Revista Brasileira em Promoção da Saúde
e-ISSN:1806-1230
Original Article
DOI: 10.5020/18061230.2021.10766

Women's health: the role of international pacts in the evolution of human rights protection

Saúde da mulher: papel dos pactos internacionais na evolução da proteção aos direitos humanos

Salud de la mujer: papel de los pactos internacionales para la evolución de la protección de los derechos humanos

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ABSTRACT

Objective: To assess whether adherence to international pacts related to women's human rights has influenced their health status, especially with regard to advice on family planning. **Methods:** A quantitative ecological and analytical study was conducted in the second half of 2019 based on 8 World Health Organization (WHO) global strategy indicators for women's health estimated between 1993 and 2018. Measurements involved the 190 countries that adhered to the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) and the 115 countries that adhered to the Optional Protocol to Convention on the Elimination of All Forms of Discrimination against Women (OP-CEDAW). Descriptive analysis of the evolution of WHO indicators and adherence to treaties in that period was carried out. Then, the data were organized into the categories of countries according to their income (high, upper-middle, lower-middle, and low) for comparison purposes. We calculated the statistical significance of the difference between the mean values for women's health indicators in the five years before the country ratified the treaty, on the date of ratification, and five years later. **Results:** Family planning was statistically significant for both pacts, CEDAW (p-value=0.05) and OP-CEDAW (p-value=0.007). Anemia in pregnant women and coverage of antenatal care were also significant in relation to OP-CEDAW (p-value=0.03 and 0.01, respectively). **Conclusion:** Most of the women's health indicators analyzed do not appear to have been influenced by adherence to the pacts, except for family planning, the only indicator positively impacted by the two treaties.

Descriptors: Women's Health; Human Rights; International Cooperation; Public Health.

RESUMO

Objetivo: *Avaliar se a adesão aos pactos internacionais relativos aos direitos humanos das mulheres influenciou o estado de saúde delas, especialmente no que diz respeito ao assessoramento sobre o planejamento da família.* ***Métodos:*** *Estudo ecológico, analítico e quantitativo realizado no segundo semestre de 2019 a partir de oito indicadores da estratégia global para a saúde da mulher da Organização Mundial da Saúde (OMS), estimados entre 1993 a 2018. As mensurações envolveram 190 países que aderiram à Convenção sobre a Eliminação de Todas as Formas de Discriminação contra a Mulher (CEDAW) e 115 países que aderiram ao Protocolo Facultativo à Convenção sobre a Eliminação de Todas as Formas de Discriminação contra a Mulher (OP-CEDAW). Realizou-se análise descritiva da evolução dos indicadores da OMS e das adesões aos tratados nesse período. Posteriormente, organizaram-se os dados nas categorias de países conforme a renda (alta, média alta, média baixa e baixa) para fins de comparação. Calculou-se a significância estatística da diferença entre as médias dos indicadores de saúde das mulheres nos cinco anos antes do país ratificar o tratado, na data da ratificação e nos cinco anos seguintes.* ***Resultados:*** *O planejamento familiar foi estatisticamente significativo para ambos os pactos, CEDAW (p-valor=0,05) e OP-CEDAW (p-valor=0,007). A anemia em mulheres grávidas e a cobertura de cuidados pré-natais foram significativos em relação ao OP-CEDAW (p-valor=0,03 e 0,01,*

Received on: *04/13/2020*
Accepted on: *10/30/2020*

respectivamente). ***Conclusão:*** *A maioria dos indicadores de saúde das mulheres analisados parece não ter sofrido a influência da adesão aos pactos, com exceção do planejamento familiar, o único indicador impactado positivamente pelos dois tratados.*

Descritores: *Saúde da Mulher; Direitos Humanos; Cooperação Internacional; Saúde Pública.*

RESUMEN

Objetivo: *Evaluar si la adhesión a los pactos internacionales sobre los derechos humanos de las mujeres ha influenciado su estado de salud, especialmente sobre el asesoramiento del planeamiento familiar.* ***Métodos:*** *Estudio ecológico, analítico y cuantitativo realizado en el segundo semestre de 2019 a partir de ocho indicadores de la estrategia global para la salud de la mujer de la Organización Mundial de la Salud (OMS) estimados entre 1993 y 2018. Las mensuraciones incluyeron 190 países que adhirieron a la Convención sobre la Eliminación de Todas las Formas de Discriminación contra la Mujer (CEDAW) y 115 países que adhirieron al Protocolo Facultativo a la Convención sobre la Eliminación de Todas las Formas de Discriminación contra la Mujer (OP-CEDAW). Se realizó el análisis descriptivo de la evolución de los indicadores de la OMS y de las adhesiones a los tratados en ese período. A posteriori, se ha organizado los datos en categorías de países según la renta (alta, media alta, media baja y baja) para fines de comparación. Se calculó la significancia estadística de la diferencia entre las medias de los indicadores de salud de las mujeres en los cinco años antes del país ratificar el tratado, en la fecha de la ratificación y en los cinco años siguientes.* ***Resultados:*** *El planeamiento familiar ha sido estadísticamente significativo para ambos los pactos, el CEDAW (p-valor=0,05) y el OP-CEDAW (p-valor=0,007). La anemia en mujeres embarazadas y la cobertura de los cuidados prenatales han sido significativos respecto el OP-CEDAW (p-valor=0,03 y 0,01, respectivamente).* ***Conclusión:*** *La mayoría de los indicadores de salud de las mujeres analizados parece no haber sufrido la influencia de la adhesión a los pactos a excepción del planeamiento familiar que ha sido el único indicador impactado positivamente por los dos tratados.*

Descriptores: *Salud de la Mujer; Derechos Humanos; Cooperación Internacional; Salud Pública.*

INTRODUCTION

Health promotion is a commitment kept by the Unified Health System (*Sistema Único de Saúde – SUS*) in the Federal Constitution of 1988[1]. In order to develop actions capable of achieving it, the Ministry of Health defined the National Health Promotion Policy (*Política Nacional de Promoção da Saúde – PNPS*) in 2006, which was then revised in 2014[2].

Among the strategic guidelines of the PNPS, the promotion of human rights was outlined as a priority theme because it is recognized that equity is a central point for the articulation of health, which points out ways not only to overcome diseases, but also to reduce vulnerabilities, risks and health inequities[3,4].

At the international level, there are two pacts that address issues relating to women's human rights. The first of them, the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)[5], was drafted in the late 1970s in the form of a declaration of women's rights[6] and is the main international treaty on human rights for women's equality[7]. After nearly 20 years, the Optional Protocol to the Convention on the Elimination of All Forms of Discrimination against Women (OP-CEDAW) was put into effect. It was established as a kind of an executive branch, with the creation of a committee responsible for receiving notifications and carrying out investigations on violations of CEDAW[8].

Among the discussions held internationally that culminated in these pacts, one of them originated from the countries' concern with women's health[9]. Article 10, item "h", of CEDAW mentions the commitment of States Parties to adopt appropriate measures to ensure the health and well-being of the family, which includes information and advice on family planning[5].

A recent study revealed that the most positive results regarding the evolution of the family planning policy occurred in the African continent, since the estimated prevalence of contraceptive use in that region presented the highest increase[10]. However, according to another study, which involved 77 low- and middle-income countries, West and Central Africa continue to have the lowest coverage of contraceptive methods (32.9%), with South Asia and Latin America and the Caribbean presenting the highest coverage (about 70%)[11].

Indicators that are also taken into account in the women's global strategy are those related to prenatal care. In Brazil, women's care does not follow the normative standard of comprehensive care recommended by the Ministry of Health in 87.5% of the states[12]. Specifically in relation to prenatal care, it has been observed that when it is properly provided, maternal mortality rates are reduced[13].

This brief overview of the health status of women in Brazil and in the world shows that despite the advances already observed over the last few years, there are still aspects of lack of assistance that need to be overcome[14,15].

There is no doubt that the mere fact of a country adhering to an international treaty that safeguards human rights is an advance in itself, since the intention to direct efforts towards the adoption of measures capable of implementing the agreements made is clear. However, a pact that remains only in the theoretical field is below the aspirations of the field of human rights. Therefore, there is a need to assess the effectiveness of these agreements in order to actually promote health[16].

In reviewing the literature, we found recent studies on the topic. The effects of CEDAW and the Convention on the Rights of the Child on the health of these groups have already been studied[17]. The findings showed that the level of income of countries affected the results of the role that CEDAW played in health, that is, the best results were associated with high-income countries. The correlation between the protection of women's economic and social rights was also evaluated and a positive association was found. The study concluded that when women's rights are highly respected, the country is more likely to have higher health rates[18]. There are also studies that assessed the effects of these international pacts in particular situations of certain countries. One reflected on the role played by the CEDAW committee in the Philippines' criminal restrictions on abortion[19], and another looked at how CEDAW could influence American cities to use the human rights framework to promote abortion as a right in places under its jurisdiction[20].

Academic research on the topic is still incipient[21] and there are few studies that seek to understand the role that CEDAW and OP-CEDAW play in women's health outcomes. In addition, none of the studies reviewed addressed the aspect of article 10, item "h", of CEDAW, which mentions the need to address family planning. As CEDAW[8] valued this point, there is no doubt that this is an important issue for countries committed to this pact consider in the strategy of protecting women's human rights.

Therefore, the following question remains: will it be that, from the moment that the countries committed themselves to these two pacts, did that actually have some kind of implication for women's health outcomes? In other words, has the ratification of these international treaties had an effect on the global health status of women? What about family planning advice (since CEDAW specifically alludes to this aspect)?

With that in mind, the aim of this study was to assess whether adherence to international pacts on women's human rights has influenced their health status, especially with regard to advice on family planning.

METHODS

This is a quantitative ecological and analytical study in which analyses were carried out to verify whether adherence to CEDAW and OP-CEDAW had positive effects on the health status of women. It was carried out in the second half of 2019 with data collected from the WHO database, which makes up the global strategy for the health of women, children and adolescents, from which eight indicators were selected and estimated between the years 1993 to 2018. The study sought to involve all countries that have committed to the treaties. In all, 190 countries have joined CEDAW and 115 countries have joined OP CEDAW. Because of that, two analysis strategies were used.

As a first strategy, we worked with countries organized into income groups based on the 2019/2020 World Bank classification[22], which proposes the division into four income categories: high, upper-middle, lower-middle and low. Thus, it was possible to compare the evolution of women's health status in relation to the degree of adherence to international pacts among all income groups. This was because one of the initial hypotheses of the study was that richer countries would tend to have better health performance.

The first step of this strategic phase consisted in calculating, for each income group, the distribution as a percentage of countries according to the regional division of WHO[23]. This division classifies countries into six regions, namely: African, Americas, European, Eastern Mediterranean, Western Pacific and Southeast Asia. The intention here was to verify the percentage of countries in the African, European, Americas, and so on, that belonged to the high-, upper-middle, lower-middle and low-income groups.

The second step in the first strategic phase was to describe the women's health situation in recent years. Indicators directly related to women's health were selected from the WHO database on the global health strategy for women, children and adolescents[24], thus resulting in the following: maternal mortality ratio (MD); prevalence of anemia in women of reproductive age (AR); prevalence of anemia in non-pregnant women (AN); prevalence of anemia in pregnant women (AP); prenatal care coverage (CC); women screened for syphilis during pregnancy (SP); women who had postnatal contact with a health care provider (PP); and women who have a satisfied family planning need (FP).

The choice of these indicators to respond to the research objective considered that they represent a way to measure women's access to health; they function as a guide to enable changes to improve women's health and

social well-being[25]. This is one of the concerns mentioned in CEDAW[5]. It is important to highlight the FP indicator, which has a direct relationship with the CEDAW text, because it specifically mentions the adoption of measures to ensure information and advice on family planning. It assesses overall levels of coverage of family planning programs and services[26].

To describe the temporal evolution and spatial distribution of MD, an analysis of annual data referring to deaths from 2000 to 2017 in each income group was carried out[24]. The same procedure was performed in relation to RA, AN and AP[24], but in the period from 2000 to 2016.

CC, SP, and PP[24] were analyzed together because they portray care related to pregnancy. It was decided to portray the punctual proportion of these issues in each region since the data were not uniform in relation to the measurement dates, that is, each country had different time frames and periods and, in many of them, there was only one measure of reference. The mean values for the most recent data for the countries in each group were also calculated.

Regarding the proportion of FP[24], the analysis considered the oldest and most recent data for each country. These results were averaged for each income group and the evolutionary synthesis of this indicator was obtained.

Then, we moved to the third step, in which we carried out a study of the progress of adherence to CEDAW and OP-CEDAW by all countries in the world. Data from the Office of the United Nations High Commissioner for Human Rights (OHCHR)[27] were used and showed whether the country had ratified the pacts and the date on which the commitment was signed. A time series with the evolution of adherence in income groups was systematized, with the first point coinciding with the year of first ratification and the last with that of the most recent ratification.

The second analysis strategy sought to verify the correlation between the factors of adherence to international pacts and the health status of women based on the analysis of eight selected indicators of the global strategy for the health of women, children and adolescents[24].

One-way analysis of variance was used to verify whether there was a difference between the mean values of each women's health indicator among the three time classes: five years before ratification of the international pact, on the ratification date, and five years after ratification. To visualize the differences, Box-Plot graphs were used and the analyses were performed on R Studio.

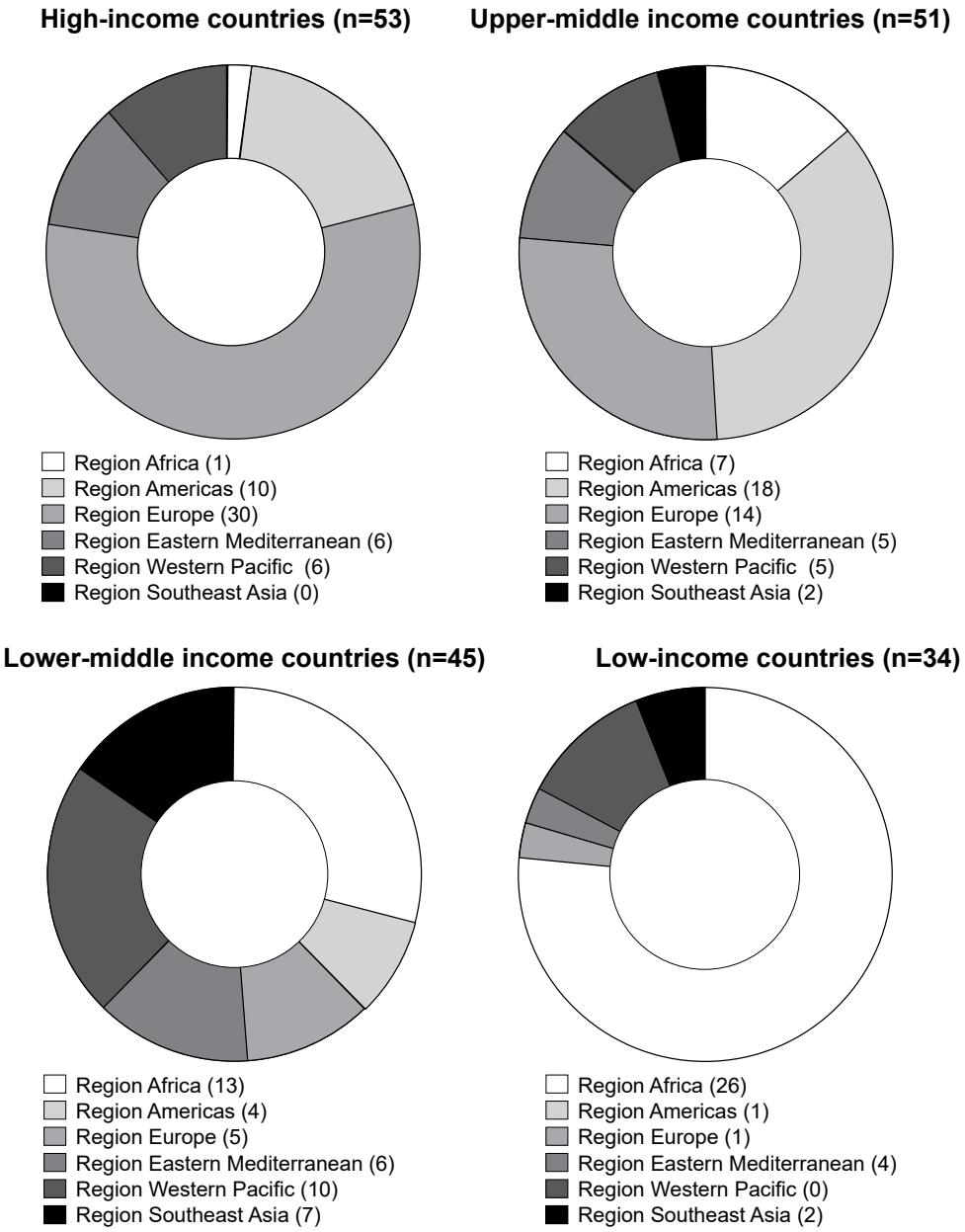
As the entire research used data from public access and domain, there was no need for approval by an ethics committee.

RESULTS

With regard to the distribution of WHO regions, the results obtained are shown in Figure 1. In the high-income group (n=53), there was an imbalance in the composition, with a substantial predominance of countries in the European Region, with 57% (n=30), while countries in the African Region accounted for only 2% (n=1). There was no participation of Southeast Asia in the group. In the upper-middle income group (n=51), there was a greater presence of countries in the Americas, with 35% (n=18), while Southeast Asia had the lowest percentage (4%; n=2). The lower-middle income group (n=45) had the smallest distribution amplitude, with the African Region being the most prevalent, with 29% (n=13), and the European Region and the Americas being the least prevalent, with 11% (n=5) and 9% (n=4), respectively. The most unequal distribution was found in low-income countries (n=34), with a majority from the African Region, which alone accounted for 76% (n=26) of the group.

Considering the health status of women, the findings were organized in Figure 2. The graph that illustrates the evolution of MD shows that all income groups showed a declining trend. Low-income countries had the worst results, with a mean of 546.44 deaths per 100,000 live births from 2000 to 2017 and MD rates greater than twice as high as upper-middle income countries over the entire period (mean of 126.82 deaths per 100,000 live births). The rates of the upper-middle income countries were higher than the rates of the lower-middle income countries in all measured years, which computed a mean rate of 221.66 deaths. The smallest decline was observed in high-income countries, with the best overall results.

As for AR, AN and AP, although the best results were achieved by high-income countries, followed successively by upper-middle and lower-middle income countries, with the worst results in low-income countries, the differences were not as substantial as those observed for MD (Figure 2). This was because low-income countries had MD rates on average 485% higher than high-income countries. In relation to RA, AN and AP, this difference was on average 213%.



Source: WHO and World Bank

Figure 1 - Distribution of countries by World Bank income groups according to WHO regional division, 2018, n=183.

In the case of RA, it was possible to notice a decrease in the percentage during the first decade of observation, with a subsequent increase. For high-income countries, the decrease took place until 2009, when the subsequent increase meant that in 2016 they had worse results compared to 2000 (20.7% and 18.5%, respectively). In the other groups, although they also showed this change in trend (the changes in trend ocurred in 2012 for upper-middle income countries, in 2013 for lower-middle income countries, and in 2015 for low-income countries), the 2016 results continued to be better than those observed in 2000 (Figure 2).

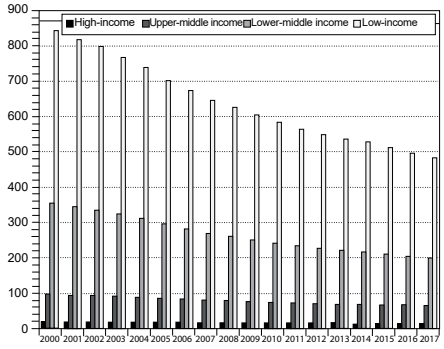
The evolution of AN also followed the dynamics of a downward trend in the first decade of analysis, with a subsequent increase in the following years. And, once again, the group of high-income countries was the only one in which the results of 2016 were worse than those of 2000, with a difference of 1.7 percentage points between them. The time frames of trend change occurred in the years 2010, 2012, 2013 and 2015 for high-, upper-middle, lower-middle and low-income countries, respectively (Figure 2).

As for AP, although a change in trend was noticed during the period in three of the four income groups, the oscillation was slighter than that in women of reproductive age and in non-pregnant women, and in none of the groups was observed a worsening at the end of the period. The exception was for the group of low-income countries, in

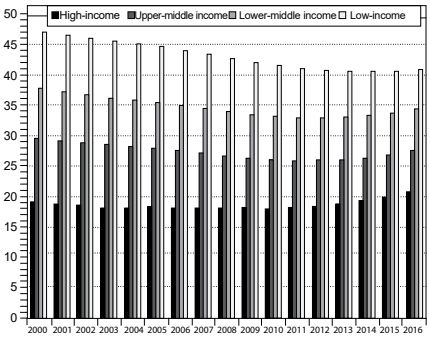
which there was a decrease in AP during the entire observation period. In terms of evolution, high-income countries remained at the same level, since they totaled 26.8% in 2000 and 26.3% in 2016. Those with upper-middle income started with 33.9% and, in the end, registered 31.9%. Those with lower-middle income had 37.8% in 2000 and 35.5% in 2016. Those with low income had the smallest decrease, with 50.7% in the first measurement and 45.6% in the last. Trend changes occurred in 2011 in high-income countries and in 2012 in both upper-middle and lower-middle income countries (Figure 2).

The results of the proportion of care during pregnancy were directly proportional to the income range, that is, the higher the income, the higher the percentages of care. High-income countries totaled high percentages in the three indicators, totaling 93.7%, 88.6% and 93.9% respectively in the CC, SP and PP indicators. Upper-middle income countries also performed well, with percentages above 82% in CC and PP and 75.1% in SP. Lower-middle income countries also had the worst percentages of SP, with 58.5%. The two other indicators scored around 70%. Low-income countries scored worst on all three indicators (Figure 2).

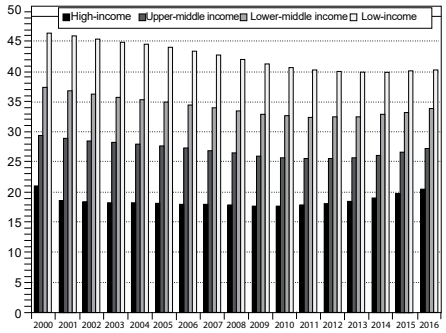
Finally, the results for FP showed that there was an improvement in the proportion of this coverage in all income groups. The best result was found in high-income countries, with percentages of 67.8% in the first measurements and 71% in the last ones. The lowest rate was found in low-income countries, which, however, totaled the largest difference observed, from 33.4% to 44.7%. The most recent records from upper-middle and lower-middle income countries were similar, both around 60%, with the upper-middle income countries oscillating only 1.2 percentage points, while that of low-middle income countries was 7.5 percentage points (Figure 2).



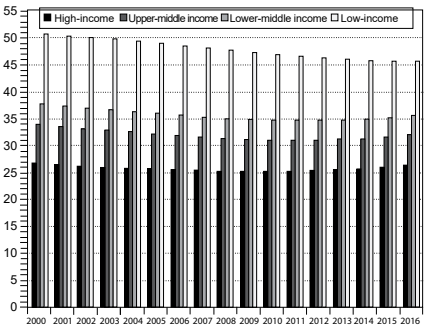
Evolution of maternal mortality rate per 100,000 live births, 2000-2017.



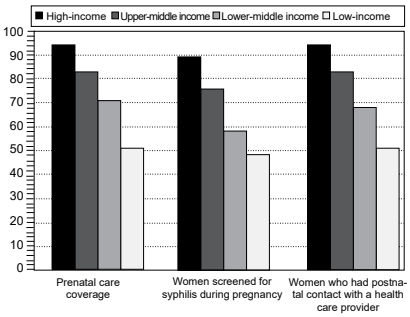
Evolution of the prevalence of anemia in women of reproductive age (%), 2000-2016.



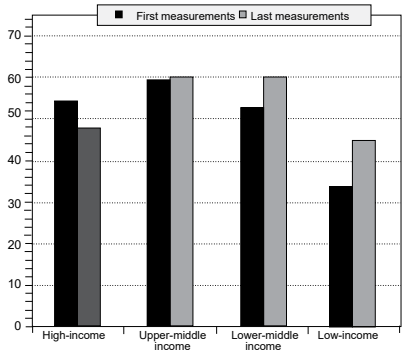
Evolution of the prevalence of anemia in non-pregnant women (%), 2000-2016.



Evolution of the prevalence of anemia in pregnant women (%), 2000-2016.



Proportion of care during pregnancy (%), 1993-2018.



Proportion of women who have a satisfied need for family planning (%), 1993-2018.

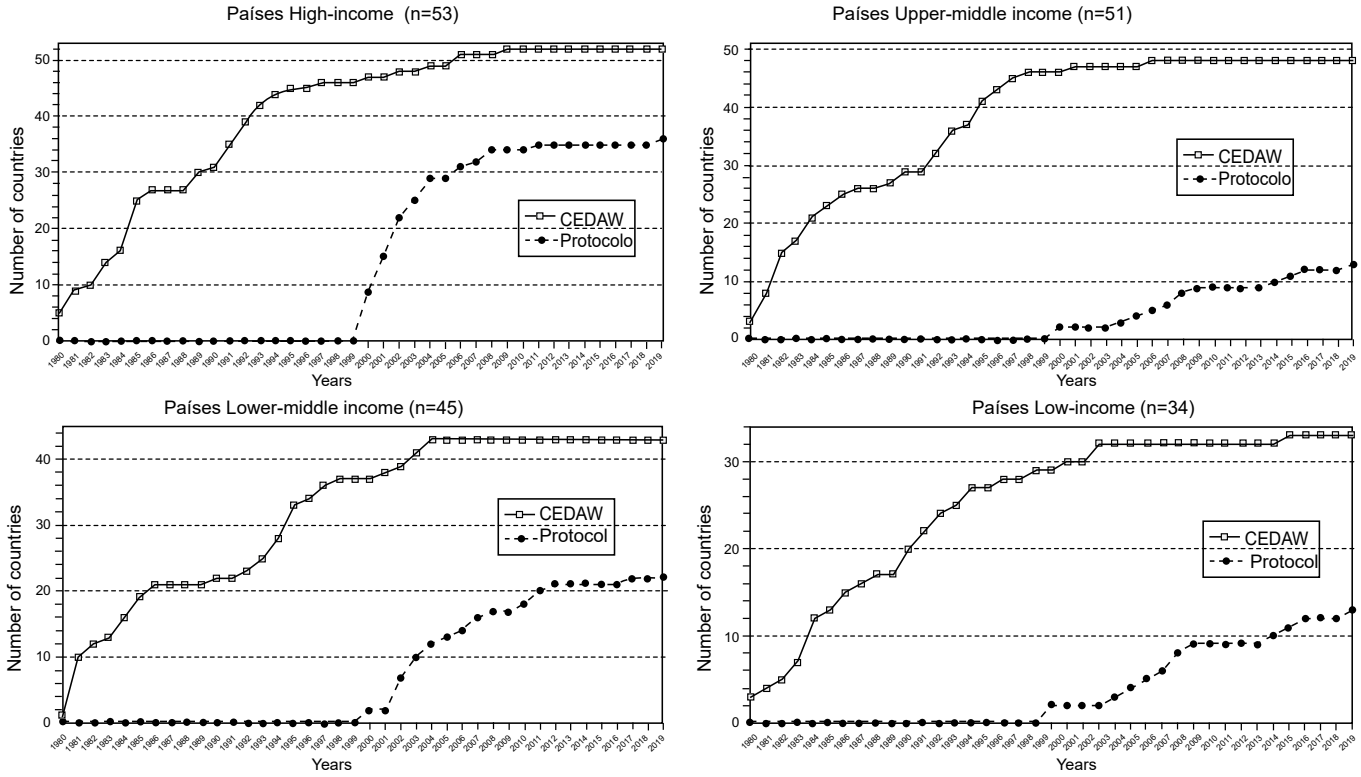
Source: WHO

Figure 2 - Women's health status based on WHO health indicators according to the World Bank's organization of countries by income groups, 1996-2018; n=183 (high income: n=53; upper middle income: n=51; lower middle income: n=45; low income: n=34).

Regarding the ratification of international pacts (Figure 3), the results showed that, currently (until 2019), CEDAW is widely adhered to, with results shoing almost all countries in all income groups (88.89% of adherence). OP-CEDAW had lower rates, with 42.42% of adherence.

In the case of high-income countries, only one country has not ratified CEDAW and it is possible to say that, in terms of evolution, the greatest growth occurred between 1984 and 1985, when the number of adhering countries

increased by 17 percentage points. In the other periods, the years 1981, 1983, 1991 and 1992 stood out as they registered 7.5 percentage points more in the rate of adherence in relation to the previous years. With regard to OP-CEDAW, the greatest increase occurred in the 2000s, with the adherence of nine countries, representing 17% of the countries in this group. In the following year, in 2001, the increase was also important, of 13.2 percentage points, and in subsequent years, until 2007, the increase was of two percentage points on average (Figure 3).



Source: OHCHR

Figure 3 - Evolution of adherence to CEDAW and OP-CEDAW Protocol according to the World Bank's organization of countries by income groups, 1980-2019.

The group of upper-middle income countries, on the other hand, had the greatest dichotomy between the ratification of CEDAW and OP-CEDAW: 68.6 percentage points of difference in adherence in 2019. It was also the group with the lowest degree of adherence to OP-CEDAW in percentage terms (25.5%). As for the degree of increase in CEDAW ratification, the highest records occurred in 1981 and 1982, with respective increases of 9.8 and 13.7 percentage points. Regarding OP-CEDAW, considering the initial milestone of the 2000s, growth was more uniform, on average 0.6 per year, with no relevant peaks of increase.

The results of the low-middle income countries showed that in this group there was the highest degree of ratification of CEDAW right at the beginning, with a 20% adherence of the countries in the year 1981, which was, in fact, the biggest increase of the entire period. The second largest increase, of 11.1 percentage points, occurred in 1995. The growth peaks in the number of people joining OP-CEDAW were in 2002, with an increase of 11.1 percentage points, followed by the year 2003, with an increase of 6.7 percentage points. Subsequent years did not show significant fluctuations, recording an average growth of 0.75 in adherence per year (Figure 3).

Considering low-income countries, the peak of growth of adherence to CEDAW occurred in 1985, which registered an increase of 14.7 percentage points. In the other time intervals, there was an increasing oscillation of 3.5 percentage points on average. OP-CEDAW had low adherence in general, with ratification by less than half of the countries in the group (38.2%). Overall, the evolution of adherence to OP-CEDAW took place steadily, without significant growth peaks, recording, on average, an increase of 0.65 in adherence per year, from the 2000s onwards.

The results of statistical tests on the correlation between adherence to pacts and women's health indicators were shown in Figures 4 and 5. Regarding CEDAW, Figure 4 shows that only the FP indicator showed a significant difference between the three periods (p-value=0.05). The p-value of the other indicators suggests that the difference

is not significant for the other cases. In relation to OP-CEDAW (Figure 5), in AP and CC there was significance in the difference (p-value=0.03 and 0.01, respectively). In the FP indicator, the differences were very significant (p-value=0.007).

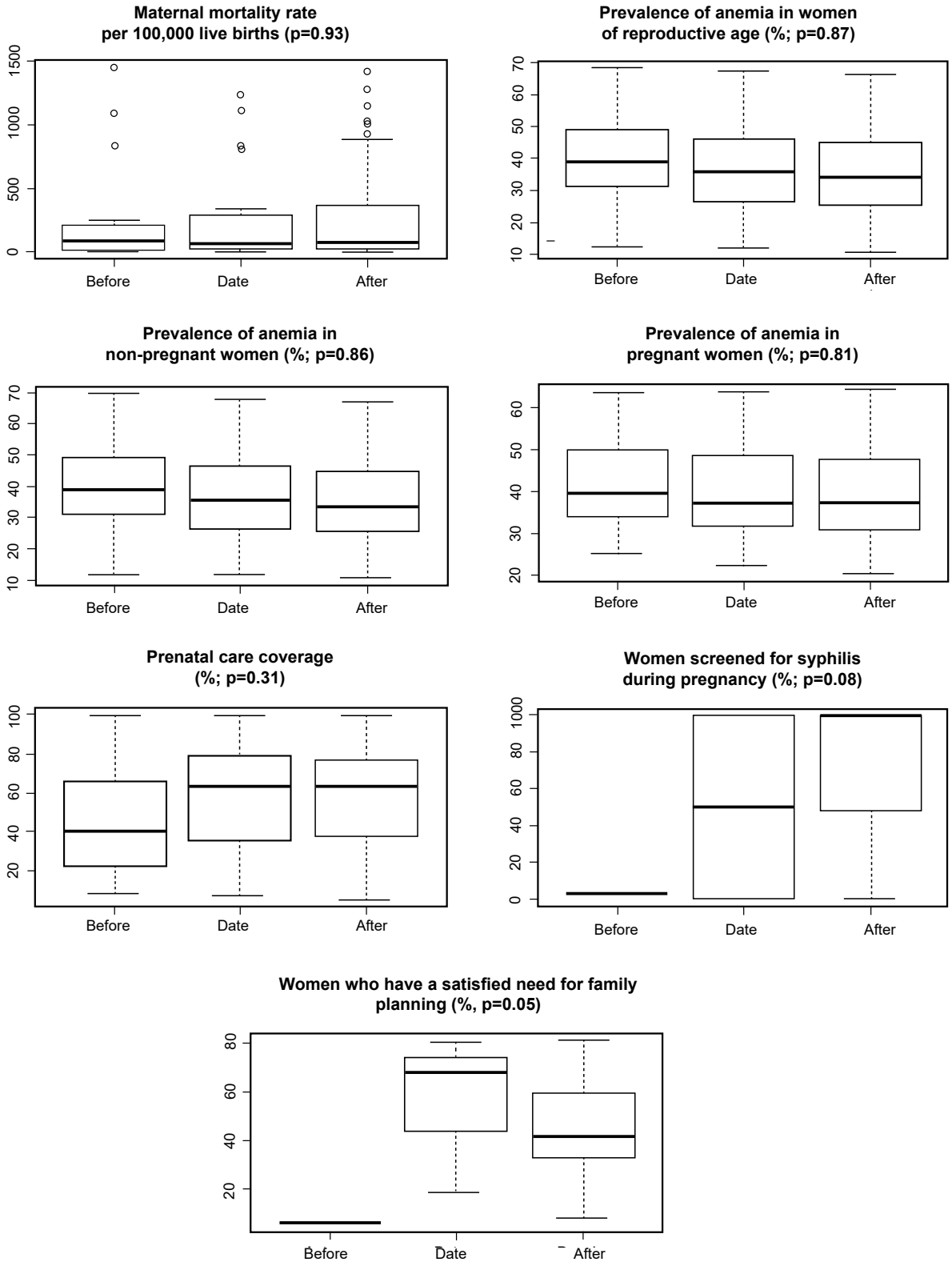


Figure 4 - Means for women's health indicators in all countries in the five years before and after adhering to CEDAW.

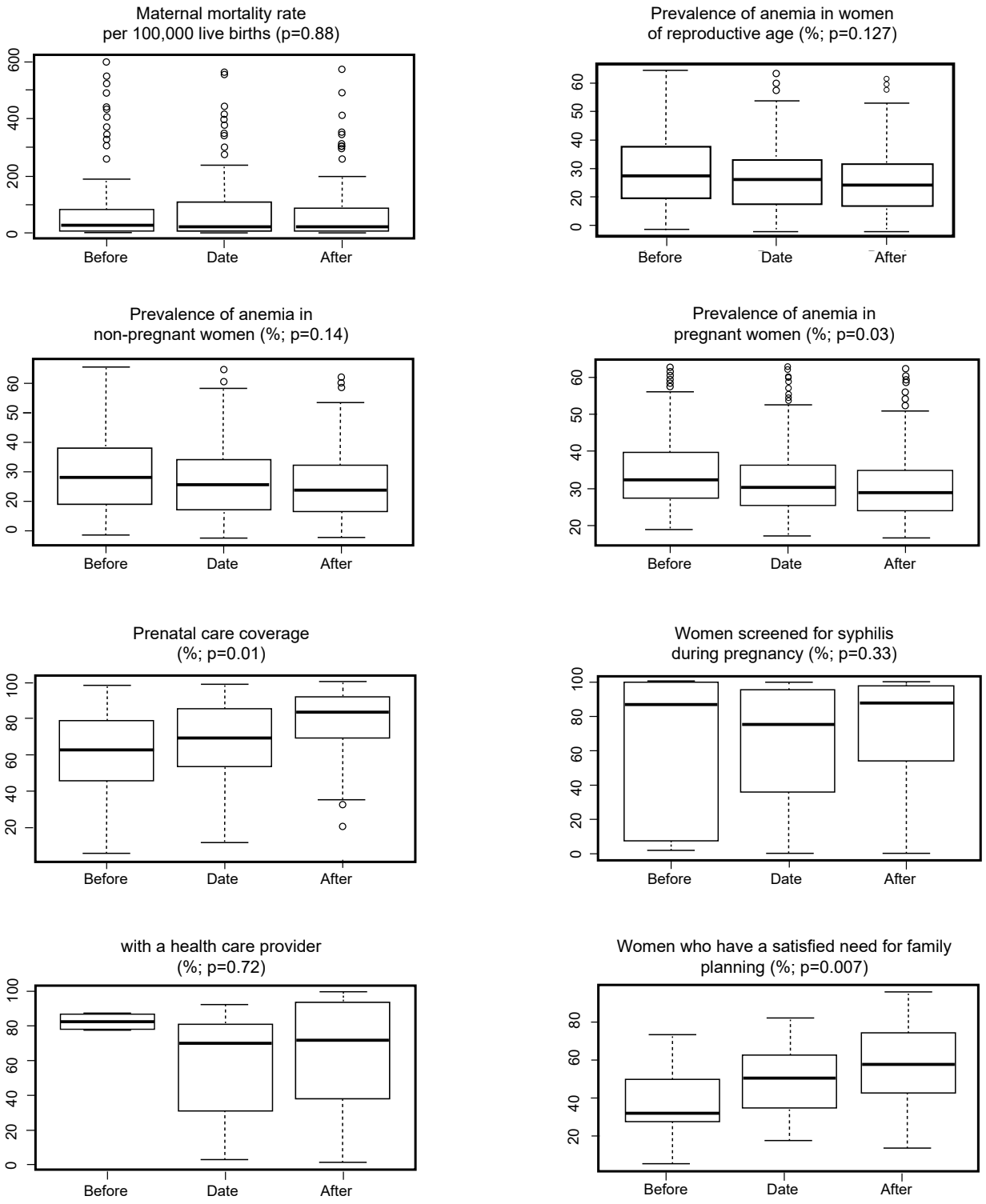


Figure 5 - Means for women's health indicators for all countries in the five years before and after adherence to the OP-CEDAW Protocol.

DISCUSSION

The health situation of women studied from the organization of countries by income groups showed that more satisfactory rates were achieved by high-income groups, followed successively by upper-middle, lower-middle and low-income groups. Studies have already pointed out the relationship between income level and health status at the individual level[28-30]. This relationship also occurs at the macro level, that is, countries with higher income status

presented, on average, better parameters of women's health, which confirms the initial hypothesis of the present study in this regard.

Considering the distribution of WHO regions, it is possible to infer that these higher values of women's health parameters refer to countries in the European region, while the lowest refer to those in the African region. These results are in line with a previous study[31], in which a global scale comparison was made between health levels in member states of the Belt and Road initiative, which covers countries in Europe, Asia, Africa and Oceania. The analysis involved the health indicators from the WHO 2018 global reference list. The authors demonstrated that Europe has an overall good health status, higher than the rest, while Africa has a lower status.

When comparing the degree of CEDAW ratification among income groups, the balance between all of them stands out, with a large degree of adherence, above 90% in all groups. These high adherence rates were recorded at least since 2005 in the four groups and there was no substantial change in the trend in the evolution of indicators related to MD and RA, AN and AP. It should be noted that there is no need to talk about trends in the CC, SP, PP and FP indicators, based on this study, given the lack of sufficient data to analyze their evolution over time.

OP-CEDAW, on the other hand, has a lower level of ratification and greater disparity between groups: only the high-income group has most countries committed to OP-CEDAW, with 67.9% of adherence, while the others do not reach the majority. The group with the lowest degree of ratification is the upper-middle income group, with 25.5%. Those with lower-middle income computed 48.9% of adherence and those with low income computed 38.2% of adherence. This means that the group most committed to OP-CEDAW was the one with the best women's health outcomes, but the reverse was not true, as the second best health outcomes were found in the upper-middle income group, which was the least committed to OP-CEDAW.

This first comparative analysis suggests that the difference in outcomes in women's health status is more affected by the level of income of countries than by the degree of commitment they have to international pacts on women's human rights.

The statistical correlation tests performed in this study helped to deepen this first analysis. In fact, with regard to MD, RA, AN and AP, no significant association was found with the factor commitment to CEDAW. Regarding OP-CEDAW, there were two indicators that showed a significant correlation in the difference in health outcomes after committing to the international pact: AP and CC. In the case of MD, the results showed that it reduced in all income groups. A previous study already disclosed a trend of global decline, with a continuous annual rate of 2.3% reduction, with a decrease in the number of maternal deaths worldwide from 385 per 100,000 live births in 1990 to 216 in 2015[32]. However, this study proved that international commitment to CEDAW and OP-CEDAW did not influence this trend.

Regarding anemia, this deficiency was one of the 328 causes of the global burden of disease, injury and risk factors assessed in the Global Burden of Disease Study 2016 (GBD)[33]. In the period from 1990 to 2006, it figured as the 3rd main cause of years lived with disability (YLD) in the evaluation of the average percentage change in numerical terms and, in the following period, from 2006 to 2016, there was a small drop of 4.4%, moving it to the 4th main cause. In this study, we studied it specifically in relation to anemia in women. Although this was not the goal of GBD 2016, which worked with anemia at all ages and without gender distinction, data on anemia in women were also implicated in the findings. Another study[34] analyzed the case of anemia in non-pregnant women in low- and middle-income countries, showing that there were reductions in data collected between 2000 and 2014, which ranged from 0.49 to 2.59 percentage points in most of the countries studied, although the overall prevalence is still considered severe. The authors found higher levels of AP in populations with low socioeconomic status, which was also pointed out by our findings.

Among the various factors that contributed to the reduction of these numbers, the results revealed that CEDAW had no influence on these changes and that OP-CEDAW may have influenced the reduction of AP, as suggested by the low calculated p-value. However, no relationship was found with the decrease in AR and AN.

As for CC, although the data from the current study do not allow inferring the trend over time, one study[35] demonstrates that the estimated worldwide coverage of prenatal consultations increased by 43.3% in the period from 1990 to 2013. In its findings, the authors found substantial inequalities in coverage across regions and income groups, with sub-Saharan Africa standing out negatively, with early CC of less than 50% in 2013, which is also supported by our results. Among the various factors that the authors cite as determinants (income, age, race, ethnicity, geographic location), the degree of commitment to international human rights pacts is not considered.

The results of this study demonstrate that OP-CEDAW may have influenced the worldwide advancement of coverage, since the low p-value found suggests a statistical association between these factors. It is important to point out that although the numbers in relation to prenatal coverage have improved over the last few years, they are still below the WHO recommendations[36].

The only indicator whose result of the correlation test was significant for both pacts was the one concerning FP. It is true that, in the case of CEDAW, there was a limitation of the study due to the low number of available data. However, this did not occur in the OP-CEDAW analysis and the association was the most statistically relevant of all the cases analyzed, with a p-value low enough (0.007) to point out a correlation between the improvement in the response to FP and countries' adherence to OP-CEDAW.

One of the mentions about women's health made in CEDAW[5] is in article 10, item "h", which states that the States Parties must adopt appropriate measures to ensure the health and well-being of the family, including information and advice on family planning. Therefore, the issue of family planning was raised as a specific concern of CEDAW and the results of our study show that there were positive effects with regard to the evolution of the FP indicator after adhering to the convention.

The other two allusions to health in CEDAW are: in the preamble, showing that the concern with women's health is one of the drivers of the pact[5], that is, a generic forecast; and in article 12, concerning the protection of women's health in relation to the safety of working conditions.

The mention in the preamble does not seem to have had political force in the countries to the point of influencing the scenario of the general health status of women, since, of the eight indicators studied for each pact (i.e., 16 correlation tests), only 4 demonstrated statistical relevance. On the other hand, in the specific CEDAW forecast oriented to a given policy (in this case, that of family planning), there was an association. In that regard, in terms of women's health promotion, the mere generic allusion to health commitments in international treaties does not seem to be an effective strategy, as they did not generate significant differences in the behavior of the data. On the other hand, they can be health promotion instruments when they establish in their text direct and specific commitments related to a certain policy, as in the case of family planning, which was analyzed in this study.

The contribution of this study, therefore, is to encourage countries to establish precise international health policies with the prediction of specific promotion actions so that they have greater chances of promoting better results. About article 12, it is not possible to make considerations from this study, since the indicators used do not reveal data related to the field of women's health at work.

The study has limitations. The first one is the probable existence of other variables capable of influencing the effects of the commitment to the treaties on women's health[36]. The processes for establishing these correlations are not independent because they are implied by multiple causes. Another limitation was the fact that the indicators used were not created with the purpose of specifically measuring the prevalence of human rights practices. There were also limitations regarding the size of some samples in the database created for the analysis of the correlation between CEDAW ratification and women's health status, with a small n mainly in relation to the PP and FP indicators. Finally, another limitation was the temporal approximations of up to three years made in this same database and in the three temporal classes.

CONCLUSION

The findings of this study revealed that CEDAW played a statistically significant role in relation to the FP indicator. OP-CEDAW was associated with improvements in the AP, CC and also FP indicators, with a very significant association being found in relation to the latter.

As for the other indicators tested, the differences in the health status of women after commitment to CEDAW and OP-CEDAW were not statistically relevant.

ACKNOWLEDGMENTS

The authors would like to thank the Department of Human Rights, Health and Cultural Diversity and the Graduate Program, both at ENSP/Fiocruz, which provided for this study.

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

CONTRIBUTIONS

Cíntia da Silva Telles Nichele and **Aldo Pacheco Ferreira** contributed to the study design and conception; acquisition, analysis and interpretation of data; and writing and/or revision of manuscript. **Marco Aurélio Pereira Horta** contributed to the study design and conception; and the acquisition, analysis and interpretation of data.

FUNDING SOURCES

Finanacial aid received from CNPq as a full GD doctoral scholarship.

Manuscript based on the doctoral thesis titled: "Analysis of the role of international human rights treaties in the evolution of global health – relationship between the effects on health indicators and the foundation of Kantian ethics". Public Health Graduate Program, Sergio Arouca National School of Public Health (*Escola Nacional de Saúde Pública Sergio Arouca – Ensp*), Oswaldo Cruz Foundation (*Fundação Oswaldo Cruz – Fiocruz*). In progress.

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How to cite: Nichele CST, Horta MAP, Ferreira AP. Women's health: the role of international pacts in the evolution of human rights protection. Rev Bras Promoç Saúde. 2021;34:10766.