Factores biosociales asociados a la mortalidad materna en el departamento de Chocó 2013-2019

Biosocial factors associated with maternal mortality in the department of Chocó 2013-2019

Miladys Mosquera-Córdoba[a], Ángela Patricia Cuesta-Caicedo [b]

a. Nurse. Specialist in epidemiology. Health Sciences Faculty. Universidad Tecnológica del Chocó Diego Luis Córdoba, Quibdó, Colombia. ORCID: https://orcid.org/0000-0002-9922-0497.

b. Bacteriologist and clinical laboratory technician. Master in Educational Sciences. Health Sciences Faculty. Universidad Tecnológica del Chocó Diego Luis Córdoba, Quibdó, Colombia. ORCID: https://orcid.org/0000-0002-2738-4660.

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Abstract

Objective: To describe the convergence of biosocial forces that interact to produce and exacerbate maternal mortality in the department of Chocó.

Materials and methods: This is a descriptive, retrospective study of maternal mortality and associated factors in Chocó. Authorization was requested to review the epidemiological surveillance records of all cases of maternal deaths between 2013 and 2019. Confidentiality was guaranteed by using codes and medical record numbers for identification. In addition, the National Demographic and Health Survey (NDHS) 2015 and prenatal control reports from the department of Chocó were reviewed to identify factors associated with maternal mortality.

Results: A total of 96 maternal deaths were recorded during the 2013-2019 period. The group between 30-34 years of age contributed with the highest number of cases of maternal death (17 deaths). 90% of maternal deaths (65) were affiliated with the General Social Security System, 10% (7) corresponded to the uninsured population. Finally, 94% (68) of obstetric deaths correspond to women who performed household chores, and 6% (4) to women employed in the public sector. The main cause of maternal mortality was related to hypertensive disorders during pregnancy. It was evidenced that only 72% of pregnant women received prenatal check-ups by a doctor in Chocó and 6.6% of the checkups were performed by nurses.

In 2020, it was reported that the maximum percentage of live births with more than 4 prenatal check-ups was 79.49%.

Conclusions: The observed situation suggests the implementation of strategies that improve access to quality integral health services. Thus, an articulation between health authorities, health system service providers, local community actors, and academia must be guaranteed.

Key words: Maternal mortality, prenatal control, biosocial factors, Chocó, Colombia.

Resumen

Objetivo: Describir la convergencia de fuerzas biosociales que interactúan para producir y exacerbar la mortalidad materna en el departamento de Chocó.

Materiales y métodos: Estudio descriptivo, retrospectivo de la mortalidad materna y los factores asociados en el Chocó. Se solicitó autorización para revisión de fichas de vigilancia epidemiológica de todos los casos de muertes maternas entre 2013 y 2019. Se garantizó la confidencialidad usando códigos y número de historia clínica, para identificación. Además, se revisó la Encuesta Nacional de Demografía y Salud ENDS 2015 y los informes de control prenatal en el departamento del Chocó para identificar factores asociados a la mortalidad materna.

Resultados: Se registró un total de 96 muertes maternas durante el período 2013-2019. El grupo comprendido entre 30-34 años de edad aportó el mayor número de casos de muerte materna (17 muertes). El 90% de los fallecimientos maternos pertenecían al Sistema General de Seguridad Social, 10% correspondía a población pobre no asegurada. El 94% (68) de los fallecimientos obstétricos corresponde a mujeres que desempeñaban labores en el hogar y 6% (4) empleadas del sector público. La principal causa de mortalidad materna se relacionó con trastornos hipertensivos en el embarazo. Se evidenció que solo el 72% de las gestantes recibieron control prenatal por médico en Chocó y el 6.6% de los controles fue realizado por enfermeras. En 2020, se reportó que el porcentaje máximo de nacidos vivos con más de 4 consultas de control prenatal fue 79.49%.

Conclusiones: La situación observada sugiere la implementación de estrategias que mejoren el acceso a servicios de salud integrales de calidad. Se debe garantizar una articulación entre las autoridades de salud, actores de prestación de servicios del sistema de salud, actores comunitarios locales y la academia.

Palabras clave: Mortalidad materna, control prenatal, factores biosociales, Chocó, Colombia

Introduction

In Colombia, maternal mortality in 2009 was 68.3 cases per 100,000 live births; in the case of the department of Chocó, the maternal mortality figure was 108.8 per 100,000 live births; ten years later, in 2019, the maternal mortality ratio in this same department has increased to 152. 2 per 100,000 live births (Colombia: 46.67 cases per 100,000 live births) (1); even though the United Nations (UN) included as a sustainable development goal the reduction of the global maternal mortality rate to less than 70 per 100,000 live births between 2016 and 2030 (2).

The difficulty in achieving the expected progress in maternal and child health (MCH) has been related to factors such as: failures in insurance (3), insufficient budget for health services (4), geographical, economic, and cultural barriers to access to these services, and the quality of care received by pregnant women (5). In addition, the design of policies and programs should consider the existence of structural, economic, cultural, and social conditioning factors that determine practices and lifestyles (6). At the international level, it has been shown that the biomedical model minimizes the importance of social and cultural factors in the genesis of the disease, resorting to the "medicalization of many aspects of daily life, such as pregnancy, birth, parenting, sexuality, old age or death" (7). In this sense, within the current context of confinement measures to control Covid-19, it is necessary to ensure the provision of essential services such as prenatal care due to the devastating effects of this pandemic on health systems that are contributing to excess mortality (8).

Chocó has a dispersed population with one of the lowest densities per km^2 in the country. According to the National Administrative Department of Statistics DANE (by its acronym in Spanish) (9), 65.5% of the department's population has unsatisfied basic needs, 42.3% has multidimensional poverty, and life expectancy is lower than the national average (Chocó: 70.64, national: 76.15 years), as well as a lack of adequate sanitary infrastructure for

«The difficulty in achieving the expected progress in maternal and child health (MCH) has been related to factors such as: failures in insurance, insufficient budget for health services.»

the provision of quality health services, which influences morbidity and maternal mortality indicators, especially in the most vulnerable communities. In terms of population, the department is made up of 74% Afro-Colombians, 11.3% indigenous ethnic groups and 14.7% mestizo and white population; the prevalence of ethnic minorities in this region of Colombia is evident. In terms of cultural practices, the contribution made by traditional midwifery in these communities, which was declared intangible heritage of humanity, is highlighted (10). All the above evidence the need to review the presence of a potential syndemic as a result of the convergence of biosocial forces that interact with each other to produce and exacerbate maternal morbidity and mortality in the department of Chocó.

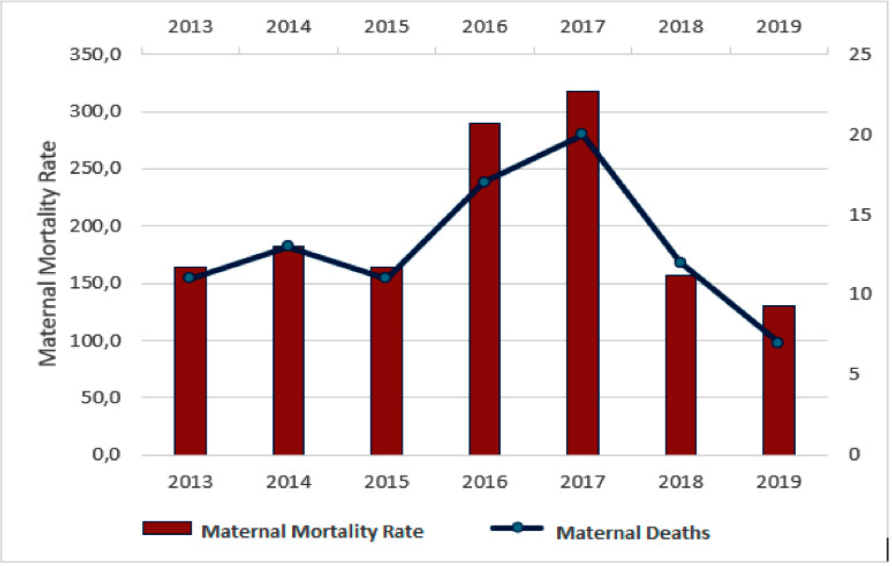
Materials and methods

Descriptive, retrospective study of maternal mortality and associated biosocial factors in the department of Chocó. The population consisted of all cases of maternal death reported to the Secretary of Health of the department of Chocó, between the years 2013-2019, finding 96 cases of maternal death registered for the study period, from public and private health institutions, as well as others. All the epidemiological surveillance records of maternal deaths reported to the Health Secretariat of the department of Chocó between 2013 and 2019 were included; the immediate notification records of maternal death and the epidemiological investigation records of maternal death reported to the epidemiology office between 2013 and 2019 were reviewed. A request for authorization was submitted to the Secretary of Health of the Department of Chocó and to the person in charge of the epidemiology area to obtain the necessary information and to review the previously mentioned documents. The information was collected through the data sheet prepared for the research. The use of informed consent by the patient was not necessary since this was a review of information. The research protocol was approved prior to its execution by the Ethics Committee of the Universidad Tecnológica del Chocó. Confidentiality was guaranteed with respect to identification, using codes (patients' initials) and the use of clinical history numbers for identification. The information was not provided to third parties outside the study. A review of the National Demographic and Health Survey NDHS 2015 and prenatal control reports in the department of Chocó was also carried out to identify factors associated with maternal mortality.

Results

During the period between 2013 and 2019, the department of Chocó recorded a total of 96 maternal deaths, two of them due to indirect causes; in 2017, the highest mortality ratio was recorded (317.41 per 100,000 live births); the existing data during the period evidences an increasing trend (11) (Figure 1)

Figure 1. Number of Maternal Deaths and Ratio per 100,000 LB and Numbre of Deaths



Source: DANE EEVVV 2013-2019

During the period 2013-2019 the group aged 30-34 years contributed the highest number of maternal death cases (17 deaths), followed by the group aged 20-24 years (14 deaths); in 2017 the group aged 15-19 years with 6 deaths and the group aged 25-29 with 5 deaths (Table 1).

Tabla 1. Maternal Deaths by Age Group Chocó 2013-2019

Years	Age Groups									
	10 - 14 years	15 - 19 years	20 - 24 years	25 - 29 years	30 - 34 years	35 - 39 years	40 - 44 years	45 - 49 years	50 - 54 years	Unknown age
2013	0	1	3	3	2	2	0	0	0	0
2014	0	3	2	1	3	0	2	1	0	1
2015	1	1	2	0	4	2	1	0	0	0
2016	0	1	4	4	4	3	1	0	0	0
2017	0	6	3	5	4	0	2	0	0	0
2018	1	0	3	3	2	1	2	0	0	0
2019	0	2	2	2	3	0	2	1	0	0
Total	**2**	**14**	**19**	**18**	**22**	**8**	**10**	**2**	**0**	**1**

Source: DANE EEVVV 2013-2019

Regarding the type of affiliation to the health social security system, during the period 2013-2017, 90% (65) of maternal deaths were affiliated to the General Social Security System, 10% (7) corresponded to uninsured poor population. During the period under analysis, 94% (68) of obstetric deaths corresponded to women who performed household chores (housewives), 6% (4) were women employed in the public sector.

During the period 2013- 2014 the main cause of maternal mortality was related to edema, proteinuria, and hypertensive disorders in pregnancy; in 2015, the main complications were related to puerperium; in 2016 and 2017 they were unclassified obstetric conditions. In the period 2013-2017, 94% (n=68) of the deaths were direct obstetric causes; indirect deaths accounted for 6% (n=4), associated with pathology such as non-communicable diseases (Table 2).

Table 2. Maternal deaths by cause of death Choco 2013-2019

Groups of causes of death (list of grouped causes 6/67 CIE-10 of OPS)	**Year**							**Total**	**%**
	2013	2014	2015	2016	2017	2018	2019		
Other obstetric conditions not elsewhere classified (o95-o99)	3	3	2	8	9	7	5	37	38,5
Edema, proteinuria and hypertensive disorders in pregnancy, childbirth, and puerperium (o10-o16)	4	4	2	5	3	1	2	21	21,9
Complications of labor and delivery (o60-o75)	2	2	2	0	4	2	5	17	17,7
Complications mainly related to the puerperium (o85-o92)	1	1	4	2	2	1	0	11	11,5
Causes specified in other chapters (a34x, b200-b24x,c58x,d392,e230,f530-f539,m830)	1	3	0	0	0	0	0	4	4,2
Pregnancy ending in miscarriage (o00-o08)	0	0	0	2	1	0	0	3	3,1
Other disorders primarily related to pregnancy (o20-o29)	0	0	0	0	1	0	0	1	1,0
Maternal care related to the fetus and amniotic cavity and possible delivery problems (o30-o48)	0	0	1	0	0	1	0	2	2,1
TOTAL	**11**	**13**	**11**	**17**	**20**	**12**	**12**	**96**	**100,0**

Source: DANE EEVVV 2013-2019

Significant inequalities in the quality of services have been demonstrated, the National Demographic and Health Survey NDHS 2015 shows that in Colombia on average 92.9% of pregnant women receive prenatal care by a doctor, in Chocó the figure decreases to 72.2%. In Colombia, 4.3% of pregnant women are checked by nurses, while in Chocó, nurses attend 6.6% of check-ups (12). In 2020, the surveillance system report for the department of Chocó showed that the percentage of live births with more than 4 prenatal control visits by Benefit Plan Insurance Companies (EAPB by its acronym in Spanish) was as follows: NUEVA EPS 54.55%, AMBUQ 56.82%, SANITAS 61.54%, COMFACHOCO 63.14%, COMPARTA 67.96, COOMEVA EPS 79.49% (Secretary of Health Chocó, 2021).

On the other hand, for 2019 it is reported that the prevalence rate of gestational syphilis was 8.3 per 1000 live births plus stillbirths (Colombia: 10.8 per 100 live births plus stillbirths) and the incidence of congenital syphilis in Chocó was 2.2 per 1000 live births plus stillbirths (Colombia: 1.8 per 1000 live births plus stillbirths) (1).

Discussion

The lack of timely prenatal care leads to disastrous outcomes (13). Maternal mortality is caused by preventable conditions (14-15). It has been shown that obstetric complications and perinatal mortality are associated with the lack of prenatal care to detect and follow up maternal and infant problems (16-17). Factors that have been associated with the lack of prenatal control in pregnant women are low level of education, home and parenting occupations, lack of employment, scarce economic resources, geographic location, lack of affiliation to the health system, beliefs and customs. On the other hand, the association with health factors such as the quality of prenatal services, barriers to accessibility and continuity of services and lack of resources have been demonstrated (17, 19).

This study shows that the high prevalence of maternal mortality in the department of Chocó is due to biosocial factors such as the prevalence of transmissible diseases such as gestational syphilis and non-transmissible diseases, associated as the main cause of maternal mortality, the presence of

«During the period 2013- 2014 the main cause of maternal mortality was related to edema, proteinuria, and hypertensive disorders in pregnancy ...

edema, proteinuria, and hypertensive disorders in pregnancy. Prenatal care coverage by doctors is low and there is evidence of deficiencies in the provision of this service. There is also evidence of a low level of occupation that generates income for the pregnant woman; 94% of obstetric deaths correspond to women who performed household chores (housewives), which has shown the potential exposure to major domestic work (20).

In Colombia, care guidelines have been defined for prenatal, childbirth and newborn care, which include recommended practices and interventions based on evidence (21). However, compliance with these national guidelines is deficient, the Colombian health system continues to show weaknesses in the care of pregnant women, since there are limitations in access to prenatal care services in a timely manner, likewise, primary health care programs for mothers in a maternal-perinatal state are not developed in a coordinated manner by the entities in charge of their definition and operation (22).

This study shows that although most deaths were affiliated to the subsidized social health insurance system, 100% were from rural areas, with a low level of education, and the most affected population is that belonging to Afro and indigenous ethnic groups.

In the same way, the human factor has a high influence on adherence to prenatal care; the respect received by the pregnant woman during health care has an impact on the continuity of attendance at prenatal visits (23). The perception that women have of the good results reported by prenatal care is the main factor that can explain adherence to prenatal care and regular compliance with the prenatal visits (24). The study by Diaz and Ortega (25) and the research by Ochoa and Ruiz (26) found that in addition to the difficult socioeconomic conditions of pregnant women, when the health services offered do not consider the expectations, needs, knowledge, traditions and worldviews of the users, resistance to prenatal care is reinforced (25, 26). Therefore, it is necessary for health systems to have an approach based on intersectoriality and interculturality, where the primary health care strategy can minimize the difficulties that limit effective access to prenatal care (27).

In Colombia, maternal health is contemplated within the objectives of the Ten-Year Public Health Plan 2012-2021, which promotes actions such as the comprehensive approach to women before, during and after childbirth, the humanization of health services incorporating a rights-based approach, the elimination of barriers to access to health services and institu-

tional strengthening (28). Likewise, in Colombia in 2015, by means of the statutory law, the Comprehensive Health Care Model (MIAS by its acronym in Spanish) is presented, which raises the importance of community intervention as an effective strategy for the improvement of health along with the tools of Primary Health Care (PHC), the management of the comprehensive route for the promotion and maintenance of health guarantees comprehensive consultations that help to diagnose health problems early, according to the life course of the patient (29).

Although maternal mortality in Colombia has tended to decline over time, in Chocó the indicators have remained above the national average. In this department, there are social determinants that may condition the risk of falling ill or dying during the gestational period. The efforts and technical capacity of the responsible actors are recognized; however, the lack of adherence to protocols, clinical management guidelines and strict compliance with them in cases of maternal mortality calls for the strengthening of training programs for health care workers (30). Significant racial and ethnic disparities in maternal mortality outcomes exist in the United States, and there is an urgent need to reduce disparities in maternal mortality outcomes. A developing body of research recognizes the role that structural racism plays in generating these disparities. The complex nature of racial and ethnic disparities in severe maternal morbidity and mortality rates requires a multipronged approach to reduce their incidence. A comprehensive approach to quality improvement across the continuum of care (from preconception through postpartum and between-pregnancy care) is required to reduce racial and ethnic disparities in severe maternal morbidity and mortality rates (31). It is also necessary to recognize the role of midwives as they participate as health agents and are leaders in their communities, preserving the Afro-indigenous culture and the ancestral medicinal knowledge that dignifies and humanizes childbirth. However, few studies have been conducted on midwifery practices and knowledge, especially in the Afro-Colombian population (32).

«In Colombia, care guidelines have been defined for prenatal, childbirth and newborn care, which include recommended practices and interventions based on evidence. »

Conclusions

90% of maternal deaths in the department of Chocó correspond to institutional deliveries of women registered in the General Social Security System and 94% (n=68) of the deaths were due to direct obstetric causes; this allows us to associate the increase in maternal mortality to structural conditions of care during delivery and prenatal control. The evidence shows that it is a priority to implement interventions to optimize the health of the most disadvantaged populations, generating strategies to improve access to comprehensive quality health services (33, 34). The proposal is to ensure coordination between health authorities, health system service providers, local community actors and academia in order to guarantee timely care for pregnant women in this region.

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E-mail: d-angela.cuesta@utch.edu.co

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