

Working conditions in Central America





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The First Central American Working Conditions and Health Survey, carried out in 2011, found that many people are self-employed, and that three-quarters of the workforce are not covered by social security. The most common occupational exposure, for men and women in all economic sectors, is repetitive movement. Two-thirds of the workforce feel their health is good or very good, and 7 out of 10 workers report having good mental health. The survey was based on a representative sample of 12,024 workers interviewed in their homes in six Central American countries: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama.

Introduction

In Central America, there is very little information on working conditions, which hampers policymakers in deciding how best to improve health and well-being in this politically and economically important region. Getting a reliable system of information is a top priority for several global health and development programmes.

The First Central American Working Conditions and Health Survey (I ECCTS) (Benavides et al, 2012) was designed with two main goals:

- to assess working and employment conditions and related health outcomes in order to inform policymaking on occupational safety and health in Central America;
- to serve as the basis for further Latin American surveys driven by the **Ibero-American Strategy in Occupational Safety and Health** of the Ibero-American Social Security Organisation (OISS, 2009).

The I ECCTS survey was led jointly by the:

- Programme on Work, Environment and Health in Central America (**SALTRA**);
- network of Central American universities;
- School of Public Health at The University of Texas Health Science Center, Houston (**UTHealth**);
- Centre for Research in Occupational Health (**CISAL**) at Pompeu Fabra University, Barcelona, Spain.

It was co-financed by the Ibero-American Social Security Organisation and the US National Institutes of Health (NIH) Fogarty International Center.

This report will briefly present the main methodological features of the I ECCTS and some of the main findings on employment conditions, physical agents and health outcomes.

Methodology

Population and sampling design

The base population of the I ECCTS was workers aged 18 or over, employed at the time of the interview or for at least one hour during the previous week, either in the formal or informal economy, or employed but temporarily not at work during the reference period due to sickness or holiday; and resident in one of the six Spanish-speaking countries of Central America:

- Costa Rica;
- El Salvador;
- Guatemala;
- Honduras;
- Nicaragua;
- Panama.

The sampling frames were the most recent population census available in each country:

- Costa Rica from 2000;
- El Salvador from 2007;
- Guatemala from 2002;
- Honduras from 2001;
- Nicaragua from 2005;
- Panama from 2000.

In total, 12,024 people were selected (2,004 per country) through random sampling procedures such as multi-stage stratified random sampling. In the first stage, 167 census segments were selected from all departments or provinces. In the second stage, a random walking route procedure was followed to select 12 households in each segment. Only one worker was interviewed within the household and when there was more than one eligible candidate, the next birthday method was used to select the participant.

Data collection and questionnaire

The fieldwork of the I ECCTS was carried out between July and December 2011. The workers answered a 78-item questionnaire in a face-to-face interview conducted in their households that lasted, on average, 32 minutes. The questionnaire design was based on the VI Spanish Working Conditions Survey (INSHT, 2007), Eurofound's fourth European Working Conditions Survey (Eurofound, 2007), the International Labour Organization (ILO) Manual of Occupational Injuries Statistics (ILO, 2008) and the 12-item General Health Questionnaire (Pilar Sánchez-López and Dresch, 2008). The questionnaire covered several topics, grouped into six main areas:

- sociodemographic and labour characteristics;
- family characteristics;

- employment conditions;
- working conditions;
- resources and preventive activities;
- health outcomes.

Weighting

To correct for differences between the sample and the source population of each country and the Central American region as a whole, each individual included in the sample was weighted by:

- sex;
- age (18–30, 31–50 and 51–65 years);
- economic sector (primary: agriculture; secondary: manufacturing and construction; tertiary: services);
- country.

Weighting by occupational groups would have been useful, but was not possible as this information was not available from the census.

Quality assurance

The survey was carried out by central American market research company Borge and Associates. A research team in each country closely supervised the data collection for quality assurance. Overall, participation rates before replacement were approximately 50% in Costa Rica, 60% in Honduras, and 80% in Guatemala, El Salvador, Nicaragua and Panama.

Participants were informed of the survey objectives, invited to participate, and had their questions answered. The project protocol was reviewed and approved by the institutional review boards of Costa Rica's National University and The University of Texas Health Science Center at Houston.

Limitations and strengths

The I ECCTS offers, for the first time, comparable data on the work and health status of workers in the formal and informal economy in the six Spanish-speaking Central American countries, based on representative national samples. However, the survey could have been affected by selection bias (selection of subjects completed in such a way that proper randomisation is not achieved). The response rate was lowest in Costa Rica, the first country surveyed. A lesson learned in Costa Rica was to time the interviews better so that workers were more likely to be at home and have the time and energy to respond. There were two instances where the initially selected segment could not be reached due to severe weather conditions. In these cases, segments were replaced with nearby similar segments and this is likely to have had little impact on the overall sampling. The experience gained in the I ECCTS will certainly allow for logistical improvements in future surveys, but there is confidence that the overall sampling design and randomisation process decreased selection bias and, together with the weighting according to each country's population distribution, increased cross-country comparability. In fact, there were only small percentage differences when the last census data available were compared with the weighted sample for each country, and Central America overall. The few significant differences ($p < 0.05$) by sex and economic sector in Costa Rica, Honduras, Nicaragua and Panama are mostly due to the large sample sizes of the censuses.

Main findings

Sociodemographic and labour characteristics

Most of the working population (78% of men and 85% of women) were under 50 years of age (Table 1). Some 13.5% of women had a university education compared with 8.3% of men. Most women and men (77.3% and 42.3% respectively) worked in the services sector, but a higher proportion of men than women worked in agriculture and industry. Women were more likely to have retail sales and other services jobs (51%), whereas most men worked in farming and fishing (36.4%).

Table 1: *Sociodemographic and labour characteristics of the working population of Central America, by sex*

| | Women | | Men | |
|---|-------|------|-------|------|
| | No. | % | No. | % |
| Age | | | | |
| <30 | 2,036 | 41.5 | 2,577 | 36.2 |
| 30–50 | 2,148 | 43.8 | 2,967 | 41.7 |
| >50 | 720 | 14.7 | 1,576 | 22.1 |
| Educational level | | | | |
| Illiterate | 282 | 5.8 | 655 | 9.2 |
| Primary (1–6 years of school) | 1,838 | 37.5 | 3,167 | 44.5 |
| Secondary (7–12 years of school) | 2,124 | 43.3 | 2,704 | 38.0 |
| University | 660 | 13.5 | 594 | 8.3 |
| Economic activity sectors | | | | |
| Agriculture | 479 | 9.8 | 2,648 | 37.2 |
| Industry | 632 | 12.9 | 1,461 | 20.5 |
| Services | 3,793 | 77.3 | 3,011 | 42.3 |
| Occupational groups* | | | | |
| Scientific and intellectual professionals | 314 | 6.4 | 185 | 2.6 |
| Technicians | 171 | 3.5 | 197 | 2.8 |
| Administrative support | 446 | 9.1 | 282 | 4.0 |
| Services/retail sector | 2,501 | 51.2 | 1,596 | 22.5 |
| Farmers/fishermen | 468 | 9.6 | 2,588 | 36.4 |
| Skilled manual | 612 | 12.5 | 1,647 | 23.2 |
| Unskilled manual | 375 | 7.7 | 606 | 8.5 |

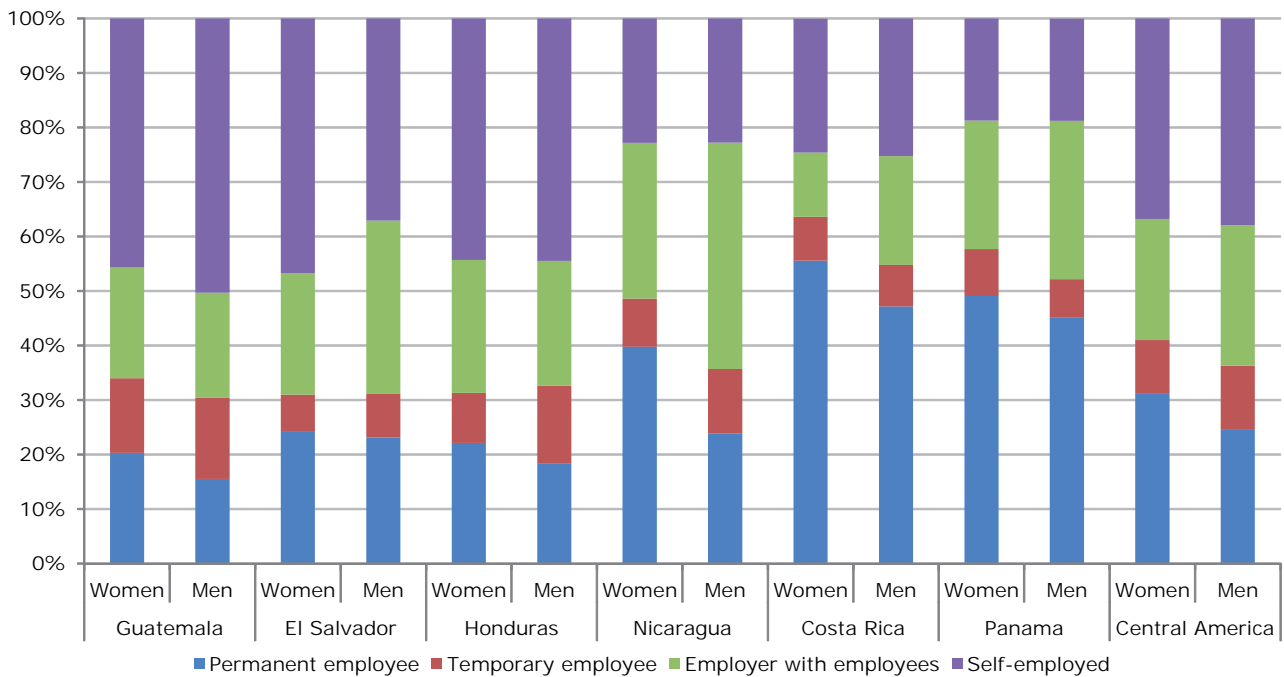
Note: * Armed forces occupations and managers are omitted due to small number of cases.

Source: *First Central American Working Conditions and Health Survey, 2011*

Employment conditions

Of the population surveyed, 38% were salaried employees (27% were permanent, 11% were temporary), 37% were self-employed and 24% were employers. As shown in Figure 1, almost half of the workforce in Costa Rica and Panama comprised permanent employees. The percentage of self-employed workers in Guatemala (46% of women and 50% of men), El Salvador (47% of women and 37% of men), and Honduras (44% of women and 45% of men) were above average for Central America.

Figure 1: Labour relationship, by country and sex (%)



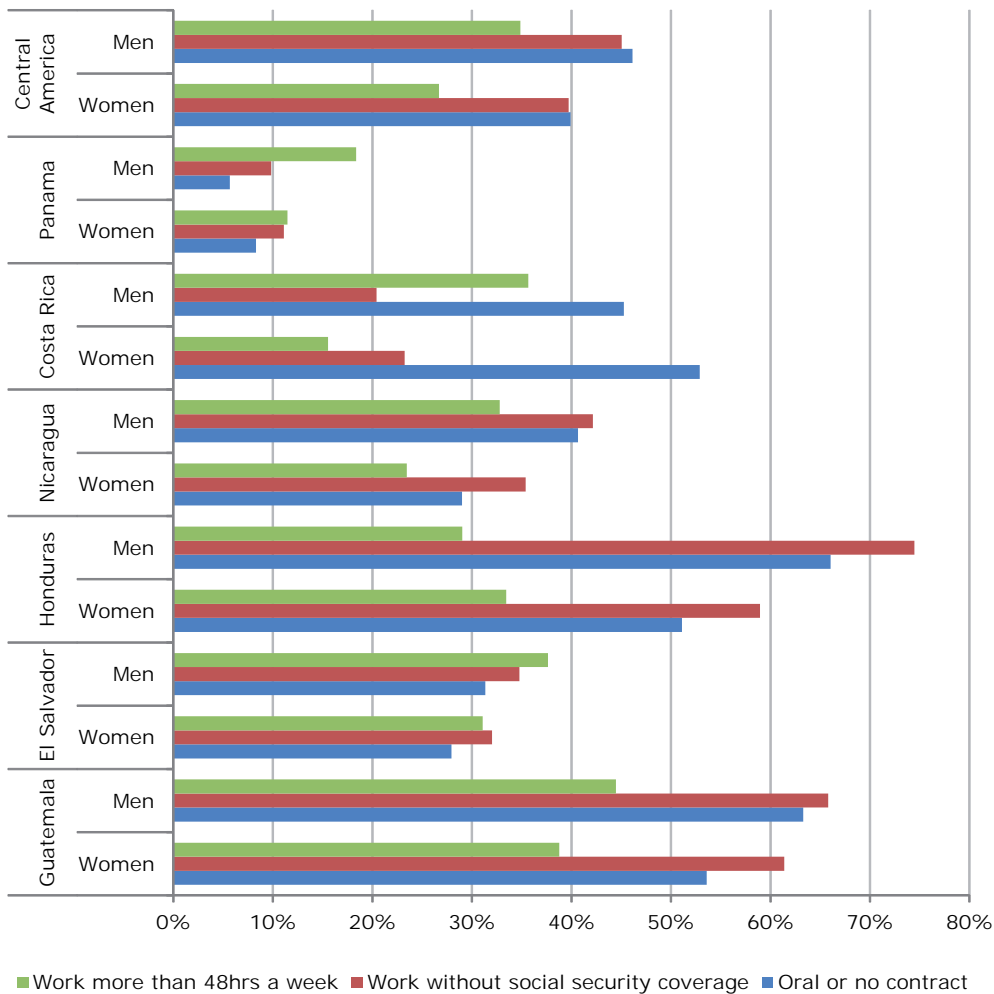
Source: *First Central American Working Conditions and Health Survey, 2011*

The proportion of workers lacking social security coverage (71% of women and 75% of men overall) varied widely between countries, ranging from 91% of men and 85% of women in Honduras to 35% of men and 33% of women in Costa Rica. As can be seen from Figure 2, when looking separately at salaried employees only, these percentages decreased considerably (40% of women and 45% of men in the region). This pattern is the same across all the countries. For example, among salaried employees in Honduras, 59% of women and 74% of men reported working without social security coverage.

Working without a written contract tends to go hand in hand with an employee’s lack of social security coverage. This can be seen in this survey from the fact that 51% of women and 66% of men in Honduras and 54% of women and 63% of men in Guatemala do not have a written contract.

Workers were also asked how many hours per week they had worked in the previous four weeks. Among salaried employees, more men (35%) worked more than 48 hours per week than women (27%).

Figure 2: Employment conditions of salaried employees, by country and sex (%)



Note: Percentages for permanent and temporary employees.
 Source: *First Central American Working Conditions and Health Survey, 2011*

These results reflect poor employment conditions in most of Central America, where a large share of both men and women are not covered by labour regulations or social protection. However, there are clear differences between countries: Panama and Costa Rica generally have better employment conditions; Nicaragua has slightly worse conditions; and Honduras, El Salvador and Guatemala have the worst conditions.

Physical risks

As shown in Table 2, more than 46% of all respondents said they were exposed to repetitive movements for more than half of their working day. This was followed by 21.2% of workers reporting exposure to high temperatures, and 20.9% reporting exposure to noise.

In addition, remarkable gender differences were observed for all these risk factors. The most notable differences were seen in relation to:

- working in high temperatures (24.9% of men, compared with 15.8% of women);
- humidity (20.7% of men and 9.8% of women);
- handling heavy loads (19.5% of men and 5.6% of women);
- negotiating stairs, openings and slopes (23.7% of men and 10.5% of women);
- slippery and unstable surfaces (23% of men and 9.5% of women);
- dangerous tools and machines (24% of men and 10.5% of women).

Overall, the most affected workers were those in agriculture and industry. Exposure to high temperatures (35.1% of workers), humidity (32%), slippery and unstable surfaces (31.7%), handling heavy loads (25.5%) and handling toxic substances (19.5%) were more frequently reported in the agricultural sector, whereas noise (33.4%) and vibrations (19%) were more frequently reported by workers in industry. There were only slight differences in the numbers of workers reporting exposure to repetitive movements across sectors. It is worth noting that there is a large share of workers reporting exposure to high temperatures in the agricultural sector. Currently, high heat exposure is being studied as a possible risk factor for the chronic kidney disease of unknown etiology, an emerging epidemic in Central America (Wesseling et al, 2013).

Table 2: *Physical risks, by sex and sector of economic activity (%)*

| Risk factors | Sex | | Sector of economic activity | | | Total % |
|----------------------------------|---------|-------|-----------------------------|------------|------------|---------|
| | Women % | Men % | Agricultural % | Industry % | Services % | |
| High temperatures* | 15.8 | 24.9 | 35.1 | 22.1 | 14.4 | 21.2 |
| Humidity* | 9.8 | 20.7 | 32.0 | 13.2 | 10.0 | 16.2 |
| Noise* | 18.8 | 22.4 | 9.6 | 33.4 | 22.2 | 20.9 |
| Vibrations* | 7.9 | 13.1 | 7.1 | 19.0 | 10.3 | 11.0 |
| Handling toxic substances* | 4.6 | 12.1 | 19.5 | 9.4 | 4.1 | 9.0 |
| Breathing chemical substances* | 11.9 | 18.0 | 19.9 | 21.0 | 11.8 | 15.5 |
| Handling heavy loads* | 5.6 | 19.5 | 25.5 | 18.7 | 7.0 | 13.8 |
| Repetitive movements* | 42.9 | 48.5 | 52.1 | 52.1 | 41.6 | 46.2 |
| Stairs, openings, slopes** | 10.5 | 23.7 | 28.0 | 25.3 | 11.8 | 18.3 |
| Slippery and unstable surfaces** | 9.5 | 23.0 | 31.7 | 22.0 | 9.5 | 17.4 |
| Dangerous tools and machines** | 10.2 | 24.0 | 26.6 | 33.1 | 10.1 | 18.4 |

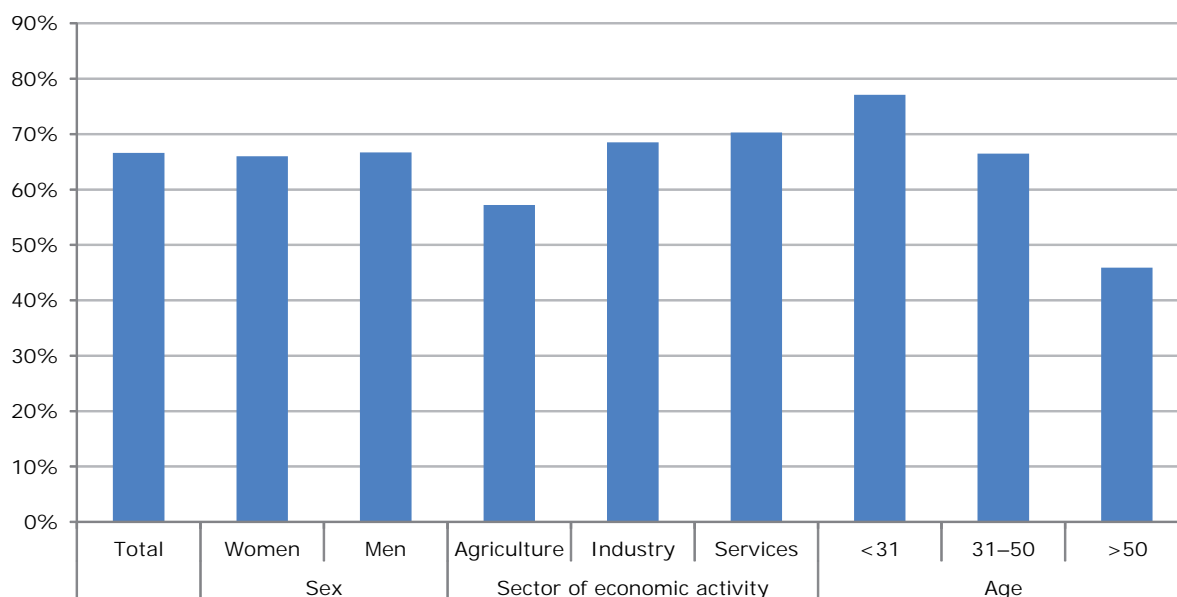
Note: * Exposed more than half the working day ** Exposed 'always' or 'very often'.

Source: *First Central American Working Conditions and Health Survey, 2011*

Health outcomes

Respondents were asked to describe their general health on a five-point Likert-scale (very good, good, fair, bad, or very bad). Figure 3 shows that most people in the whole working population said they enjoyed good health (66.6%). While workers in Panama and Costa Rica were more likely to report good health (85.8% and 78.6% respectively), workers in Nicaragua were less likely to do so (51.1%). Small gender differences between countries were observed. Workers in services (70.3%) and in industry (68.5%) more frequently reported good health than in agriculture (57.2%). As expected, there were important differences across age groups, with younger workers more frequently reporting good health.

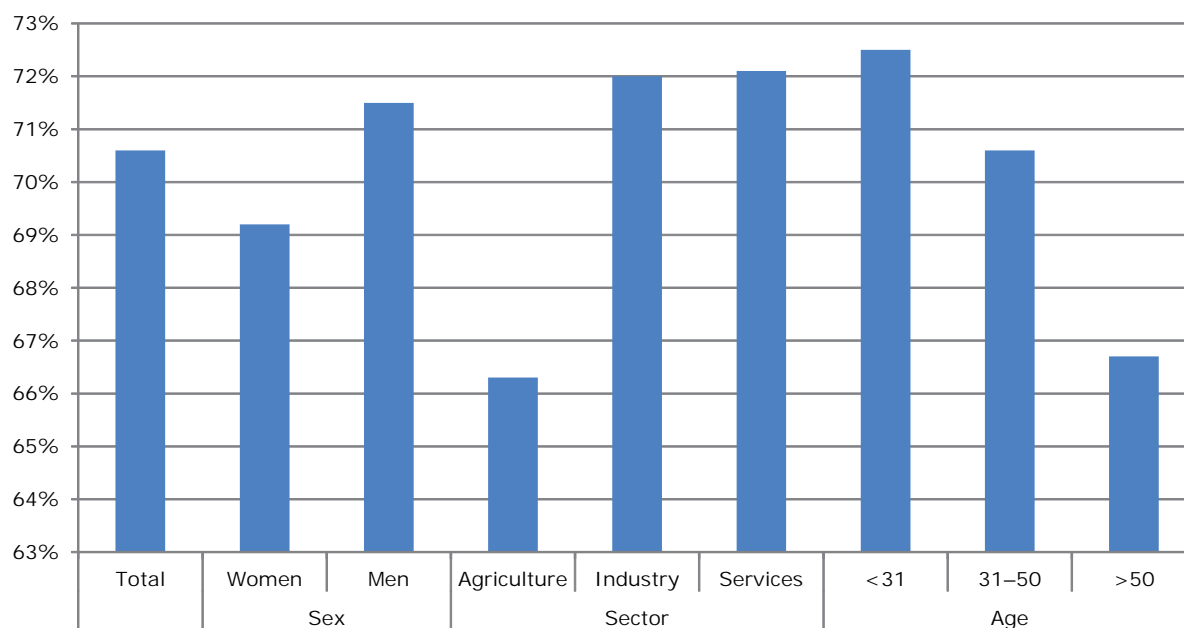
Figure 3: Self perceived good health, by sex, sector of economic activity and age (%)



Note: Percentage of workers who reported good or very good health
 Source: *First Central American Working Conditions and Health Survey, 2011*

Figure 4 shows the results when workers were also asked about their mental health using the 12-item General Health Questionnaire (Pilar Sánchez-López and Dresch, 2008). Around 70% of men and women, overall, felt they had good mental health. This proportion varied across countries, from 46.5% in El Salvador and 53.9% in Guatemala, to 89.8% in Panama. Broken down by sector, workers more frequently reported good mental health in industry and services (72% each). The percentage of workers reporting good mental health was slightly higher among those aged under 50 (above 70%) than in older workers aged over 50 (66.7%).

Figure 4: Good mental health, by sex, sector of economic activity and age (%)



Source: *First Central American Working Conditions and Health Survey, 2011*

The survey also provides information on occupational injuries and symptoms of this. Almost half of all workers (52%) stated they had back pain in the four weeks before the survey. Although there was little difference between men and women, workers in Panama (72%), in the services sector (57.1%) and aged 18–30 (60.3%) were more likely to report back pain than their counterparts in other countries. When asked about occupational injuries, around 3% of workers said they had been injured due to work with at least one day of absence in the 12 months before the survey. This proportion was slightly higher for men (3.8%) than for women (2.5%), as well as in agriculture (4.6%) and industry (4.3%), as compared to the services sector (2.3%). There were almost no differences between age groups.

Commentary

Given that there has been a lack of reliable information about occupational health in Central America, as in most of Latin America, the First Central American Working Conditions and Health Survey is an outstanding effort that, for the first time, provides a detailed overview of the working environment and health in the countries of the region. The use of harmonised methodological approaches, including the questionnaire items, has facilitated cross-country comparability. Moreover, the strategy of conducting the interview at the respondent's home allowed researchers to interview workers in informal employment, which is important, considering that more than 70% of the working population in Central America lack social security coverage and over 40% of employees work without a written contract.

Overall, the high percentage of workers lacking social security, or being exposed to long working hours, high temperatures, repetitive movements and reporting back pain, as well as the differences between men and women, should interest other countries in Latin America. This could help the survey achieve its second objective, of providing a benchmark for future surveys on health and working conditions in Latin America. This can lead to better policymaking, based on clear evidence not only within individual countries, but also at regional level.

Dataset

The dataset is available upon request to: George L. Delclos (cisal@upf.edu), Center for Research in Occupational Health, Universitat Pompeu Fabra, Barcelona, Spain.

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The First Central American Working Conditions and Health Survey, carried out in 2011, found that many people are self-employed, and that three-quarters of the workforce are not covered by social security. The most common occupational exposure, for men and women in all economic sectors, is repetitive movement. Two-thirds of the workforce feel their health is good or very good, and 7 out of 10 workers report having good mental health. The survey was based on a representative sample of 12,024 workers interviewed in their homes in six Central American countries: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama.

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