Monitoring Self-Perceived Occupational Health Inequities in Central America, 2011 and 2018

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See also Siqueira, p. 1197.

Objectives. To analyze changes in occupational health inequity between 2011 and 2018 among workers in Central America.

Methods. Data were collected by face-to-face interviews at the workers' homes for the 2 Central America Working Conditions Surveys (n = 12 024 in 2011 and n = 9030 in 2018). We estimated health inequity gaps by means of absolute and relative population attributable risks and the weighted Keppel index. We stratified all analyses by gender.

Results. Between 2011 and 2018, the proportion of workers reporting poor self-perceived health decreased both in women (from 32% to 29%) and men (from 33% to 30%). However, the health inequity gaps remained wide in the 4 stratifiers. Measured by the Keppel index, health inequity gaps between countries increased from 22% to 39% in women and from 20% to 29% in men.

Conclusions. While health improved between 2011 and 2018, health inequity gaps remained wide. Wider health inequity gaps were observed between countries than by gender, age, occupation, or education.

Public Health Implications. This first benchmark of occupational health inequities in Central America could be useful when developing and evaluating the impact of public policies on work. (*Am J Public Health*. 2021;111(7):1338–1347. https://doi.org/10.2105/AJPH.2021.306276)

AJPH July 2021, Vol 111, No. 7

Health equity, a key goal of the United Nations' 2030 Agenda for Sustainable Development Goals, is a basic condition of social justice that allows other human rights to be achieved.[1] Health inequities are systematic differences in health status that are also deemed unjust or unfair because of socially determined circumstances.[2] Wealth distribution varies for each world's region, with Central America being the most inequitable and one of the world's fastest-growing workforces together with the rest of Latin America.[3] Most people in Central America face many challenges to overcome the social and economic vulnerability they experience. Common challenges are the lack of economies of scale in production, proneness to external financial shocks, limited transport and communications infrastructure, and high levels of emigration of skilled individuals to North America or Europe.[4] Furthermore, the population's health in the Central American region is negatively affected by weak social protection systems, inadequate access to health care, and migration patterns that disrupt family and social network caregiving structures.[5]

Paid work is the primary source of income for the majority of the adult population and, in most countries, work provides access to social protections such as unemployment or health insurance covering work-related ill health, injury, or disability.[6,7] As such, paid work is an important determinant of population health as well as health inequity.[8] Employment conditions such as the contract type (e.g., permanent, temporary, or without contract), the salary level, or worker participation tend to determine a worker's income level and her or his place in the social

hierarchy. Working conditions related to the work environment, specific job tasks, or psychosocial conditions also affect workers' health. Both employment and working conditions shape the socioeconomic gradient in health. The social gradient in health refers to health inequities affecting all socioeconomic strata (whether countries or people), with the bottom of the strata having the worst health indicators, and the higher in the socioeconomic hierarchy having better health than those below. This pervasive gradient, which is associated with the circumstances in which people grow, live, work, and age, highlights the role of work and employment as a leading social determinant of health and health inequities.[9] Therefore, improving employment and working conditions could be one of the most efficient ways to reduce health inequity.

Gender also plays an important role in health inequities, particularly those related to work. While women are joining the worldwide paid labor force at a rapidly growing rate, their participation is driven by more precarious jobs, lower wages, and higher job insecurity than the men.[10]

Previous evidence indicates that employment and working conditions and workers' health vary widely across Latin America, particularly in Central America.[11] Periodic gathering of reliable, comparable, and high-quality data are basic features of effective surveillance of workers' health.[12] However, a critical obstacle for effective occupational health surveillance and the study of health inequities in Central America is the traditional lack of reliable centralized administrative national data to fully assess the impact of work on health.[13] This limitation is especially relevant given the predominance of workers in Central America who work under poor employment and hazardous working conditions, and the high proportion of workers who have informal or precarious employment and lack proper social protections.[14] Informality refers to "informal work"—that is, employment arrangements that do not provide social protection benefits. While informality is a key element when defining precariousness, it is not the defining component based on the conceptualization by the International Labor Organization.[15] In this definition, precarious work also includes type of contract (i.e., temporary arrangements), salary (i.e., lower earnings), and employee empowerment (i.e., lack or low degree of autonomy and control over the work).

To overcome the scarcity of publicly available data, national surveys of employment, working conditions, and health are a crucial source of data. Key examples of such surveys are the ones conducted every 5 years in Europe, which have contributed to policy development on quality of work and employment issues.[16] In Central America, the 2011 and 2018 Central American Working Conditions and Health Surveys (ECCTS, by its Spanish acronym) represent a similar effort among the 6 Spanish-speaking countries of Central America (i.e., all but Belize).[17]

Finally, when studying health inequity, one must consider the use of appropriate statistical techniques and specific health indicators. At a minimum, for a health equity metric to be useful for policymaking and research, it should allow comparisons across space (e.g., countries) and time (e.g., years), it must be calculated using publicly available health data (that is, to be transparent and reproducible), and it must include all socially marginalized groups.[18] Transparent and reproducible indicators would provide needed information for policymakers and stakeholders when prioritizing interventions for the improvement of health conditions and the reduction of social and health inequities.[18] The aim of this study was to analyze 8-year changes in occupational health inequities among workers in Central America according to gender, age, educational level, occupational category, and country of residence.

METHODS

Data for this study were drawn from the 2011 (n = 12 024) and 2018 (n = 9032) ECCTS. The ECCTS is a cross-sectional survey of a nationally representative sample of workers aged 18 years and older, in formal and informal employment from all economic sectors, in the 6 Spanish-speaking Central American countries: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama. Four equity stratifiers were selected: age (asking participants how old they were in years), educational level (asking participants the last year or grade level or level of education that they passed or completed), occupational rank (asking participants what job tasks or duties they usually performed in their job), and country of residence (each of the 6 Spanish-speaking countries in Central America). The questionnaire was administered face to face in interviews at the worker's home. More methodological details are available elsewhere.[19]

Health Indicator

The health indicator selected for the examination of health inequity gaps was self-perceived general health (SPGH). SPGH is a well-established measure of health status meeting the previously mentioned attributes of a good health indicator because SPGH was demonstrated to be a reliable,

valid, simple, and cost-effective health measure.[20] In both ECCTS, SPGH was measured by asking the participants the question: "In general, how do you consider your health status to be?" To answer the question, participants could select 1 of the 5 following options: very good, good, fair, poor, or very poor. Responses were dichotomized into "good" (options very good and good) and "poor" (fair, poor, and very poor).

Equity Stratifiers

Age was grouped into 18 to 24 years, 25 to 44 years, 45 to 64 years, and 65 years and older. Educational level was grouped into "low" (elementary school or less), "middle" (high school), and "high" (more than high school). Data on occupation were first coded into the 9 major occupational categories of the International Standard Classification of Occupations[21] and then collapsed into "skilled nonmanual" (managers, professionals, technicians, and associate professionals), "nonskilled nonmanual" (clerical support workers, service workers, and sales workers), "skilled manual" (skilled agricultural, forestry, and fishery workers; craft and related trades workers; plant and machine operators; and assemblers), and "nonskilled manual" (elementary occupations).

Inequity Measures and Data Analysis

First, we calculated the prevalence of poor SPGH and the corresponding 95% confidence intervals (CIs) for each category of the 4 equity stratifiers and, as appropriate, by country. Survey-specific (2011 or 2018) sample weights by gender, age, and industrial sector were applied to region (all countries combined) and country-specific data. We assessed differences in the prevalence of poor SPGH between 2011 and 2018 with the χ^2 statistic. We conducted all analyses separately for women and men.

Next, we calculated both the absolute (population-attributable risk [PAR]) and relative (PAR%) differences between the prevalence of poor SPGH in the healthiest group and the country's mean, respectively. The absolute PAR indicates the percentage of workers that would not have reported poor SPGH if the entire working population had the prevalence of poor SPGH of the most privileged group. We calculated the relative PAR% by dividing the country's PAR by the country's mean and multiplying the result by 100. Absolute and relative inequity measures are complementary measures, so both metrics should be reported to make comparisons between indicators easy.[22] A higher PAR or PAR% indicates more inequity.

In addition, we estimated the Keppel index,[23] which indicates the relative inequity among groups within each equity stratifier (e.g., age groups). When taking into account the size of the group, the result is the weighted Keppel index. In our study, the Keppel index indicated the spread of the prevalence of poor SPGH of each equity stratifier in relation to the country's average. To obtain this index, we multiplied the relative population weight of each group in the category of interest by the absolute difference between the prevalence of poor SPGH of each group and the country's mean. We then divided the sum of these weighted differences by the country's prevalence of poor SPGH and multiplied by 100.[24] A low Keppel index indicates that, on average, the health of the groups is close to the country's mean. A high index indicates more inequity—that is, the prevalence of poor SPGH is more spread out among the groups. For each of the monitoring variables examined (i.e., age, education, and occupation), we selected the group with the lowest prevalence as the reference groups against which we can compare the other groups to ensure that the metrics would fall in the conventional positive range.[22] To assess health inequity between countries, the reference was the combined prevalence of SPGH in Central America.

RESULTS

Between 2011 and 2018, the prevalence of poor SPGH in the Central America region decreased from 34% (95% CI = 32.7%, 35.3%) to 29% (95% CI = 27.5%, 30.5%) in women, and from 33% (95% CI = 31.9%, 34.1%) to 30% (95% CI = 28.7%, 31.1%) in men (Table 1). The prevalence of poor SPGH was lower in younger workers and in the highest occupational rank and educational group and increased with older age, lower occupational rank, and lower educational level. There were also large differences between countries; Figure 1 shows country differences stratified by occupation. Between 2011 and 2018, workers' health status improved in Guatemala for both genders and in El Salvador for men but worsened in Panama for both genders. In Costa Rica and Honduras, the SPGH in men overall worsened between 2011 and 2018. However, in Costa Rica, the differences were only for manual skilled workers. In Honduras, there was a worsening of SPGH prevalence in the group aged 25 to 64 years, in low educational level, and in manual nonskilled workers.

In both years, the overall prevalence of poor SPGH was higher in women than in men in all countries except Guatemala and Honduras. The prevalence of poor SPGH in 2011 ranged from 14.3% in men in Panama to 51.1%

TABLE 1— Prevalence of Poor Self-Perceived General Health (%) by Gender, Age, Educational Level, and Occupational Categories: Central American Countries, 2011 and 2018

	Costa Rica		El Salvador		Guatemala		Honduras		Nicaragua		Panama		Central America	
	2011	2018	2011	2018	2011	2018	2011	2018	2011	2018	2011	2018	2011	2018
Women														
Overall	23.5	27.8	30.1	31.4	32.6	19.6**	36.9	43.2	51.1	48.0	14.3	30.1**	34.0	29.0**
Age groups, y														
18–24	16.9	11.1	17.9	11.4	22.9	15.5	12.6	35.4**	27.3	35.5	8.1	13.8	20.0	19.1
25–44	18.2	21.3	25.7	26.1	29.4	15.4**	32.8	38.6	47.2	45.1	8.1	27.9**	29.9	26.6
45–64	35.4	41.0	45.7	35.6	50.0	33.6	53.5	56.2	70.9	60.3	32.5	38.6	51.1	41.8**
≥65	41.2	46.7	100.0	51.6	73.3	36.7	63.0	79.2	76.5	75.0	62.5	71.4	66.4	48.9*
Educational level														
High	20.3	20.5	13.1	24.0	23.3	11.9	20.0	20.3	34.4	33.0	9.4	25.6**	23.3	20.8**
Middle	17.2	25.6	24.4	24.9	22.7	17.1	26.8	30.9	52.0	44.0	12.5	25.0**	27.3	24.7**
Low	32.7	34.5	38.8	39.1	41.2	22.5**	45.9	55.3**	64.3	58.8	37.3	54.9	44.0	34.9**
Occupational categories														
Nonmanual skilled	21.4	13.6	19.0	36.4	25.0	13.3	16.3	37.2	44.8	37.9	16.4	24.7	29.5	23.6
Nonmanual nonskilled	23.4	28.6	29.2	26.8	31.5	16.1**	39.4	42.9	52.7	44.9	12.0	23.7**	34.0	24.5**
Manual skilled	28.4	32.2	34.4	33.3	36.8	27.2	41.1	43.9	53.1	59.9	18.4	43.4**	37.8	35.7
Manual nonskilled	20.7	27.5	31.6	40.4	20.6	12.7	22.2	44.4*	51.8	40.0	20.0	35.5	28.8	30.3
Men														
Overall	19.8	25.5*	31.8	26.8*	35.9	24.3**	35.1	43.8**	47.0	43.4	14.3	22.9**	33.0	29.9**
Age groups, y														
18–24	8.9	16.3	13.6	11.5	25.1	18.5	20.6	18.8	38.5	27.6	6.8	11.8	22.8	19.1
25–44	14.6	16.6	26.0	21.2	28.8	17.5**	29.2	38.8*	41.5	41.7	7.2	16.4**	26.4	25.4
45–64	29.4	35.8	43.5	26.2**	51.1	32.5**	48.7	61.4*	59.0	59.0	26.8	32.0	45.1	38.0**
≥65	37.1	35.1	25.0	45.8	71.0	50.0	62.2	75.0	72.6	70.8	65.6	57.1	63.9	51.6**
Educational level														
High	7.3	9.7	17.9	10.0	18.2	7.2	19.3	26.8	35.7	31.7	9.9	16.3	18.5	16.4
Middle	17.3	18.6	24.7	23.2	28.0	16.0**	24.0	24.2	36.6	37.1	10.8	16.1*	24.0	21.8
Low	25.9	32.1	40.9	32.6*	41.0	31.2**	40.6	53.7**	57.9	51.5	34.9	38.5	41.5	37.5**
Occupational categories														
Nonmanual skilled	8.7	13.6	21.5	11.1	25.5	6.0*	10.0	23.6	37.5	30.0	8.1	16.7	18.9	14.7
Nonmanual nonskilled	18.4	17.4	25.1	32.4	26.0	13.0**	30.7	33.7	38.7	36.4	12.7	25.2**	25.7	21.0*
Manual skilled	22.4	33.7**	38.3	25.6**	39.3	30.0**	40.0	47.1	51.3	45.3	17.7	24.1*	38.2	32.9**
Manual nonskilled	22.7	19.0	17.4	32.3	41.7	23.6	28.2	45.6*	38.5	46.1	12.4	20.2	28.2	33.3

*χ^2 $P < .01$; **χ^2 $P < .001$.

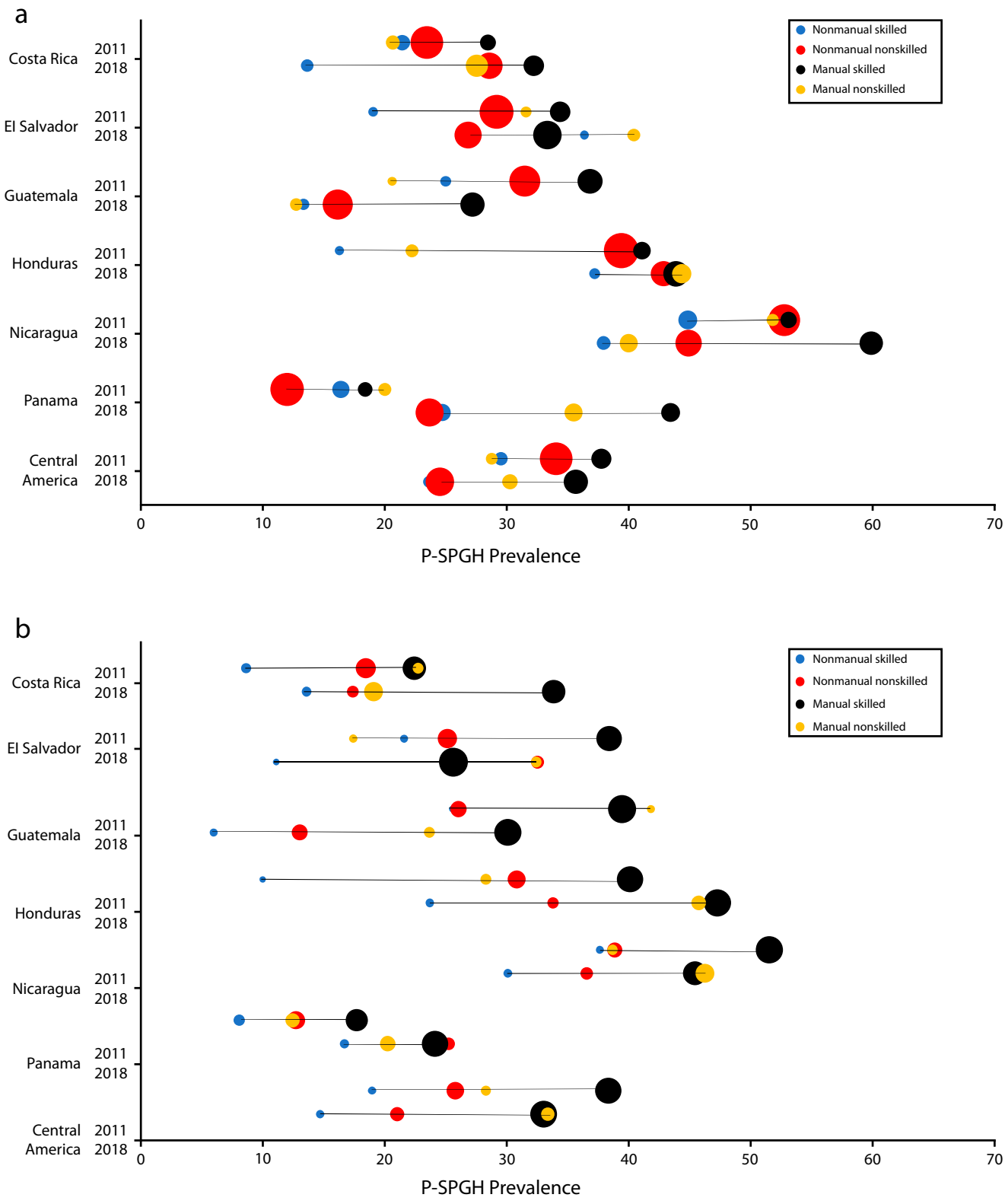

FIGURE 1— **Prevalence of Poor Self-Perceived General Health (P-SPGH) by Occupational Categories and Country of Residence for (a) Women and (b) Men: Central American Countries, 2011 and 2018**

TABLE 2— Inequities in Self-Perceived General Health (SPGH; %) by Gender, Age, Educational Level, and Occupational Categories: Central American Countries, 2011 and 2018

	Population Attributable Risk (Absolute)		Population Attributable Risk (Relative %)		Keppel Index	
	2011	2018	2011	2018	2011	2018
Women						
Age groups						
Costa Rica	6.6	16.7	28.1	60.0	32.9	37.2
El Salvador	12.2	20.1	40.4	63.8	27.7	25.6
Guatemala	9.6	4.1	29.6	20.9	25.1	32.9
Honduras	24.3	7.8	65.9	18.1	31.3	19.9
Nicaragua	23.8	12.5	46.5	26.0	22.0	15.5
Panama	6.2	16.3	43.4	54.3	66.8	24.5
Central America	13.9	9.9	41.0	34.2	28.3	27.2
Educational level						
Costa Rica	3.2	7.3	13.8	26.3	29.0	16.7
El Salvador	17.0	7.4	56.5	23.6	27.5	22.7
Guatemala	9.3	7.6	28.6	38.9	28.2	16.4
Honduras	16.9	22.8	45.8	52.9	26.8	30.5
Nicaragua	16.8	15.0	32.8	31.2	17.2	18.5
Panama	4.9	4.5	34.4	14.8	33.1	26.9
Central America	10.7	8.2	31.4	28.4	25.5	19.2
Occupational categories						
Costa Rica	2.1	14.1	8.8	50.9	3.9	9.7
El Salvador	11.0	−4.9	36.7	−15.7	7.5	12.1
Guatemala	7.6	6.2	23.2	31.8	9.6	27.1
Honduras	20.6	6.0	55.9	13.8	13.1	2.4
Nicaragua	6.3	10.0	12.3	20.9	4.9	15.5
Panama	−2.1	5.4	−14.8	17.9	19.5	24.6
Central America	4.5	5.3	13.2	18.4	5.1	16.8
Inequality among countries					22.0	39.2
Men						
Costa Rica	11.0	9.3	55.4	36.3	41.5	37.2
El Salvador	18.3	15.3	57.4	57.0	30.6	29.4
Guatemala	10.8	5.7	30.2	23.6	32.2	33.9
Honduras	14.5	25.0	41.3	57.1	30.8	35.8
Nicaragua	8.4	15.8	17.9	36.5	18.9	19.1
Panama	7.5	11.2	52.3	48.7	68.7	42.3
Central America	10.2	10.8	30.8	36.0	30.3	28.0
Educational level						
Costa Rica	12.5	15.9	63.1	62.1	26.7	29.6
El Salvador	13.9	16.8	43.7	62.6	27.3	21.5
Guatemala	17.7	17.0	49.4	70.2	18.1	33.6
Honduras	15.8	17.0	45.0	38.7	21.5	29.8
Nicaragua	11.3	11.7	24.1	26.9	22.8	18.4

Continued

in women in Nicaragua. In 2018, it ranged from 19.6% in women in Guatemala to 48% in Nicaragua in women.

Considering the absolute (PAR) and relative (PAR%) differences between the healthier category and the country's mean, in general, the PAR in the region was quite similar in both surveys in men and for the 4 stratifiers. The PAR% was higher in 2018 in Guatemala and El Salvador by both occupational rank and educational level. In women, for Central America as a whole, both the PAR and the PAR% increased from 2011 to 2018 by occupational rank and decreased by educational level. Both the PAR and the PAR% inequity gap by occupational rank and educational level were always higher in men than in women (Table 2).

In general, as indicated by the within-country Keppel index (Table 2), the 2011 health gaps in the 4 equity stratifiers remained high in 2018. In both years, the widest gap was found among age groups, followed by educational levels and occupational categories. Between 2011 and 2018, the health inequity gaps became wider (from 5.1% to 16.8%) among women by occupational rank in all the countries, but in Honduras, the gap by educational level decreased from 25.5% to 19.2%. In men, the gaps for the whole region decreased slightly by occupational rank from 18.8% to 16.6%. Yet, in Costa Rica and Guatemala, the gaps increased. Finally, the Keppel index between countries (Table 2) indicates an increase from the 2011 to the 2018 survey from 22% to 39% in women, and from 20% to 29% in men.

DISCUSSION

The overwhelming finding, with few exceptions, is that health inequity gaps by occupation and education seem to

TABLE 2— Continued

	Population Attributable Risk (Absolute)		Population Attributable Risk (Relative %)		Keppel Index	
	2011	2018	2011	2018	2011	2018
Panama	4.4	6.6	30.7	28.9	43.4	41.2
Central America	14.4	13.4	43.7	45.0	27.9	27.8
Occupational categories						
Costa Rica	11.2	12.0	56.4	46.8	14.8	31.2
El Salvador	10.3	15.7	32.4	58.5	22.7	10.5
Guatemala	10.4	18.3	29.0	75.3	14.7	29.3
Honduras	25.1	20.2	71.5	46.0	16.1	11.0
Nicaragua	9.5	13.4	20.1	30.8	12.3	8.1
Panama	6.2	6.3	43.4	27.3	20.3	8.6
Central America	14.0	15.2	42.6	50.9	18.8	16.0
Inequality among countries					20.1	29.4

Note. Weight Keppel index of disparity $= \left(\sum |r_{(1-n)} - R)| * w \right) / R * 100$ where r = group poor SPGH prevalence; R = country poor SPGH prevalence; and w = weight of the group with respect to the country's population.

have worsened between 2011 and 2018, or at least remained at the same levels. Age tends to display a similar pattern, but it is less clear in women. Importantly, this widening of health inequity gaps has occurred despite a general pattern of improvement in perceived health status among workers in Central America between 2011 and 2018. Overall, the inequity gaps remain high in Central America, and there was no indication of progress in closing the health gaps within countries between 2011 and 2018. In fact, the health gaps among countries grew significantly in both women and men between 2011 and 2018. Only for men in El Salvador and for both men and women in Guatemala we observed statistically significant reductions in the prevalence of poor SPGH.

The apparent divergence between region and country-specific (e.g., Guatemala) health patterns could be explained because Guatemala represents almost 40% of the total population in the region (17.2 million out of 48.8 million),[25] contributing significantly to the regional improvement. Guatemala, with the lowest prevalence of poor SPGH in the region in 2018, showed a significant reduction in the prevalence of poor SPGH, which is further supported by the fastest reduction in the adult mortality rate since 2000 in the region, with an annual average decrease of 4.5%.[26] In addition, this reduction in poor SPGH could be attributable to improvements, especially in the health of the indigenous population, which represents approximately 60% of the Guatemalan population. Many strategies have been proposed to reduce inequity in health among indigenous populations as the creation of the health care unit for the indigenous and interculturality in 2009, and the inclusion of the popular, alternative, and traditional medicine program.[27] Guatemala implemented a quality management health system in 2010 designed to improve health services.[28] However, the health and social gap is still marked among social groups.[29] Further research is needed to assess this improvement in population's health in Guatemala.

When we analyzed absolute (PAR) and relative (Keppel index and PAR%) differences in the prevalence of poor SPGH, we found that in the countries where poor SPGH decreased (e.g., Guatemala) the relative inequity gap grew, whereas in countries where poor SPGH increased (e.g., Panama) the inequity relative gap decreased; in both cases the absolute gap remained almost the same. The prevalence of poor SPGH in Panama in 2011 was the lowest in Central America. And, while in 2018 the prevalence of SPGH almost doubled in both genders, the absolute inequity (PAR) was similar in both years and for groups. These results could be explained because the absolute gap between the best health group and the country's mean remained stable over time, with no progress in reducing this gap among different groups, whereas the relative gap is affected by an increase or decrease of the country's mean. This result reaffirms the importance of measuring both absolute and relative inequity.[22] The PAR% shows that, in 2018, around 51% and 18% of reports of poor SPGH in men and women, respectively, could be avoided if their working and employment conditions were similar to those of nonmanual skilled workers, and around 45% of men and 28% of women if all workers achieved a high level of education.

The health gaps among countries grew significantly in both women and men between 2011 and 2018. This increase in the Keppel index suggests that the prevalence of poor SPGH in the 6 countries is more spread out in 2018 than in 2011, with respect to the Central

American mean. This could be a consequence of the improvement of worker health in some countries, such as Guatemala and El Salvador, versus the deterioration of health in the others.

The variation in magnitude of the Keppel index among countries is even larger than those associated with gender, education level, or occupational rank within countries. A similar result was also found in a recent analytical cross-sectional study done by our group that included 15 Latin American and Caribbean countries, where country borders seem to be the most important source of difference when examining health inequities.[30] A possible explanation could be related to international differences in regulations that expose workers to poorer working and employment conditions, with a high proportion of jobs in the informal economy, with high levels of employment precarity.

In addition, some differences among countries could be attributable to cultural factors reflecting values, beliefs, and expectations regarding poor health.[31] However, these cultural differences should not have affected the increase in gaps among countries, as these same factors were likely present and similar in both surveys. In summary, our results suggest that the country where people work is more important, as a determinant of workers' general health, than age, education, or occupation.

Our results regarding occupation inequities are to be interpreted taking into account some methodological and conceptual considerations. Within each occupation category, there may be far more heterogeneity than within age and education. Heterogeneity within occupation may relate not only to differences in the type of work (e.g., manual vs nonmanual) but also to its precariousness levels. Furthermore, specific occupational hazards (e.g., ergonomic or psychosocial factors) may also vary by occupation while contributing to occupational health inequities. Because our interest was to describe inequities by occupational categories, we did not control by potential explanatory factors. Future studies may want to explore how much of the inequities in occupation relate to specific working conditions and their effect on health inequity indices.

Within countries, there was no progress in closing the health gaps among different groups. The magnitude of the weighted Keppel index remains high in most countries, across the 4 equity stratifiers. Actually, this index was significantly higher in 2018 than in 2011 among women by occupational categories in all countries except Honduras. This increase in the gap could be explained in part by the increasing participation of women in the labor market over the past decade, mainly via informal employment. In 45% of cases, this informal employment is involuntarily forced by family constraints.[32] Another explanation could be related to changes in the distribution of women across occupational rank. The percentage of women having a manual skilled job in Central America increased from 22% in 2011 to 34% in 2018, whereas nonmanual unskilled jobs decreased from 60% in 2011 to 45% in 2018 (Table A, available as a supplement to the online version of this article at http://www.ajph.org). The manual skilled jobs show worse health than nonmanual unskilled jobs; thus, poor health is more spread out among these groups.

In contrast with what was previously reported, we found that, in the whole region, men reported poor SPGH similar to women's, 33% and 34%, respectively, in 2011, and 30% and 29%, respectively, in 2018.[33] However, this higher prevalence in men was only observed in Guatemala; thus, again, the proportion of the overall study sample reflected by Guatemalans could be influencing the region's average. Men in Guatemala are more likely to have a manual skilled job (around 60% in both 2011 and 2018), and this is the category showing the highest prevalence of poor SPGH. This coincides with a study in Latin American countries that found small differences in SPGH between women and men.[34] In addition, although women tended to report worse SPGH than men, the difference disappears when socioeconomic and health covariates are included in the analysis. The same study found no significant differences in tolerance of health problems between women and men, concluding that it is appropriate to compare perceived health by gender.[35]

Limitations and Strengths

The limitations of this study are mainly related to study design. First, participation was voluntary, and response rates differed by country, which could have introduced selection bias. However, the sampling design, randomization, and use of sampling weights minimize this potential selection bias and increase cross-country comparability. In fact, when we compared our sample with available census data according to gender, age, and sector of economic activity, we found no relevant differences.

Second, the ECCTS includes only workers aged 18 years and older, leaving children and adolescents who may work out of the sample. We used this criterion because 18 years is the legal

age for adulthood in most countries and because, except under specific circumstances and regulations, the employment of children aged younger than 18 years is not legal. In addition, to apply a survey in children aged younger than 18 years, additional permission from their parents or guardians is necessary.

Third, as health status was based on the respondent's self-perception, information bias may be present as it is known that SPGH may be affected by cultural factors and health values,[31] which could vary from one country to another and within countries, among different social groups. However, SPGH has been repeatedly shown to be a reliable measure of health.[20]

Our study has several strengths as well. First, the ECCTS provides reliable, updated information, obtained from representative samples of workers in Central America. As such, our findings may be generalized to the adult working population (aged 18 years and older) of the region. In this region, occupational health data are poor and seriously underreported; hence, our survey represents the best available data. Second, this study sheds light on the true magnitude of, and changes in, the inequity gaps in Central American countries in 2 periods of time among different groups. To our knowledge, this is the first study that tracks the changes in inequity in health gaps in a representative sample of workers of Central America. In fact, it provides benchmark surveillance information, underscoring the importance of periodically gathering information to monitor conditions at work, track the progress of programs to reduce inequities, measure the impact of public policies, and identify disadvantaged and vulnerable groups. Finally, and while cross-country comparisons should always be made with caution, our study provides an opportunity to track differences in Central America using the same questionnaire and data collection strategy in all 6 countries over almost a decade.

Conclusions

Despite all the efforts of the international community to reduce health inequities,[36] we found no evidence of progress in closing health inequity gaps in Central America between 2011 and 2018. Instead, inequity among countries grew in the context of improvement in self-reported health. Improving health in the less-favored social groups is essential, especially in those countries with a large percentage of workers with poor SPGH. The COVID-19 pandemic has made obvious the importance of having enough high-quality data to make sound data-driven decisions. The same approach applies to the field of occupational health, which is in need of benchmark surveillance data. Unfortunately, while occupational health monitoring is common in most high-income regions (e.g., the European Union), the situation in Central America would benefit from efforts to create a reliable occupational health monitoring system, an essential tool for making better public policy decisions. Therefore, we suggest that epidemiologists and public health professionals should engage with decisionmakers to seek their support to provide the necessary infrastructure, resources, and a normative body of how to strengthen and broaden occupational surveillance data collection, their correct use, and their proper interpretation. We expect this study will serve as an initial stimulus to foster strong, reliable, and available national and regional worker health monitoring systems. AJPH

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PUBLICATION INFORMATION

Full Citation: Silva-Peñaherrera M, Gimeno Ruiz de Porras D, Delclos GL, et al. Monitoring self-perceived occupational health inequities in Central America, 2011 and 2018. *Am J Public Health*. 2021;111(7):1338–1347.

Acceptance Date: March 11, 2021

DOI: 10.2105/AJPH.2021.306276

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M. Silva-Peñaherrera and F. G. Benavides contributed to the conceptualization and design of the study, data analyses, interpretation of data, and drafting of the article. D. Gimeno Ruiz de Porras and G. L. Delclos contributed to the interpretation of results and drafting of the article. M. Rojas Garbanzo, P. Merino-Salazar, and M. Lopez-Ruiz made substantial contributions to the interpretation of results and review of the article. All authors critically revised the article for important intellectual content and final approval of the published version.

ACKNOWLEDGMENTS

This study was partially supported by the Center for Research in Occupational Health, Universitat Pompeu Fabra, Barcelona. D. Gimeno Ruiz de Porras and G. L. Delclos were partly supported by the Southwest Center for Occupational and Environmental Health (SWCOEH), the Centers for Disease Control and Prevention National Institute for Occupational Safety and Health Education and Research Center (grant T42OH008421) at The

University of Texas Health Science Center at Houston (UTHealth) School of Public Health. The second Central American Working Conditions and Health Survey (ECCTS) was partially funded by a Cooperative Agreement (IL-29677-16-75-K-48) between the US Department of Labor Bureau of International Labor Affairs and the SWCOEH at UTHealth School of Public Health (PI: D. Gimeno). The first ECCTS was partially funded by a contract between the Organización Iberoamericana de Seguridad Social and the Universidad Nacional de Costa Rica (Heredia), and also by Fogarty International Center, US National Institutes of Health grant (D4TW00064) to the SWCOEH at UTHealth School of Public Health.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

Respondents were informed and gave consent to participate in the survey. Participation was voluntary and anonymous. Both the UTHealth Committee for Protection of Human Subjects (https://www.uth.edu/cphs) and the Ethics Committee of the Universidad Nacional in Costa Rica gave their approval for the study protocol.

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