The Study of Household Preparedness: Preparing California for Earthquakes

Final Report to the Alfred E. Alquist Seismic Safety Commission and the California Emergency Management Agency

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Table of Contents

Introduction

California's population is diverse and comprised of people who differ in age, gender, race/ethnicity, language proficiency, educational level, social role, and prior experience with emergencies and disasters. These factors affect the nature of information that the public receives and processes. People hear information from many sources and over multiple channels. People also differ in the extent to which they actively seek information, observe what others do, and act to protect themselves from future earthquakes and other disasters.

Recognizing the diversity of California, successful public education employs multiple strategies which are tailored to different groups multiple times so that people from all backgrounds receive relevant information that motivates them to take action.

The California Earthquake Preparedness Survey was designed to evaluate how California residents receive information about earthquake preparedness and how they use the information. Given the importance of being prepared for earthquakes and the expense needed to carry out and maintain preparedness, it is critical to learn the extent to which the many public education programs have effectively increased earthquake preparedness in California. We must learn, for example;

- How prepared Californians are for earthquakes and other disasters;
- Who is and who is not getting messages about getting prepared;
- Where residents are getting information about earthquakes;
- How we can improve our educational messages about preparedness;
- What we can do to maximize the impact of education and information on behavior; and
- How we can increase Californians' engagement in preparing for earthquakes.

Evidence-based information is needed to help answer these questions. If we want California residents to be prepared for earthquakes and other catastrophes, we must understand how information about preparedness is disseminated, understood, and acted upon by the public.

Overview

This report describes the research methods and major descriptive findings from the California Earthquake Preparedness Survey (CEPS). This study was conducted by researchers at the UCLA School of Public Health for the State of California. The purpose of the study was to describe how prepared California households are for earthquakes and where they get their information about preparedness and mitigation.

The report begins by introducing the research team who led the study, describes the methods used to conduct the study, and then presents descriptive results for the major outcomes of interest. The results are compared across the three geographic areas, and by major racial/ethnic group. Concluding statements are made at the end of the report. The questionnaire and a full description of the sample are included in the appendices.

About the Research Team

Linda B. Bourque, PhD, the principal investigator of the study, is a professor in the Department of Community Health Sciences and an associate director of both the Center for Public Health and Disasters (www.cphd.ucla.edu) and the Southern California Injury Prevention Research Center (www.ph.ucla.edu/sciprc) at the University of California, Los Angeles (UCLA), School of Public Health. Megumi Kano, DrPH, is a senior researcher, and Michele M. Wood, PhD, a research associate, at the Southern California Injury Prevention Research Center. These three lead researchers have extensive experience researching topics related to disaster preparedness, including a recently completed national survey of household experiences and preparedness for terrorism and other disasters. The research team also included the late Eve Fielder, DrPH, and Tonya Hays of the UCLA Survey Research Center, who managed the data collection and field work; Jay Sumner, PhD, of the UCLA Survey Research Center, who supervised the sampling procedure and developed data weights; and Melissa M. Kelley, MSPH, a graduate student research assistant at the Southern California Injury Prevention Research Center.

Methods

Survey Sample

Telephone interviews were conducted with a representative sample of 2,081 households in California. The sample was stratified into three areas: ten northern California counties at high risk of earthquakes (San Francisco, Alameda, Santa Cruz, Contra Costa, Santa Clara, San Mateo, Marin, Solano, Mendocino, Sonoma; N=556); six southern California counties at high risk of earthquakes (Los Angeles, Ventura, Orange, San Bernardino, Riverside, Imperial; N=906); and the remaining 42 counties at low risk of earthquakes (N=619). The sample was drawn by random-digit-dialing supplemented with random sampling from geographic areas with higher proportions of Blacks/African Americans.

Does the sample represent California?

Of concern in all studies is the extent to which the sample "represents" or can be generalized to the population from which it was drawn. To assess "representativeness," the unweighted sample was compared to U.S. Census projections for 2007, and to the California Health Interview Survey (CHIS), which was administered during the same period. Consistent with most telephone surveys conducted in the United States in the last five years, the California Earthquake Preparedness Survey overrepresents older persons, females and college graduates, and underrepresents males, younger persons (< 35), persons with less than a high school education, and Hispanics and Asian/Pacific Islanders. Consistent with how the sample was selected, the unweighted sample overrepresents Blacks/African Americans. The unweighted sample approximates the distribution of households across the three strata, the distribution of household income, the presence of children in the household, and the number of one-person households. The unweighted CHIS sample similarly underrepresents younger persons, males and some ethnic/racial groups.

Weighting is used to bring population-based samples into closer conformance with the populations from which they are drawn. The weights applied brought the sample into close conformance with the projected age, gender, and race/ethnicity distributions for California. Analyses are conducted using the weighted samples. Appendix A contains a complete description of the sample, potential biases and the process used in weighting the sample.

Do we only have earthquake "groupies"?

Researchers are always concerned about selective, differential participation in studies. In this study, the concern would be that persons who agreed to be interviewed were more knowledgeable about or more concerned about earthquakes. There are no direct ways to test for this possible bias in the California Earthquake Preparedness Survey.

Groves, Presser, and Dipko (2004) ". . . found that persons cooperated at higher rates to surveys on topics of likely interest to them" (p. 25)[1] but that findings differed across topics and that offering a monetary incentive to some extent reversed the pattern. They concluded that the effect of high interest on findings would be a function of the relative size of the highly interested subpopulation, and the extent to which the survey introduction highlighted the topic of interest. None of the topics studied were analogous to a survey about earthquake preparedness.

Consistent with Institutional Review Board requirements, the introduction to the California Earthquake Preparedness Survey begins with:

> "Hello, I'm….calling from the University of California. We are interviewing people in California to find out what they have heard or done about earthquake preparedness. This information may help improve responses to disasters in California. As a thank you, participants will receive a $20 gift certificate."

Earthquakes are not mentioned again until the selected respondent has agreed to be interviewed (the interview questionnaire is included in Appendix B). Persons who refused to be interviewed generally refused during this initial contact period.

In comparison to other recent surveys conducted by this UCLA research group, the introduction for the California Earthquake Preparedness Survey is much shorter. The brief introduction combined with the offer of monetary incentives guarded against domination of the data set by earthquake "groupies."

Questionnaire Development

Content for the questionnaire was drawn from various sources, including a review of relevant scientific literature, existing public preparedness campaign materials, the lead investigators' prior theoretical work on household preparedness for disasters, and input from the California Readiness Advisory Group. The topics covered by the questionnaire were past earthquake experience, information received about earthquake readiness, observation of other people's earthquake readiness actions, belief in earthquake safety myths, information activities related to earthquake readiness, adoption of earthquake preparedness and mitigation actions, and preferred method for receiving earthquake readiness information and official disaster warnings and alerts.

The questionnaire was pretested for length and comprehension on a total of 31 individuals. The draft questionnaire was revised based on pretest results, and the final questionnaire was translated into Spanish. The questionnaire was then programmed for computer-assisted telephone interviewing in both English and Spanish. The length of the

[1] Groves RM, Presser A, Dipko S. The role of topic interest in survey participation decisions. *Public Opinion Quarterly* 2004; 68(1):2-31.

interview was about 30 minutes. The English version of the questionnaire is included in Appendix B.

Survey Administration

Interviews were conducted by the UCLA Survey Research Center using computer-assisted telephone interviewing (CATI) procedures between June 26, 2008 and December 18, 2008. The interviews were offered in English and Spanish, and a $20 incentive was offered to encourage participation in the study.

Data Analysis

Data were analyzed using SPSS software (SPSS Inc., 2007). The descriptive analyses reported here are based on weighted data. A complete description of the weighting method is in Appendix A.

Descriptive statistics were calculated and compared between the three geographic areas based on sampling strata: northern California, southern California, and the rest of the state. Analyses also compared the major racial/ethnic groups: White, Hispanic (or Latino), Black (or African American), and Asian/Pacific Islander (API). American Indians and Alaskan Natives (N=13) were classified as White. Multi-racial individuals (N=34) and those who described some other type of identification (e.g., “human being”; N=10) were excluded from the race/ethnicity-based analysis. Respondents who did not know their race/ethnicity (N=3), refused to answer the question (N=49) or were missing data for this question (N=1) were also excluded from the analysis of racial/ethnic differences.

Frequency distributions, or proportions, were compared between groups using Pearson’s chi-square test. When there were cells with expected count less than five, statistical tests were not reported. Means were compared between groups using the one-way analysis of variance (ANOVA) test. When more than two group means were compared, Bonferroni’s post-hoc pairwise comparisons were conducted. Due to the large sample size, a conservative alpha level of .001 was used to determine statistical significance.

Asterisks are placed next to variable names in the figures where there were statistically significant associations. Superscript letters are placed next to the values, or numbers, in the figures to indicate statistically significant pairwise differences in means. For example, a superscript H (for Hispanics) next to the mean for Whites indicates a significant difference in means between Whites and Hispanics. A statistically significant bivariate association does not necessarily mean there were any statistically significant pairwise differences.

Multivariate statistical analyses were not performed for this descriptive report. The results shown here should be interpreted with caution; they are mostly univariate and bivariate distributions that do not account for other potentially confounding variables.

Results by Geographic Area

This section presents descriptive results that compare three geographic areas based on sampling strata: northern California, southern California and the other regions of California.

1: Perceived Effect of Worst Earthquake Ever Experienced

The first question in the interview asked respondents to think about the worst earthquake they had ever experienced and to report how much it had affected them, using a scale of 1 to 5, where 1 means “no effect” and 5 means “a lot of effect.”

1.1 Thinking of the worst earthquake you ever experienced, how much did it affect you?

The results showed that the responses varied by geographic area (Figure 1.1). On average, southern California (mean = 3.1) and northern California residents (mean = 2.8) reported experiencing a greater effect compared to those living in other parts of the state (mean = 2.5).

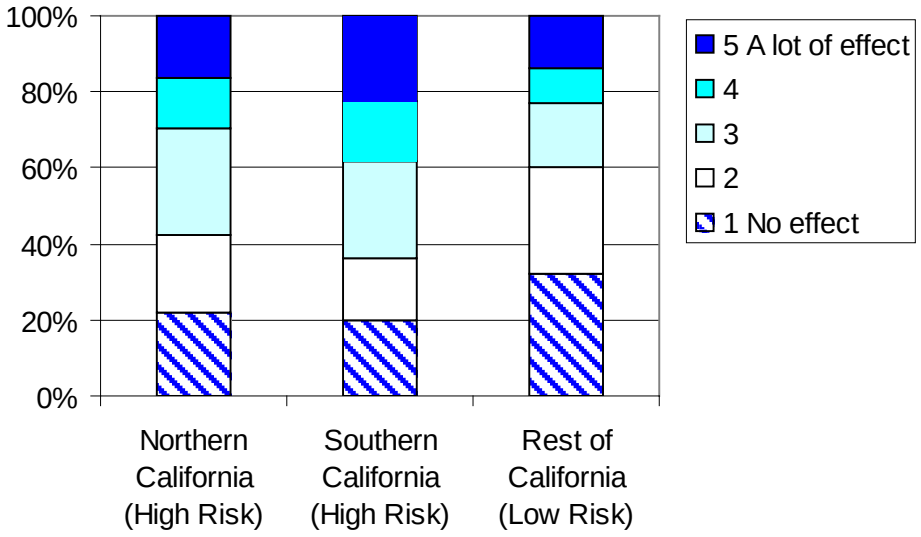


Figure 1.1 Perceived effect of the worst earthquake ever experienced, by geographic area

Note: Northern California, N=423; southern California, N=1,040; rest of California, N=608. Data were weighted with raked individual weights. Responses were measured on a scale of 1 ‘No effect’ to 5 ‘A lot of effect.’ There was a statistically significant association between geographic area and perceived effect, using Pearson’s chi-square ($p<.001$).

2: Information Received About Earthquake Preparedness

Respondents were asked a series of questions about information they had received regarding earthquake preparedness. Questions asked about: general sources of information (i.e. television anchors/reporters, schools) (Figures 2.1 and 2.6A); specific sources of information (i.e., Red Cross, Office of Emergency Services) (Figures 2.2, 2.3 and 2.6A); channels over which information was heard (Figures 2.4 and 2.6B); the types of information received (Figures 2.5 and 2.6C); whether information had been communicated in languages other than English (Figure 2.7); and the extent to which they believed, understood, thought about, and discussed the information (Figure 2.8).

2.1 Have you heard information about preparing for earthquakes from … [general sources]?

Overall, television news anchors and reporters were the most commonly cited source of information for earthquake preparedness, followed by radio hosts and reporters, schools, and family and friends. Some regional differences were found, where residents of northern and southern California were more likely than those living in other parts of the state to have heard information about earthquake preparedness from radio hosts/reporters, television anchors/reporters and employers, and residents of southern California were especially more likely than those living in other regions to say they had heard this kind of information from entertainers.

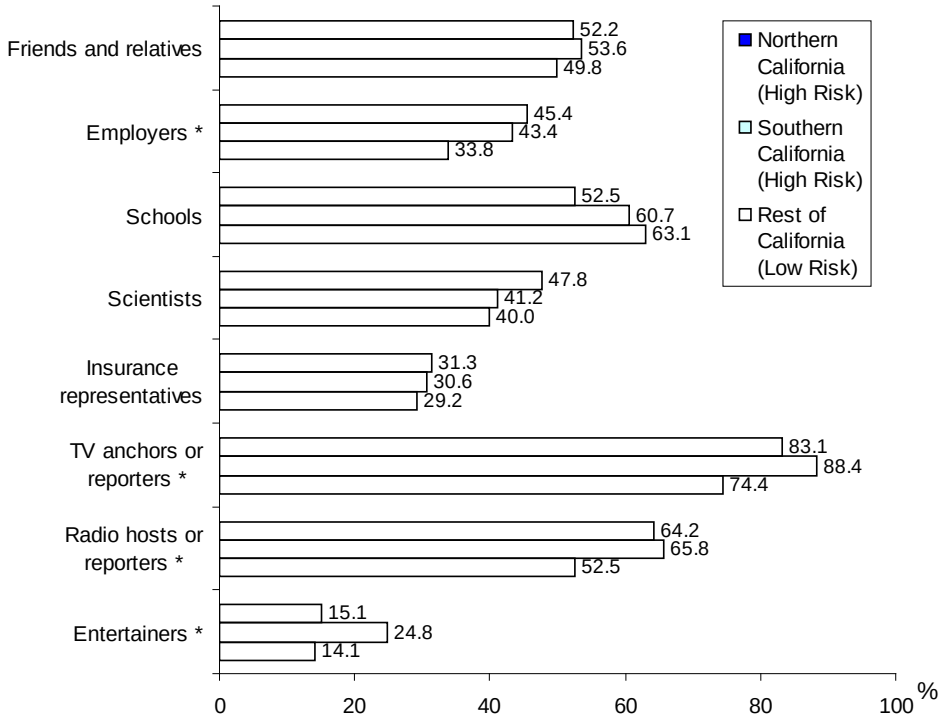


Figure 2.1. Sources of information on earthquake preparedness, by geographic area

Note: Northern California, N=425; southern California, N=1,044; rest of California, N=612. Data were weighted with raked individual weights. Respondents could choose more than one response. Asterisks (*) indicate statistically significant associations between geographic area and receiving information from the index source, using Pearson's chi-square (p<.001).

2.2 Have you heard information about preparing for earthquakes from … [specific sources]?

When asked about some specific sources for information on earthquake preparedness, about half of the respondents in all regions said they had received information from Red Cross agencies, but less than half of them said they had received information from the other sources listed, including state and local agencies and their publications (Figure 2.2). There was one regional difference, where northern California residents were more likely to say they had received information from the U.S. Geological Survey than were residents of southern California and other parts of the state.

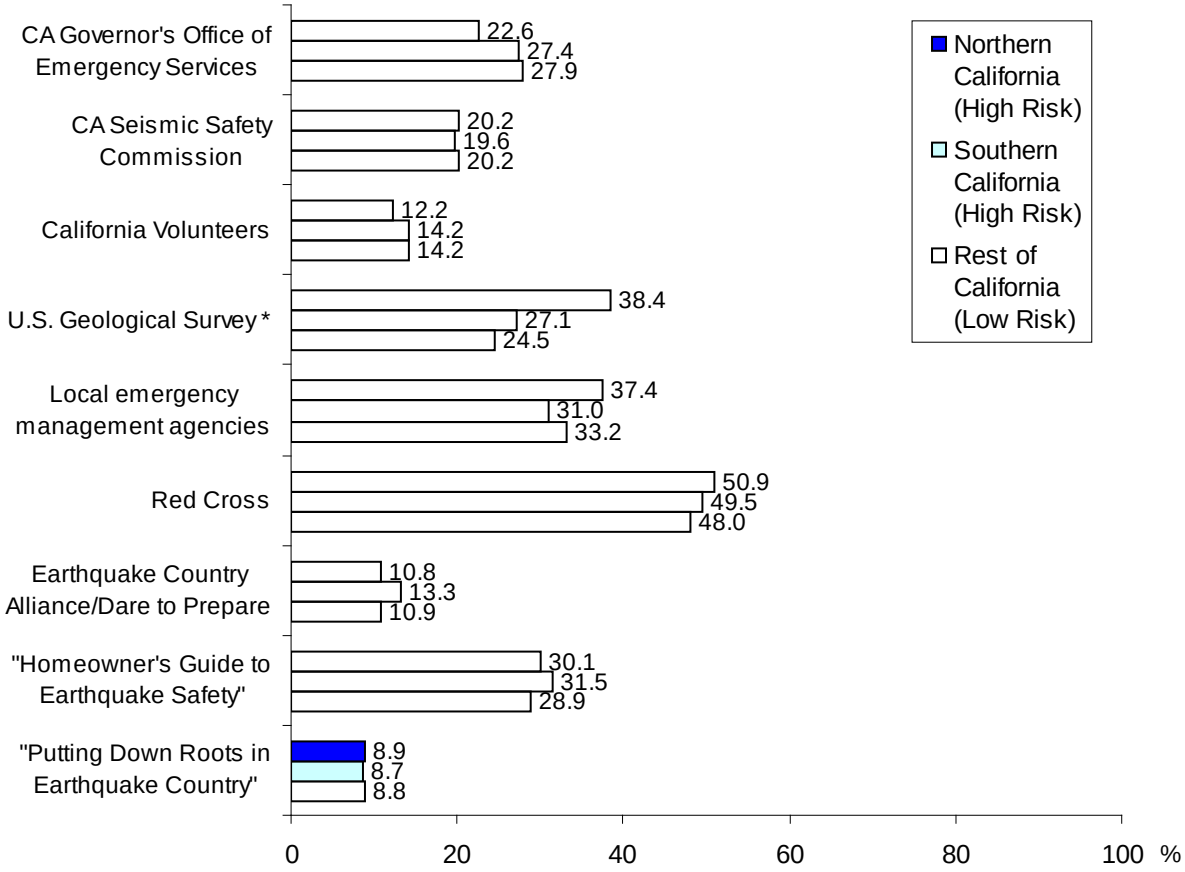


Figure 2.2. Sources of information on earthquake preparedness, by geographic area (continued)

Note: Northern California, N=425; southern California, N=1,044; rest of California, N=612. Data were weighted with raked individual weights. Respondents could choose more than one response. Asterisks (*) indicate statistically significant associations between geographic area and receiving information from the index source, using Pearson's chi-square (p<.001).

2.3 Respondents' lack of recognition of official sources for earthquake safety information

In response to the question about sources of information on earthquake preparedness, several respondents said they did not know whether they had received information on earthquake safety from many of the official sources listed in the interview. Figure 2.3 shows the percent of respondents, by geographic area, who were unable to report whether or not they had received information from these official sources. In general, respondents had a greater tendency to be uncertain about whether they had received earthquake preparedness information from state and local agencies and organizations than they were about receiving information from the Red Cross. There were no statistically significant associations between geographic region and being uncertain about earthquake preparedness information received from official sources.

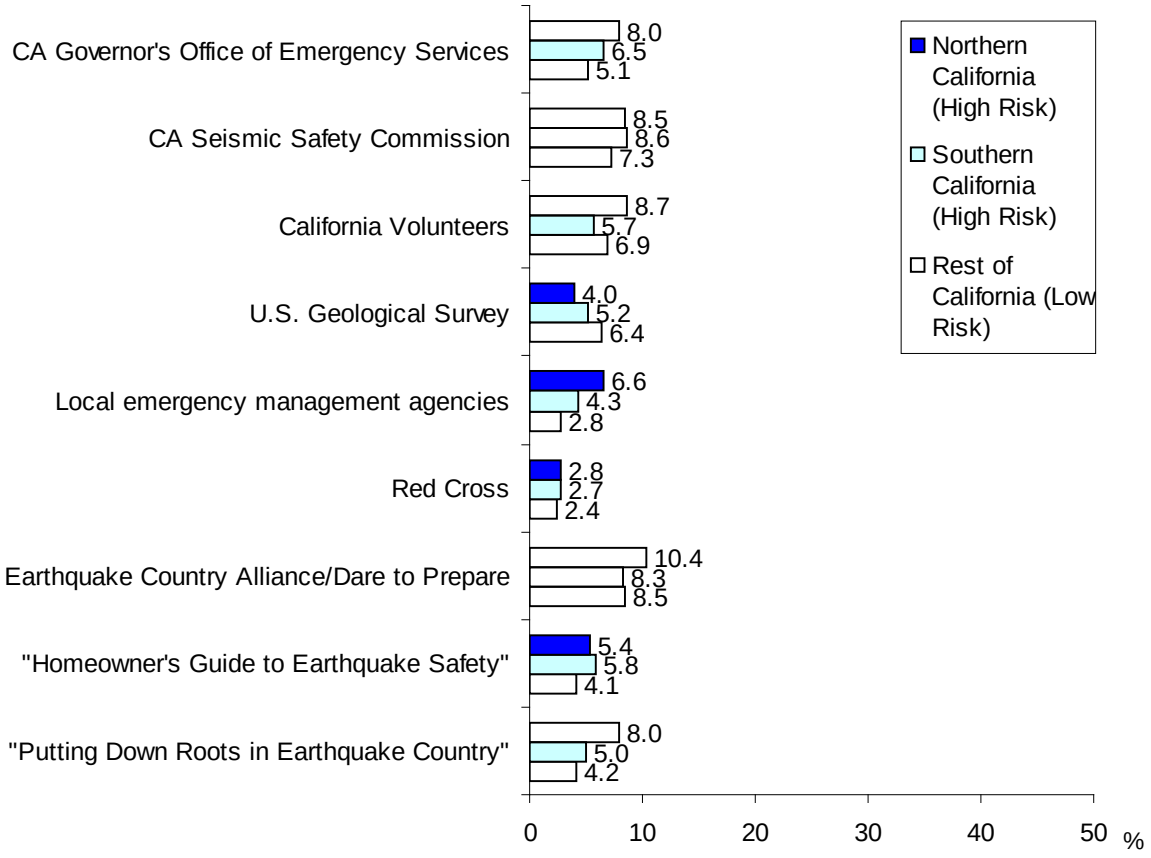


Figure 2.3. Respondents who were uncertain about receiving information from official sources, by geographic area

Note: Northern California, N=425; southern California, N=1,044; rest of California, N=612. Data were weighted with raked individual weights. There were no statistically significant associations between geographic area and being uncertain about receiving information from the index source, using Pearson's chi-square (p>.001).

2.4 How was the information communicated to you?

This next question asked about channels of communication, or ways in which information about earthquake preparedness was communicated by various sources (Figure 2.4). Respondents who said they had not received information from any sources were not asked this question. In general, television was the most common channel of communication for information on earthquake preparedness followed by radio, newspapers, and other print media. Regional differences included northern and southern California residents being more likely than those in other parts of the state to report receiving information through radio, and northern California residents being the most likely to report receiving information through the Internet.

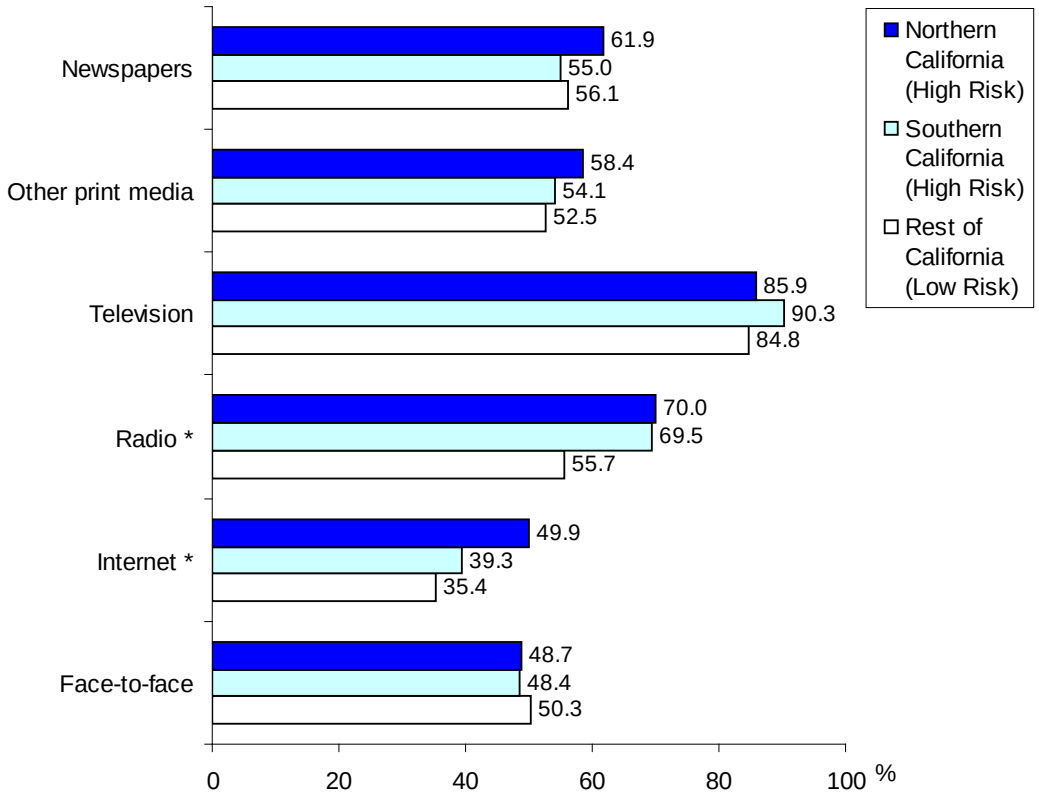


Figure 2.4. Channels of information on earthquake preparedness, by geographic area

Note: Those who did not receive information from any sources were not asked this question about information channels. Northern California, N=416; southern California, N=1,022; rest of California, N=585. Data were weighted with raked individual weights. Respondents could choose more than one response. Asterisks (*) indicate statistically significant associations between geographic area and receiving information via the index channel, using Pearson's chi-square ($p<.001$).

2.5 Have you gotten information about…?

Questions were also asked about the content or type of information that had been communicated (Figure 2.5). A large majority of the respondents who said they had received information on earthquake preparedness said they had gotten information about learning how to be ready for an earthquake, learning how to be safe during an earthquake, making disaster plans, organizing emergency equipment and supplies, and making things inside the home safer in case of an earthquake. There were some associations between geographic area and the kind of information that was communicated, where northern and southern California residents, compared to those living in other parts of the state, were more likely to have gotten information about learning how to be ready for an earthquake, organizing equipment and supplies, making things inside the home safer, and buying earthquake insurance.

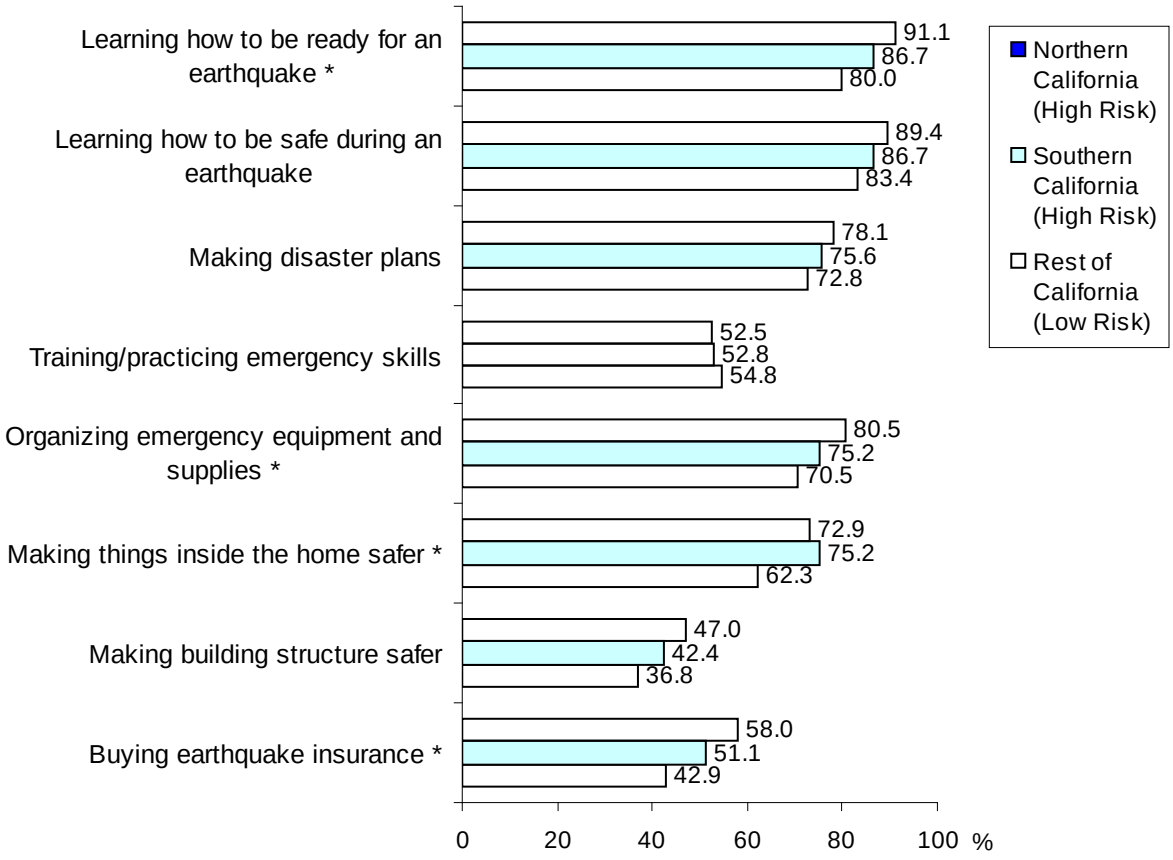
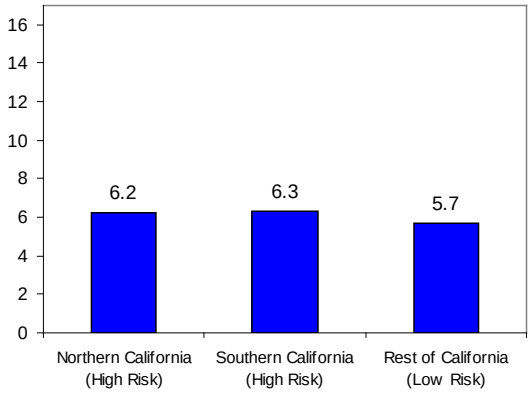


Figure 2.5. Type of information received about earthquake preparedness, by geographic area

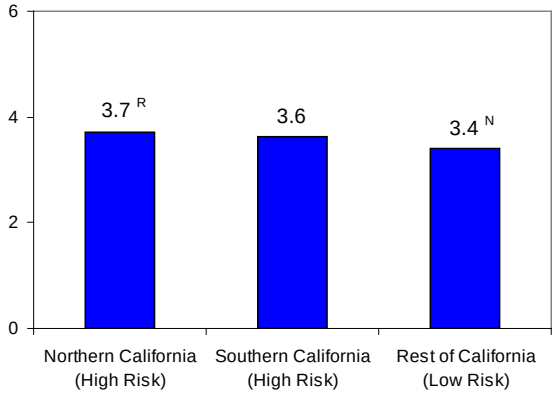
Note: Those who did not receive information from any sources were not asked this question about information types. Northern California, N=416; southern California, N=1,022; rest of California, N=585. Data were weighted with raked individual weights. Respondents could choose more than one response. Asterisks (*) indicate statistically significant associations between geographic area and receiving the index information content, using Pearson's chi-square ($p<.001$).

2.6 Number of sources, channels and types of information

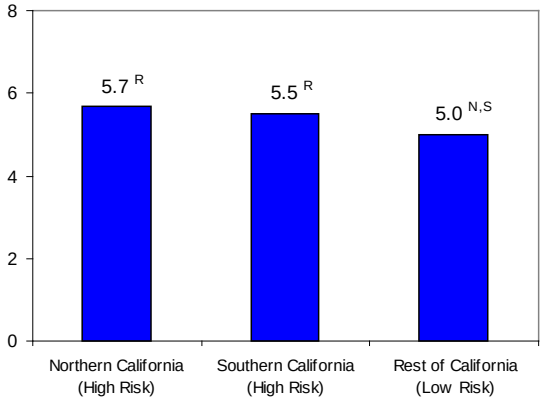
The average number of information sources, information channels and information types reported by each respondent were calculated and compared by geographic region (Figure 2.6). On average, northern and southern California residents reported receiving earthquake preparedness information from a greater number of sources than that reported by residents of the rest of California, although these differences were not statistically significant. Of those who reported receiving some information about preparedness, northern California residents, on average, reported the greatest number of information channels and information types, followed by southern California residents and residents of other parts of California.



(a) Average number of information sources, by geographic area (range 0-17)



(b) Average number of information channels, by geographic area (range 0-6)



(c) Average number of information types, by geographic area (range 0-8)

Figure 2.6. Average number of (a) information sources, (b) information channels, and (c) information types, by geographic area

Note: (a) Northern California, N=425; southern California, N=1,044; rest of California, N=612. (b-c) Those who did not receive information about earthquake preparedness from any sources were not asked the questions about information channels and types. Northern California, N=416; southern California, N=1,022; rest of California, N=585. Data were weighted with raked individual weights. Means were compared using one-way analysis of variance with Bonferroni's post-hoc pairwise comparisons. Superscripts indicate statistically significant pairwise differences ($p<.001$) with N=northern California, S=southern California, and R=rest of California (e.g., a superscript N indicates a statistically significant difference in means compared with northern California).

2.7 Has information been communicated in languages other than English?

A question was also asked about whether the respondent was aware of any efforts to communicate information on earthquake preparedness to the public in languages other than English (Figure 2.7). Half or fewer of the respondents said they knew information about earthquake preparedness had been communicated to the public in non-English languages. The difference in awareness of foreign language dissemination of earthquake preparedness information among the geographic areas was not statistically significant.

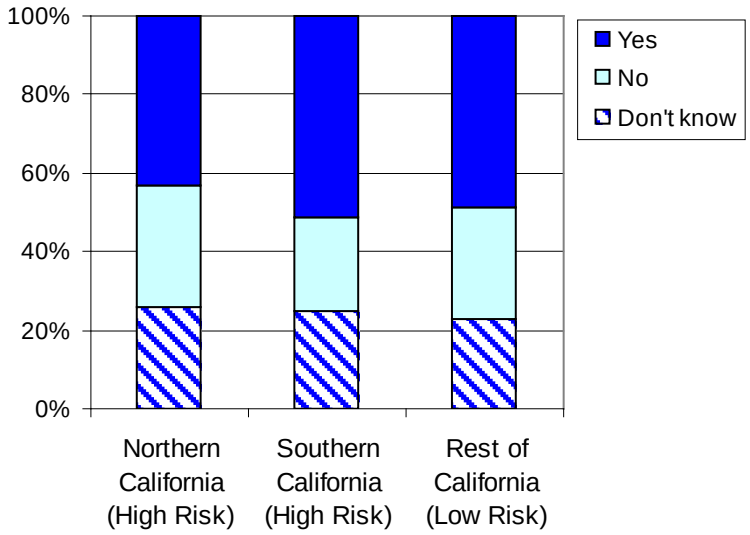


Figure 2.7. Awareness of earthquake preparedness information dissemination in non-English languages, by geographic area

Note: Those who did not receive information from any sources were not asked this question about information dissemination in non-English languages. Northern California, N=417; southern California, N=1,022; rest of California, N=585. Data were weighted with raked individual weights. The association between geographic area and awareness of information dissemination in non-English languages was not statistically significant, using Pearson's chi-square (p>.001).

2.8 How much of the information did you believe, understand, think about and discuss with other people?

Those respondents who said they had received information about earthquake preparedness were also asked to report the extent to which they believed, understood, thought about and discussed the information (Figure 2.8). On average, respondents indicated that they understood and believed most of the information they received about earthquake preparedness, gave some thought to over half of the information they received, and discussed about half of the information they received with other people. On average, northern California residents (mean = 4.4) reported believing more of the information they received compared to other groups (mean = 4.1), and northern (mean = 3.1) and southern California residents (mean = 3.2) reported discussing more of the information with other people compared to residents living in low earthquake-risk areas of the state (mean = 2.8).

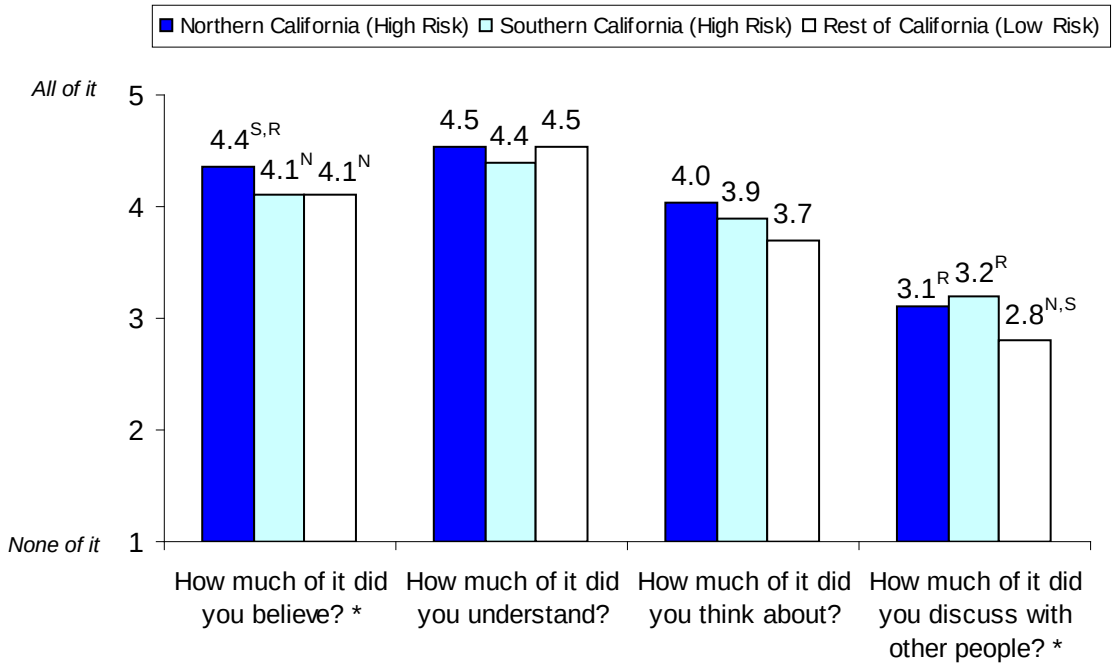


Figure 2.8. Extent to which respondents believed, understood, thought about, and discussed the information they received on earthquake preparedness, by geographic area

Note: Those who did not receive information from any sources were not asked these questions. Northern California, N=416; southern California, N=1,022; rest of California, N=585. Actual N varies by question due to missing data. Data were weighted with raked individual weights. Responses were measured on a scale of 1 'None of it' to 5 'All of it'. Asterisks (*) indicate statistically significant associations between geographic area and the index variable, using one-way analysis of variance ($p<.001$). Superscripts indicate statistically significant pairwise differences, using Bonferroni's post-hoc comparisons ($p<.001$), with N=northern California, S=southern California, and R=rest of California (e.g., a superscript S indicates a statistically significant difference in means compared with southern California).

3: Observation of Other People Performing Earthquake Preparedness

Respondents were asked a series of questions about whether anyone they know had done certain tasks to be prepared for earthquakes. Figure 3.1 shows the percentage of respondents who said they observed other people perform earthquake preparedness activities, and Figure 3.2 shows the average number of preparedness activities observed by geographic region.

3.1 Do you know anyone (other than yourself) who has … ?

The results indicate that half or more of the respondents know other people who have done something to prepare for earthquakes, such as learning how to be ready for an earthquake or organizing emergency equipment and supplies. There were a couple of statistically significant associations between geographic region and the type of behavior observed. Slightly over half of northern and southern California residents said they knew someone who had made things inside their home safer in case of an earthquake, compared to only 44% of residents of the rest of California. Also, 30% of northern and southern California residents, respectively, said they knew someone who had bought earthquake insurance compared to 18% of residents of other areas of the state.

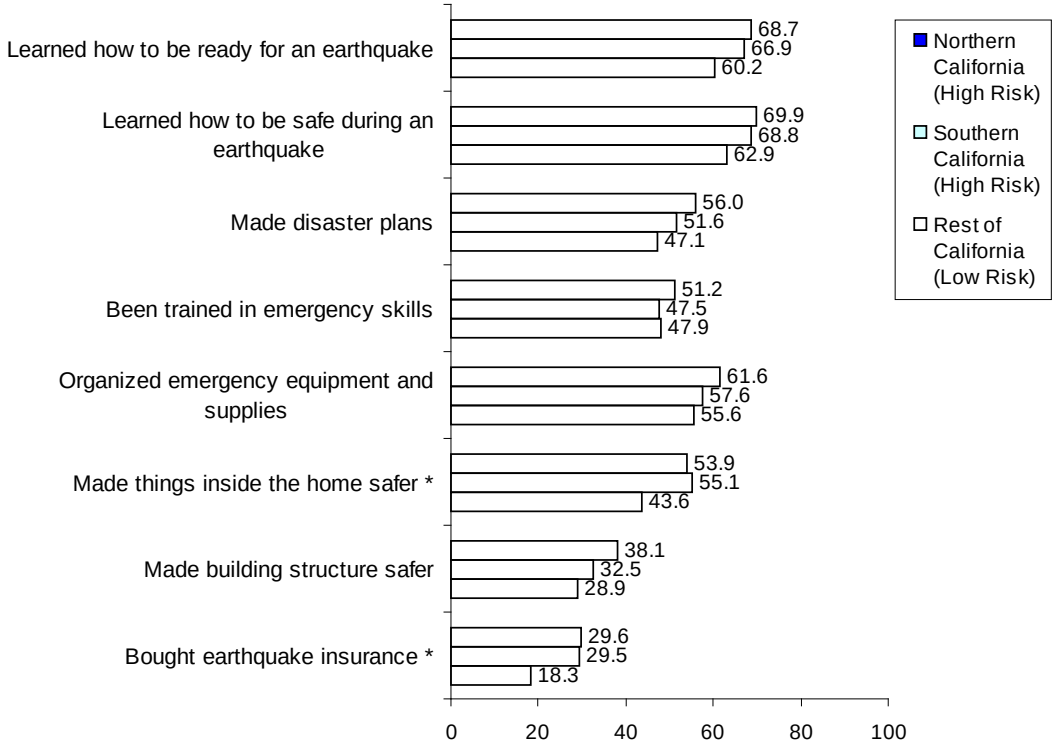


Figure 3.1. Observation of other people performing preparedness actions, by geographic area

Note: Northern California, N=425; southern California, N=1,044; rest of California, N=612. Data were weighted with raked individual weights. Respondents could choose more than one response. Asterisks (*) indicate statistically significant associations between geographic area and the index preparedness action, using Pearson's chi-square ($p<.001$).

3.2 Average number of observed earthquake preparedness activities

On average, residents of northern California reported observing the most preparedness activities (mean = 4.3) being performed by people they know, followed by southern California residents (mean = 4.1) and residents of the rest of the state (mean = 3.6).

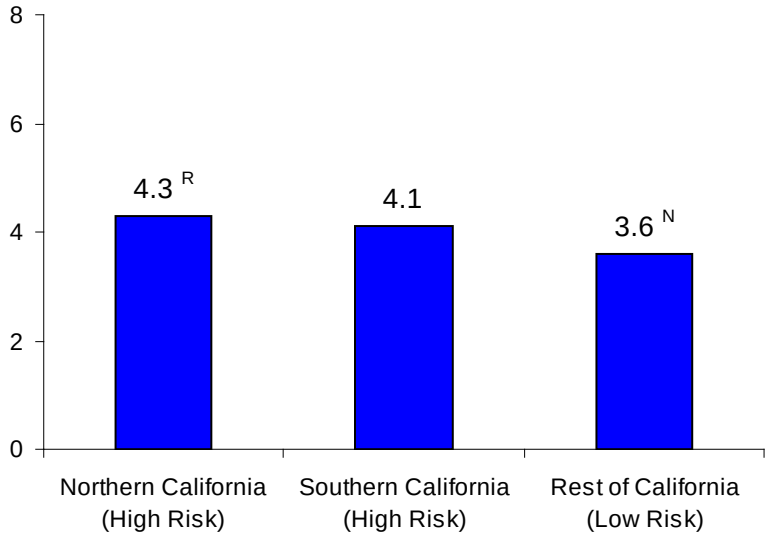


Figure 3.2. Average number of observed preparedness activities (cues), by geographic area

Note: Northern California, N=425; southern California, N=1,044; rest of California, N=612. Data were weighted with raked individual weights. The possible range for observed cues was 0 to 8. The association between geographic area and the average number of cues observed was statistically significant, using one-way analysis of variance ($p<.001$). None of the pairwise differences were statistically significant, using Bonferroni's post-hoc comparisons ($p>.001$).

4: Belief in Earthquake Safety Myths

A series of questions was asked to assess belief in misinformation, or myths, about earthquake safety (Figure 4.1).

4.1 How much do you disagree or agree with the following statements?

On average, respondents did not agree with many of the myths about earthquake safety. Some of the more commonly believed ideas were: the safest place inside a building when an earthquake occurs is under the doorway; the "triangle of life" is safer than "drop, cover and hold on"; buildings built on hard rock are relatively safer; and buildings in California are safe because of good building codes. There were a few statistically significant associations between geographic area and type of misconception, where northern California residents were least likely to believe houses built on sand are safer in earthquakes but most likely to believe houses built on hard rock are safer. Southern California residents were most likely to believe that buildings in California are safe from earthquakes because the state has good building codes.

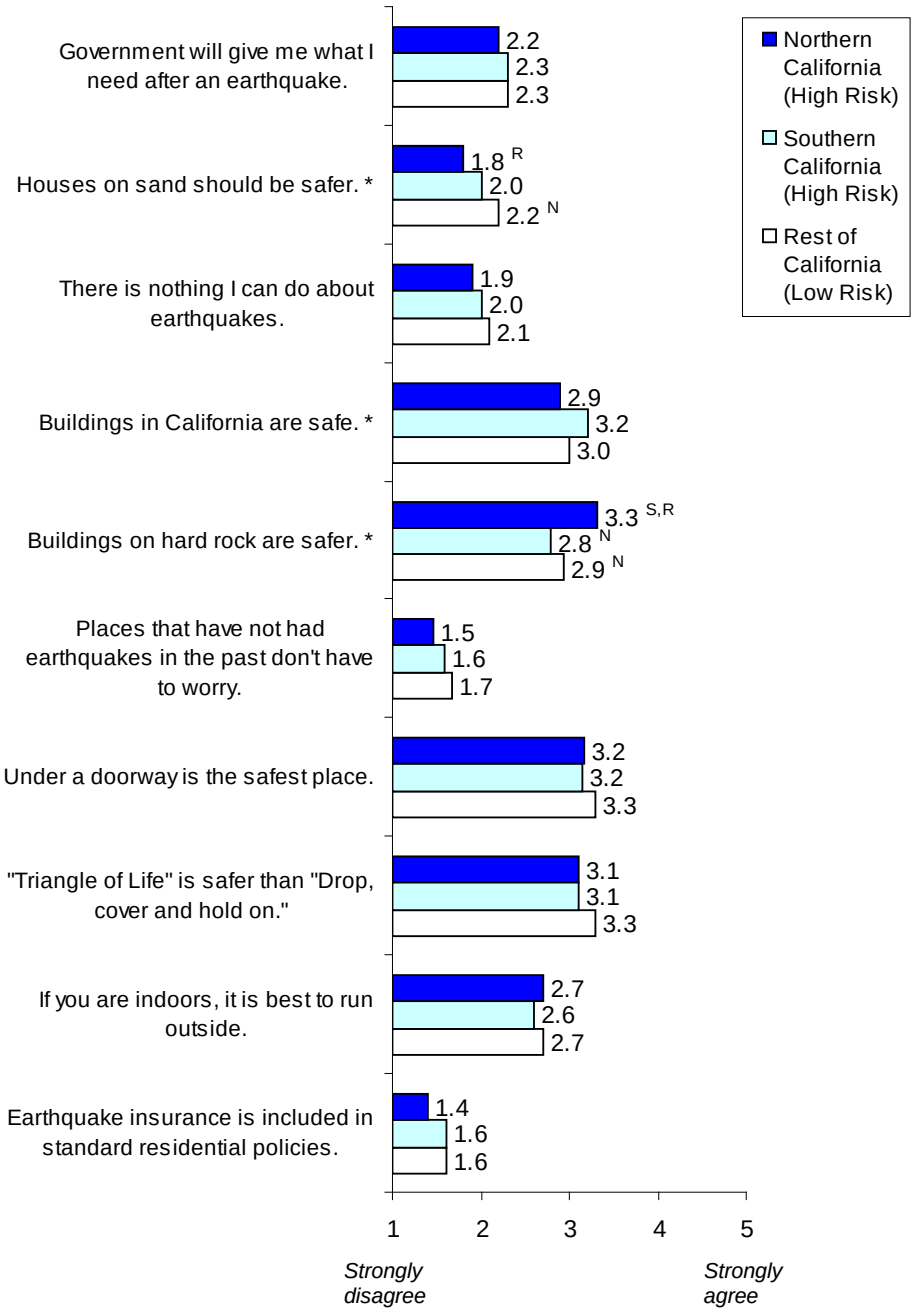


Figure 4.1. Belief in earthquake safety myths, by geographic area

Note: N varies due to missing data. Data were weighted with raked individual weights. Responses were measured on a scale of 1 'Strongly disagree' to 5 'Strongly agree'. Asterisks (*) indicate statistically significant associations between geographic area and level of belief in the index myth, using one-way analysis of variance ($p<.001$). Superscripts indicate statistically significant pairwise differences, using Bonferroni's post-hoc comparisons ($p<.001$), with N=northern California, S=southern California, and R=rest of California (e.g., a superscript S indicates a statistically significant difference in means compared with southern California).

4.2 Respondents' lack of recognition of earthquake safety myths

Several respondents had not heard about some of the earthquake safety myths and were unable to indicate their level of agreement with these statements. Over half of the respondents in all regions said "don't know" when asked about their level of agreement with the statement that the "Triangle of Life" is safer than "Drop, cover and hold on" (Figure 4.2). About 10-15% of respondents were uncertain about their level of agreement with the statements about houses built on sand or hard rock being safer in earthquakes and about earthquake insurance being included in standard residential policies. There were no statistically significant associations between geographic location and not knowing about certain earthquake safety myths.

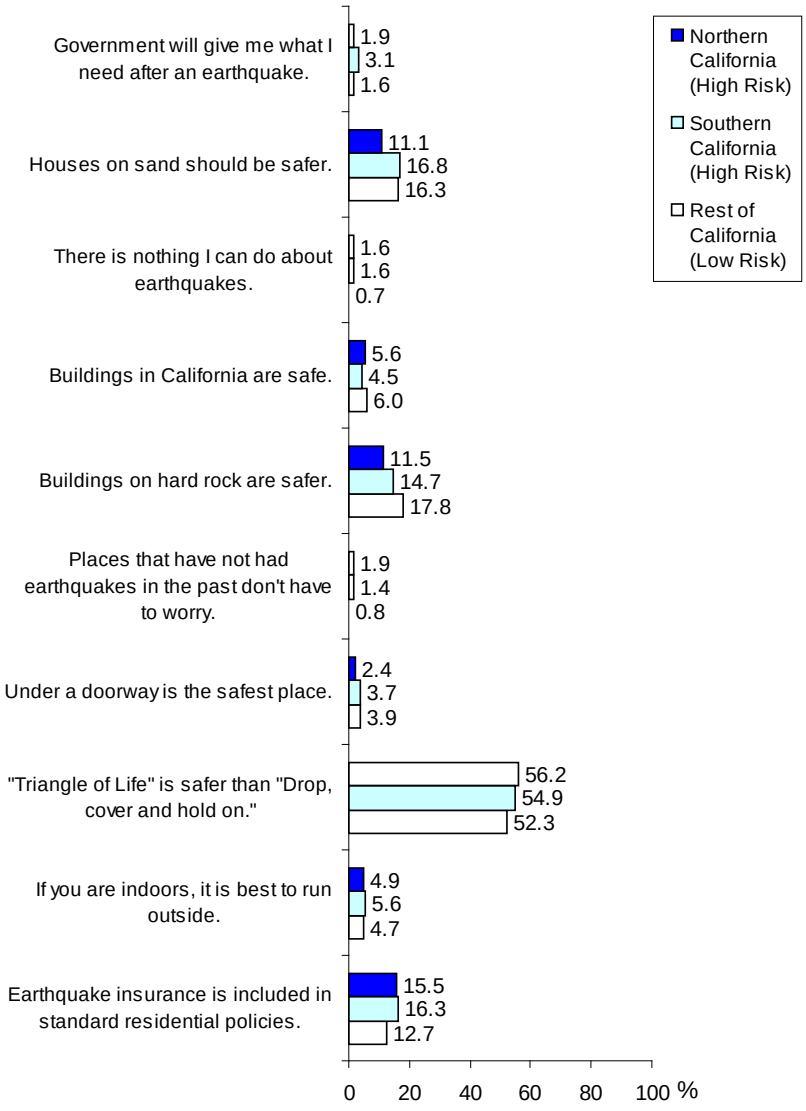


Figure 4.2. Respondents who were uncertain of their belief in earthquake safety myths, by geographic area

Note: Data were weighted with raked individual weights. There were no statistically significant associations between geographic location and not knowing about the earthquake safety myths in question, using Pearson's chi-square ($p>.001$).

5: Active Information-Seeking About Earthquake Preparedness

Respondents were asked how frequently they had actively searched for information about earthquake preparedness (Figure 5.1). As a follow-up, respondents were asked to indicate how much information they were actually able to find through their search, using a 1 to 5 scale where 1 meant "none of it" and 5 meant "all of it (Figure 5.2).

5.1 How often have you actively looked for information on earthquake preparedness?

Very few respondents said they had looked for information about earthquakes on at least a daily, weekly or monthly basis. The overwhelming majority said they had either never actively searched for information on earthquake preparedness or they had looked for it at least once a year, but not as often as once a month. On a scale of 1="Never" to 5="At least daily", on average, those in northern (mean = 1.8) and southern California (mean = 1.8) reported seeking information about earthquake preparedness more frequently than those in the rest of the state (mean = 1.5).

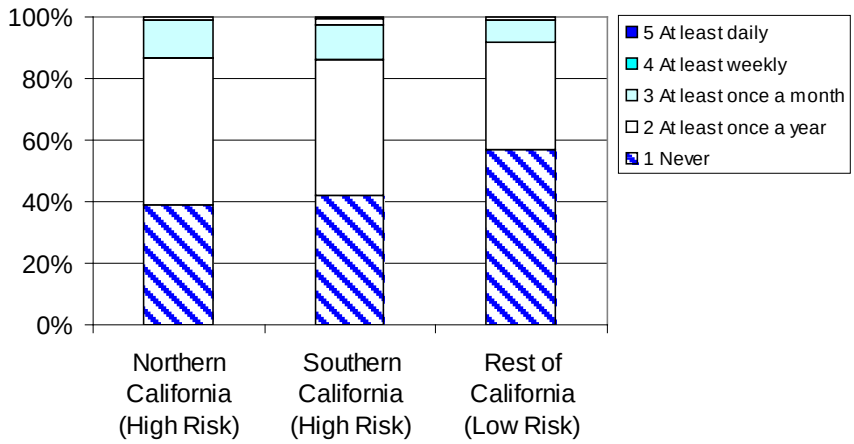


Figure 5.1. Frequency of information-seeking on earthquake preparedness, by geographic area

Note: Northern California, N=421; southern California, N=1033; rest of California, N=610. Data were weighted with raked individual weights. The association between geographic area and frequency of information-seeking was statistically significant using one-way analysis of variance ($p<.001$).

5.2 How much of the information did you actually get?

The majority of respondents said they were successful in getting most or all of the information they wanted. There was no statistically significant difference across regions.

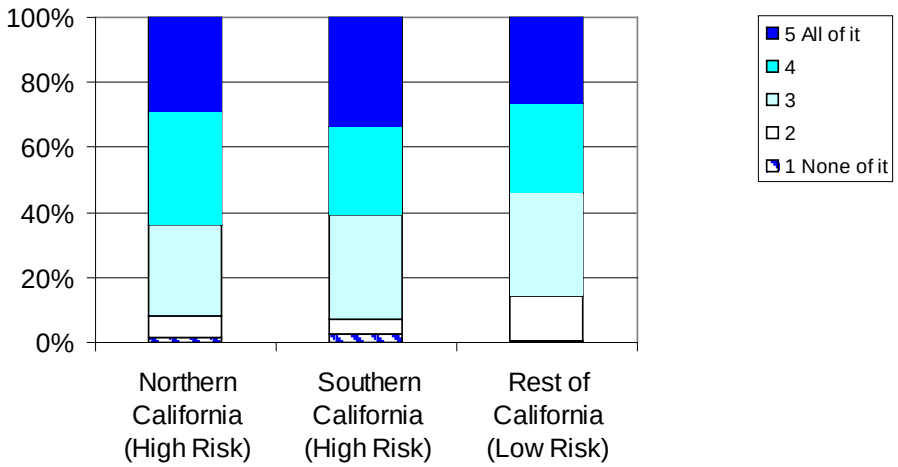


Figure 5.2. Extent of success of information-seeking, by geographic area

Note: Only those who had ever looked for information were asked this question: Northern California, N=259; southern California, N=603; rest of California, N=263. Data were weighted with raked individual weights. The association between geographic area and frequency of information-seeking was not statistically significant using one-way analysis of variance (p>.001).

6: Earthquake Preparedness and Reasons for Action

6.1 Introducing the "Get Ready" Pyramid

The next series of questions addressed the types of preparedness activities the interviewed households had implemented (Figures 6.2 - 6.9). A total of 43 actions were asked about in the interview. Some of the actions were specific to earthquakes while others were applicable to both earthquakes and other hazards. The actions were classified into seven categories that correspond to the seven layers of the ***Get Ready Pyramid*** (Figure 6.1), where Level 1 is "Learn How to be Ready," Level 2 is "Plan and Organize," Level 3 is "Train and Practice," Level 4 is "Manage Supplies and Equipment," Level 5 is "Secure Building Contents," Level 6 is "Protect Building Structure," and Level 7 is "Safeguard Finances."

Figure 6.1. The "Get Ready" Pyramid

6.2 Pyramid level 1: Learned how to be ready

Among the Level 1 activities (Figure 6.2), only about a third of households have learned how to make their home structure safe, or how to safeguard their finances. While many households across the state have learned about what supplies and equipment to have, northern and southern California residents, compared to residents of other parts of the state, were more likely to have learned about how to be safe during an earthquake and how to make the things inside their home safe in an earthquake.

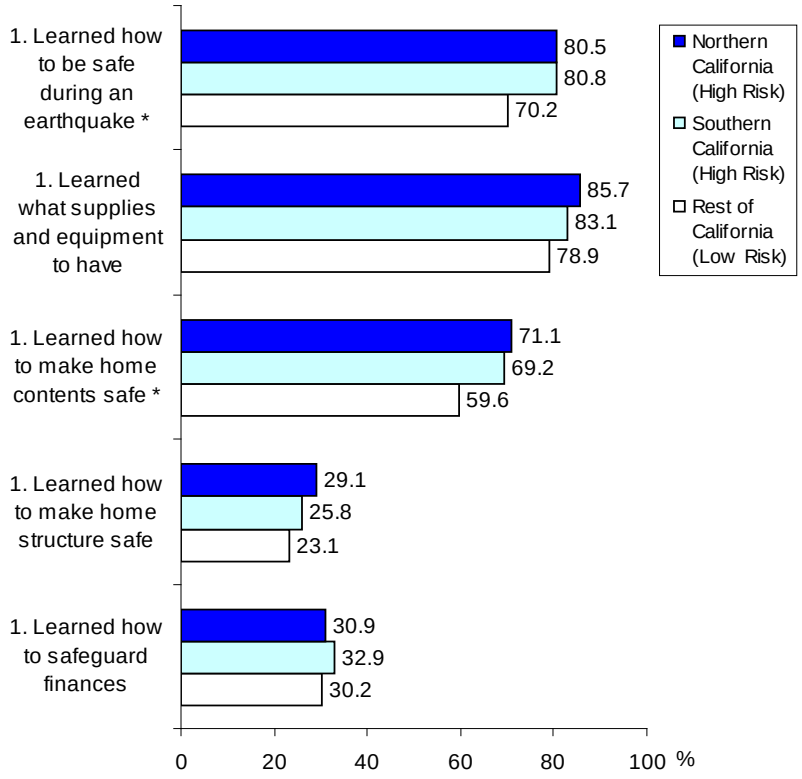


Figure 6.2. *Get Ready Pyramid* Level 1 activities performed, by geographic area

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between geographic area and the index preparedness action, using Pearson's chi-square ($p<.001$).

6.3 Pyramid level 2: Plan and organize

Among the Level 2 activities (Figure 6.3), over half of the households have made back-up copies of important documents and about 40% have made family disaster plans. However, only a few households have participated in neighborhood disaster planning. Northern California residents (16%) were more likely than residents of southern California (9%) and those of other parts of the state (7%) to have participated in neighborhood disaster planning. About 15-20% of households have made disaster plans for their pets.

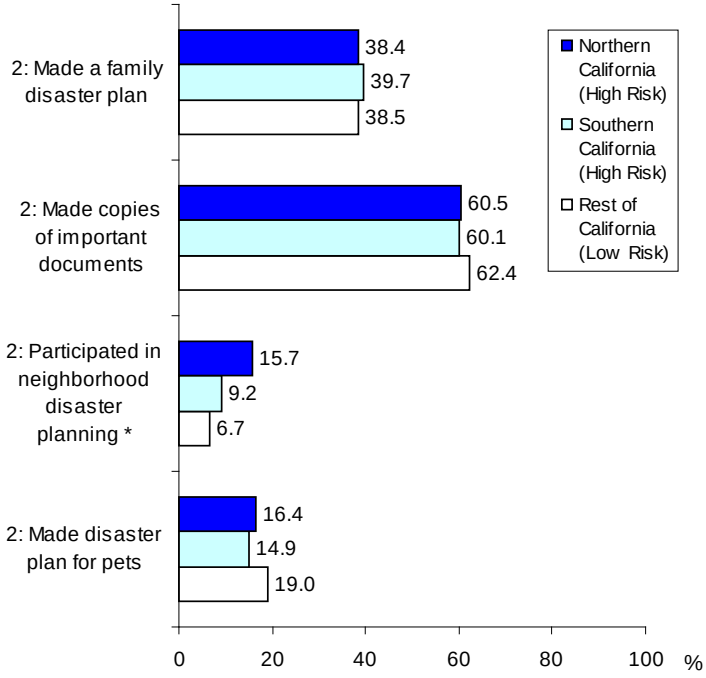


Figure 6.3. *Get Ready Pyramid* Level 2 activities performed, by geographic area

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between geographic area and the index preparedness action, using Pearson's chi-square ($p<.001$).

6.4 Pyramid level 3: Train and practice

Of the Level 3 activities (Figure 6.4), about 70% of respondents in all regions reported learning first aid and learning how to shut off utilities in their home. Slightly under half of the respondents said they had participated in disaster preparedness activities at their workplace, and less than 25% said they had received disaster response trainings, like CERT (Community Emergency Response Team) training.

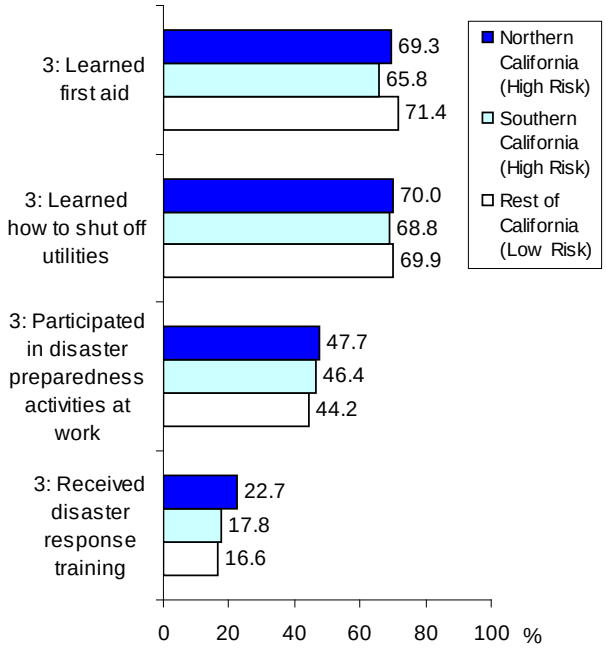


Figure 6.4. *Get Ready Pyramid* Level 3 activities performed, by geographic area

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between geographic area and the index preparedness action, using Pearson's chi-square ($p<.001$).

6.5 Pyramid level 4: Manage supplies and equipment

Level 4 activities are shown in Figure 6.5.1 and 6.5.2. Among the actions listed in Figure 6.5.1, there was a statistically significant association, where only 59% of southern California residents reported having a fire extinguisher, compared to 69% of residents of northern California and other parts of the state.

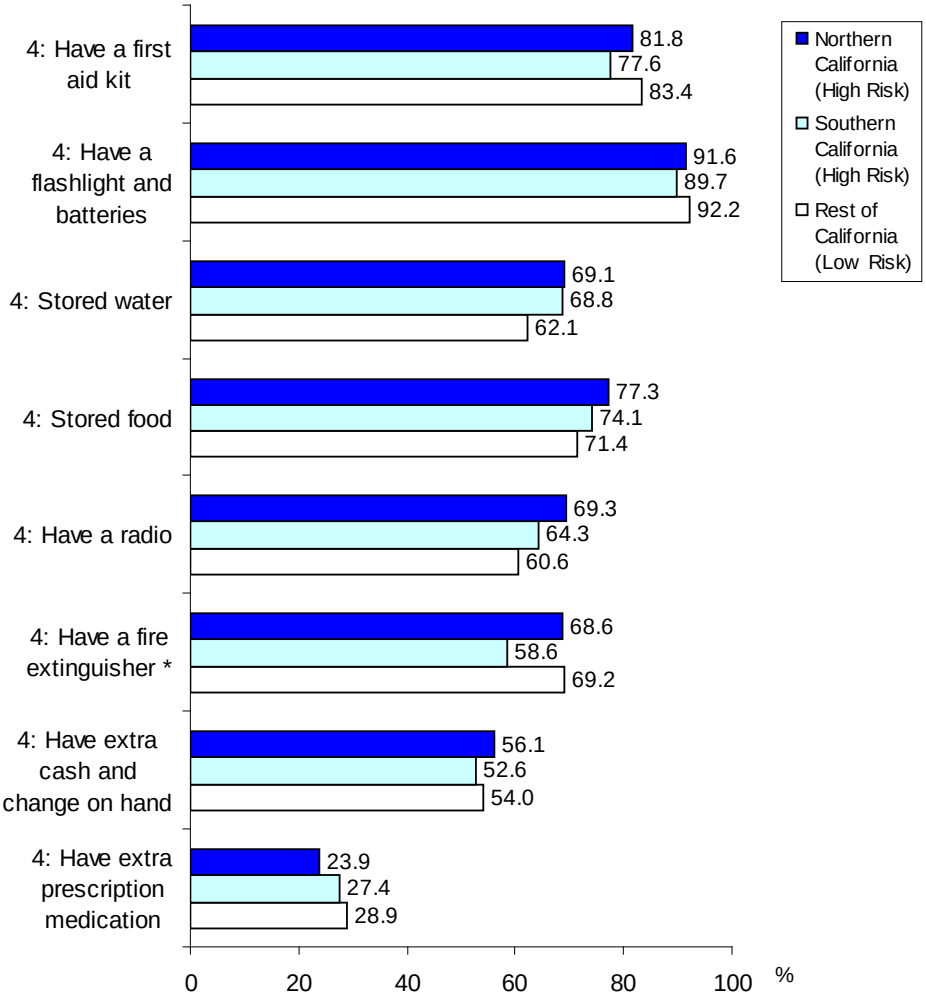


Figure 6.5.1. *Get Ready Pyramid* Level 4 activities performed, by geographic area (part 1)

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between geographic area and the index preparedness action, using Pearson's chi-square ($p<.001$).

Of the actions listed in Figure 6.5.2, having a back-up power generator was the least common, reported by less than 15% of residents across all regions. Other activities performed by less than half of the respondents in all regions included having dust masks and keeping disaster supplies in the car. There was only one statistically significant association, where 52% of northern California residents and 48% of southern California residents reported having tools to rescue trapped people (e.g., crowbars, axes), compared to 59% of residents of other parts of the state.

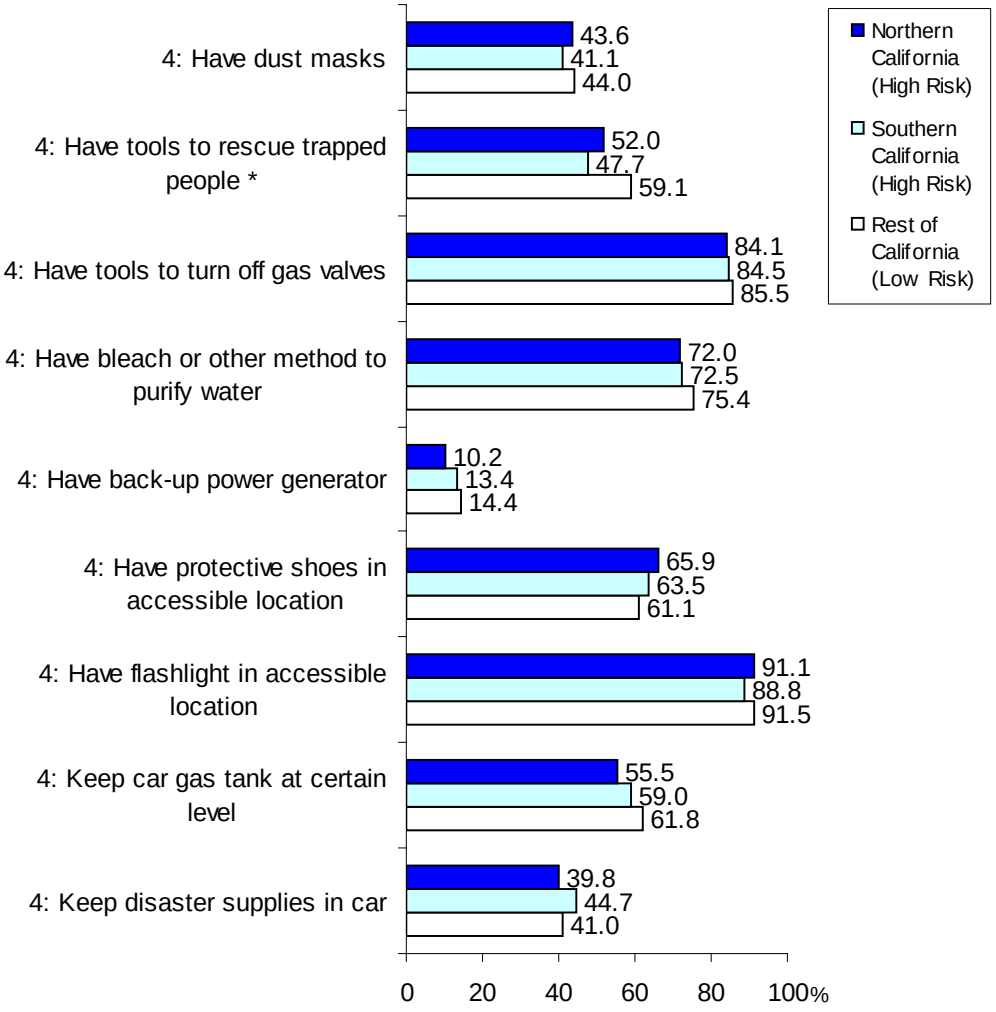


Figure 6.5.2. *Get Ready Pyramid* Level 4 activities performed, by geographic area (part 2)

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between geographic area and the index preparedness action, using Pearson's chi-square ($p<.001$).

6.6 Amount of water, food and fuel storage

State, federal and non-governmental entities recommend individuals or families should have a minimum three-day supply of preparedness items to survive potential disruptions or delays in essential services. In terms of water storage, the minimum recommendation is one gallon per person per day for a three-day period. The recommended amount of food storage is a three-day supply per person. While there is no standard recommendation on the amount of fuel that should be kept in a car's gas tank, general consensus is at least half of a tank.

Follow-up questions were asked about specific quantities when respondents said they stored water or food, maintained a certain fuel level in their cars or set aside extra cash and change for emergencies. In general, Californians in low-risk areas for earthquakes were more likely than those in high-risk areas to meet or exceed preparedness recommendations, although these differences were not statistically significant (Figure 6.6). With regard to water storage, only 30-38% of respondents who said they stored water met or exceeded the recommendation. Those who said they stored more than 3 gallons per person were asked to specify the exact amount they stored. Among those who responded to this question, answers ranged from 3.3 to 3,500 gallons per person with a median (50th percentile) of 6 gallons per person.

Of respondents who said they had stored food, 85-90% of all Californians interviewed met or exceeded preparedness recommendations of three of more days of food per person. Respondents who said they had more than three days of food per person were asked to specify the actual amount. Responses ranged from four days' to two years' worth of food per person, with a median of one week's worth.

Of those who said they keep a certain fuel level in their car, 50-60% said they keep at least half a tank of fuel in their car. Although not shown in the figure below, respondents who said they have extra cash on hand for an emergency reported setting aside anywhere between $2 to $30,000 with a median of $250.

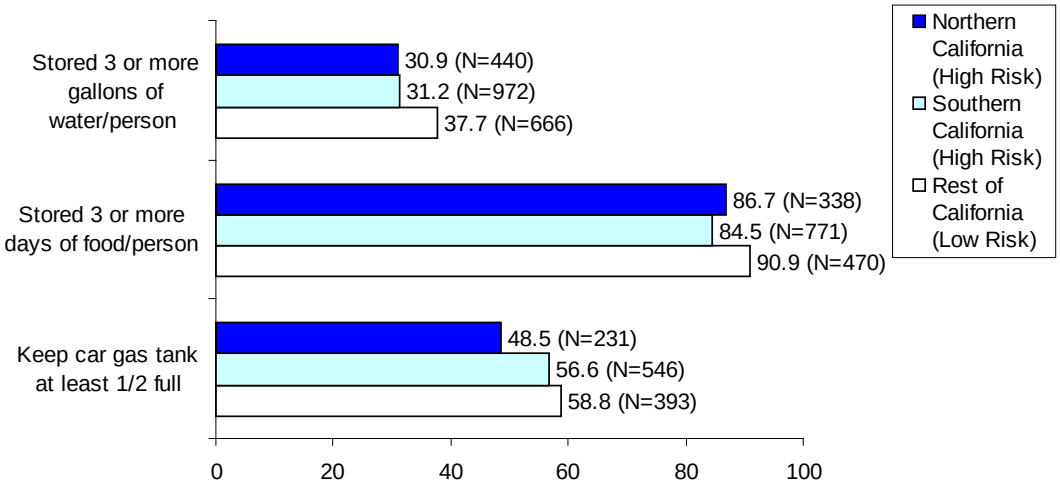


Figure 6.6. Amount of water, food and fuel storage, by geographic area

Note: Data were weighted with raked household weights. Respondents could choose more than one response. N varies due to sample size and the fact that only those who said they maintain a certain supply of food, water, and/or gas were asked these follow-up questions about specific quantities.

6.7 Pyramid level 5: Secure building contents

The most common Level 5 activities across all regions were securing the water heater and storing hazardous materials safely (Figure 6.7). All of the other measures were implemented by less than half of the households across all regions. There were no statistically significant associations between geographic area and the adoption of mitigation measures that involve securing building contents.

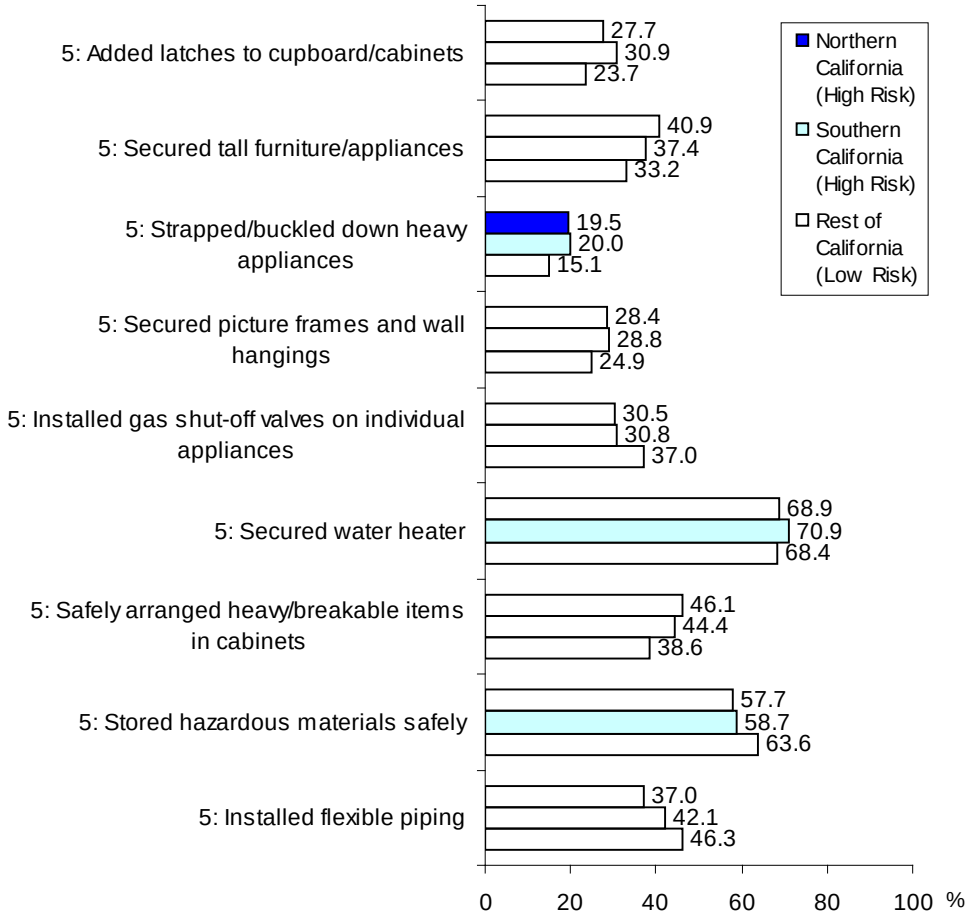


Figure 6.7. *Get Ready Pyramid* Level 5 activities performed, by geographic area

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. None of the associations between geographic area and the index preparedness action were statistically significant, using Pearson's chi-square ($p>.001$).

6.8 Pyramid level 6: Protect building structure

Activities to protect the building structure were not common among households in California, regardless of geographic region (Figure 6.8). Only about 20% or fewer of the households across all regions said they structurally reinforced their home or had their home inspected for earthquake resistance.

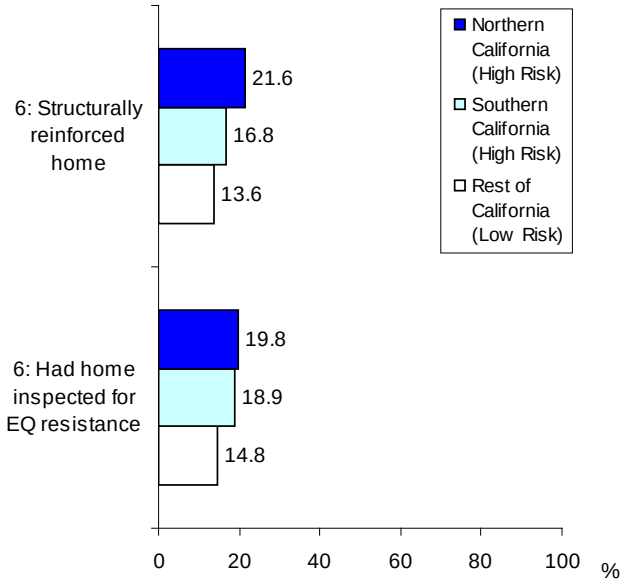


Figure 6.8. *Get Ready Pyramid* Level 6 activities performed, by geographic area

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between geographic area and the index preparedness action, using Pearson's chi-square ($p<.001$).

6.9 Pyramid level 7: Safeguard finances

Safeguarding finances was also uncommon among the surveyed households (Figure 6.9). Between 10-20% of them said they purchased earthquake insurance for their home structure or for the things inside their home, with slightly more households in northern and southern California reporting earthquake insurance coverage than those in the rest of the state. The association between geographic area and earthquake insurance coverage for the home structure was statistically significant.

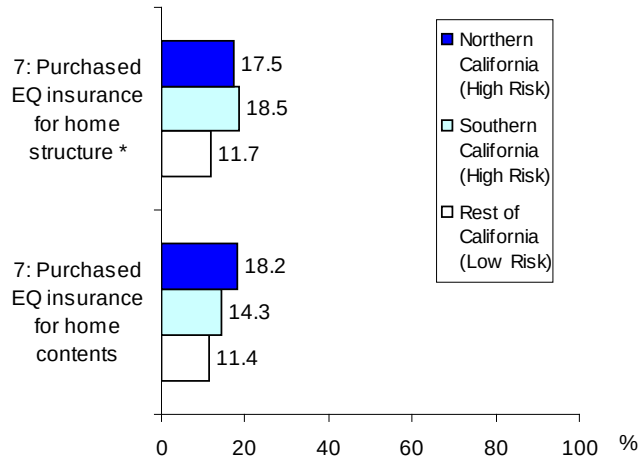


Figure 6.9. *Get Ready Pyramid* Level 7 activities performed, by geographic area

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between geographic area and the index preparedness action, using Pearson's chi-square ($p<.001$).

6.10 Average number of preparedness actions performed in total

The average number of preparedness actions performed per household in total was calculated and compared by geographic area (Figure 6.10). On average, the households reported performing about half of the 43 actions that were listed in the interview. There was no statistically significant difference between geographic regions.

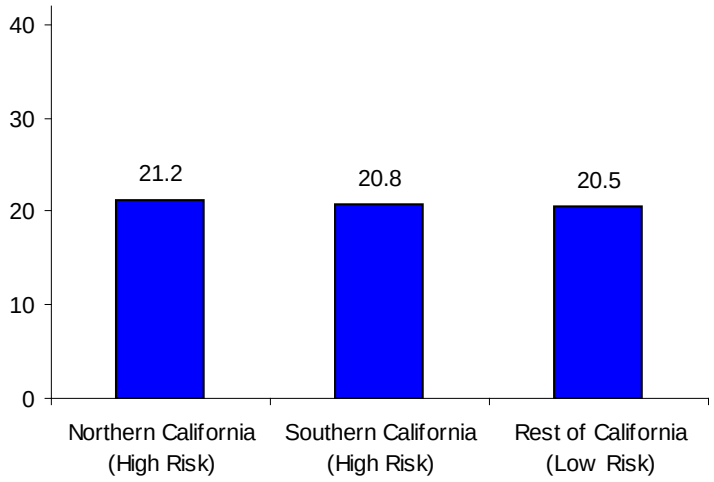


Figure 6.10. Average number of preparedness actions performed, by geographic area

Note: Number of preparedness actions could range from 0 to 43. Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. The association between geographic area and total number of preparedness actions was not statistically significant, using one-way analysis of variance (p>.001).

6.11 Average proportion of preparedness actions performed by pyramid level

The average proportion of actions within each level of the "Get Ready" Pyramid performed per household was also calculated. On average, respondents reported doing proportionally the most of the Level 4 (Manage supplies and equipment) actions, and the least of the Level 7 (Safeguard Finances) actions, compared to the other levels of the pyramid. There were statistically significant associations where northern and southern California residents, on average, said they had done proportionally more of the actions in Levels 1 and 7 of the pyramid compared with residents of the rest of the state.

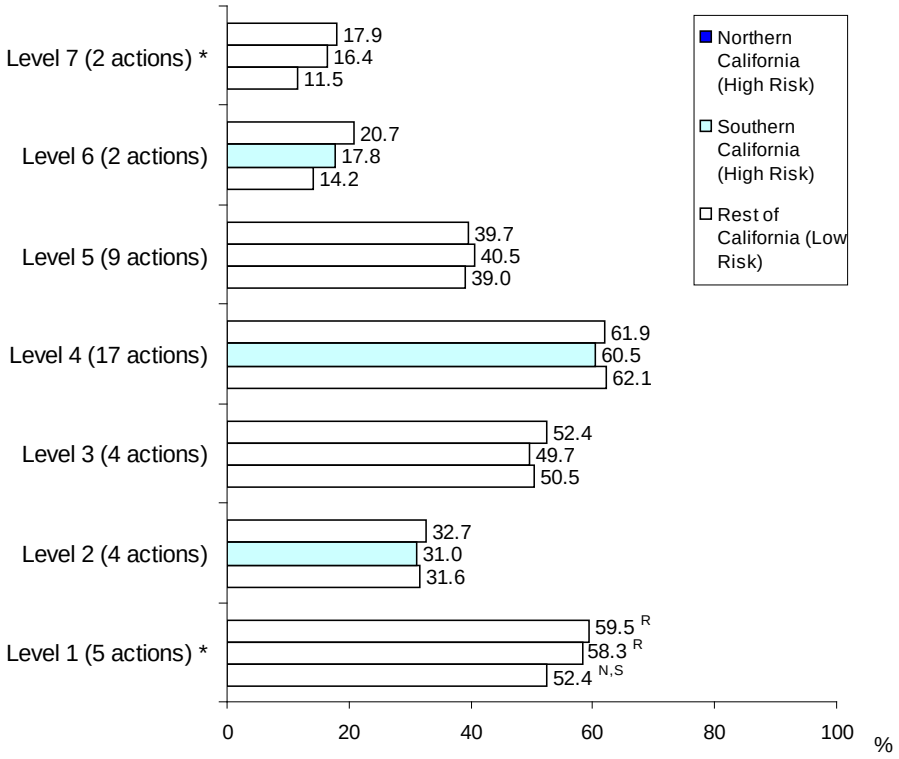


Figure 6.11. Average proportion of preparedness actions performed by pyramid level, by geographic area

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. The number of preparedness actions applicable to each pyramid level is indicated in parentheses. Data were weighted with raked household weights. Asterisks (*) indicate statistically significant associations between geographic area and the average proportion of preparedness actions performed by pyramid level, using one-way analysis of variance (p<.001). Superscripts indicate statistically significant pairwise differences, using Bonferroni's post-hoc comparisons (p<.001), with N=northern California, S=southern California, and R=rest of California (e.g., a superscript S indicates a statistically significant difference in means compared with southern California).

6.12 Respondents' lack of recognition of earthquake readiness actions

It is worth noting that, for some of the earthquake preparedness and mitigation actions, a substantial number of respondents said they did not know whether they, or other people in the household, had done the activity or not, suggesting they lack the knowledge or awareness about the actions that could protect them in an earthquake. Figure 6.12 shows some of the recommended earthquake readiness actions that had the highest rates of respondents saying they "don't know" whether it was done or not. Across all regions, respondents were most frequently unsure about whether they had installed flexible gas piping in their homes. There was one statistically significant association where, proportionally, about twice as many southern California residents as other groups were unsure whether they had purchased earthquake insurance for their home structure.

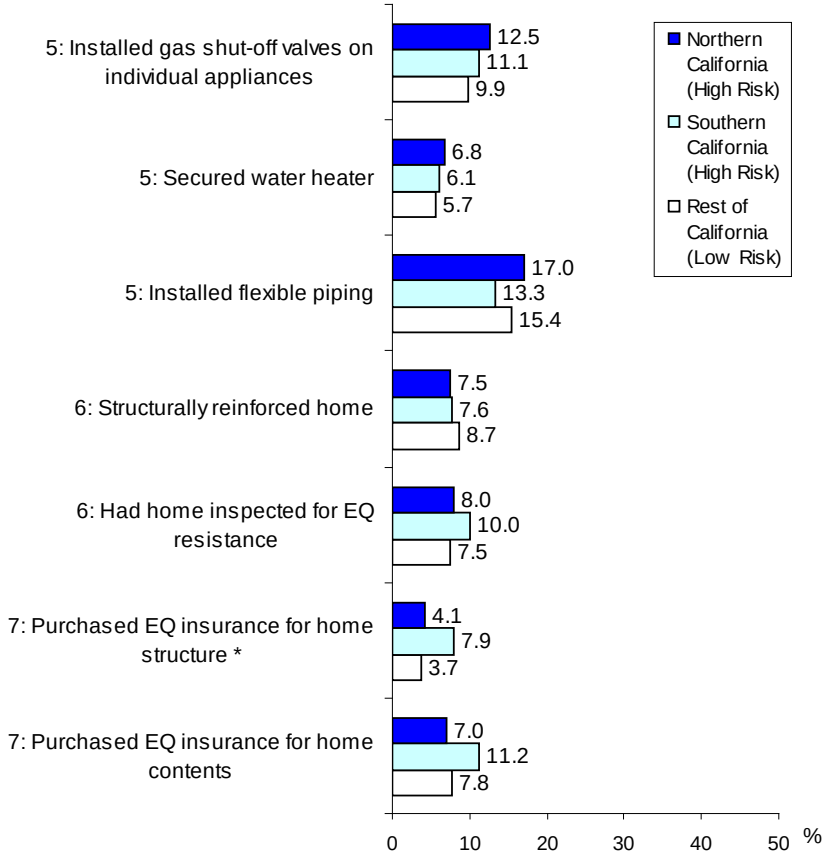


Figure 6.12. Respondents who were uncertain whether they had done some of the earthquake preparedness activities, by geographic area

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Asterisks (*) indicate statistically significant associations between geographic area and being uncertain about whether they had done the index preparedness action, using Pearson's chi-square ($p<.001$).

6.13 Reasons given for performing preparedness actions, in total

Of the 43 actions listed in the interview, 35 of them were not specific to earthquakes and could apply to all hazards; the other 8 were only relevant to earthquakes (e.g., Learning how to be safe during an earthquake). For these 35 all-hazard preparedness actions, respondents were asked to state why they had implemented the self-protective measure. The response options were: a) for earthquakes only, b) for other reasons, or c) for both reasons. Very few respondents were unable to tell us the reasons for their action. The average number of activities that fall into each of those three categories were calculated and compared by geographic area (Figure 6.13).

The average number of actions taken only to prepare for an earthquake was the lowest among the three categories across all regions. There were some statistically significant associations, where, on one hand, northern California residents (mean = 4.2) and southern California residents (mean = 3.4) reported implementing more actions to specifically prepare for an earthquake compared to that reported by residents of other parts of the state (mean = 1.9). On the other hand, households in other parts of California (mean = 7.0) reported implementing more preparedness measures for reasons other than to prepare for an earthquake compared to northern California (mean = 5.6) and southern California residents (mean = 4.9). There was no statistically significant difference between geographic regions in terms of the average number of activities performed for both earthquakes and other purposes.

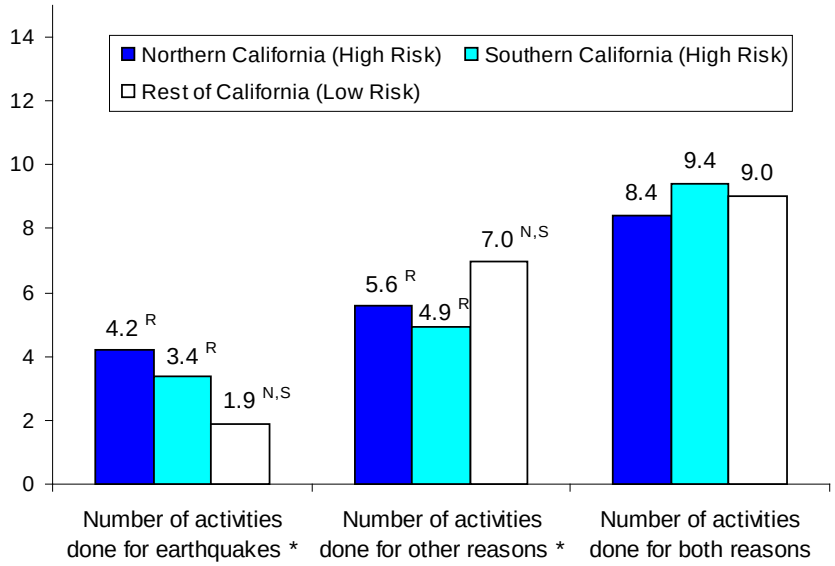


Figure 6.13. Average number of preparedness actions performed by reason for action and by geographic area

Note: Reason for action was asked for 35 all-hazard preparedness actions. Number of preparedness actions reported in this figure could range from 0 to 35. Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Asterisks (*) indicate statistically significant associations between geographic area and the index variable, using one-way analysis of variance ($p<.001$). Superscripts indicate statistically significant pairwise differences, using Bonferroni's post-hoc comparisons ($p<.001$), with N=northern California, S=southern California, and R=rest of California (e.g., a superscript S indicates a statistically significant difference in means compared with southern California).

6.14 Reasons given for performing preparedness actions, by pyramid level

The reasons for performing preparedness actions were also assessed by each level of the "Get Ready" Pyramid. Figure 6.14.1 shows the average proportion of activities in each level of the pyramid that was done only because of the earthquake hazard, as reported in each geographic region. Less than 20% of the actions in each level were done solely for earthquakes. On average, Level 5 actions (secure building contents) had the highest proportion of actions done only because of earthquakes. There were several statistically significant associations in each pyramid level where northern California residents reported the greatest proportion of actions done only for earthquakes; residents of the rest of California reported the least amount of actions done specifically for earthquakes.

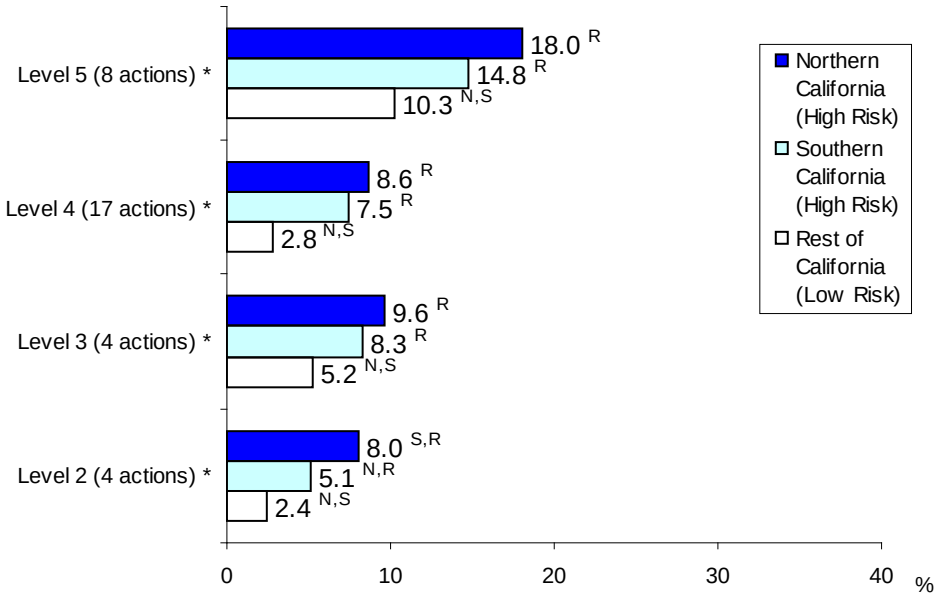


Figure 6.14.1. Average proportion of preparedness actions done only because of the earthquake hazard by pyramid level and by geographic area

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Reason for action was asked for 35 all-hazard preparedness actions. The number of applicable preparedness actions in each pyramid level is indicated in parentheses. Pyramid levels 1, 6 and 7 had an insufficient number of applicable actions to calculate a percentage. Asterisks (*) indicate statistically significant associations between geographic area and the average proportion of preparedness actions done only because of the earthquake hazard by pyramid level, using one-way analysis of variance ($p<.001$). Superscripts indicate statistically significant pairwise differences, using Bonferroni's post-hoc comparisons ($p<.001$), with N=northern California, S=southern California, and R=rest of California (e.g., a superscript S indicates a statistically significant difference in means compared with southern California).

Figure 6.14.2 shows the average proportion of activities in each level of the pyramid that were done because of reasons other than the earthquake hazard, as reported in each geographic region. There were statistically significant associations in each pyramid level where residents of southern California and northern California reported performing proportionally fewer preparedness actions for reasons other than earthquakes, compared with residents of other regions of the state.

The average proportion of activities that were done for both earthquakes and other reasons are not shown.

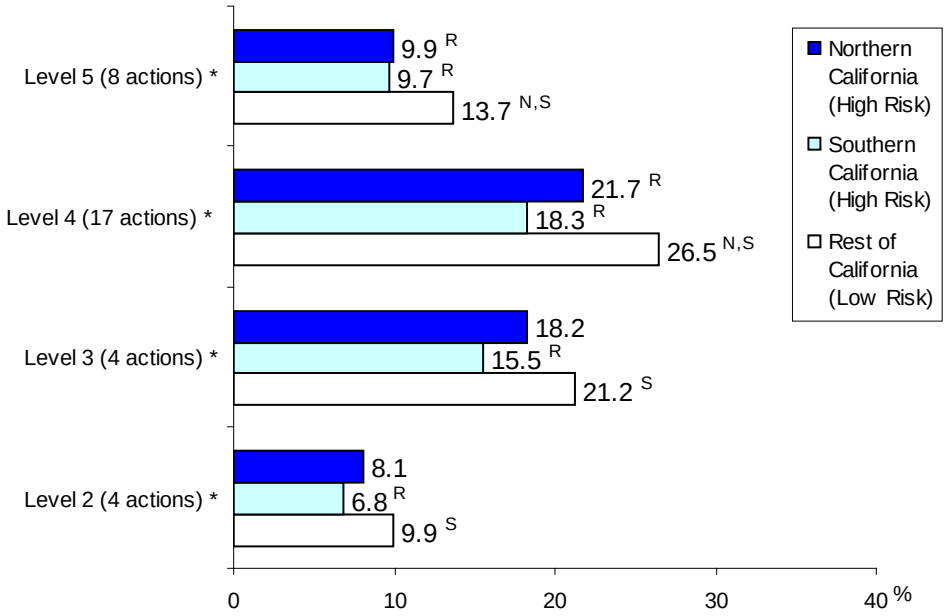


Figure 6.14.2. Average proportion of preparedness actions done because of reasons other than the earthquake hazard by pyramid level and by geographic area

Note: Northern California, N=440; southern California, N=973; rest of California, N=668. Data were weighted with raked household weights. Reason for action was asked for 35 all-hazard preparedness actions. The number of applicable preparedness actions in each pyramid level is indicated in parentheses. Pyramid levels 1, 6 and 7 had an insufficient number of applicable actions to calculate a percentage. Asterisks (*) indicate statistically significant associations between geographic area and the average proportion of preparedness actions done for reasons other than the earthquake hazard by pyramid level, using one-way analysis of variance ($p<.001$). Superscripts indicate statistically significant pairwise differences, using Bonferroni's post-hoc comparisons ($p<.001$), with N=northern California, S=southern California, and R=rest of California (e.g., a superscript S indicates a statistically significant difference in means compared with southern California).

7: Preferred Web Address Extension for Preparedness Information

This question asked respondents what web address extension they think would be most appropriate for a website that offers important information about preparing for earthquakes and other disasters.

7.1 Which web address extension do you think would be best for a site that provides important information about preparing for earthquakes and other disasters?

The most frequent response to this question was ".gov" followed by ".com" and ".org" (Figure 7.1). There were quite a few respondents to whom this question did not apply because they did not use the Internet, especially in the southern California (24%) and low earthquake-risk areas (20%).

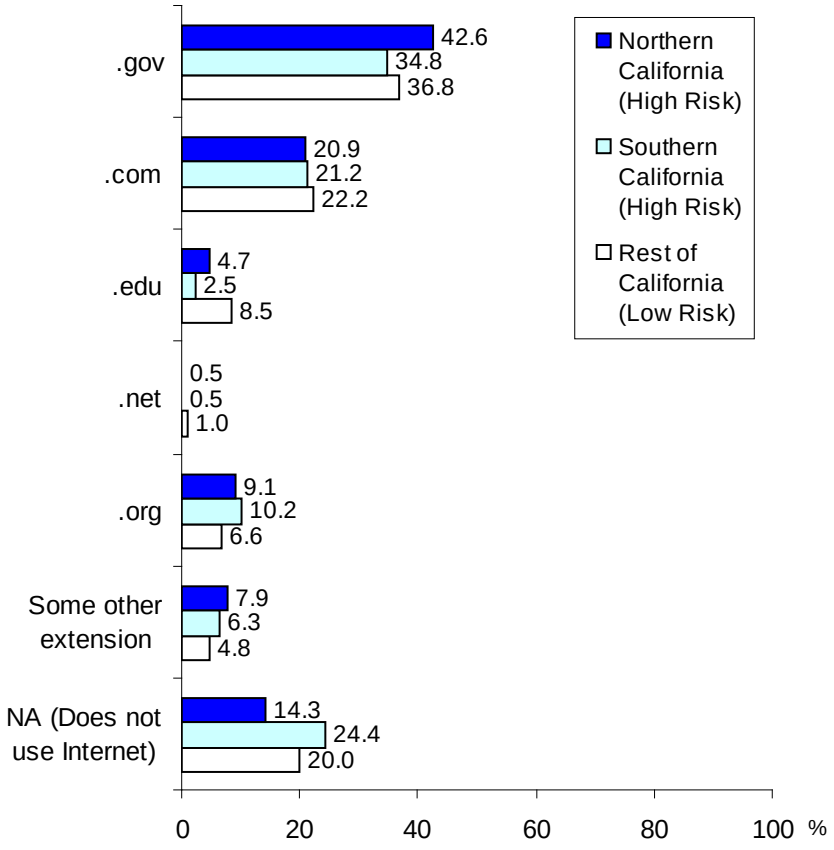


Figure 7.1. Preferred web address extension for a disaster preparedness site, by geographic area

Note: Northern California, N=406; southern California, N=962; rest of California, N=589. Data were weighted with raked individual weights. The association between geographic area and preferred web address extension could not be tested due to expected cell sizes less than 5.

8: Preferred Source and Channel for Warning, Alerts, and Notifications

Respondents were asked to choose a government agency or official from whom they would like to receive disaster warnings, alerts, and other emergency notifications (Figure 8.1). Respondents were also asked about their preferred method for receiving official warning, alerts and other emergency notifications (Figure 8.2).

8.1 From whom would you prefer to receive official warnings, alerts, and notifications in the event of a disaster?

The most frequent response was the local fire department, followed by the local emergency management office and local law enforcement officials. There was a statistically significant association between geographic area and preferred source for official emergency communications where, in southern California, nearly half of the respondents (49%) preferred the local fire department compared to 41% in northern California and 40% in the rest of the state, and only 17% in southern California preferred the local emergency management office, compared to 27% in northern California and 23% in the rest of the state.

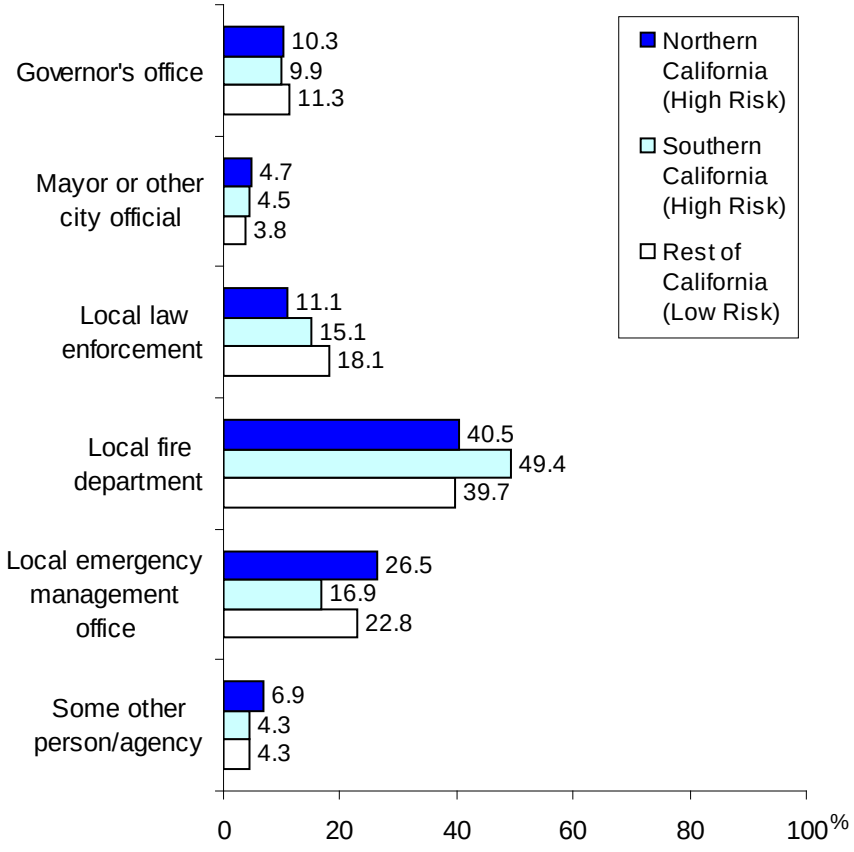


Figure 8.1. Preferred source for warnings, alerts, and notifications, by geographic area

Note: Northern California, N=407; southern California, N=1,011; rest of California, N=602. Data were weighted with raked individual weights. The association between geographic area and preferred source for warnings, alerts, and notifications was statistically significant, using Pearson's chi-square ($p<.001$).

8.2 What would the best way for you to receive official warnings, alerts, and notifications in the event of a disaster?

The most frequent response was television, followed by radio (in northern California) or phone call (in southern California and the rest of the state). Internet-based methods, such as e-mail or a website, were not popular. The association between geographic area and preferred channel for official emergency communication to the public could not be tested for statistical significance due to expected cell sizes less than five.

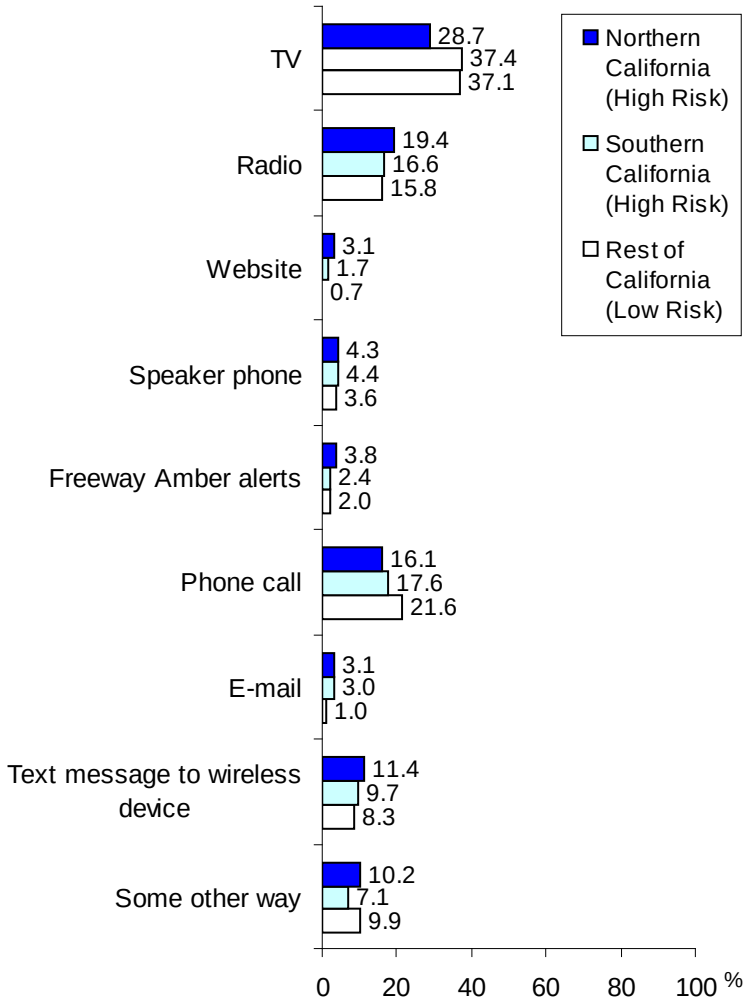


Figure 8.2. Preferred channel for warnings, alerts, and notifications, by geographic area

Note: Northern California, N=422; southern California, N=1,036; rest of California, N=606. Data were weighted with raked individual weights. The association between geographic area and preferred channel for warnings, alerts, and notifications could not be tested due to expected cell sizes less than 5.

Results by Racial/Ethnic Group

This section presents descriptive results for the same variables shown in the previous section, but this time, the analysis compares the four major racial/ethnic groups represented in the sample: White, Hispanic, Black and Asian/Pacific Islander.

9: Perceived Effect of Worst Earthquake Ever Experienced

9.1 Thinking of the worst earthquake you ever experienced, how much did it affect you?

The perceived personal effect of the worst earthquake ever experienced varied across the major racial/ethnic groups (Figure 9.1). On average, Black respondents reported experiencing the greatest effect (mean = 3.4) among all the groups, followed by Hispanics (mean = 2.9), Whites (mean = 2.8) and Asian/Pacific Islanders (API) (mean = 2.5).

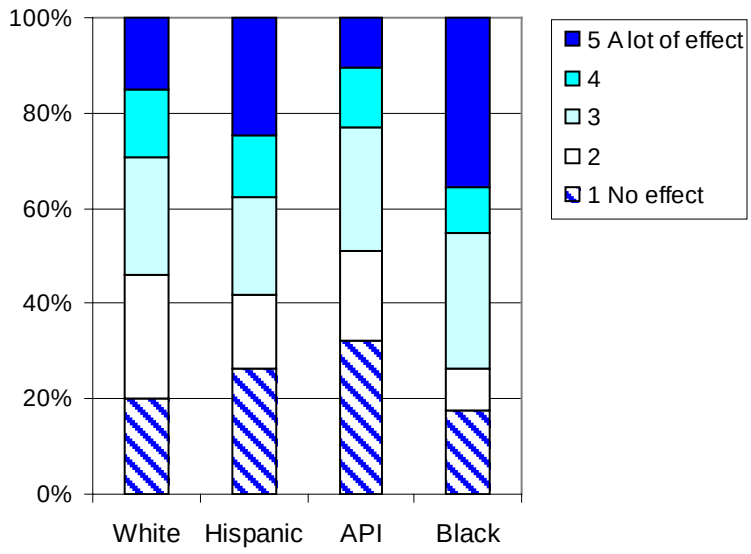


Figure 9.1. Perceived effect of the worst earthquake ever experienced, by racial/ethnic group

Note: White, N=941; Hispanic, N=655; API, N=281; Black, N=126. Data were weighted with raked individual weights. Responses were measured on a scale of 1 'No effect' to 5 'A lot of effect.' There was a statistically significant association between racial/ethnic group and perceived effect, using Pearson's chi-square ($p<.001$).

10: Information Received About Earthquake Preparedness

10.1 Have you heard information about preparing for earthquakes from … [general sources]?

There were several statistically significant associations between race/ethnicity and receiving information about earthquake preparedness from general sources (Figure 10.1). White and API respondents were more likely than Hispanic and Black respondents to have gotten information from scientists. White and Black respondents were more likely than other groups to have gotten information about earthquake preparedness from insurance representatives. Hispanic respondents, compared with all other racial/ethnic groups, were more likely to report receiving information from TV anchors/reporters and radio hosts/reporters. Hispanic and Black respondents were more likely than other groups to have heard information about earthquake preparedness from entertainers.

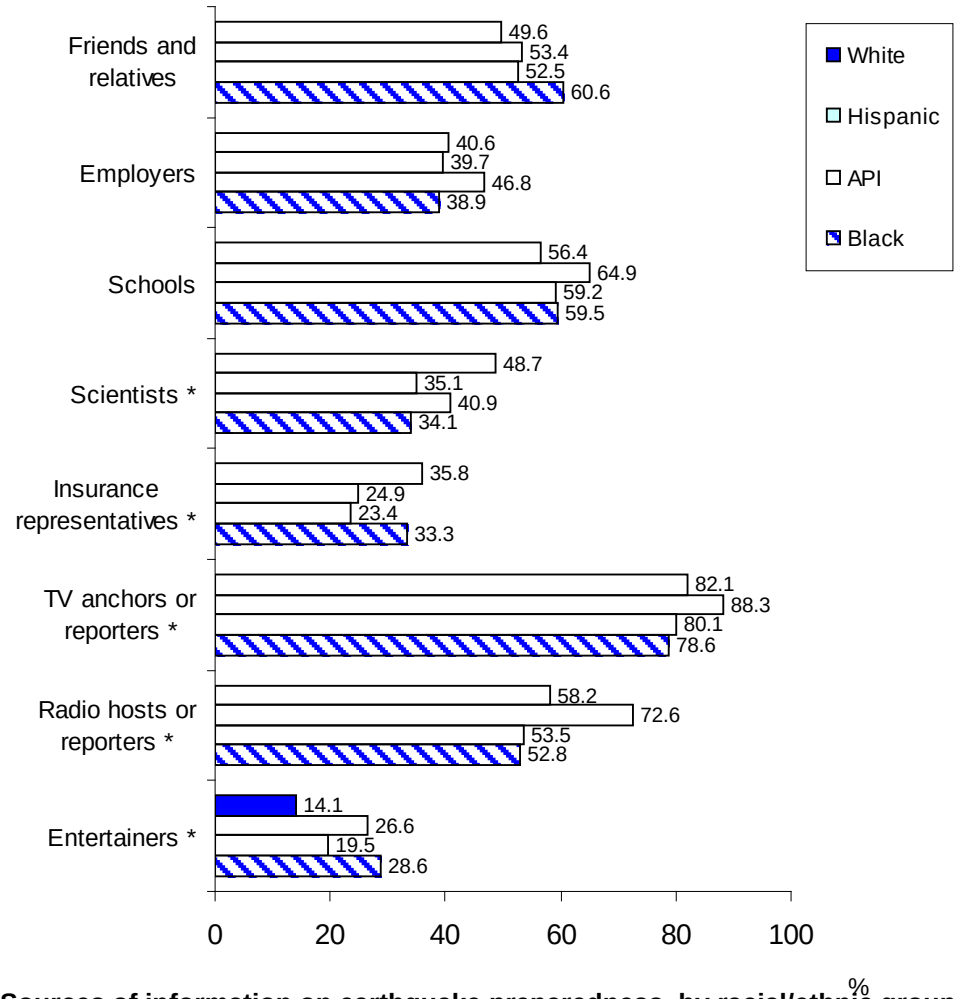


Figure 10.1. Sources of information on earthquake preparedness, by racial/ethnic group

Note: White, N=945; Hispanic, N=659; API, N=282; Black, N=127. Data were weighted with raked individual weights. Respondents could choose more than one response. Asterisks (*) indicate statistically significant associations between racial/ethnic group and receiving information from the index source, using Pearson's chi-square (p<.001).

10.2 Have you heard information about preparing for earthquakes from … [specific sources]?

Racial/ethnic differences also existed in receiving information about earthquake preparedness from official sources (Figure 10.2). API respondents, compared to other groups, were least likely to have heard information from the Governor's Office of Emergency Services. A substantially larger proportion of Hispanic and Black respondents had heard information from the California Volunteers compared with White and API respondents. White respondents were more likely than any of the other groups to have heard information from the U.S. Geological Survey and local emergency management agencies.

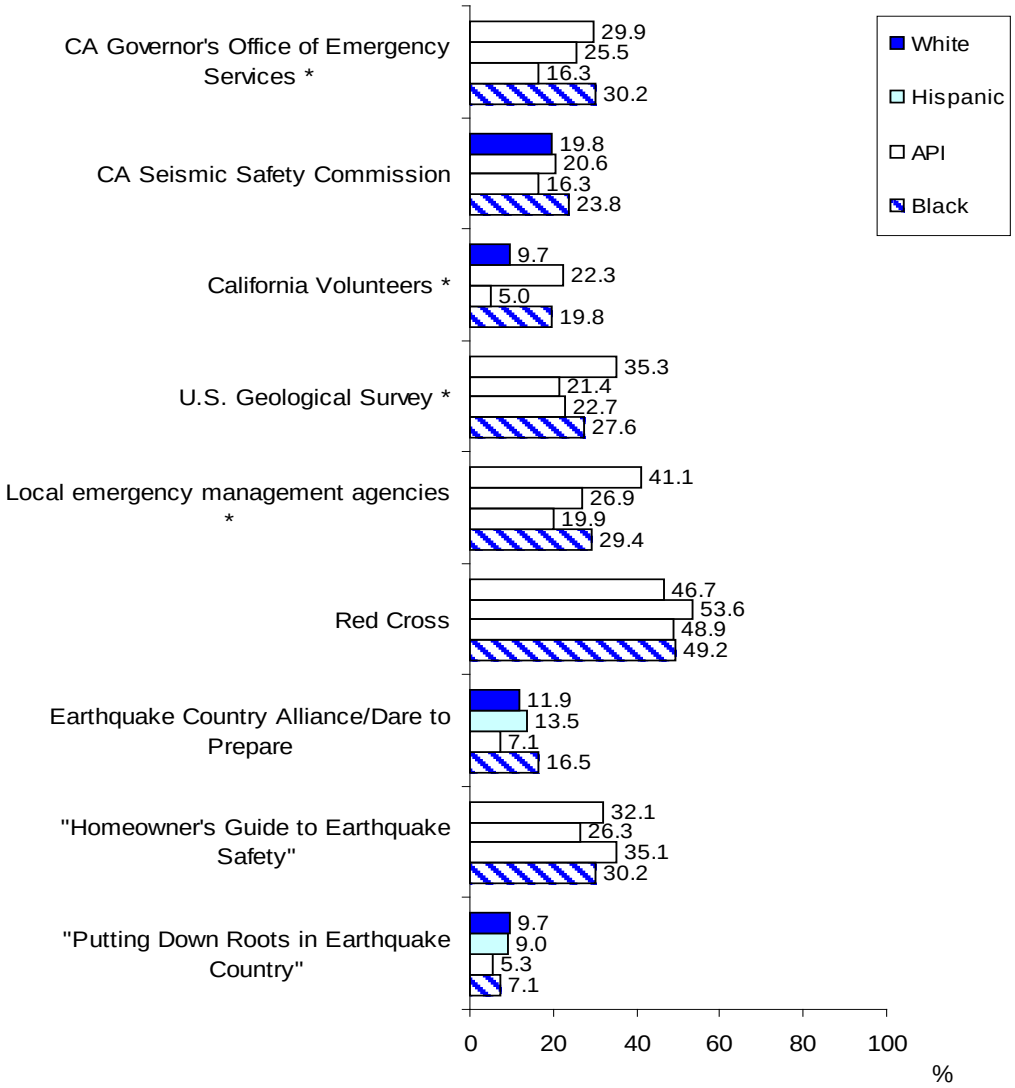


Figure 10.2. Sources of information on earthquake preparedness, by racial/ethnic group (continued)

Note: White, N=945; Hispanic, N=659; API, N=282; Black, N=127. Data were weighted with raked individual weights. Respondents could choose more than one response. Asterisks (*) indicate statistically significant associations between racial/ethnic group and receiving information from the index source, using Pearson's chi-square ($p<.001$).

10.3 Respondents' lack of recognition of official sources for earthquake safety information

In response to the question about sources of information on earthquake preparedness, several respondents said they did not know whether they had received information on earthquake safety from many of the official sources listed in the interview. Figure 10.3 shows the percent of respondents, by racial/ethnic group, who were unable to report whether or not they had received information from these official sources. There were a couple of statistically significant associations where White respondents were more likely than those in other groups to say they did not know whether they had received information about earthquake preparedness from the Earthquake Country Alliance and their *Dare to Prepare* campaign, or from the "Homeowner's Guide to Earthquake Safety" published by the California Seismic Safety Commission.

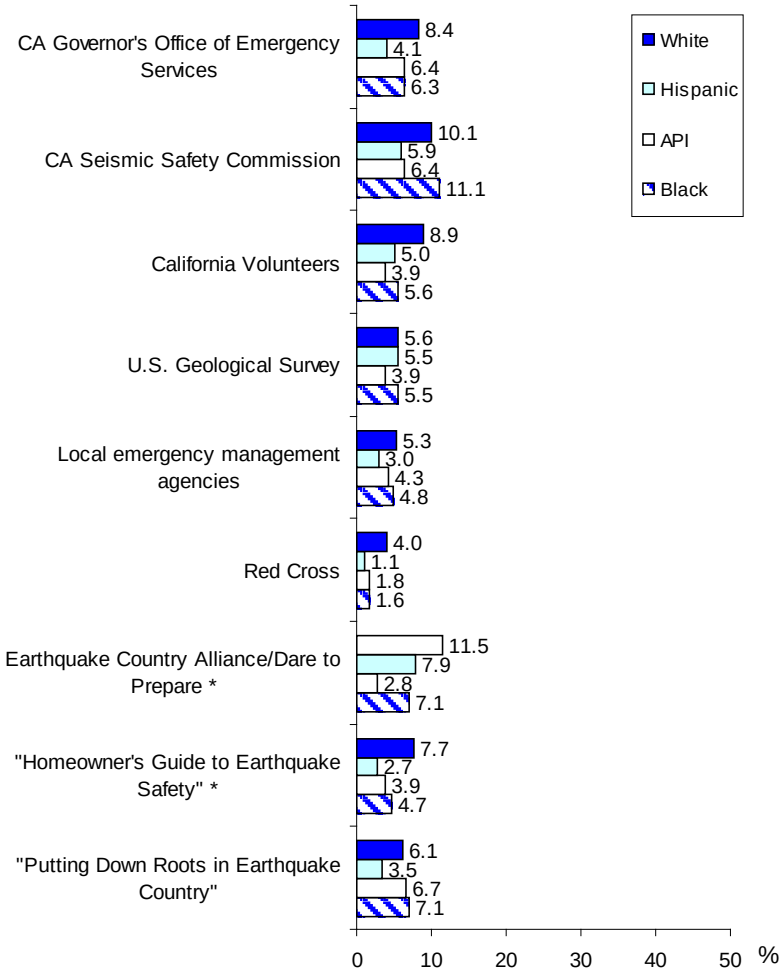


Figure 10.3. Respondents who were uncertain about receiving information from official sources, by racial/ethnic group

Note: White, N=945; Hispanic, N=659; API, N=282; Black, N=127. Data were weighted with raked individual weights. Asterisks (*) indicate statistically significant associations between racial/ethnic group and being uncertain about receiving information from the index source, using Pearson's chi-square (p<.001).

10.4 How was the information communicated to you?

Responses to the follow-up question about how the information on preparedness was communicated also varied by racial/ethnic group (Figure 10.4). White respondents were the most likely, and Hispanic respondents the least likely, to report obtaining that kind of information from newspapers and other print media. Compared to all other groups, substantially more Hispanics mentioned the radio, more APIs mentioned the Internet, and more Blacks mentioned face-to-face communication, respectively, as the channel through which they got information about earthquake preparedness.

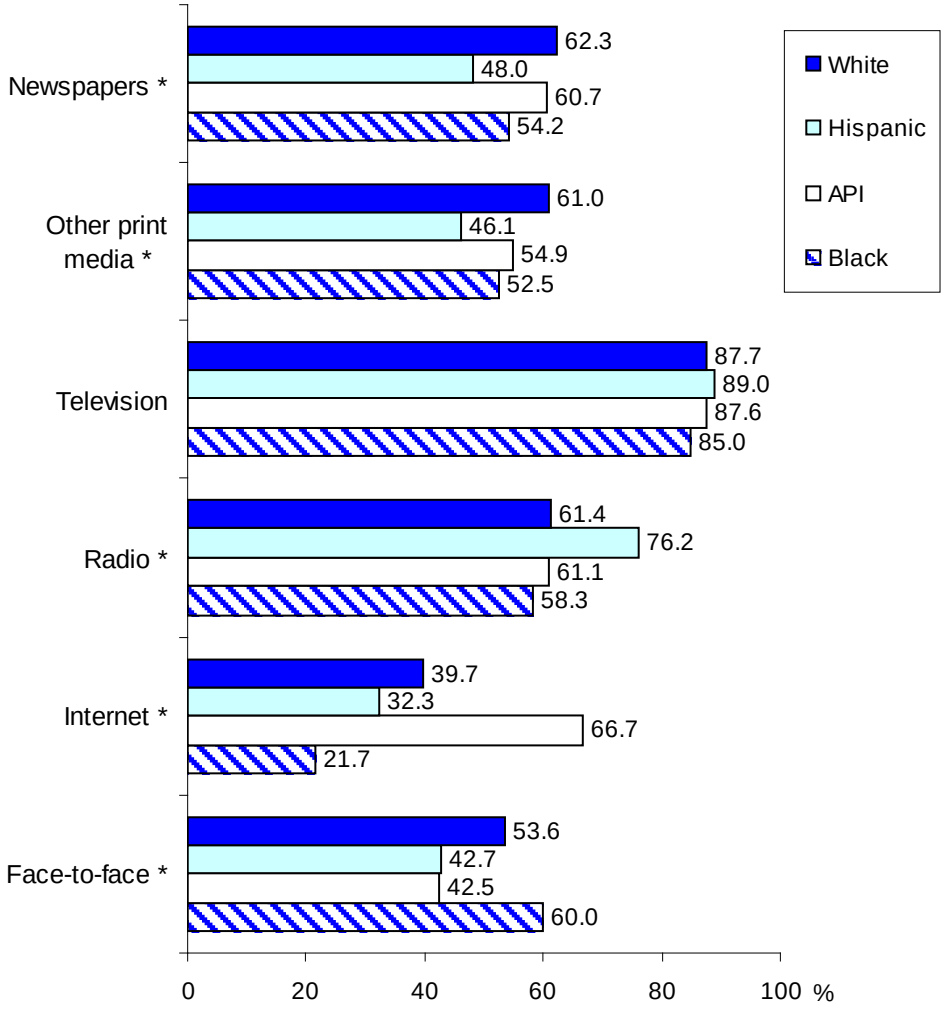


Figure 10.4. Channels of information on earthquake preparedness, by racial/ethnic group

Note: Those who did not receive information from any sources were not asked this question about information channels. White, N=916; Hispanic, N=648; API, N=275; Black, N=120. Data were weighted with raked individual weights. Respondents could choose more than one response. Asterisks (*) indicate statistically significant associations between racial/ethnic group and receiving information via the index channel, using Pearson's chi-square (p<.001).

10.5 Have you gotten information about…?

There were several statistically significant associations between race/ethnicity and the type of information received about earthquake safety (Figure 10.5). In general, Hispanic and API respondents were less likely than White and Black respondents to have received specific kinds of information about earthquake preparedness. For example, 67% of Hispanic and 65% of API respondents said they had gotten information about making disaster plans compared to 84% of White respondents and 76% of Black respondents.

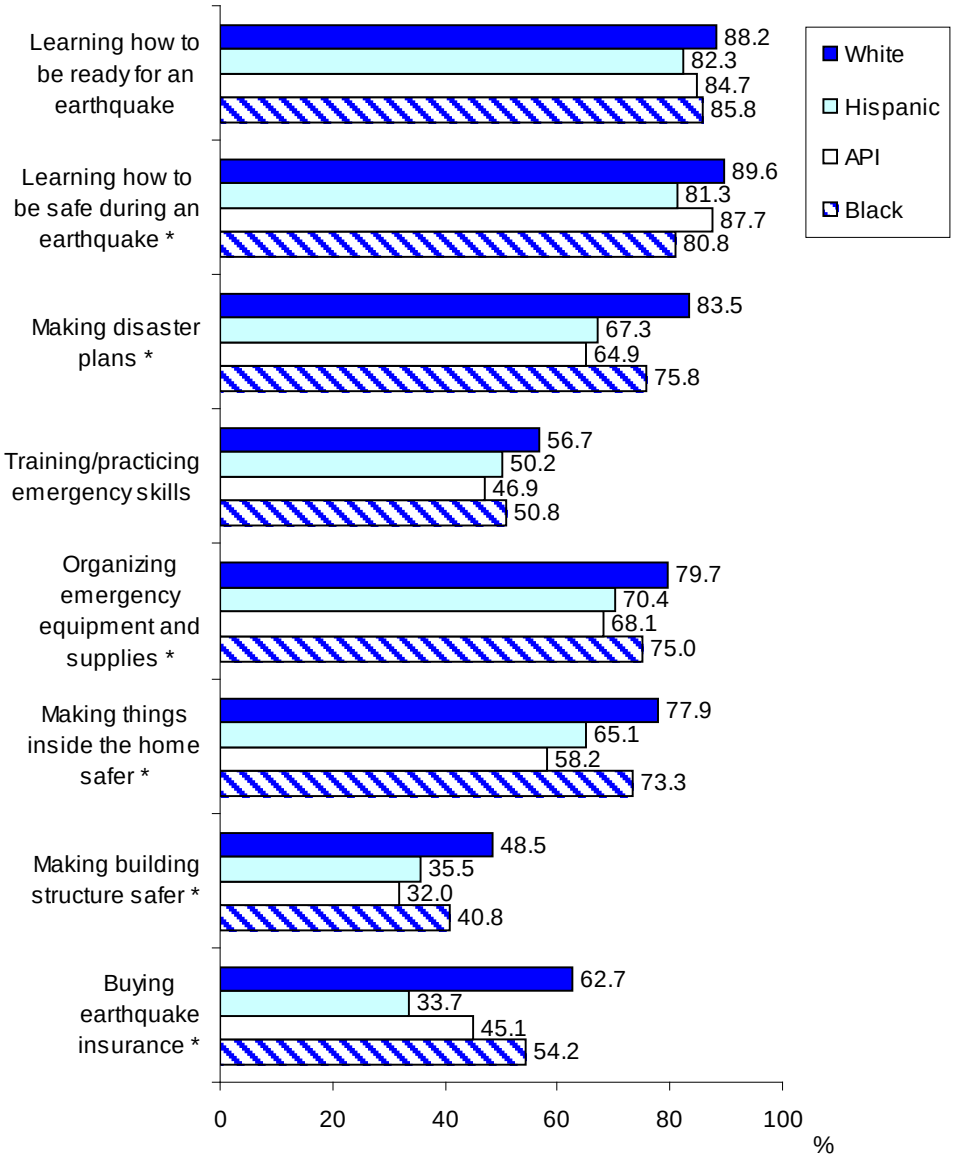
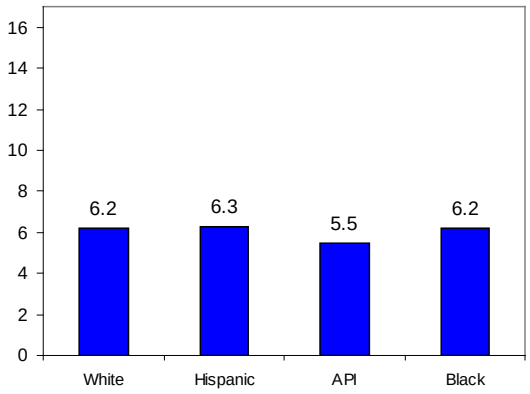


Figure 10.5. Type of information received about earthquake preparedness, by racial/ethnic group

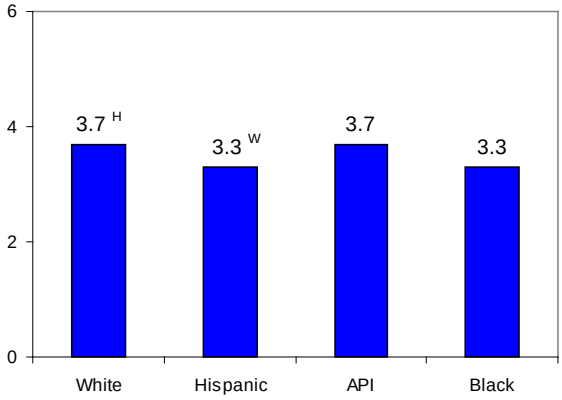
Note: Those who did not receive information from any sources were not asked this question about information types. White, N=916; Hispanic, N=648; API, N=275; Black, N=120. Data were weighted with raked individual weights. Respondents could choose more than one response. Asterisks (*) indicate statistically significant associations between racial/ethnic group and receiving the index information content, using Pearson's chi-square ($p<.001$).

10.6 Number of sources, channels and types of information

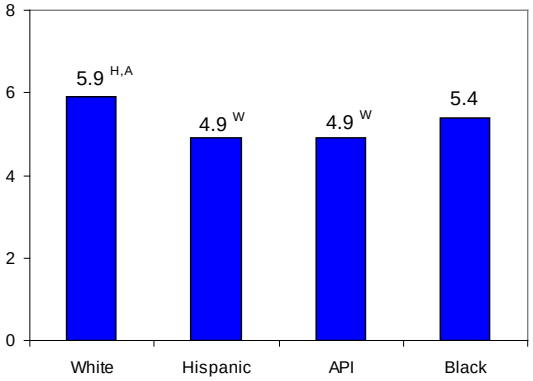
When the average number of information sources, channels and types were calculated by racial/ethnic group, some statistically significant differences emerged (Figure 10.6). While the groups did not differ in the number of information sources they reported, White and API respondents, compared with Hispanic and Black respondents, on average, reported a greater number of information channels through which they received earthquake preparedness information (only the pairwise difference between White and Hispanic respondents was statistically significant). White respondents also reported receiving a greater number of preparedness message types than did Hispanic or API respondents.



(a) Average number of information sources, by racial/ethnic group (range 0-17)



(b) Average number of information channels, by racial/ethnic group (range 0-6)



(c) Average number of information types, by racial/ethnic group (range 0-8)

Figure 10.6. Average number of (a) information sources, (b) information channels, and (c) information types, by racial/ethnic group

Note: (a) White, N=945; Hispanic, N=659; API, N=282; Black, N=127. (b-c) Those who did not receive information about earthquake preparedness from any sources were not asked the questions about information channels and types. White, N=916; Hispanic, N=648; API, N=275; Black, N=120. Data were weighted with raked individual weights. Means were compared using one-way analysis of variance with Bonferroni's post-hoc pairwise comparisons. Superscripts indicate statistically significant pairwise differences ($p<.001$) with W=White, H=Hispanic, A=API and B=Black (e.g., a superscript H indicates a statistically significant difference in means compared with Hispanics).

10.7 Has information been communicated in languages other than English?

The major racial/ethnic groups differed in their awareness of preparedness information dissemination in non-English languages (Figure 10.7). Hispanics were most likely to acknowledge information on earthquake preparedness has been communicated to the public in languages other than English (68%), followed by API (47%), White (39%) and Black (33%) respondents. API respondents were most likely to say that, to their knowledge, information on earthquake preparedness has *not* been communicated in languages other than English. White and Black respondents were the most likely to say they do not know whether preparedness information has been communicated in non-English languages.

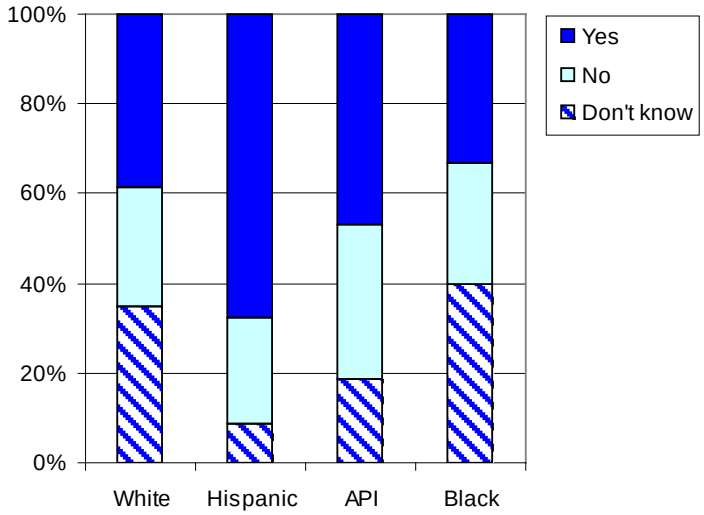


Figure 10.7. Awareness of earthquake preparedness information dissemination in non-English languages, by racial/ethnic group

Note: Those who did not receive information from any sources were not asked this question about information dissemination in non-English languages. White, N=916; Hispanic, N=648; API, N=275; Black, N=120. Data were weighted with raked individual weights. The association between racial/ethnic group and awareness of information dissemination in non-English languages was statistically significant, using Pearson's chi-square ($p<.001$).

10.8 How much of the information did you believe, understand, think about and discuss with other people?

Several statistically significant differences emerged when comparisons were made between the major racial/ethnic groups in the extent to which they believed, understood, thought about and discussed the information they received about earthquake preparedness (Figure 10.8). While not all pairwise differences between the groups were statistically significant, on average, White respondents reported believing and understanding more of the information they received than reported by other groups. API respondents reported thinking about or discussing the least amount of the information they received, compared with all other groups.

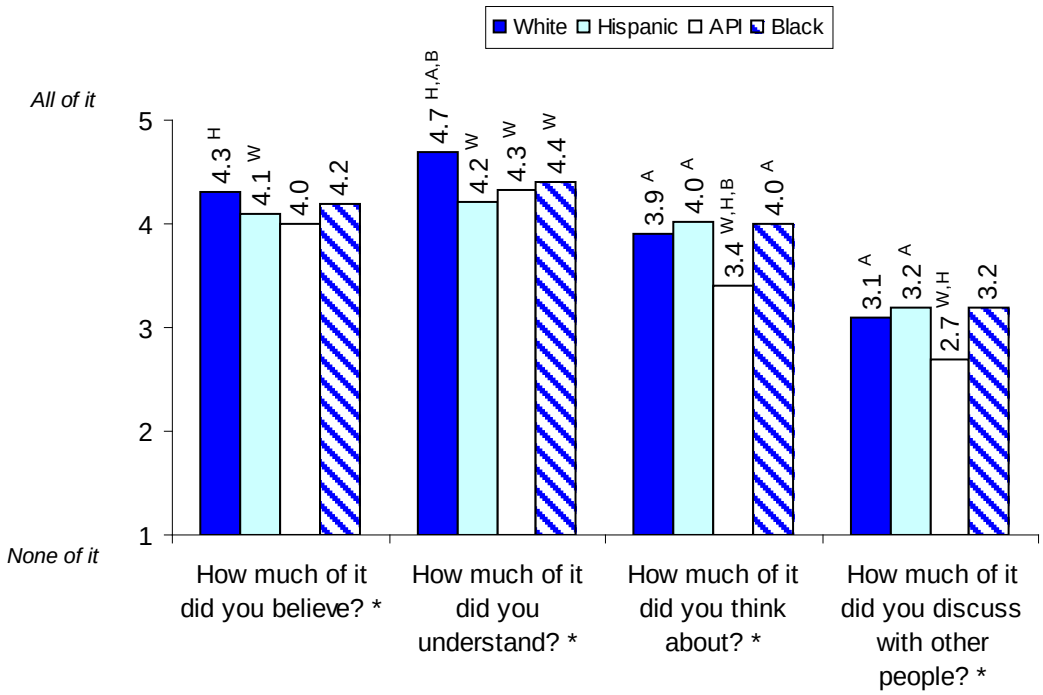


Figure 10.8. Extent to which respondents believed, understood, though about, and discussed the information they received on earthquake preparedness, by racial/ethnic group

Note: Those who did not receive information from any sources were not asked these questions. White, N=916; Hispanic, N=648; API, N=275; Black, N=120. Actual N varies due to missing data. Data were weighted with raked individual weights. Responses were measured on a scale of 1 'None of it' to 5 'All of it'. Means were compared using one-way analysis of variance with Bonferroni's post-hoc pairwise comparisons. Asterisks (*) indicate statistically significant associations between racial/ethnic group and the index reaction to information, using one-way analysis of variance ($p<.001$). Superscripts indicate statistically significant pairwise differences ($p<.001$) with W=White, H=Hispanic, A=API and B=Black (e.g., a superscript H indicates a statistically significant difference in means compared with Hispanics).

11: Observation of Other People Performing Earthquake Preparedness

11.1 Do you know anyone (other than yourself) who has…?

All of the associations between race/ethnicity and the observations of other people performing certain kinds of preparedness actions were statistically significant (Figure 11.1). In general, White respondents were the most likely to report knowing other people who have taken actions to prepare for an earthquake, while Hispanic respondents were the least likely. For example, 65% of White, 58% of Black and 55% of API respondents said they knew someone who had organized emergency equipment and supplies, compared to 48% of Hispanic respondents.

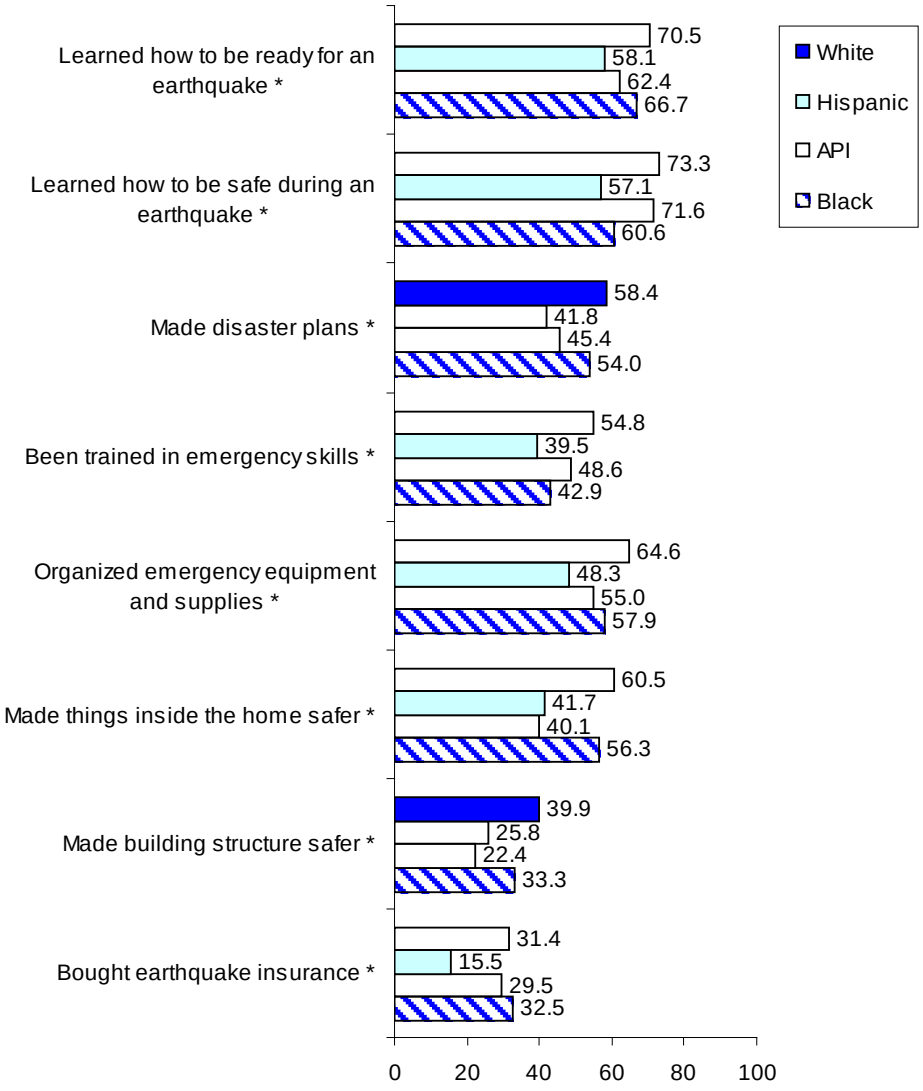


Figure 11.1. Observation of other people performing preparedness actions, by racial/ethnic group

Note: White, N=945; Hispanic, N=659; API, N=282; Black, N=126. Data were weighted with raked individual weights. Respondents could choose more than one response. Asterisks (*) indicate statistically significant associations between racial/ethnic group and the index preparedness action, using Pearson's chi-square ($p<.001$).

11.2 Average number of observed earthquake preparedness activities

The average number of preparedness activities observed in other people varied by racial/ethnic group (Figure 11.2). Specifically, White respondents, on average, reported observing a significantly greater number of preparedness activities performed by people they know (mean = 4.5) compared to API (mean = 3.8) and Hispanic respondents (mean = 3.3).

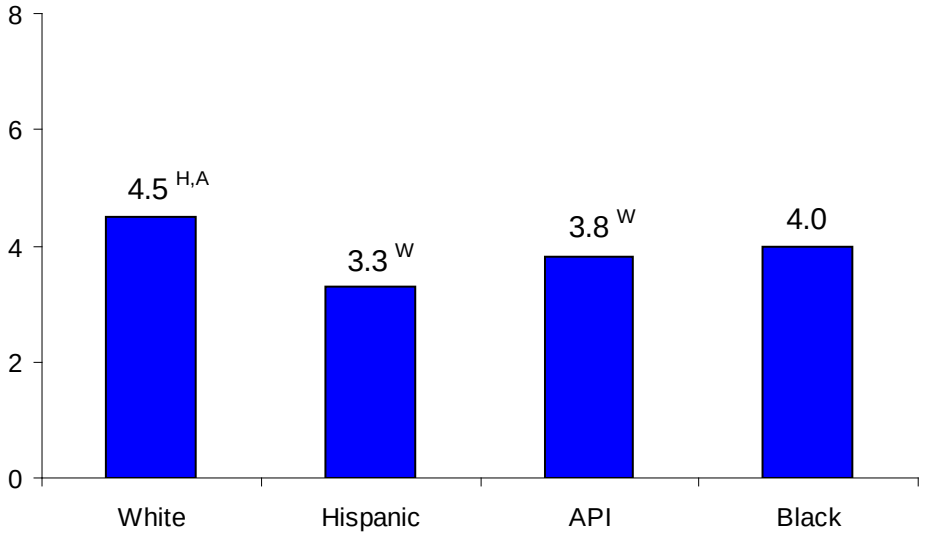


Figure 11.2. Average number of observed preparedness activities (cues), by racial/ethnic group

Note: White, N=945; Hispanic, N=659; API, N=282; Black, N=126. Data were weighted with raked individual weights. The possible range for observed cues was 0 to 8. Means were compared using one-way analysis of variance with Bonferroni's post-hoc pairwise comparisons. Superscripts indicate statistically significant pairwise differences (p<.001) with W=White, H=Hispanic, A=API and B=Black (e.g., a superscript H indicates a statistically significant difference in means compared with Hispanics).

12: Belief in Earthquake Safety Myths

12.1 How much do you disagree or agree with the following statements?

There were several statistically significant differences by racial/ethnic group in their misconceptions about earthquake safety (Figure 12.1). In general, White respondents had a weaker tendency to agree with the misinformed statements compared with other groups. Hispanic and API respondents had a greater tendency than the other groups to agree with several of the earthquake safety myths, especially in comparison with White respondents. Black respondents stood out from the other groups in their belief that there is nothing they can do about earthquakes.

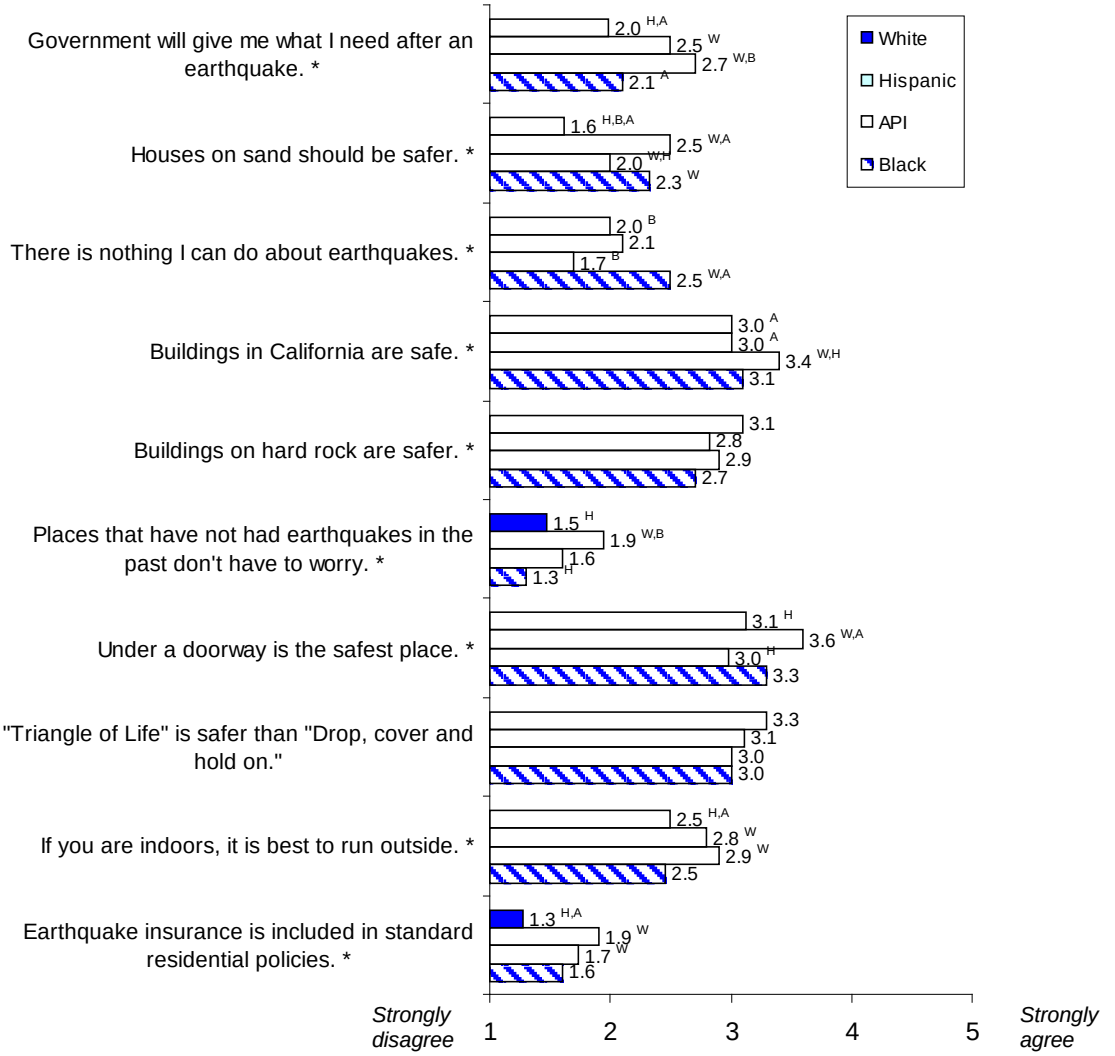


Figure 12.1. Belief in earthquake safety myths, by racial/ethnic group

Note: White, N=945; Hispanic, N=659; API, N=282; Black, N=126. Actual N varies due to missing data. Data were weighted with raked individual weights. Responses were measured on a scale of 1 'Strongly disagree' to 5 'Strongly agree'. Means were compared using one-way analysis of variance with Bonferroni's post-hoc pairwise comparisons. Superscripts indicate statistically significant pairwise differences (p<.001) with W=White, H=Hispanic, A=API and B=Black (e.g., a superscript H indicates a statistically significant difference in means compared with Hispanics)

12.2 Respondents' lack of recognition of earthquake safety myths

Several respondents had not heard about some of the earthquake safety myths and were unable to indicate their level of agreement with these statements. There were a number of statistically significant associations where the percent of respondents answering "don't know" to questions about the earthquake safety myths differed by racial/ethnic group (Figure 12.2). Hispanic respondents were the most likely to say they didn't know whether they agreed or not with statements about houses built on sand or those built in California are safer in earthquakes, or about earthquake insurance being included in standard residential policies. Black respondents were the most likely to be uncertain about their belief in the idea that houses built on hard rock are safer in earthquakes. White respondents were the most likely to say "don't know" when asked about the "Triangle of Life" being safer than "Drop, cover and hold on."

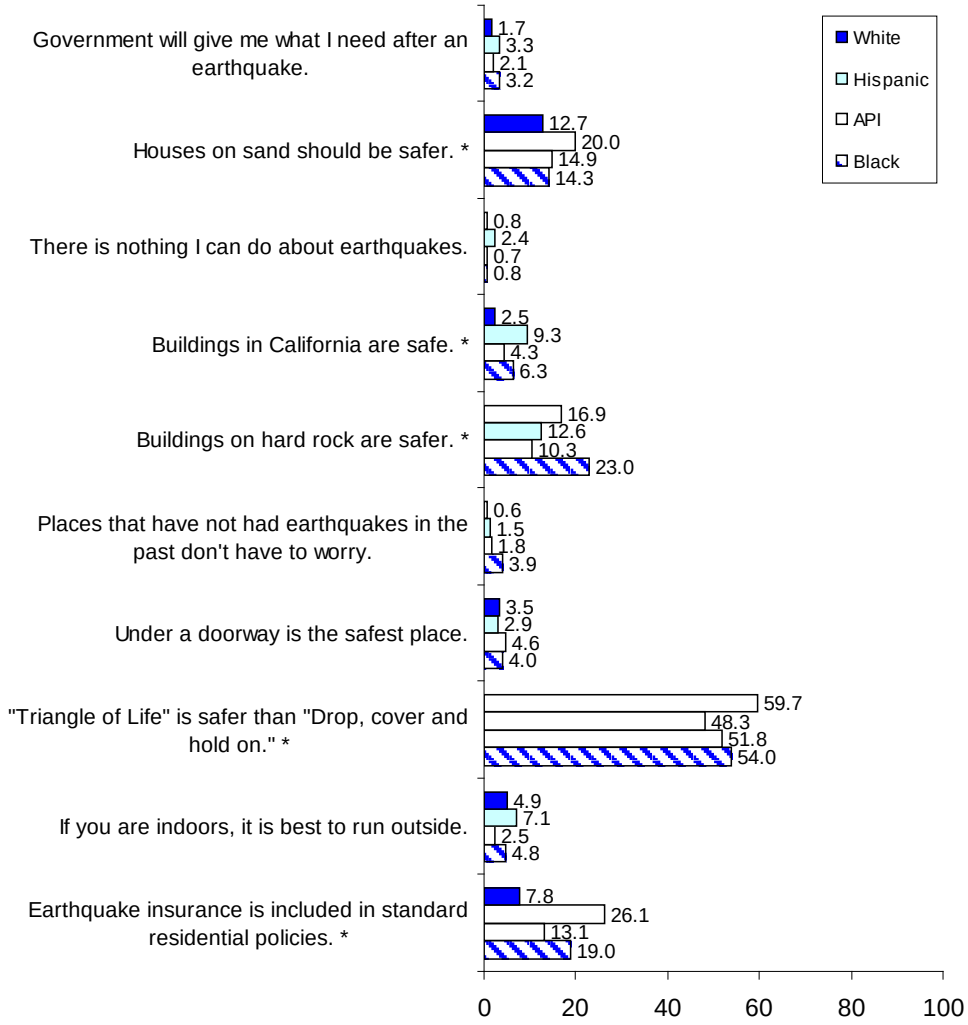


Figure 12.2. Respondents who were uncertain of their belief in earthquake safety myths, by racial/ethnic group

Note: White, N=945; Hispanic, N=659; API, N=282; Black, N=126. Data were weighted with raked individual weights. Asterisks (*) indicate statistically significant associations between racial/ethnic group and not knowing about the index earthquake safety myth, using Pearson's chi-square (p<.001).

13: Active Information-Seeking About Earthquake Preparedness

13.1 How often have you actively looked for information on earthquake preparedness?

The major racial/ethnic groups were compared in terms of how often they have actively looked for information on earthquake preparedness (Figure 13.1). Black respondents appeared most likely to have never sought any information. However, the association between race/ethnicity and the frequency of information-seeking was not statistically significant.

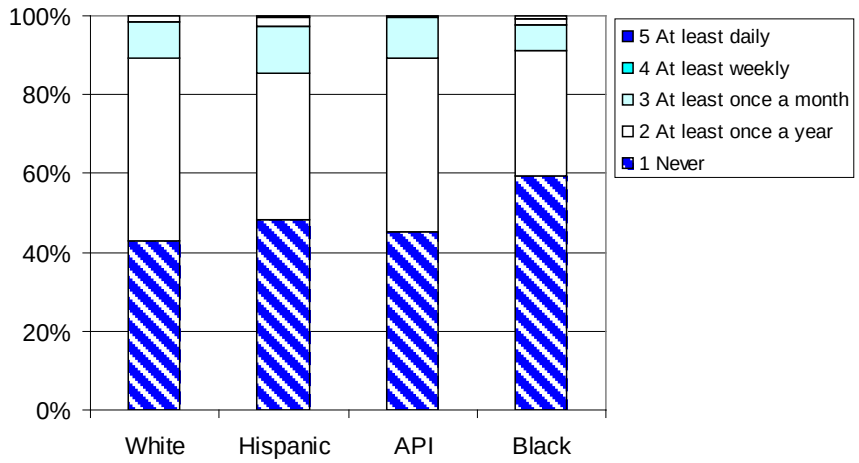


Figure 13.1. Frequency of seeking information on earthquake preparedness, by racial/ethnic group

Note: White, N=938; Hispanic, N=653; API, N=282; Black, N=125. Data were weighted with raked individual weights. The association between racial/ethnic group and frequency of information-seeking was not statistically significant using one-way analysis of variance (p>.001).

13.2 How much of the information did you actually get?

The extent to which respondents were successful in getting the information they wanted appeared to vary very little across racial/ethnic groups (Figure 13.2). The association between race/ethnicity and the outcome of information-seeking was not statistically significant.

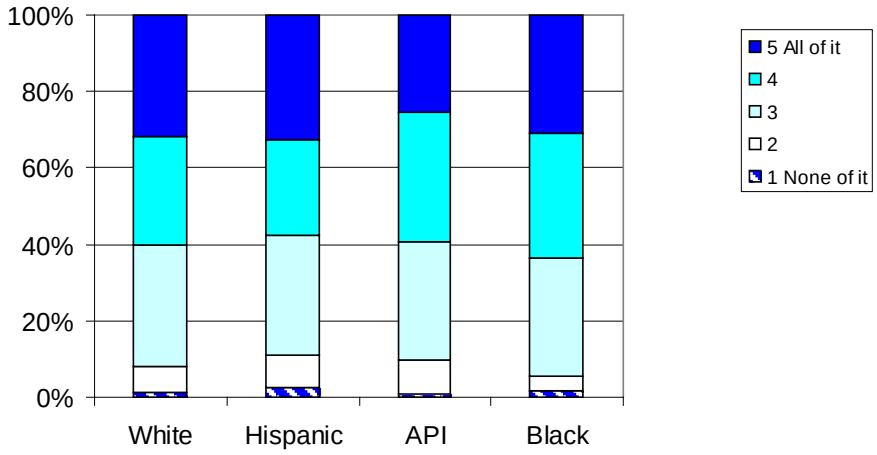


Figure 13.2. Extent of success of information-seeking, by racial/ethnic group

Note: Only those who had ever looked for information were asked this question: White, N=537; Hispanic, N=338; API, N=153; Black, N=52. Data were weighted with raked individual weights. The association between racial/ethnic group and extent of success of information-seeking was not statistically significant using one-way analysis of variance (p>.001).

14: Earthquake Preparedness and Reasons for Actions

14.1 Pyramid level 1: Learn how to be ready

Several statistically significant associations were identified between race/ethnicity and learning how to be ready for an earthquake (Level 1 actions) (Figure 14.1). In general, Hispanic respondents tended to be the least likely among all groups to have learned about earthquake preparedness. For example, 71% of Hispanic respondents said they learned how to be safe during an earthquake, compared to 79% of White, 80% of Black, and 82% of API respondents.

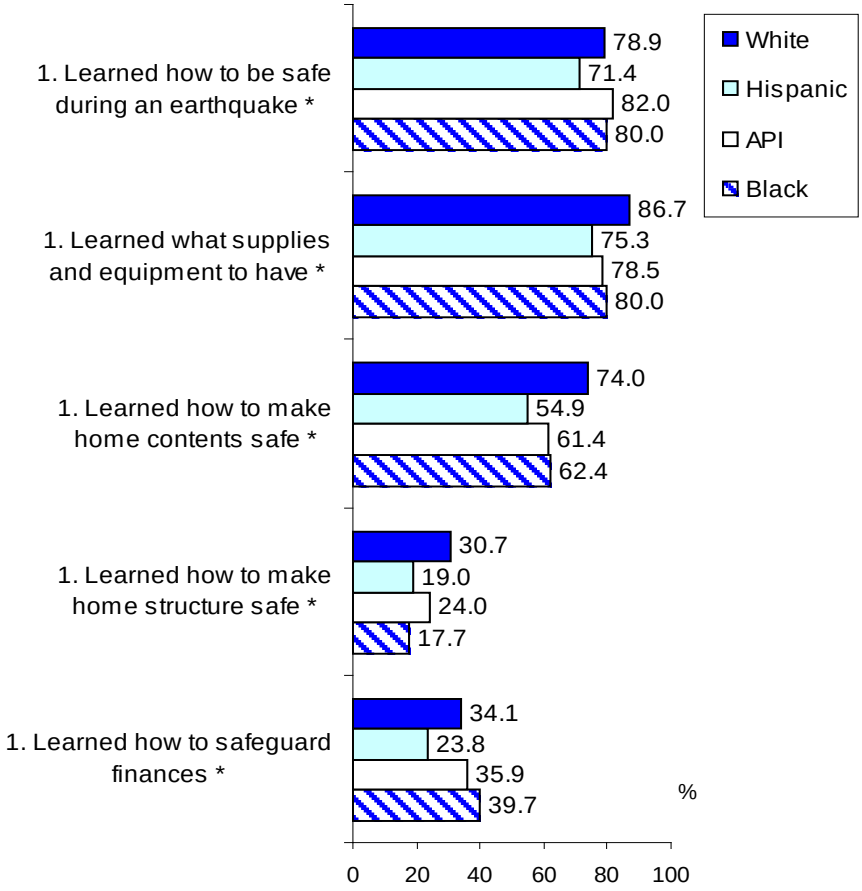


Figure 14.1. *Get Ready Pyramid* Level 1 activities performed, by racial/ethnic group

Note: White, N=1,054; Hispanic, N=548; API, N=141; Black, N=251. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between racial/ethnic group and the index preparedness action, using Pearson's chi-square ($p<.001$).

14.2 Pyramid level 2: Plan and organize

In terms of planning and organizing for a future earthquake (Level 2 activities), statistically significant findings include API respondents being more likely than all other groups to have made copies of important documents, and White respondents being more likely than all other groups to have made disaster plans for their pets.

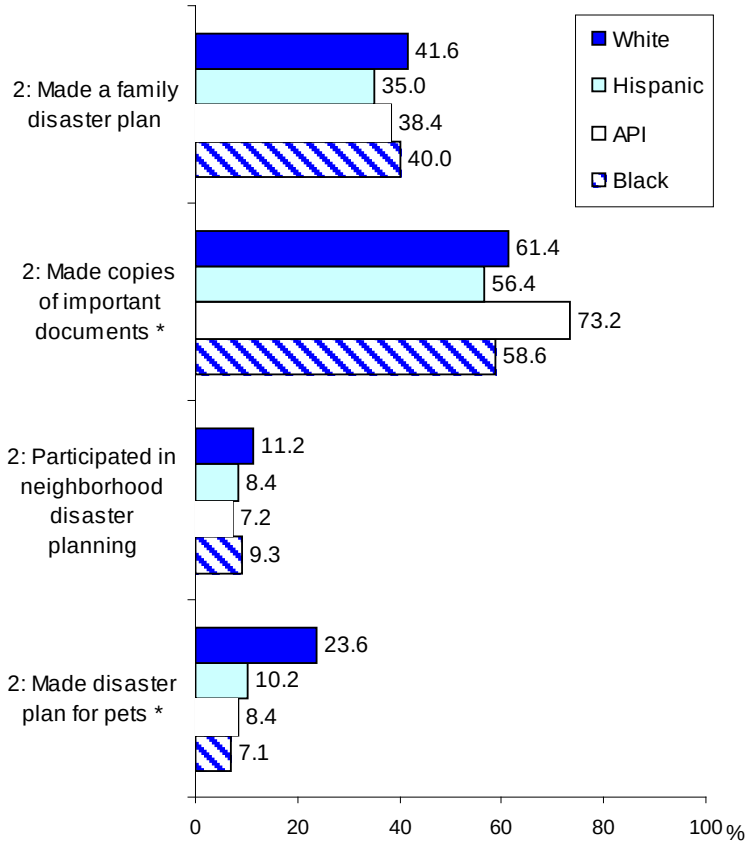


Figure 14.2. *Get Ready Pyramid* Level 2 activities performed, by racial/ethnic group

Note: White, N=1,054; Hispanic, N=548; API, N=141; Black, N=251. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between racial/ethnic group and the index preparedness action, using Pearson's chi-square ($p<.001$).

14.3 Pyramid level 3: Train and practice

There were statistically significant associations between race/ethnicity and three of the four Level 3 (Train and Practice) actions asked about in the interview (Figure 14.3). Hispanic respondents were the least likely among the groups to have implemented these actions. Black respondents were the most likely to report having learned first aid and participating in disaster preparedness at their workplace, while White respondents were more likely than other groups to have learned how to shut off the utilities in their home.

Have you done any of the following things?

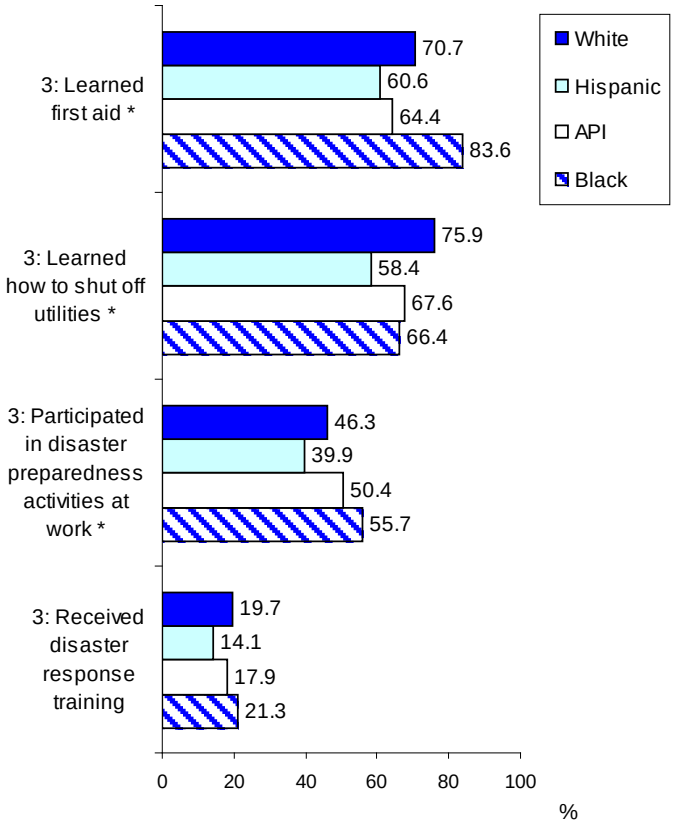


Figure 14.3. *Get Ready Pyramid* Level 3 activities performed, by racial/ethnic group

Note: White, N=1,054; Hispanic, N=548; API, N=141; Black, N=251. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between racial/ethnic group and the index preparedness action, using Pearson's chi-square ($p<.001$).

14.4 Pyramid level 4: Manage supplies and equipment

Of the Level 4 (Manage Supplies and Equipment) actions listed in Figure 14.4.1, there were several statistically significant associations between race/ethnicity and implementing these actions. In general, White and API respondents were more likely than Black and Hispanic respondents to report having done these activities, with Hispanic respondents being the least likely. For example, 72% of White respondents reported having a fire extinguisher, followed by API (64%), Black (60%) and Hispanic respondents (50%).

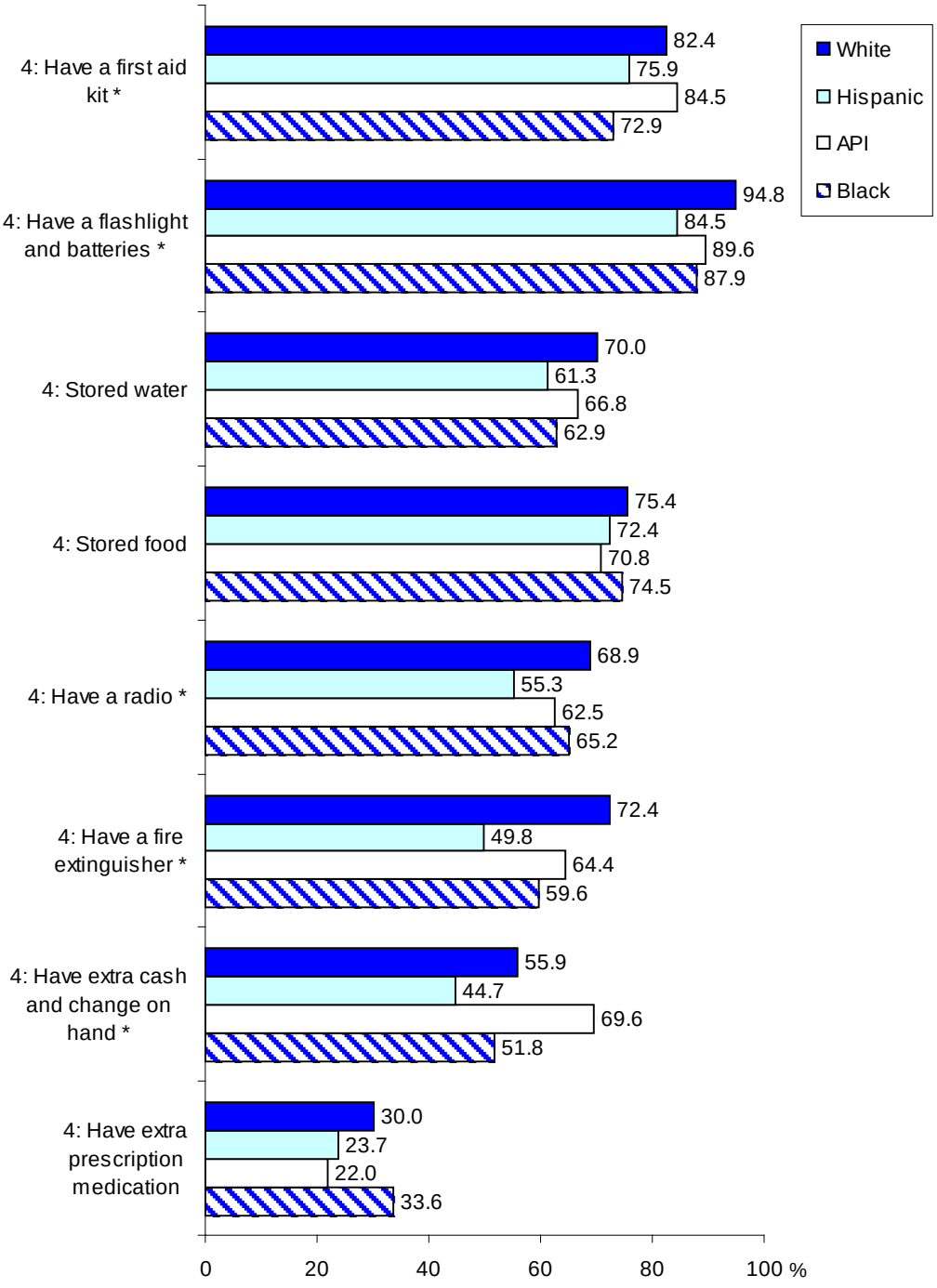


Figure 14.4.1. *Get Ready Pyramid* Level 4 activities performed, by racial/ethnic group (part 1)

Note: White, N=1,054; Hispanic, N=548; API, N=141; Black, N=251. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between racial/ethnic group and the index preparedness action, using Pearson's chi-square ($p<.001$).

There were several statistically significant associations between race/ethnicity and the remaining Level 4 actions asked about in the interview (Figure 14.4.2). In several of these cases, API and Hispanic respondents were less likely than the other groups to have adopted the preparedness measure. For example, 60% of API and 62% of Hispanic respondents said they have bleach or some other method to purify water compared to 81% of White and 80% of Black respondents. API and Hispanic respondents were also the least likely of the groups to report having tools to rescue trapped people or to turn off gas valves, and having protective shoes and a flashlight in an accessible location.

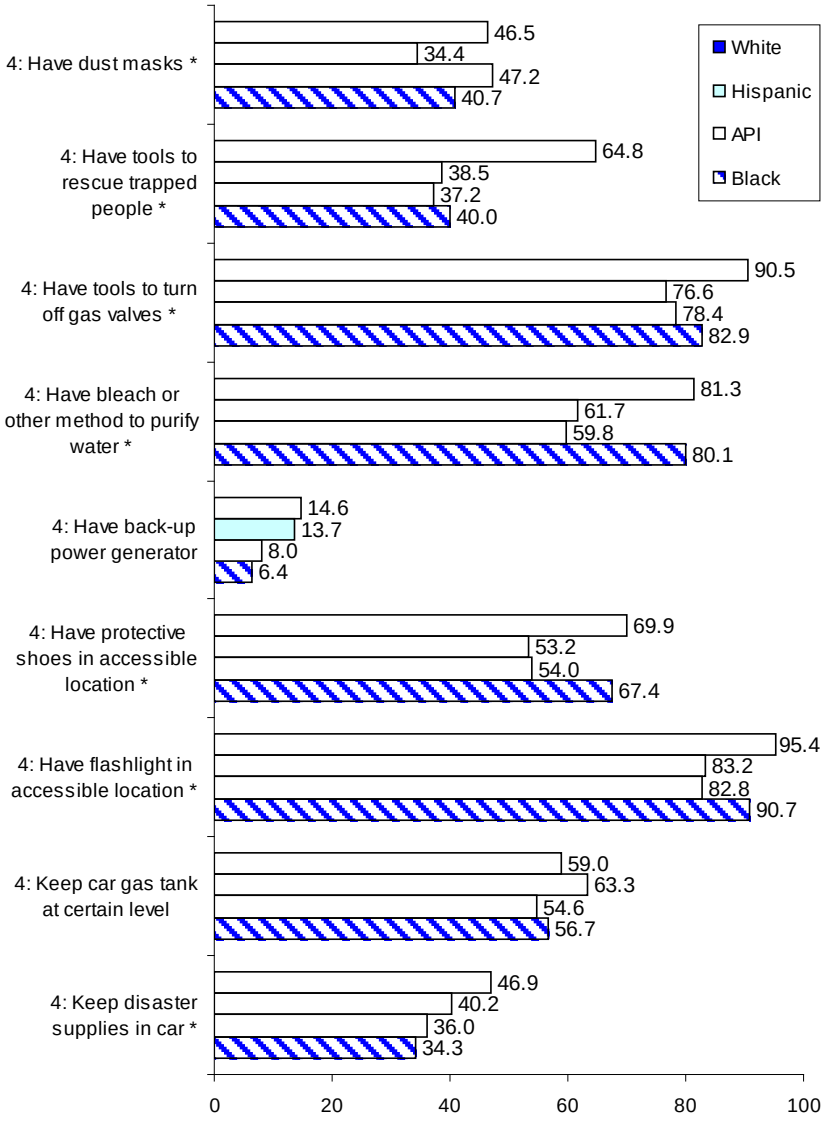


Figure 14.4.2. *Get Ready Pyramid* Level 4 activities performed, by racial/ethnic group (part 2)

Note: White, N=1,054; Hispanic, N=548; API, N=141; Black, N=251. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between racial/ethnic group and the index preparedness action, using Pearson's chi-square ($p<.001$).

14.5 Amount of water, food and fuel storage

Figure 14.5 shows the responses to the follow-up questions about specific quantities that were asked when respondents said they stored water or food for emergencies or that they maintained a certain fuel level in their cars. There was one statistically significant association where, of those who said they stored food, Whites (91%) were most likely to say they stored 3 or more days' worth of food per person, followed by APIs (87%), Hispanics (84%) and Blacks (82%). Although not statistically significant, of those who said they keep a certain level of fuel in their car, more Blacks (65%) appeared to report keeping at least a half tank of gas in their car compared to Whites (56%), Hispanics (54%) and APIs (52%). Of those who said they keep extra cash on hand for emergencies, Hispanics (mean = $672) tended to report having more cash set aside compared to Whites (mean = $565), Blacks (mean = $547) or APIs (mean = $435), but these differences were not statistically significant (results not shown in Figure 14.5).

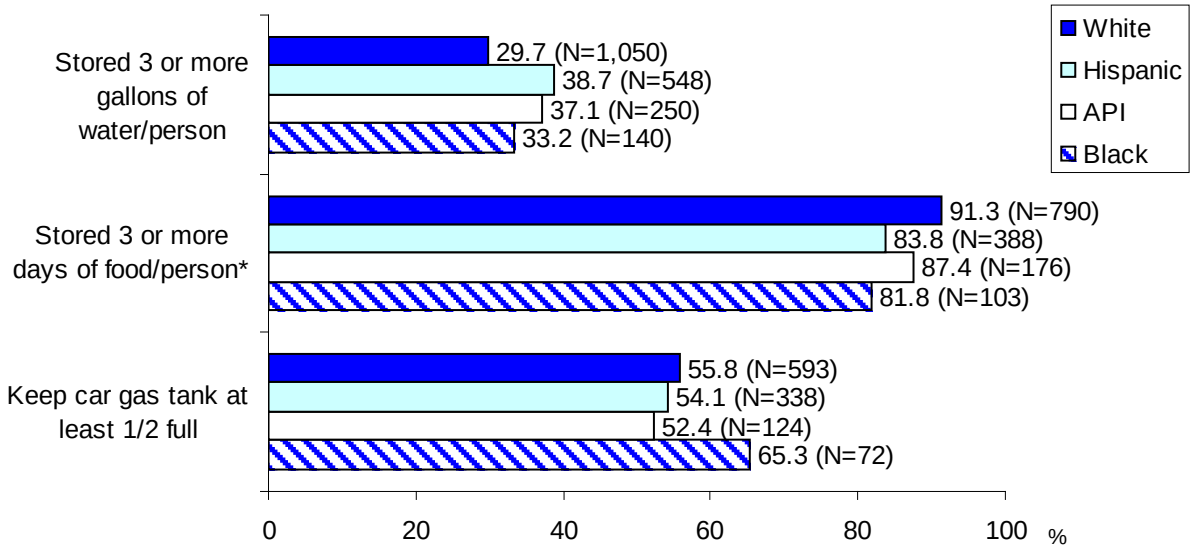


Figure 14.5. Preparedness recommendation met, by racial/ethnic group

Note: Data were weighted with raked household weights. Respondents could choose more than one response. N varies due to sample size and the fact that only those who said they maintain a certain supply of food, water, and/or gas were asked these follow-up questions about specific quantities. Asterisks (*) indicate statistically significant associations between racial/ethnic group and the index preparedness action, using Pearson's chi-square (p<.001).

14.6 Pyramid level 5: Secure building contents

There were a few statistically significant associations between race/ethnicity and the Level 5 (Secure Building Contents) actions asked about in the interview (Figure 14.6.1). White (41%) and API (40%) respondents were more likely than Hispanic (31%) and Black (29%) respondents to have secured their tall furniture and appliances. White respondents were more likely than all other groups to have secured their water heater (75% vs. 62-65%) and to have installed flexible gas piping (48% vs. 33-39%). Hispanic (65%) and White (61%) respondents were more likely than API (54%) and Black (48%) respondents to have stored hazardous materials safely in their home.

Have you done any of the following things?

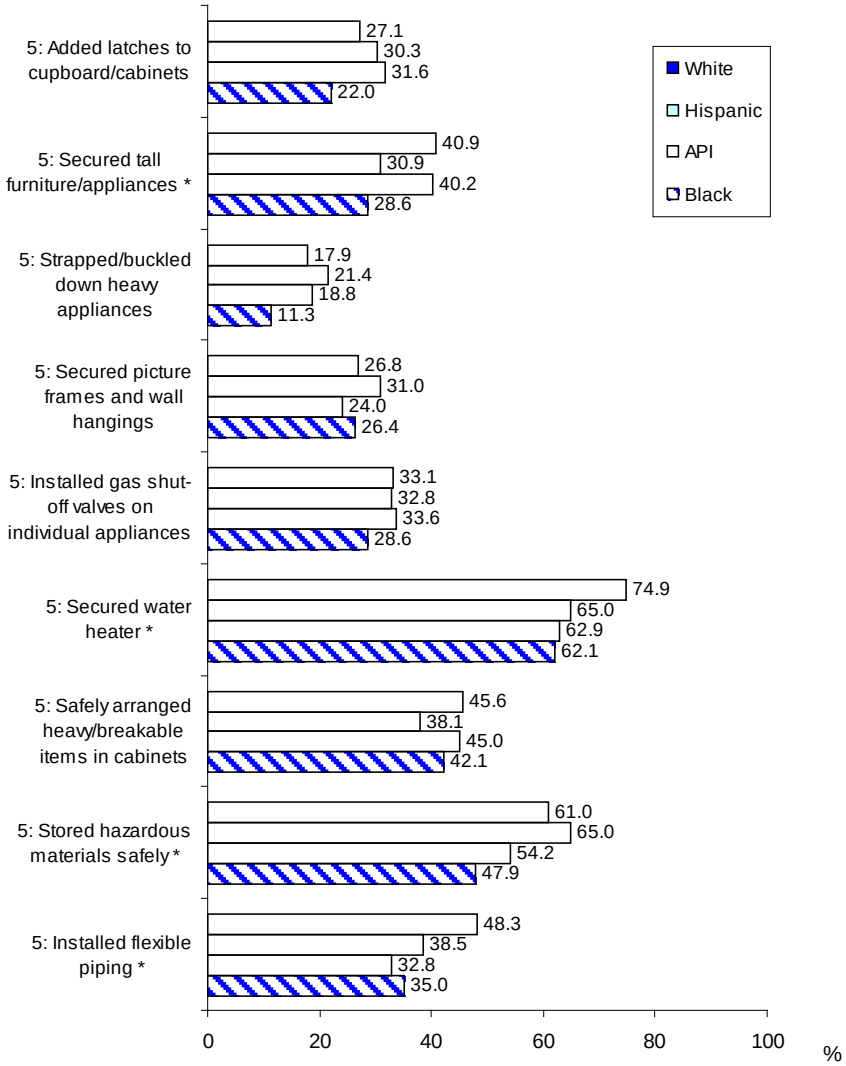


Figure 14.6. *Get Ready Pyramid* Level 5 activities performed, by racial/ethnic group

Note: White, N=1,054; Hispanic, N=548; API, N=141; Black, N=251. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between racial/ethnic group and the index preparedness action, using Pearson's chi-square ($p<.001$).

14.7 Pyramid level 6: Protect building structure

Figure 14.7 shows the adoption of Level 6 (Protect Building Structure) mitigation measures by racial/ethnic group. White respondents appeared more likely than other groups to have structurally reinforced their home (20% vs. 12-14%), but this association was not statistically significant.

Have you done any of the following things?

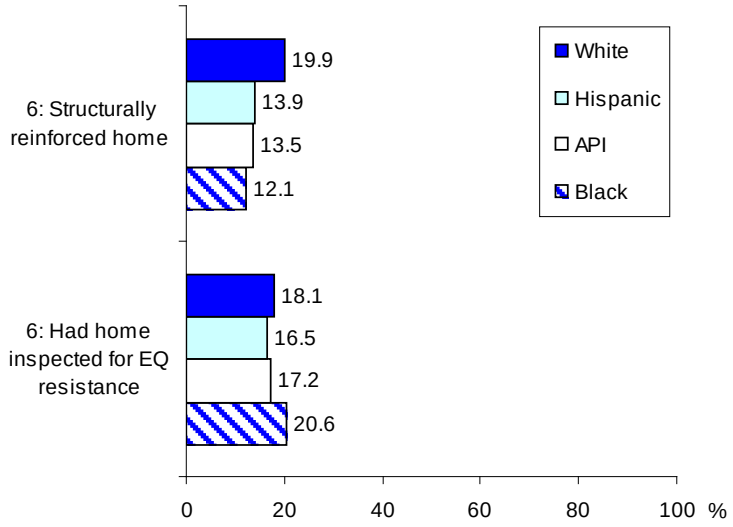


Figure 14.7. *Get Ready Pyramid* Level 6 activities performed, by racial/ethnic group

Note: White, N=1,054; Hispanic, N=548; API, N=140; Black, N=250. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between racial/ethnic group and the index preparedness action, using Pearson's chi-square ($p<.001$).

14.8 Pyramid level 7: Safeguard finances

Both Level 7 (Safeguard Finances) (Figure 14.8) actions were associated with race/ethnicity, where White respondents were most likely to have purchased earthquake insurance for their home structure and contents, followed by API, Black, and Hispanic respondents. Proportionally, about twice as many White respondents as Hispanic respondents said they had purchased earthquake insurance. To put these numbers into context, the percent of households that are home owners in each racial/ethnic group are: 67% among Whites, 60% among APIs, 41% among Hispanics, and 34% among Blacks.

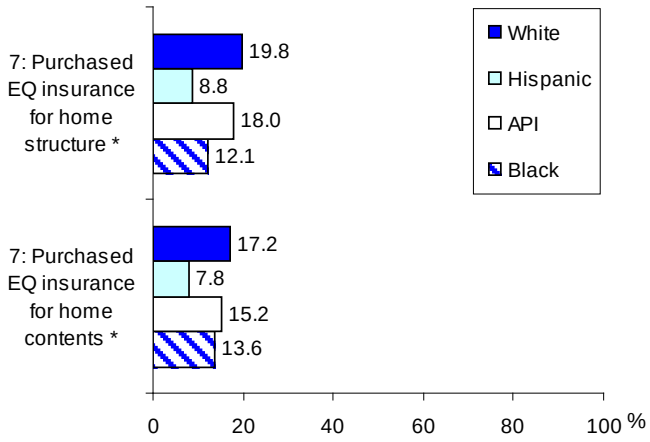


Figure 14.8. *Get Ready Pyramid* Level 7 activities performed, by racial/ethnic group

Note: White, N=1,054; Hispanic, N=548; API, N=140; Black, N=250. Data were weighted with raked household weights. Respondents could choose more than one response. Numbers next to each action indicate the corresponding level of the *Get Ready Pyramid*. Asterisks (*) indicate statistically significant associations between racial/ethnic group and the index preparedness action, using Pearson's chi-square ($p<.001$).

14.9 Average number of preparedness actions performed in total

The average number of preparedness activities performed per household in total was calculated and compared by racial/ethnic group (Figure 14.9). There was a statistically significant association between the household respondent's race/ethnicity and the average number of preparedness actions reported, where White respondents (22.2), on average, reported performing more preparedness activities than both API (mean = 20.1) or Hispanic (mean = 18.6) respondents.

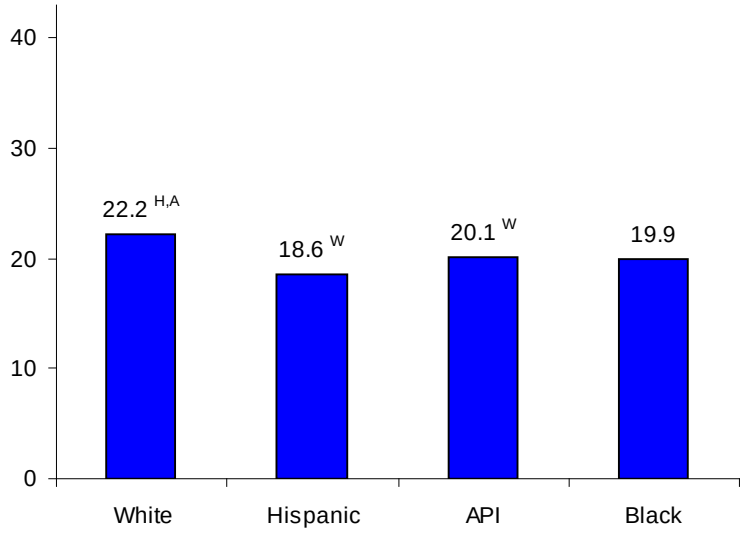


Figure 14.9. Average number of preparedness actions performed, by racial/ethnic group

Note: Number of preparedness actions could range from 0 to 43. White, N=1,054; Hispanic, N=548; API, N=140; Black, N=250. Data were weighted with raked household weights. Superscripts indicate statistically significant pairwise differences, using Bonferroni's post-hoc comparisons (p<.001), with W=White, H=Hispanic, A=API and B=Black (e.g., a superscript H indicates a statistically significant difference in means compared with Hispanics).

14.10 Average proportion of preparedness actions performed in each pyramid level

The average proportion of actions within each level of the "Get Ready" Pyramid performed per household was calculated by racial/ethnic group (Figure 14.10). There were several statistically significant associations where White respondents, on average, tended to report doing proportionally more of the actions in most of the pyramid levels compared to other groups, with the exception that Blacks reported doing proportionally the most of Level 3 (Train & Practice) actions among all groups. Hispanics, compared to all other groups, tended to report doing proportionally the least of the actions in all levels of the pyramid except in Level 5 (Secure Building Contents).

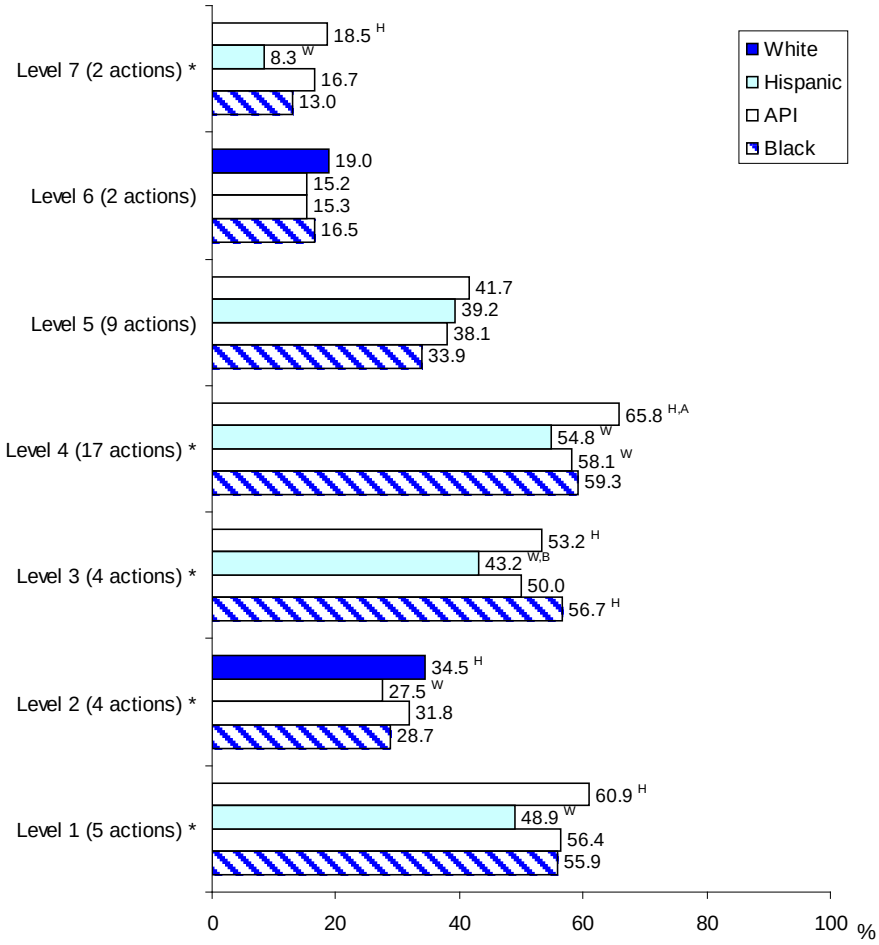


Figure 14.10 Average proportion of preparedness actions performed by pyramid level, by racial/ethnic group

Note: White, N=1,054; Hispanic, N=548; API, N=140; Black, N=250. The number of preparedness actions applicable to each pyramid level is indicated in parentheses. Data were weighted with raked household weights. Asterisks (*) indicate statistically significant associations between race/ethnicity and the average proportion of preparedness actions performed by pyramid level, using one-way analysis of variance (p<.001). Superscripts indicate statistically significant pairwise differences, using Bonferroni's post-hoc comparisons (p<.001), with W=White, H=Hispanic, A=API and B=Black (e.g., a superscript H indicates a statistically significant difference in means compared with Hispanics).

14.11 Respondents' lack of recognition of earthquake readiness actions

Several respondents indicated they were uncertain whether they, or other people in the household, had done some of the earthquake readiness actions. Figure 14.11 shows some of the recommended earthquake readiness actions that had the highest rates of respondents saying they "don't know" whether it was done or not. There were a couple of statistically significant associations where APIs were the most likely, and Blacks the least likely, to say they did not know whether flexible gas piping had been installed in their home; and Hispanics and APIs were more likely than White or Black respondents to not know whether they had purchased earthquake insurance for their home structure.

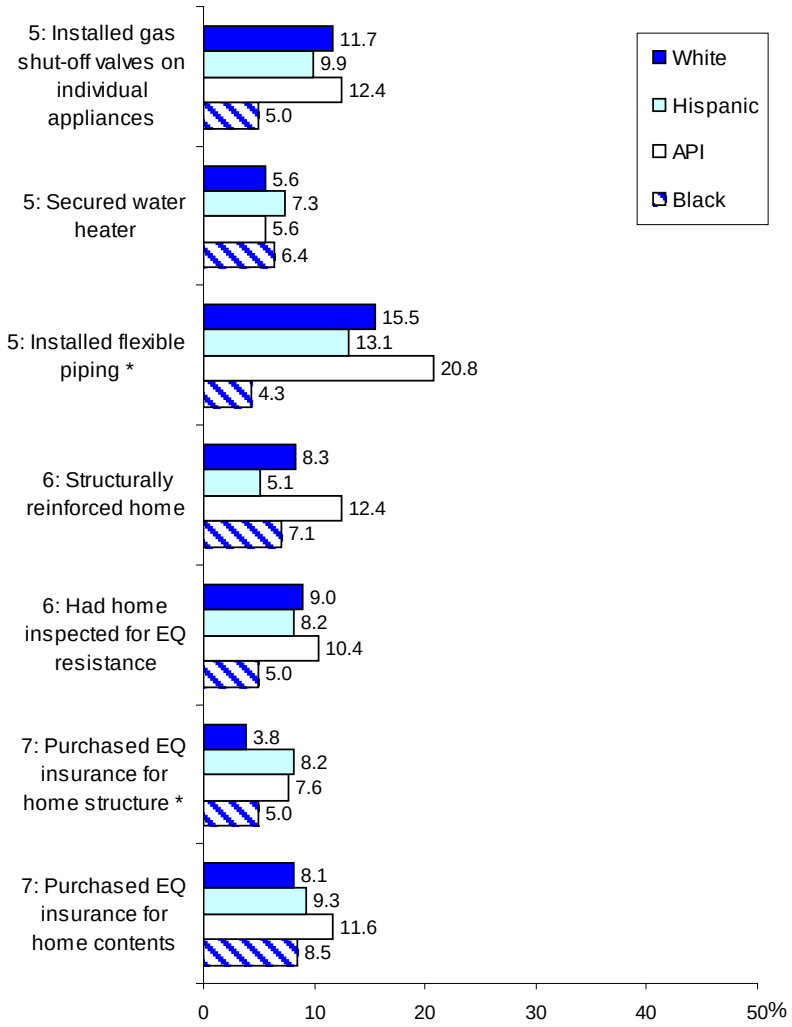


Figure 14.11. Respondents who were uncertain whether they had done some of the earthquake preparedness activities, by racial/ethnic group

Note: White, N=1,054; Hispanic, N=548; API, N=140; Black, N=250. Data were weighted with raked household weights. Asterisks (*) indicate statistically significant associations between race/ethnicity and being uncertain about whether they had done the index preparedness action, using Pearson's chi-square ($p<.001$).

14.12 Reasons given for performing preparedness actions in total

The average number of preparedness and mitigation activities performed only for earthquakes, those performed only for reasons other than earthquakes, and those performed for both reasons, respectively, were calculated and compared by racial/ethnic group (Figure 14.11). Statistically significant associations were identified, where White respondents, on average, reported implementing more actions, specifically for the earthquake hazard (mean = 3.6) and for both earthquakes and other reasons (mean = 9.9), compared with Hispanic respondents (means = 2.2 and 8.2, respectively).

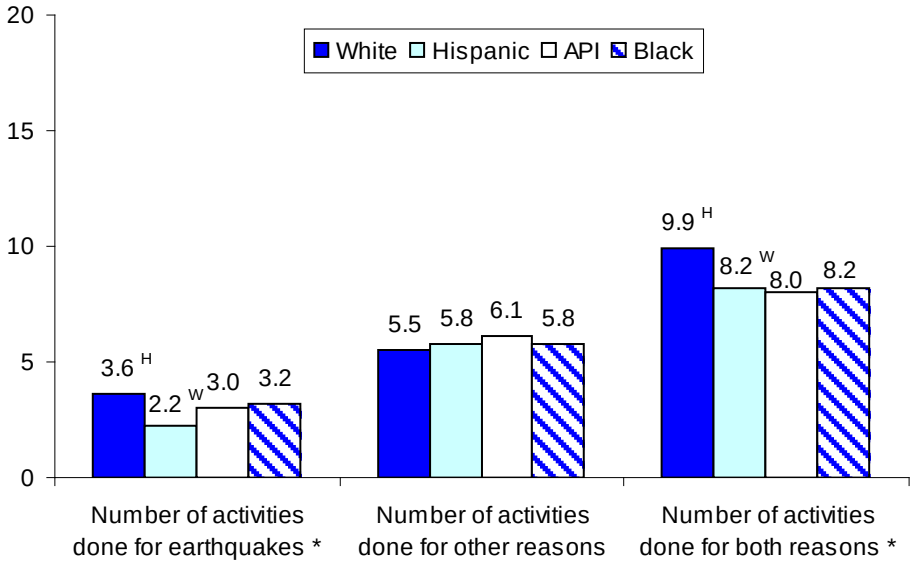


Figure 14.12. Average number of preparedness actions performed by reason for action and by racial/ethnic group

Note: Reason for action was asked for 35 all-hazard preparedness actions. Number of preparedness actions reported in this figure could range from 0 to 35. White, N=1,054; Hispanic, N=548; API, N=140; Black, N=250. Data were weighted with raked household weights. Asterisks (*) indicate statistically significant associations between race/ethnicity and the index variable, using one-way analysis of variance (p<.001). Superscripts indicate statistically significant pairwise differences, using Bonferroni's post-hoc comparisons (p<.001), with W=White, H=Hispanic, A=API and B=Black (e.g., a superscript H indicates a statistically significant difference in means compared with Hispanics).

14.13 Reasons given for performing preparedness actions by pyramid level

The reasons for performing preparedness actions were also assessed by each level of the "Get Ready" Pyramid. Figure 14.13.1 shows the average proportion of activities in each level of the pyramid that were done only because of the earthquake hazard, as reported in each racial/ethnic group. There was one statistically significant association where both White and API respondents reported doing proportionally more Level 5 actions (Secure Building Contents) only because of earthquakes compared to Hispanic respondents.

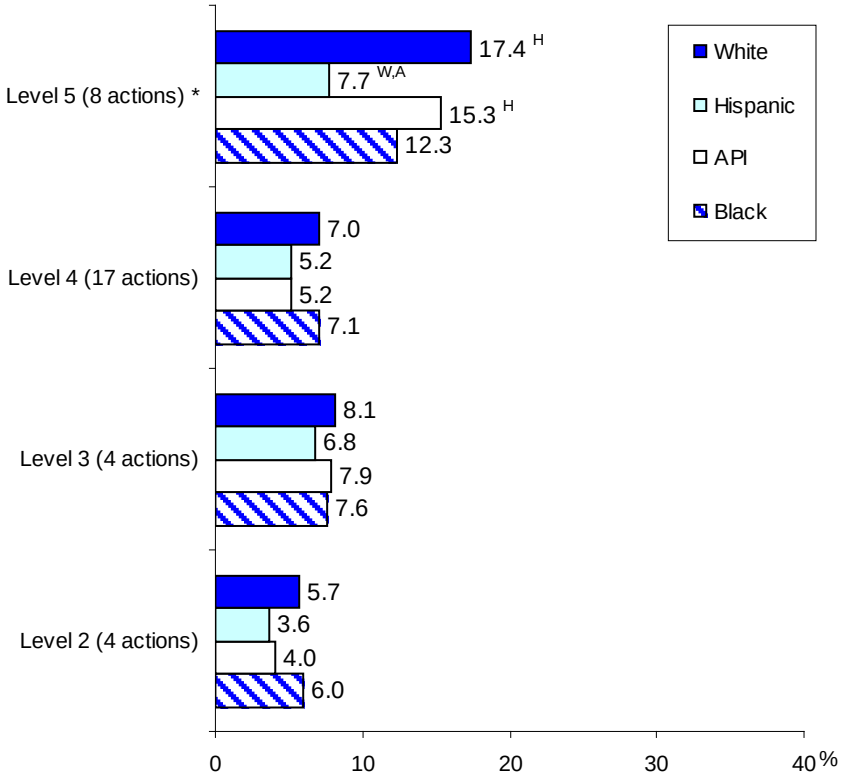


Figure 14.13.1 Average proportion of preparedness actions done only because of the earthquake hazard by pyramid level and by racial/ethnic group

Note: White, N=1,054; Hispanic, N=548; API, N=140; Black, N=250. Data were weighted with raked household weights. Reason for action was asked for 35 all-hazard preparedness actions. The number of applicable preparedness actions in each pyramid level is indicated in parentheses. Pyramid levels 1, 6 and 7 had an insufficient number of applicable actions to calculate a percentage. Asterisks (*) indicate statistically significant associations between race/ethnicity and the average proportion of preparedness actions done only because of the earthquake hazard by pyramid level, using one-way analysis of variance ($p<.001$). Superscripts indicate statistically significant pairwise differences, using Bonferroni's post-hoc comparisons ($p<.001$), with W=White, H=Hispanic, A=API and B=Black (e.g., a superscript H indicates a statistically significant difference in means compared with Hispanics).

Figure 14.13.2 shows the average proportion of activities in each level of the pyramid that were done because of reasons other than the earthquake hazard, as reported in each racial/ethnic group. There was one statistically significant association where API respondents reported doing proportionally more Level 2 activities (Plan & Organize) for reasons other than earthquakes compared to White and Black respondents.

The average proportion of activities that were done for both earthquakes and other reasons are not shown.

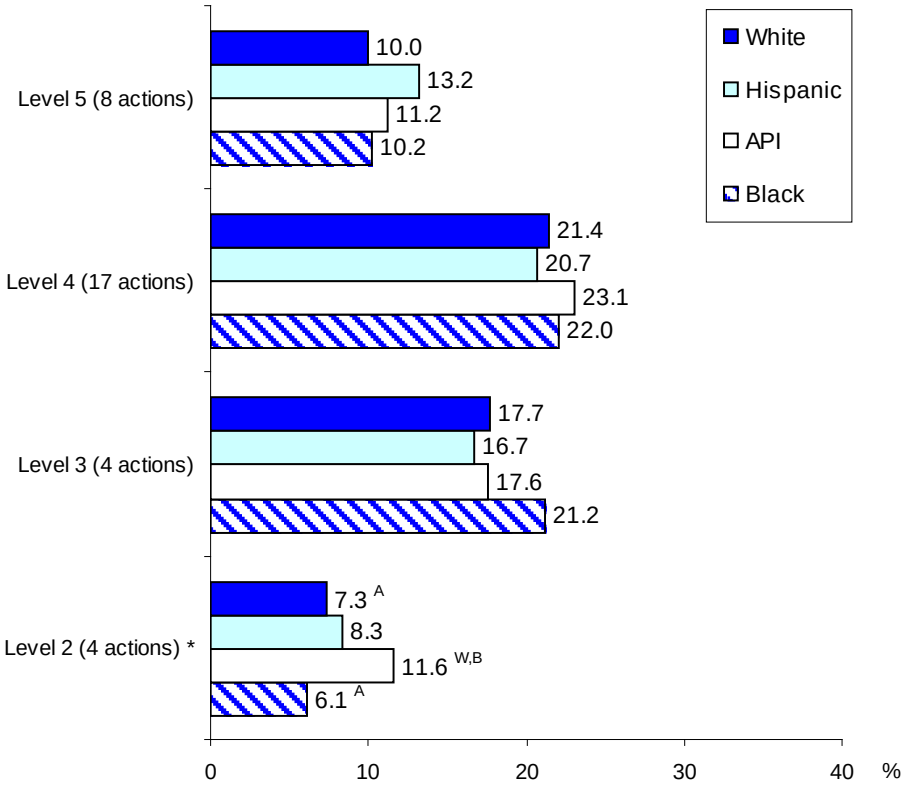


Figure 14.13.2. Average proportion of preparedness actions done because of reasons other than the earthquake hazard by pyramid level and by racial/ethnic group

Note: White, N=1,054; Hispanic, N=548; API, N=140; Black, N=250. Data were weighted with raked household weights. Reason for action was asked for 35 all-hazard preparedness actions. The number of applicable preparedness actions in each pyramid level is indicated in parentheses. Pyramid levels 1, 6 and 7 had an insufficient number of applicable actions to calculate a percentage. Asterisks (*) indicate statistically significant associations between race/ethnicity and the average proportion of preparedness actions done for reasons other than the earthquake hazard by pyramid level, using one-way analysis of variance ($p<.001$). Superscripts indicate statistically significant pairwise differences, using Bonferroni's post-hoc comparisons ($p<.001$), with W=White, H=Hispanic, A=API and B=Black (e.g., a superscript H indicates a statistically significant difference in means compared with Hispanics).

15: Preferred Web Address Extensions for Preparedness Information

15.1 Which web address extension do you think would be best for a site that provides important information about preparing for earthquakes and other disasters?

There were some apparent differences by racial/ethnic group in their preference for a web address extension for an Internet site that provides important information on disaster preparedness (Figure 15.1). While the top two choices were ".gov" and ".com" across all groups, White respondents indicated a clear preference for ".gov", API and Black respondents preferred ".gov" over ".com" by a smaller margin, and Hispanic respondents' preferences were split between the two. There also appeared to be a substantial difference in the proportion of respondents who are not Internet users, where 37% of Black and 32% of Hispanic respondents said they do not use the Internet compared to 15% of White and 10% of API respondents. The association between race/ethnicity and preferred website extension for a preparedness information website could not be tested for statistical significance due to expected cell sizes less than five.

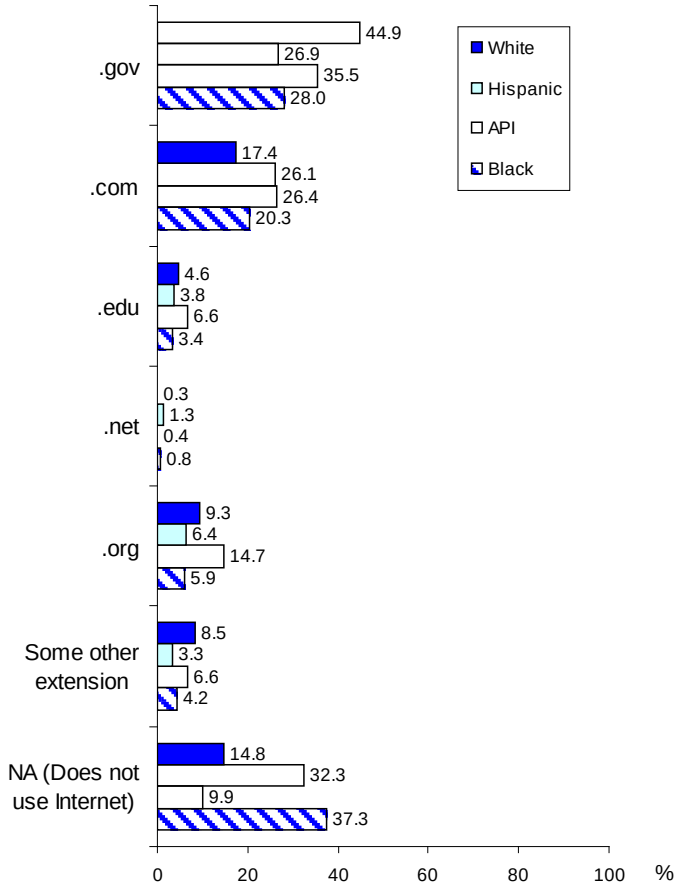


Figure 15.1. Preferred web address extension for a disaster preparedness site, by racial/ethnic group

Note: White, N=890; Hispanic, N=613; API, N=273; Black, N=118. Data were weighted with raked individual weights. The association between racial/ethnic group and preferred web address extension could not be tested due to expected cell sizes less than 5.

16: Preferred Source and Channel for Warning, Alerts, and Notifications

16.1 From whom would you prefer to receive official warnings, alerts, and notifications in the event of a disaster?

There was a statistically significant association between race/ethnicity and preferred source for official warnings, alerts, and notifications in the event of a disaster (Figure 16.1). Most notably, the majority (59%) of Hispanic respondents said they would want to receive emergency communication from the local fire department, while other groups gave more varied responses. The local emergency management office, which was the second most popular choice among all groups, except Hispanics, was chosen by 29% of Black, 25% of Hispanic and 22% of API respondents, compared to only 13% of Hispanic respondents.

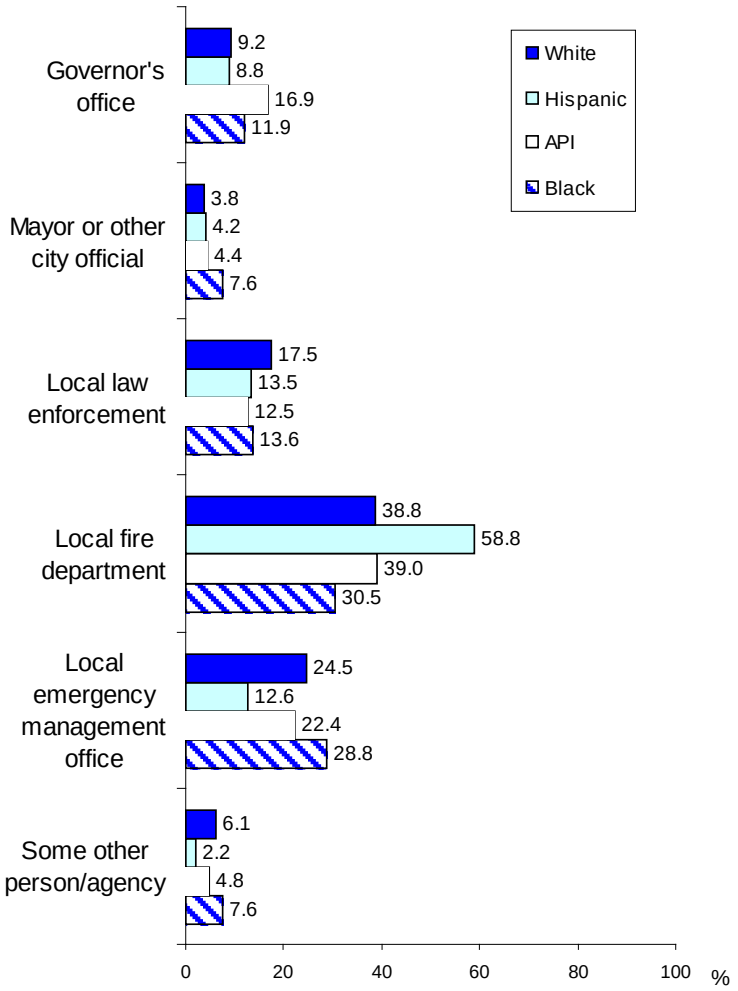


Figure 16.1. Preferred source for warnings, alerts, and notifications, by racial/ethnic group

Note: White, N=919; Hispanic, N=645; API, N=272; Black, N=118. Data were weighted with raked individual weights. The association between racial/ethnic group and preferred source for warnings, alerts, and notifications was statistically significant, using Pearson's chi-square ($p<.001$).

16.2 What would the best way for you to receive official warnings, alerts, and notifications in the event of a disaster?

There were some apparent differences by race/ethnicity in preferences for how to receive official warnings, alerts, and other notifications in the event of a disaster (Figure 16.2). Television was clearly the most preferred channel by all groups, except White respondents, whose preferences were divided between television, phone call, and radio. A statistical test could not be performed on the association between race/ethnicity and preferred method for emergency notification due to expected cell sizes less than five.

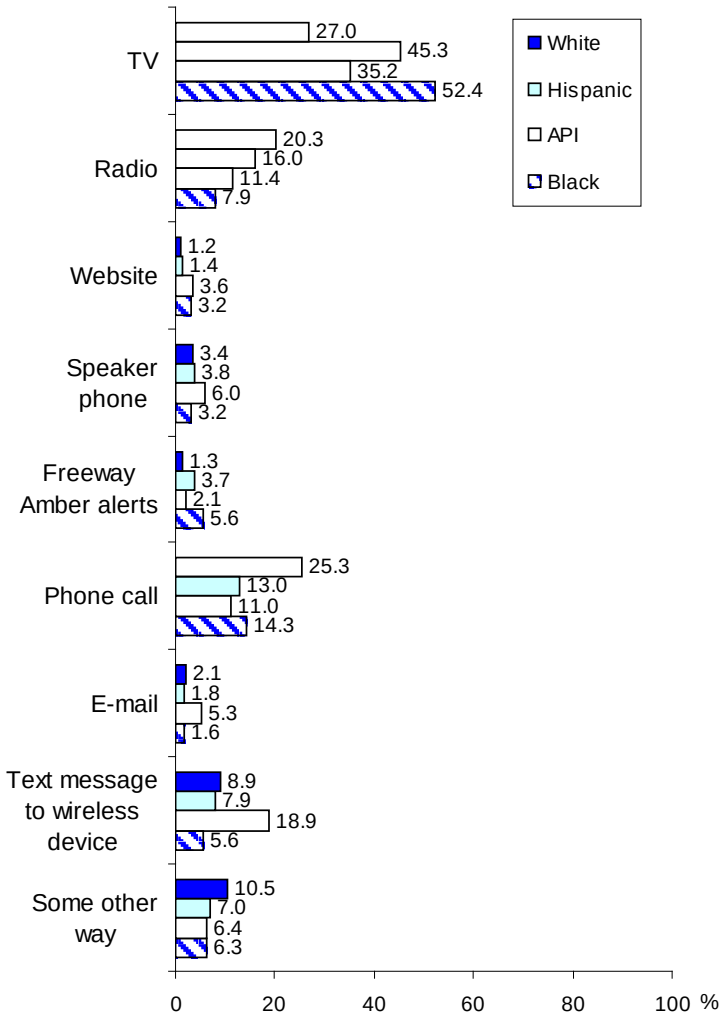


Figure 16.2. Preferred channel for warnings, alerts, and notifications, by racial/ethnic group

Note: White, N=1,030; Hispanic, N=559; API, N=240; Black, N=156. Data were weighted with raked individual weights. The association between racial/ethnic group and preferred channel for warnings, alerts, and notifications could not be tested due to expected cell sizes less than 5.

Conclusions

The main findings from the descriptive analyses conducted of the California Earthquake Preparedness Survey follow.

1. Californians in high risk areas are not getting ready in proportion to the differential risks they face.

2. People who have done things to get ready have done them for a variety of reasons and not just because of earthquakes.

3. Most of the actions Californians have taken are simple preparations; relatively few households have acted to mitigate losses and reduce injuries.

4. Some Californians believe earthquake myths that could lead to loss of life and injuries in an earthquake.

5. Messages on earthquake preparedness and mitigation developed specifically for dissemination in California have low market penetration.

Appendix A: Sample Design and Weighting of the Sample

Sample Design

The sample originally was designed to obtain equal numbers of households (n = 666/667) in each of the three strata: northern California, southern California, and the rest of California. Subsequent analysis considerations prompted a higher allocation for southern California. Since the objective was a total sample of 2,000 households and since only 6% of households in the state are Black/African American, oversampling of Black/African American households was introduced. Since more Black/African American households are found in the southern California stratum than in other areas of the state, almost all of the oversampling occurred in southern California. The final sample contained 2,081 households: 556 in northern California; 906 in southern California; and 619 in the rest of California. Thus, 26.7% of the sample lives in northern California, 43.5% lives in southern California, and 29.8% lives in the rest of the state.

The unweighted distribution of households by race/ethnicity of the respondent was 19.3% (n = 392) Hispanic/Latino, 11.8% (n = 240) Black/African American, 7.8% (n = 159) Asian/Pacific Islander, and 61.0% (n = 1,237) White/Other (includes non-Hispanic White, American Indian/Alaskan Native, multiracial, and other responses).

When compared with population projections for 2007 (Table 1), the unweighted California Earthquake Preparedness Survey sample overrepresents older persons, females, and college graduates, and underrepresents males, younger persons (< 35), and persons with less than a high school education. Hispanic and Asian/Pacific Islander households are also underrepresented, but, consistent with how the sample was selected, the unweighted sample overrepresents Black/African American households. The unweighted sample approximates the distribution of households across the three strata, the distribution of household income, the presence of children in the household, and the number of one-person households. Particularly underrepresented are educated persons under 31, and males under 35. In the 6 southern counties, males 35-45 are especially underrepresented.

Comparison with the California Health Interview Survey (CHIS) Sample

Response rates for population-based surveys have steadily declined during the past decade. Part of that decline reflects increased use of cell phones by the US population. Traditionally, the samples for telephone surveys have been drawn from landline telephones. In 2004, the Consumer Expenditure Survey estimated that 7% of U.S. households were cell-only households, and in 2007, the National Health Interview Survey estimated that 14.5% of adults resided in cell-only households. Most recently it was reported that in 2007, 9.0% of California households were cell-only, and that 8.4% of California adults lived in cell-only households.

In 2007, the California Health Interview Survey (CHIS) implemented a telephone survey with adults in cell-only households. The cell-only sample was developed to supplement the regular RDD sample that was conducted concurrently. The CHIS provide data that allow us to assess the sample in the California Earthquake Preparedness Survey, and the extent to which distributions in the landline sample might be complemented by a cell-only sample.

Whereas the California Earthquake Preparedness Survey was conducted between June and December 2008, CHIS was conducted about a year earlier between June, 2007 and March, 2008. Interviews averaged 35 minutes, similar in length to the California Earthquake Preparedness Survey. The household response rate for the CHIS landline sample was 21.1%, while the household response rate for the California Earthquake Preparedness Survey was 35%. Where the California Earthquake Preparedness Survey sample was comprised of three strata and 2,081 interviews were conducted, CHIS was comprised of 44 strata (41 individual counties and 3 grouped county strata); 48,791 interviews were conducted by landline, and 825 by cell. CHIS, landline, was supplemented with 451 interviews from surname lists for Koreans and Vietnamese; the California Earthquake Preparedness Survey was supplemented with oversampling in census tracts with higher proportions of Black/African American households.

Except for Blacks/African Americans, which were oversampled, demographic outcomes for the California Earthquake Preparedness Survey are very similar to those for the CHIS landline sample (see Table 2). Compared to census projections, the unweighted CHIS landline sample underrepresents Asian/Pacific Islanders, Blacks/African Americans, and Hispanics. Females, older persons (>65), and persons with a college degree are overrepresented.

In contrast, the CHIS cell-only sample underrepresents females, older persons, owner households, and persons with college degrees. Asian/Pacific Islander and Black/African American households are overrepresented; Hispanic households are slightly underestimated, but are much closer to census projection than in the landline sample.

In summary, for both the CHIS sample and the California Earthquake Preparedness Survey, younger persons, males, renters, and some ethnic/racial subgroups are underrepresented in the landline samples. Part of this underrepresentation is explained by the characteristics of persons who live in cell-only households.

Weighting of the Sample

Weighting is used to bring population-based samples into closer conformance with the populations from which they were drawn. Since the sample was designed to intentionally overrepresent Black/African American households and some regions, weights are used for the analyses reported here. US Census data for California and data from the California Department of Finance were both used in determining the appropriate weights.

In 2007, the total estimated adult population (18 and over) in California was 27,169,594 in an estimated 13,308,346 households. Twenty-one percent of the households were located in the 10 northern California counties, 47% were located in the 6 southern counties, and 32% were located in the rest of California [S2501-see references]. Twenty percent of the adult population was in the 10 northern counties, 50% was in the 6 southern counties, and 29% was located in the rest of California [CalDOF- see references].

The weighting had two objectives. The first was to account for the differential selection probabilities associated with the sample design; this objective was met by calculating sampling weights that are inversely proportional to selection probabilities, and scaled to sum to the sample size, 2081. The second objective was to bring the distributions of key demographic characteristics into conformance with California statewide distributions; this was accomplished using WesVar software (from Westat, in Rockville,

Maryland) to ‘rake’ the sampling weights so that the weighted sample demographics matched population control values. Both individual weights and household weights, with and without raking, were calculated. Raking controls for household weights included stratum of residence, imputed age of householder, imputed race/ethnicity of householder, household composition, home ownership, single vs. multiple housing, and household income. Raking controls for individual weights were similar to those used for the CHIS sample: stratum of residence, age, gender, race/ethnicity, education level, household composition, and home ownership. Because of the smaller sample size, the number of levels per demographic control was fewer for the California Earthquake Preparedness Survey than for CHIS. Table 1 demonstrates the effects of the various weights.

Individual weights are used when data refer to characteristics of individuals, such as race/ethnicity, gender, age, and education, and in reporting all non-demographic data with the exception of questions asking about household preparedness. Household weights are used when data refer to and reflect household characteristics, such as household distribution across the three strata, household income, home ownership, and the size and composition of the household. Household weights are also applied when data are presented relating to the 42 preparedness activities and the reasons given for investing in preparedness activities.

Table 1. Comparison of the unweighted and weighted samples with population projections for California in 2007 on selected demographic variables—California Earthquake Preparedness Survey, 2008

		Weighted samples[1]				Population projections for California, 2007	
						Population (Age 18+)[2]	Household/ Householder[3]
	Unweighted sample	Individual weights	Individual weights with raking	Household weights	Household weights with raking	N = 27,169,594	N = 13,308,346
	%	%	%	%	%	%	%
Geographic strata[4]							
Northern California	26.7	20.9	20.4	21.6	21.1	20.4	21.1
Southern California	43.5	44.7	50.2	43.4	46.8	50.4	46.7
Rest of California	29.7	34.3	29.4	35.0	32.1	29.3	32.1
Race/Ethnicity							
Asian/Pacific Islander	7.8	9.2	13.8	7.9	12.3	12.9	11.8
Black/African American	11.8	6.4	6.2	7.2	6.9	6.0	6.7
Hispanic/Latino	19.3	24.6	32.2	21.1	27.0	31.8	26.8
White/Other	61.0	59.8	47.8	63.7	53.7	49.3	54.7
Age of respondent							
Under 35	18.5	23.3	33.3	N/A	N/A	31.8	N/A
35-44	17.9	18.0	20.2			20.0	
45-54	23.0	23.0	18.8			19.4	
55-64	18.8	17.9	13.7			14.0	
65 and older	21.8	17.7	14.0			14.9	
Gender of respondent: Female	62.2	63.0	50.7	N/A	N/A	50.5	N/A

	Unweighted sample	Weighted samples[1]				Population projections for California, 2007	
		Individual weights	Individual weights with raking	Household weights	Household weights with raking	Population (Age 18+)[2]	Household/Householder[3]
						N = 27,169,594	N = 13,308,346
	%	%	%	%	%	%	%
Education level of respondent							
Less than high school	9.5	11.6	12.1	N/A	N/A	19.4	N/A
High school graduate	22.1	23.2	22.3			24.7	
Some college education	25.6	25.3	23.4			22.2	
College graduate	42.7	39.8	42.2			33.7	
Nationality of respondent:							
U.S.	77.3	74.0	67.8	N/A	N/A	81.1	N/A
Household income ($)							N = 12,200,672
Less than 15k	7.6	N/A	N/A	8.0	8.9	N/A	10.4
15k to less than 25k	9.2			9.4	10.5		9.7
25k to less than 35k	10.6			10.9	10.9		9.3
35k to less than 50k	9.0			9.2	9.8		13.0
50k to less than 75k	18.5			18.6	19.8		18.0
75k to less than 100k	12.6			12.6	12.4		12.7
100k to less than 150k	19.7			19.7	17.6		14.6
150k or greater	12.9			11.5	10.1		12.2
Households with children under age 18	37.4	N/A	N/A	38.4	38.0	N/A	43.8
One-person households	21.5	N/A	N/A	21.8	25.3	N/A	24.8
Single-family unit housing	69.3	N/A	N/A	68.0	56.1	N/A	58.3
Owner-occupied residence	65.1	N/A	N/A	64.4	56.0	N/A	58.0

Notes: Total sample size was 2,081. Actual N varies due to missing values. Percents may not add to 100 due to rounding.

[1]The individual weights account for differential selection probabilities of individuals due to the sample design, which specified varying sampling rates for geographic strata, oversampling Blacks/African Americans, and adjustments for multi-landline households and household size. The household weights account for differential selection probabilities of households due to the sample design, which specified varying sampling rates for geographic strata, oversampling Blacks/African Americans, and adjustments for multi-landline households. Raked individual weights enhance conformance of sample to the 2007 over-17 population distribution with respect to region strata, age, education, gender, race/ethnicity, and household ownership and number of adults present. Raked household weights enhance conformance of sample to the 2007 household population distribution with respect to region strata, household size, home ownership, housing units in structure, household income, and householder age and race/ethnicity.

[2]Data for population projections of strata, race/ethnicity, age, and gender were extracted for 2008 from the State of California, Department of Finance, "Race/Ethnic Population with Age and Sex Detail, 2000-2050. Data for population projections of education and nationality were extracted from the U.S> Bureau of Census, 2007 American Community Survey Public Use Microdata Sample (PUMS).

[3]Data for household/householder projections for geographic strata, one-person households, and owner-occupied residences were extracted from the U.S. Bureau of Census, 2007 American Community Survey 1-Year Estimates, Table S2501, Occupancy Characteristics. Data for race/ethnicity of household/householder were extracted from the Bureau of Census, 2007 American Community Survey 1-Year Estimates, Table S2502 Demographic Characteristics for Occupied Housing Units. Data for household income were extracted from the Bureau of Census, 2007 American Community Survey 1-Year Estimates, Table DP-3, Selected Economic Characteristics. Data for households with children under age 18 were extracted from the 2007 American Community Survey Public Use Microdata Sample (PUMS). Data for projections of single-family housing units were extracted from the Bureau of the Census, American Community Survey 1-Year Estimates, Table DP-4 Selected Housing Characteristics 2007.

[4]Northern California = Alameda, Contra Costa, Marin, Mendocino, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma counties. Southern California = Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. Rest of California = remaining 42 counties in the state that are at relatively low risk of earthquakes compared to the counties in the northern and southern California strata. "Other" race/ethnicity includes multi-racial and other types of identification.

Table 2. Comparison of unweighted California Earthquake Preparedness Survey (CEPS) sample to landline and cell-only California Health Interview Survey (CHIS), 2007-2008

Demographic and Household Characteristics	California Earthquake Preparedness Survey (CEPS)	California Health Interview Survey (CHIS)		Population Projections for California, 2007	
	N = 2,081	Landline	Cell-Only	Population (Age 18+)[1]	Household/ Householder[2]
		N = 49,242	N = 825	N = 27,169,594	N = 13,308,346
Race/Ethnicity					
Asian/ Pacific Islander	7.8	8.6	12.5	12.9	11.8
Black/African American	11.8	4.6	7.8	6.0	6.7
Hispanic/Latino	19.3	17.1	24.6	31.8	26.8
White/Other	61.0	69.7	55.2	49.3	54.7
Age					
Under 35	18.5	14.2	62.2	31.8	N/A
35-44	17.9	15.1	10.7	20.0	N/A
45-54	23.0	20.6	13.9	19.4	N/A
55-64	18.7	20.8	9.7	14.0	N/A
65 and older	21.8	29.4	3.5	14.9	N/A
Gender					
Percent Male	37.4	39.8	59.4	50.5	N/A
Education					
Less than high school	9.6	9.5	8.5	19.4	N/A
High school graduate	22.1	22.1	32.0	24.7	N/A
Some college education	25.6	28.3	32.1	22.2	N/A
College graduate	42.7	40.1	27.4	33.7	N/A
Citizenship					
Born in US (CEPS)/ US citizen (CHIS)	77.3	91.6	89.2	81.1	N/A
Not born in US (CEPS)/ Not US citizen (CHIS)	22.7	8.4	10.8	18.9	N/A
Household income					
Less than 15k	7.6	11.4	17.0	N/A	10.4
15k to less than 25k	9.1	11.3	12.1	N/A	9.7
25k to less than 35k	10.6	9.5	10.9	N/A	9.3
35k to less than 50k	9.0	12.5	15.0	N/A	13.0
50k to less than 75k	18.5	17.7	16.7	N/A	18.0
75k to less than 100k	12.6	11.3	9.5	N/A	12.7
100k to less than 150k	19.7	14.3	10.4	N/A	14.6
150k or greater	12.9	12.0	8.4	N/A	12.2
Households with child(ren) under age 18					
Have child(ren)	37.4	30.2	31.5	N/A	43.8
Do not have child(ren)	62.6	69.9	68.5	N/A	56.2

Household size					
More than one person	78.5	71.61	76.85	N/A	75.2
One-person household	21.5	28.39	23.15	N/A	24.8
Ownership of residence					
Owner-occupied	65.1	69.52	29.09	N/A	58.0
Renter- or other - occupied	34.9	30.48	70.91	N/A	42.0

[1]Data for population projections of strata, race/ethnicity, age, and gender were extracted for 2008 from the State of California, Department of Finance, "Race/Ethnic Population with Age and Sex Detail, 2000-2050. Data for population projections of education and nationality were extracted from the 2007 American Community Survey Public Use Microdata Sample (PUMS).

[2]Data for household/householder projections for geographic strata, one-person households, and owner-occupied residences were extracted from the Bureau of Census, 2007 American Community Survey 1-Year Estimates, Table S2501, Occupancy Characteristics. Data for race/ethnicity of household/householder were extracted from the Bureau Census, 2007 American Community Survey 1-Year Estimates, Table S2502 Demographic Characteristics for Occupied Housing Units. Data for household income were extracted from the Bureau of Census, American Community Survey 1-Year Estimates, Table DP-3, Selected Economic Characteristics, 2007. Data for households with children under age 18 were extracted from the 2007 American Community Survey Public Use Microdata Sample (PUMS). Data for projections of single-family housing units were extracted from the Bureau of the Census, American Community Survey 1-Year Estimates, Table DP-4 Selected Housing Characteristics 2007.

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Appendix B: Survey Questionnaire

TASK 12: FINAL QUESTIONNAIRE
REV 11
January 7, 2009
California Earthquake Preparedness Survey
University of California, Los Angeles

I. SCREENER

THE PURPOSE OF THE SCREENER IS TO IDENTIFY ELIGIBLE RESPONDENTS.

INTERVIEW START TIME: _____ : _____ AM / PM

INTRO

Hello, I'm … calling from the University of California. We are interviewing people in California to find out what they have heard or done about earthquake preparedness. This information may help improve responses to disasters in California. As a thank you, participants will receive a $20 gift certificate. I need to ask just a few questions to see if you are eligible to participate.

S1A. Have I reached you at your home phone?

YES .....SKIP TO **S1C** 1
NO ..... ASK **S1B**.....2

S1B. Is this a residence?

YES ..... ASK **S1C**.....1
NO ..... TERMINATE.....2

S1C. I would like to confirm that I reached you at <PHONE NUMBER>.

YES .....SKIP TO **S1D** 1
NO ..... TERMINATE..... 2

IF S1A=2, S1B=1 AND S1C=1, SKIP TO S1E.

S1D. For this survey, I need to speak with someone who lives there who is 18 years old or older. Are you 18 or over?

YES ..... SKIP TO **S1F** 1
NO ..... ASK **S1E** 2
NO ONE IN HH IS 18 OR OLDER, TERMINATE 3

S1E. May I speak to an adult 18 years or older who lives there?

IF ADULT RESIDENT AVAILABLE,
GO BACK TO **INTRO** 1

IF NO ADULT RESIDENT AVAILABLE,
ARRANGE FOR AN APPROPRIATE CALLBACK TIME
[**SUSPEND**] 2

NO ONE IN HH IS 18 OR OLDER, TERMINATE 3

S1F. This interview is voluntary and completely confidential. You have the right to refuse any question without penalty. If you or someone else in your household completes the interview, we will send that person a $20 gift certificate as a thank you. The interview will take about 30 minutes.

If you need more information about the survey, you can call the UCLA Survey Research Center, toll-free at 866-508-9788.

I would like to begin the interview, is that ok?

YES 1
NO ARRANGE FOR APPROPRIATE CALLBACK TIME [**SUSPEND**] 2

S2. How many people are there in your household who are 18 years or older?

_____

IF S2=1, GO TO Q1, OTHERWISE CONTINUE

S2A. I would like to speak to the adult in your household, 18 or older, who has had the most recent birthday. Who would that be?

IF CURRENT PERSON, GO TO **S4** 1

IF OTHER ADULT RESIDENT, GO TO **S3** 2

S3. Thank you for helping me with this information. May I please speak with him/her?

IF AVAILABLE, READ INTRO BELOW 1

IF NOT AVAILABLE, ARRANGE FOR AN APPROPRIATE CALLBACK TIME [**SUSPEND**] 2

INTRODUCTION

Hello, I'm … calling from the University of California. We are interviewing people in California to find out what they have heard or done about earthquake preparedness. This information may help improve responses to disasters in California.
This interview is voluntary and completely confidential. You have the right to refuse any question without penalty. The interview will take about 30 minutes. As a thank you, you will receive a $20 gift certificate.

If you need more information about the survey, you can call the UCLA Survey Research Center, toll-free at 866-508-9788.

S4. I would like to begin the interview, is that ok?

YES 1

NO .... ARRANGE FOR AN APPROPRIATE CALLBACK TIME [**SUSPEND**] 2

INTERVIEW START TIME: _____ : _____ AM / PM

II. INTERVIEW

1. Please think about the worst earthquake you have ever experienced. How much did it affect you? Using a scale of 1 to 5 where 1 means “no effect”, and 5 means “a lot of effect”, would you say it had “1 no effect”, “5 a lot of effect” or you may use any number in between?

1 ..... 2 ..... 3 ..... 4 5

NO EFFECT — A LOT OF EFFECT

DK 8

RF 9

2. Please think about the information you have gotten about preparing for earthquakes. Have you heard information about preparing for earthquakes from: ("DON'T KNOW" IS AN INFORMATIVE RESPONSE.)

	YES	NO	DK	RF
A. Friends or relatives?	1	2	8	9
B. The *California Volunteers*?	1	2	8	9
C. Employers?	1	2	8	9
D. *Earthquake Country Alliance* or their *Dare to Prepare* campaign?	1	2	8	9
E. Scientists?	1	2	8	9
F. *Putting Down Roots in Earthquake Country*?	1	2	8	9
G. Schools?	1	2	8	9
H. The California Seismic Safety Commission?	1	2	8	9
I. The *Homeowner's Guide to Earthquake Safety*?	1	2	8	9
J. TV anchors or reporters?	1	2	8	9
K. The Governor's Office of Emergency Services?	1	2	8	9
L. Insurance representatives	1	2	8	9
M. Radio hosts or reporters?	1	2	8	9
N. Entertainers?	1	2	8	9
O. The Red Cross?	1	2	8	9
P. Local Emergency Management Agencies?	1	2	8	9
Q. The United States Geological Survey, USGS?	1	2	8	9
R. What other sources?	1	2	8	9

SPECIFY 1:_____

SPECIFY 2:_____

SPECIFY 3:_____

(IF ALL "NO" (2) AND/OR "RF" (9), SKIP TO Q5.)

(IF THERE ARE "YES" (1) AND/OR "DK" (8), CONTINUE TO Q3.)

3. How was the information communicated to you?

	YES	NO	DK	RF
Did you read it in the newspapers?	1	2	8	9
Did you read it in other print media?	1	2	8	9
Did you see it on the television?	1	2	8	9
Did you hear it on the radio?	1	2	8	9
Did you see it on the Internet?	1	2	8	9
Was it communicated to you in face-to-face discussions?	1	2	8	9
Was it communicated to you some other way?	1	2	8	9

SPECIFY: _____

3A. To your knowledge, has information on earthquake preparedness been communicated to the public in languages other than English?

YES 1
NO 2
DK 8
RF 9

4. What kinds of information have you gotten? Have you gotten information about <…>?

Q4.			
What kinds of information have you gotten? Have you gotten information about <…>? **INSERT ACTION FROM LEFT COLUMN** **8=DK 9=RF**		**GOTTEN INFORMATION ABOUT <…>?**	
		Y	**N**
1.	Learning how to be ready for an earthquake?	1	2
2.	Learning how to be safe during an earthquake?	1	2
3.	Making disaster plans?	1	2
4.	Training and practicing for skills that can protect life or reduce damage in an earthquake?	1	2
5.	Organizing equipment and supplies that would be useful in an earthquake?	1	2
6.	Making the things inside your home safer during an earthquake?	1	2
7.	Making your building structure safer during an earthquake?	1	2
8.	Buying earthquake insurance?	1	2

4A. How much of the information that you got about preparing for earthquakes did you <u>believe</u>? Would you say "1, none of it," "5, all of it," or you may use any number in between?

1 ..... 2 ..... 3 ..... 4 5
NONE OF IT — ALL OF IT

DK..... 8
RF..... 9

4B. How much of the information did you understand? Would you say 1, none of it, 5, all of it, or any number in between?

1 ..... 2 ..... 3 ..... 4 5
NONE OF IT — ALL OF IT

N/A..... 6
DK..... 8
RF..... 9

4C. How much of the information did you think about? Would you say 1, none of it, 5, all of it, or any number in between?

1 ..... 2 ..... 3 ..... 4 5
NONE OF IT — ALL OF IT

N/A..... 6
DK..... 8
RF..... 9

4D. How much of the information did you discuss with other people? Would you say 1, none of it, 5, all of it, or any number in between?

1 ..... 2 ..... 3 ..... 4 5
NONE OF IT — ALL OF IT

N/A..... 6
DK..... 8
RF..... 9

Now I want to ask if you know anyone who has done certain things because of earthquakes.

5. Do you know anyone, not including yourself, who has <...>?

Q5.				
Do you know anyone, not including yourself, who has <...>?	**Y**	**N**	**DK**	**RF**
1. Learned how to be ready for an earthquake?	1	2	8	9
2. Learned how to be safe during an earthquake?	1	2	8	9
3. Made disaster plans?	1	2	8	9
4. Been trained in skills that can protect life and reduce damage in an earthquake?	1	2	8	9
5. Organized equipment and supplies that would be useful in an earthquake?	1	2	8	9
6. Made the things inside the home safer during an earthquake?	1	2	8	9
7. Made the building structure safer during an earthquake?	1	2	8	9
8. Bought earthquake insurance?	1	2	8	9

6. I'd like to know what you think about the following statements. As I read the statements about earthquakes, please tell me how much you disagree or agree using a scale from 1 to 5, where 1 means "strongly disagree", 5 means "strongly agree", or you may use any number in between.
8=DK 9=RF

REPEAT RESPONSE OPTIONS EVERY 3RD ITEM.

	Q6.	STRONGLY DISAGREE				STRONGLY AGREE
1	The government will give me what I need after an earthquake.	1	2	3	4	5
2	Sand softens the shaking during earthquakes, so houses on sand should be safer.	1	2	3	4	5
3	There is nothing I can do about earthquakes so why worry about it.	1	2	3	4	5
4	California has good building codes, so the buildings are safe in an earthquake.	1	2	3	4	5
5	Buildings constructed on hard rock are safer during earthquakes.	1	2	3	4	5
6	People who live in areas of California that have not had earthquakes in the past don't have to worry.	1	2	3	4	5
7	Under a doorway is the safest place to be during an earthquake.	1	2	3	4	5
8	The "Triangle of Life" is safer than "drop, cover, and hold on."	1	2	3	4	5
9	If you are in a building when an earthquake strikes, it is best to run outside so the building doesn't collapse on you.	1	2	3	4	5
10	Earthquake insurance is included in standard residential insurance policies.	1	2	3	4	5

7. Now I want to know if you have actively looked for information about preparing for earthquakes. Would you say you have actively looked:

At least daily 1
At least weekly..... 2
At least once a month..... 3
At least once a year, or..... 4
Never?.....SKIP TO **Q8** 5
DK..... 8
RF..... 9

7A. On a scale of 1 to 5, where 1 means "none of it" and 5 means "all of it", how much of the information you went looking for did you actually get? Would you say 1, none of it, 5, all of it, or any number in between?

1 ..... 2 ..... 3 .....4..... 5
NONE OF IT ALL OF IT

N/A..... 6
DK..... 8
RF..... 9

8. Now I want to know if *you* have done any of the following things.

8A. Have you/Do you have <...> (on hand)?
CIRCLE RESPONSE IN COLUMN A.

IF Q8A="1–YES", ASK Q8B.
IF Q8A="2–NO", SKIP TO NEXT ITEM.

8B. Was that/Is that for earthquakes or for other reasons?

Q8. **6=N/A 8=DK 9=RF** **(READ GOING ACROSS)**		**A.** **HAVE YOU/DO YOU HAVE <...>?**		**B.** **REASONS FOR TAKING ACTION**		
				EARTHQUAKE	**OTHER REASONS**	**BOTH**
		Yes	**No**	**1**	**2**	**3**
1.	Have you… Learned how to shut off utilities, such as gas? Was that for earthquakes or for other reasons?	1	2	1	2	3
2.	Have you… Learned what supplies and equipment to have on hand? Was that for earthquakes or for other reasons?	1	2	1	2	3
3.	Have you… Made family disaster plans? Was that for earthquakes or for other reasons?	1	2	1	2	3
4.	Have you… Participated in neighborhood disaster planning? Was that for earthquakes or for other reasons?	1	2	1	2	3
5.	Have you… Made disaster plans for pets? Was that for earthquakes or for other reasons?	1	2	1	2	3
6.	Have you… Learned first aid? Was that for earthquakes or for other reasons?	1	2	1	2	3

Q8. 6=N/A 8=DK 9=RF (READ GOING ACROSS)		A. HAVE YOU/DO YOU HAVE <...>?		B. REASONS FOR TAKING ACTION		
				EARTHQUAKE	OTHER REASONS	BOTH
		Yes	No	1	2	3
7.	Have you… Participated in disaster preparedness activities at work? Was that for earthquakes or for other reasons?	1	2	1	2	3
8.	Have you… Learned how to be safe during an earthquake?	1	2			
9.	Have you… Received basic disaster response training, like CERT? Was that for earthquakes or for other reasons?	1	2	1	2	3
10.	Do you have… A first aid kit and medical supplies? Is that for earthquakes or for other reasons?	1	2	1	2	3
11.	Have you… Learned how to make the things inside your home safer during an earthquake?	1	2			
12.	Do you have… A working flashlight with replacement batteries? Is that for earthquakes or for other reasons?	1	2	1	2	3
13.	Have you… Stored water? **IF "1–YES", ASK 13a;** **IF "2–NO", SKIP TO Q14.** Was that for earthquakes or for other reasons?	1	2	1	2	3
13a.	How much do you store? Less than 3 gallons per person, about 3 gallons per person, or more than 3 gallons per person? **IF "GT 3 GAL", ASK 13b;** **ELSE SKIP TO Q14.**	LT 3 GAL ..... 1 ABOUT 3 GAL ..... 2 GT 3 GAL..... 3				
13b.	How many gallons of water per person do you store?	_____				

Q8. 6=N/A 8=DK 9=RF (READ GOING ACROSS)		A. HAVE YOU/DO YOU HAVE <...>?		B. REASONS FOR TAKING ACTION		
				EARTHQUAKE	OTHER REASONS	BOTH
		Yes	No	1	2	3
14.	Have you… Stored canned, dried, or other non-perishable food? **IF "1–YES", ASK 14a;** **IF "2–NO", SKIP TO Q15.** Was that for earthquakes or for other reasons?	1	2	1	2	3
14a.	How much do you store? PAUSE FOR RESPONSE. Would you say that is less than 3 days of food per person, about 3 days of food per person, or more than 3 days of food per person? **IF "GT 3 DAYS", ASK 14b;** **ELSE SKIP TO Q15.**	LT 3 DAYS ..... 1 ABOUT 3 DAYS ... 2 GT 3 DAYS 3				
14b.	How many days of food per person do you store?	_____				
15.	Do you have… A working radio with replacement batteries, or crank or solar radio? Is that for earthquakes or for other reasons?	1	2	1	2	3
16.	Do you have… A fire extinguisher? Is that for earthquakes or for other reasons?	1	2	1	2	3
17.	Do you have… Copies of important papers, such as insurance policies and passports? Is that for earthquakes or for other reasons?	1	2	1	2	3
18.	Do you have… Extra cash and change on hand for emergencies? **IF "YES", ASK 18a; IF "NO", SKIP TO Q19.** Is that for earthquakes or for other reasons?	1	2	1	2	3
18a.	About how much cash do you have set aside? PROBE FOR APPROXIMATE DOLLAR AMOUNT.	$_____				
19.	Do you have… Extra prescription medications? Is that for earthquakes or for other reasons?	1	2	1	2	3

Q8. 6=N/A 8=DK 9=RF (READ GOING ACROSS)		A. HAVE YOU/DO YOU HAVE <...>?		B. REASONS FOR TAKING ACTION		
				EARTHQUAKE	OTHER REASONS	BOTH
		Yes	No	1	2	3
20.	Do you have… Dust masks? Is that for earthquakes or for other reasons?	1	2	1	2	3
21.	Do you have… Tools to rescue trapped people, such as crowbars and axes? Is that for earthquakes or for other reasons?	1	2	1	2	3
22.	Do you have… Tools to turn off gas valves, such as a wrench? Is that for earthquakes or for other reasons?	1	2	1	2	3
23.	Have you… Installed gas shut-off valves on individual appliances in your home?	1	2			
24.	Have you… Installed flexible piping to gas appliances? Was that for earthquakes or for other reasons?	1	2	1	2	3
25.	Do you have… Bleach or some other method that can be used to purify water? Is that for earthquakes or for other reasons?	1	2	1	2	3
26.	Do you have… A back-up power generator? Is that for earthquakes or for other reasons?	1	2	1	2	3
27a.	Do you have… Protective shoes in an accessible location? Is that for earthquakes or for other reasons?	1	2	1	2	3
27b.	Do you have… A flashlight in an accessible location? Is that for earthquakes or for other reasons?	1	2	1	2	3
28.	Do you… Keep the gas tank in your vehicle at a certain level? **IF "YES", ASK 28a; IF "NO", SKIP TO Q29.** Is that for earthquakes or for other reasons?	1	2	1	2	3

Q8. 6=N/A 8=DK 9=RF (READ GOING ACROSS)		A. HAVE YOU/DO YOU HAVE <...>?		B. REASONS FOR TAKING ACTION		
				EARTHQUAKE	OTHER REASONS	BOTH
		Yes	No	1	2	3
28a.	At what point do you typically fill up your gas tank? When it is nearly empty, one-quarter full, half full, three-quarters full, or some other time?	NEARLY EMPTY..... 1 1/4 FULL ..... 2 1/2 FULL ..... 3 3/4 FULL ..... 4 OTHER (SPECIFY) ..... 5 _____				
29.	Do you… Keep disaster supplies in your car? Is that for earthquakes or for other reasons?	1	2	1	2	3
30.	Have you… Learned how to make the structure of your building safer during an earthquake?	1	2			
31.	Have you… Added latches to cupboard or storage cabinets? Was that for earthquakes or for other reasons?	1	2	1	2	3
32.	Have you… Secured tall furniture and appliances like bookshelves and refrigerators to walls? Was that for earthquakes or for other reasons?	1	2	1	2	3
33.	Have you… Strapped or buckled down heavy appliances, like televisions and computer monitors? Was that for earthquakes or for other reasons?	1	2	1	2	3
34.	Have you… Secured picture frames and other wall hangings? Was that for earthquakes or for other reasons?	1	2	1	2	3
35.	Have you… Secured your water heater? Was that for earthquakes or for other reasons?	1	2	1	2	3
36.	Have you… Arranged breakable and heavy items in cabinets and shelves to reduce damage? Was that for earthquakes or for other reasons?	1	2	1	2	3

Q8. 6=N/A 8=DK 9=RF (READ GOING ACROSS)		A. HAVE YOU/DO YOU HAVE <...>?		B. REASONS FOR TAKING ACTION		
				EARTHQUAKE	OTHER REASONS	BOTH
		Yes	No	1	2	3
37.	Have you… Stored hazardous materials safely? Was that for earthquakes or for other reasons?	1	2	1	2	3
38.	Have you… Structurally reinforced your home? Was that for earthquakes or for other reasons?	1	2	1	2	3
39.	Have you… Learned how to safeguard your finances in case there is an earthquake?	1	2			
40.	Have you… Had your home inspected for earthquake resistance?	1	2			
Earthquake insurance is not included in standard residential insurance policies. PAUSE.						
41.	Have you… Purchased earthquake insurance to cover your home's structure?	1	2			
42.	Have you… Purchased earthquake insurance for the things inside your home?	1	2			

9. Think about how you might look on the Internet for important information about preparing for earthquakes and other disasters. Which website extension, such as .gov or .com, is best? The one with .gov, .com, .edu, .net, .org, or some other extension?

.GOV 1
.COM 2
.EDU 3
.NET 4
.ORG 5
OTHER 6
NA, DOES NOT USE INTERNET .. 7
DK 8
RF 9

9A. Why do you think so?

_____

_____

_____

_____

Next, I want to ask you some questions about warnings and alerts that you might receive in the event of a disaster.

10. Think about how you might receive official warnings, alerts, and notifications about a disaster, including notifications about when and how to evacuate your home. I am going to read a list. Please tell me from whom you would prefer to receive this information. Would you say: CHOOSE ONE.

The Governor's office 1
The Mayor or other city official 2
Local law enforcement 3
Local fire department 4
Local emergency management office, or .. 5
Some other person or agency? 7
SPECIFY _____

DK 8
RF 9

11. What would be the best way for you to receive these warnings? Would you say: CHOOSE ONE.

On television	1
On the radio	2
On a website	3
By speakerphone	4
Freeway Amber Alerts	5
Phone call	6
E-mail	7
Text message to wireless device, or	8
Some other method?	9
SPECIFY _____	
DK	88
RF	99

12. What would you do if you received a warning about a disaster affecting the area where you live? PROBE: What are some things you might do in response?

_____

_____

_____

_____

(Remember, your answers are completely confidential. We use this information for descriptive purposes only.)

Now, I have a few questions about your residence.

13. Do you own your current residence or do you rent?

OWN 1
RENT 2
OTHER 3

DK 8
RF 9

14. Do you live in an apartment/duplex, home/single-family unit, condominium/townhouse, mobile home/trailer, or something else?

APARTMENT/DUPLEX 1
HOME/SINGLE-FAMILY UNIT 2
CONDOMINIUM/TOWNHOUSE 3
MOBILE HOME/TRAILER 4
SOMETHING ELSE 5

DK 8
RF 9

Now I would like to ask some background information about you.

15. First, what is your current marital status? Are you: never married, married, living together as married, divorced, separated, or widowed?

NEVER MARRIED 1
MARRIED 2
LIVING TOGETHER AS MARRIED 3
DIVORCED 4
SEPARATED 5
WIDOWED 6
DK 8
RF 9

IF S2=1 GO TO Q17, OTHERWISE CONTINUE

16. Of the <INSERT ANSWER FROM S2-1> adult(s) 18 years of age or older living in your household what is their relationship to you? READ TABLE DOWN.

SPOUSE	01	GRANDCHILD	14
CHILD	02	UNCLE/AUNT	15
STEP-CHILD	03	UNCLE/AUNT-IN-LAW	16
CHILD-IN-LAW	04	NEPHEW/NIECE	17
PARENT	05	NEPHEW/NIECE-IN-LAW	18
STEP-PARENT	06	COUSIN	19
PARENT-IN-LAW	07	FOSTER CHILD	20
SIBLING	08	OTHER RELATED	21
STEP-SIBLING	09	LIVE-IN ROMANTIC	22
HALF-SIBLING	11	OTHER NON-RELATED	90
GRAND PARENTS	12	**DON'T KNOW**	**88**
GRAND PARENTS-IN-LAW	13	**REFUSED**	**99**

16A. In which month was your <INSERT RELATIONSHIP> born?

JANUARY	01	MAY	05	SEPTEMBER	09
FEBRUARY	02	JUNE	06	OCTOBER	10
MARCH	03	JULY	07	NOVEMBER	11
APRIL	04	AUGUST	08	DECEMBER	12
		DK	88	RF	99

COMPLETE Q16 FIRST, THEN ASK Q16A.

ADULT ROSTER

Q16. RELATIONSHIP TO RESPONDENT (ENTER CODE # FROM LIST)	**Q16A.** ENTER BIRTH MONTH (ENTER CODE # FROM LIST)
01.	
02.	
03.	
04.	
05.	
06.	
07.	
08.	

17. How many children 17 years of age or younger live with you in your household?

_____ 88=DK 99=RF
RECORD AS GIVEN

IF Q17=0, GO TO Q18, OTHERWISE CONTINUE

17A. Of the <INSERT ANSWER FROM Q17> child(ren) 17 years of age or younger living in your household, what is their relationship to you?

CHILD..... 02
STEP-CHILD..... 03
CHILD-IN-LAW..... 04
SIBLING..... 08
STEP-SIBLING..... 09
HALF-SIBLING..... 11
GRANDCHILD..... 14
NEPHEW/NIECE..... 17
NEPHEW/NIECE-IN-LAW..... 18
COUSIN..... 19
FOSTER CHILD..... 20
OTHER RELATED..... 21
OTHER NON-RELATED..... 90
DON'T KNOW..... 88
REFUSED..... 99

17A. CHILD ROSTER

Q17A. RELATIONSHIP TO RESPONDENT (ENTER CODE # FROM LIST)	
01.	09.
02.	10.
03.	11.
04.	12.
05.	13.
06.	14.
07.	15.
08.	16.

18. What was your age on your last birthday? _____ 888=DK 999=RF

18A. And, in which month were you born? _____
ENTER CODE# FROM LIST

JANUARY..... 01	MAY 05	SEPTEMBER..... 09
FEBRUARY..... 02	JUNE 06	OCTOBER 10
MARCH 03	JULY 07	NOVEMBER..... 11
APRIL 04	AUGUST..... 08	DECEMBER..... 12
	DK 88	RF 99

19. RECORD GENDER BY OBSERVATION:

MALE..... 1
FEMALE..... 2

20. What is the highest grade in school you completed and received credit for?

GRADE SCHOOL:	01	02	03	04	05	06
MIDDLE/HIGH SCHOOL:	07	08	09	10	11	12
COLLEGE/OTHER POST HIGH SCHOOL SCHOOLING:			13	14	15	16
POST-GRADUATE SCHOOL:			17	18	19	20
NEVER ATTENDED SCHOOL:	00		DK=88		RF=99	

INTERVIEWER INSTRUCTION: IF RESPONDENT MENTIONS…
TEACHER'S CREDENTIAL..... CODE AS 17
MASTER DEGREE ..... CODE AS 18
DOCTORATE (PH.D.), M.D., LAW DEGREE..... CODE AS 20

21. Have you had <u>any</u> trade, technical, or vocational training?
YES..... 1
NO 2
DK 8
RF 9

22. What degrees or diplomas, if any, do you have? <u>CODE HIGHEST DEGREE</u>

HIGH SCHOOL DIPLOMA/GED (OR EQUIVALENT)..... 01
JUNIOR COLLEGE DEGREE (A.A.) 02
BACHELORS DEGREE (B.A.,B.S.)..... 03
MASTERS DEGREE (M.A., M.S.) 04
DOCTORATE (PH.D.) 05
PROFESSIONAL (M.D., J.D., ETC.)..... 06
NONE 07
OTHER 08
DK 88
RF 99

23. Were you born in the United States or in another country?

UNITED STATES 1
OTHER (SPECIFY: _____)..... 2
DK..... 88
RF 99

24. Please tell me which ONE of these racial/ethnic groups best describes you? Would you say: White; Hispanic or Latino; Black or African American; Asian; Native Hawaiian or other Pacific Islander; American Indian or Alaskan Native; or Other? **(<u>ONE</u> ANSWER ONLY) IF RESPONDENT MENTIONS MULTIPLE, PROBE: "Which one do you identify with the most?"**

WHITE 1
HISPANIC/LATINO 2
BLACK OR AFRICAN AMERICAN 3
ASIAN 4
NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER..... 5
AMERICAN INDIAN OR ALASKAN NATIVE 6
OTHER (SPECIFY _____) 7
DK 8
RF 9

25. What is your current employment status? Are you working full-time, working part-time, unemployed, retired, keeping house, a student, disabled, or something else?

(IF NEEDED, 35 HOURS OR MORE PER WEEK IS FULL-TIME)

WORKING FULL-TIME 1
WORKING PART-TIME 2
UNEMPLOYED/LOOKING FOR WORK 3
RETIRED 4
KEEPING HOUSE 5
A STUDENT 6
DISABLED 7
OTHER (SPECIFY: _____) 8
DK 88
RF 99

IF NO CHILDERN 17 YEARS OF AGE OR YOUNGER LIVE IN HOUSEHOLD (Q17=0) AND ONLY 1 PERSON 18 OF AGE OR OLDER IN HOUSEHOLD (S2=1), SKIP TO Q26A_ALT.

26. Thinking of all the people in your household, how many people including yourself, received income from any source, such as wages or salary, social security, pensions, welfare, or alimony, in 2007?

88=DK 99=RF RECORD NUMBER OF PEOPLE:_____
(MUST BE =>1)

26A. Still thinking of all the people in your household, was the total household income from all sources, under $50,000 or over $50,000 in 2007? Please include your income in the figure as well.

UNDER $50,000	SKIP TO Q26B	1
OVER $50,000	SKIP TO Q26B	2
EXACTLY $50,000	SKIP TO Q27	3
DK	SKIP TO Q28	8
REFUSED	SKIP TO Q28	9

26A_ALT. Was your total income from all sources, under $50,000 or over $50,000 in 2007?

UNDER $50,000	ASK Q26B	1
OVER $50,000	ASK Q26B	2
EXACTLY $50,000	SKIP TO Q28	3
DK	SKIP TO Q28	8
REFUSED	SKIP TO Q28	9

26B. Please tell me which of the following categories includes the total income of your household before taxes in 2007?

IF UNDER $50,000 IN Q26A, USE COLUMN I.
IF OVER $50,000 IN Q26A, USE COLUMN II.

I		**II**	
Less than $15,000	01	$50,000 to less than $75,000	05
$15,000 to less than $25,000	02	$75,000 to less than $100,000	06
$25,000 to less than $35,000	03	$100,000 to less than $150,000	07
$35,000 to less than $50,000	04	$150,000 or more	08

DON'T KNOW 88
REFUSED 99

27. Including yourself, how many people 18 years of age or older were dependent on that total household income?

88=DK 99=RF RECORD #: _____

27A. How many children 17 years of age or younger were dependent on that total household income?

88=DK 99=RF RECORD #:_____

28. Do you have more than one land-line telephone number at this residence?

YES .....ASK **28A**..... 1
NO..... SKIP TO **28B** 2
DK..... SKIP TO **28B** 8
RF ..... SKIP TO **28B** 9

28A. How many different land-line telephone numbers do you have at this residence? Please include all the phone numbers in your household.

88=DK 99=RF

RECORD # OF PHONE NUMBERS: ___

28B. Do you or any of the <u>adults</u> at this residence have a cell phone for personal use (that is not exclusively for business)?

YES 1
NO..... 2
DK..... 8
RF 9

28C. In what county do you live?

_____

29. Do you think there are important questions about earthquakes that we should have asked about, or topics we should have covered but didn't in this interview? What else should we have asked about?

_____

_____

30. We may want to do a follow-up interview. Would you be willing to be re-interviewed in about a year?

YES 1
NO 2
DK 8
RF 9

31. Which one of the following 3 gift certificates would you like? **(READ LIST)**

Target ..... (ASK **Q32**)..... 1
Walmart .....(ASK **Q32**) 2
Barnes & Noble.....(ASK **Q32**) 3
DON'T WANT GIFT CERTIFICATE..... (SKIP TO **Q33**)..... 4

32. In order to mail your $20 gift certificate, I will need a full name and mailing address. Who should I send the certificate to, and what is the address?

TO CONTINUE TO CAPTURE ADDRESS..... 1

DOES NOT WANT GIFT CERTIFICATE....(SKIP TO **Q33**) ... 2

FULL NAME: _____

ADDRESS: _____

CITY, STATE: _____

ZIP: _____

32A. I would also like to verify that your full name is <INSERT> and that your address is <INSERT>.

33. To which one of the following 3 organizations do you wish us to send a $20 contribution? **(READ LIST)**

American Red Cross..... 1
American Heart Association..... 2
American Cancer Society 3
DON'T WANT $20 SENT TO ANY ORGANIZATION 4

END: Thank you very much for your cooperation. END INTERVIEW.

34. LANGUAGE: ENGLISH 1
SPANISH 2

STOP TIME: _____ : _____ AM / PM