consistency/reliability (Cronbach's  $\alpha = 0.69$ ; 95% CI 0.48–0.91).

### **Questionnaire**

The NAWS *Work Organization and Psychosocial Factors* supplement includes the following question items, listed below. The English and Spanish wording of the questionnaire items is available in the accompanying codebook.

#### **General Health**

- In general, how would you describe your health? (Excellent, good, fair, poor)

### **Family Worrying and Concerns**

- How difficult is it for you to be separated from your family? (Not at all difficult, somewhat [more or less], very difficult, not separated from family)

### **Work Limitations**

- Do you have any PHYSICAL problem that limits your work (FW)? (Yes/No)
- Do you have any MENTAL or EMOTIONAL problem that limits your work (FW)? (Yes/No)
- In the last 12 months, about how many days have you MISSED WORK (FW) because of a work-related illness or injury?
- In the last 12 months, about how many days have you WORKED (FW) while injured or ill because of a work-related illness or injury?

### **Job Content - Decisions Latitude**

- In your current farm work (FW)...how often... (Never, sometimes, very often, always)
  - ...do you have a lot of say about what happens on your job?
  - ...does your job require a high level of skill?
  - ...do you have the freedom to decide how you do farm work?
  - ...does your job require you to be creative?

### **Job Content - Job Demands**

- In your current farm work (FW)...how often... (Never, sometimes, very often, always)
  - ...does your job require you to work very hard?
  - ...are you asked to do an excessive amount of work?

### **Job Content - Job Insecurity**

- Are you afraid that you could be fired from this farm job? (Yes/No)
- How easy would it be to find another job, farm work (FW) or non-farm job (NF) where you would earn at least as much as you earn now? (Not at all easy [difficult], somewhat easy, very easy)

### **Center for Epidemiologic Studies, Depression (CES-D) Short Form**

- In the past seven (7) days, have you felt...(Yes/No)
  - ...that you enjoyed life?
    - [If YES] How many of the past 7 days did you feel that you enjoyed life for MOST of the day?
  - ...happy?
    - [If YES] How many of the past 7 days did you feel happy for MOST of the day?
  - ...that everything you did was an effort?
    - [If YES] How many of the past 7 days did you feel that everything you did was an effort for MOST of the day?
  - ...restless in your sleep?
    - [If YES] How many of the past 7 days did you feel restless in your sleep for MOST of the day?
  - ...lonely?
    - [If YES] How many of the past 7 days did you feel lonely for MOST of the day?
  - ...that people were unfriendly?
    - [If YES] How many of the past 7 days did you feel people were unfriendly for MOST of the day?

- ...sad?
  - [If YES] How many of the past 7 days did you feel sad for MOST of the day?
- ...that people disliked you?
  - [If YES] How many of the past 7 days did you feel that people disliked you for MOST of the day?
- ...that you could not get going?
  - [If YES] How many of the past 7 days did you feel that you could not get going for MOST of the day?
- ...depressed?
  - [If YES] How many of the past 7 days did you feel depressed for MOST of the day?

## Data Collection

Questions on depressive symptoms, work organization and workplace psychosocial factors were included as a supplement to the NAWS questionnaire and were administered to all 3,691 respondents completing the survey in Federal Fiscal Years 2009 and 2010. All NAWS data are collected using face-to-face interviews administered by trained interviewers. Before approaching workers, interviewers contact the randomly selected agricultural employer and explain the purpose of the survey, and obtain access to the worksite (e.g., farm, ranch, or nursery) to schedule interviews. Interviewers then go to the worksite and select a random sample of workers using field-sampling techniques designed by a statistician. Before collecting data, interviewers explain the purpose of the survey to the workers, ask them to participate, and obtain informed consent. Interviewers then administer the questionnaire in the location and language (i.e., English or Spanish) of the worker's choice. Participants received a \$20 honorarium for their participation.

A detailed description of the sampling, weighting, and data collection procedures for the NAWS can be found DOL's Web site (see <https://www.doleta.gov/naws/>).

## Interviewer Training

Experienced NAWS interviewers participated in a day-long training on administering the items. The training was overseen by DOL and NIOSH staff and included a presentation from a psychologist on how to handle sensitive issues that might arise during the interview. Interviewers were instructed to provide respondents with a keychain that had a toll-free number for Call for Health, a program of the National Center for Farmworker Health that provides referrals to farm workers seeking treatment for physical or mental health conditions.

## Time Period the Data Are Available

Data obtained from the *Work Organization and Psychosocial Factors* supplement was collected as part of the NAWS data collection in Federal Fiscal Years 2009 and 2010. Public use data are available for all 3,691 respondents who completed the supplement.

## Scale Creation

The questions in the supplement can be used to create scales measuring depressive symptoms using the 10-item CES-D, and to assess levels of job control and psychological demands associated with farm work using the job demands and decision latitude subscales. The following paragraphs describe how these scales were constructed for publications cited in this guide.

**Elevated depressive symptoms** was coded using the number of days the respondent experienced a symptom. The days were coded as a categorical variable. Values ranged from 1 to 3 with 5 days or more coded as 3; 3 or 4 days coded as 2; 1 or 2 days coded as 1. Positive items were reverse coded (e.g., enjoyed life, happy). The final score was obtained by summing across the 10 items. Higher scores indicated more depressive symptoms. Following Grzywacz et al 2006, a CES-D score of 10 or higher was used as a cutoff to indicate elevated depressive symptoms.

**Elevated psychological demands** was coded using the two items from the job demands subscale. Elevated psychological demands was coded as 1 if the sum of the two items was greater than or equal to 2, indicating that one responded “sometimes” to both questions, or responded “very often” to one of the questions. Individuals with summed scores less than 2 were coded as 0.

**Low control** was coded based on the sum total of the four items in the Decision Latitude subscale. If the sum score of the decision latitude items was less than or equal to 2 and no single response to the four items had a value of 2 or higher (indicated by a response of “very often” or “always”), low control was coded as 1. All other responses were coded as 0.

**Job strain** was coded as 1 if *both* the elevated psychological demands and low control variables were coded as 1. Otherwise, job strain was coded as 0.

## Existing Research

The NAWS *Work Organization and Psychosocial Factors* supplement has been used to examine the national prevalence of depressive symptoms, associations between aspects of occupational stress, depressive symptoms, general health, and health care utilization among Latino farm workers.

Approximately 9 to 11 percent of the Latino farm workers sampled in recent research reported elevated depressive symptoms using the CES-D, indicating that the frequency of depressive symptoms is consistent with that of the overall population. Georges et al. (2013) found that over 50 percent of farm workers, most of whom lived in rural areas, reported at least 1 health care visit in the past 2 years, with the majority (42%) reporting visits to private doctors or migrant/Community Health Clinics. In addition, having elevated depressive symptoms increased the odds of health care utilization by 45 percent. As most farm workers live in rural areas, these findings suggest that rural health care providers in regions with a substantial Latino farm worker population need to be prepared to recognize, screen, and treat depressive symptoms as part of a comprehensive program in providing care to this population.

Grzywacz et al. (2014) examined whether farm workers’ exposure to low control in their jobs, high psychological demand, and high job strain increased the risk of poor self-rated health and

elevated depressive symptoms. Results indicated that more than one-fifth (22%) of Latino farm workers sampled reported fair or poor health. Additionally, of the dimensions of occupational stress assessed, only exposure to high psychological demand was significantly associated with depressive symptoms and poorer physical health among farm workers, suggesting that the organization and psychological stressors related to work in field agriculture pose risks for poor health outcomes among Latino farm workers.

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