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Pregnancy outcomes, site of delivery, and community schisms in regions affected by the armed conflict in Chiapas, Mexico

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Abstract

The Zapatista armed conflict began in the state of Chiapas, Mexico, in 1994, and overlaps pre-existing local disputes about land, religion, and other issues. Related disruptions in access to and utilization of health services have been alleged to have compromised local health status, particularly in vulnerable subgroups such as indigenous women and infants. The study objective was to measure maternal and perinatal mortality ratios and utilization of pregnancy-related health services in the region affected by the Zapatista conflict, and to describe associations between these primary outcome measures, socioeconomic and demographic factors, and factors associated with inter-party and intra-community conflict. A cross-sectional, population-based survey was conducted in 46 communities in three regions. The study subjects were 1227 women, 13–49 years old, who had been pregnant during the preceding 2 years (1999–2001). Principal outcome measures were maternal and perinatal mortality, and site of delivery. Secondary analyses explored associations between primary outcomes and socioeconomic, demographic, and conflict-related factors. Most births (87.1%) occurred at home. The crude observed maternal and perinatal mortality ratios were 607/100,000 and 23.5/1000 live births, respectively. Those who died had difficulty accessing emergency obstetrical care. Both home birth and mortality were associated with descriptors of intra-community conflict. Observed maternal and perinatal mortality ratios were substantially higher than those officially reported for Mexico or Chiapas. Reduction of high reproductive mortality ratios will require attention to socioeconomic and conflict-related problems, in addition to improved access to emergency obstetrical services.

Keywords: Maternal mortality; Perinatal mortality; Chiapas; Mexico; War

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Background

Since 1994, the state of Chiapas, Mexico, has been the site of low-intensity armed conflict between the Mexican government and an insurgent force known as the Ejército Zapatista de la Liberación Nacional (the Zapatistas). This conflict overlaps and exacerbates longer-standing local disputes over land tenure, religion, and other issues (Eber, 2001, 2003; Leyva Solano, 2003; Womack, 1999a). Although deliberate killing of civilians has occurred as a result of the Zapatista conflict, e.g. during the 1997 Ácteal massacre, thus far these events have been relatively infrequent. Mortality caused by paramilitary forces operating within the region, or owing to intra-community disputes over religion, has apparently been of similar magnitude (Commission on Human Rights, 2000; Solomon, Brett, Brown, & Manual, 1997). Over 12,000 civilians are thought to have been forcibly displaced by a combination of military and village-level factors (Centro de Derechos Humanos Fray Bartolomé de las Casas, 1999; Oficina del Alto Comisionado de las Naciones Unidas para los Derechos Humanos en México, 2003). Village-level consequences of intra-community divisions have included expulsion or flight of dissenting individuals and factions, violence (including murder), and establishment of parallel political structures that compete with local governments for resources and adherents. As described by Burguete Cal y Mayor (2003) and others, parallel local governmental structures can be so complex as to include parallel schools, health clinics, justice systems, and jails.

Inequities in access to arable land, health services, and other necessities have been cited as important causes of the Zapatista conflict (Womack, 1999b). Mexican health statistics have repeatedly shown that the health status of rural, southern, largely indigenous populations (such as that of Chiapas) was significantly worse than that of residents of Mexico's more northern, more urban, and less indigenous population centers, and that the needier populations enjoyed less access to health services (Avila-Curiel, Chávez-Villasana, Shamah-Levy, & Madrigal-Fritsch, 1993; Lozano et al., 2001; Miranda-Ocampo, Salvatierra-Izaba, Vivanco-Cedeno, Alvarez-Lucas, & Lezana-Fernandez, 1993). Freyermuth (2003) has noted that Chiapas has one Mexico's highest maternal mortality ratios, and that within Chiapas, maternal mortality is greatest and access to emergency obstetrical services worst in predominantly indigenous regions.

Beginning in mid-1994, many Zapatista supporters began to refuse all government-sponsored assistance, choosing instead to rely on the services of non-governmental organizations and to establish their own network of village-based primary health workers (Declaración de Moisés Gandhi, 1997; Capps, 1999; Ejército Zapatista de la Liberación Nacional, 1999; Farmer, 2003).

By the late 1990s, anecdotal reports alleged that conflict-related factors had led to increased mortality and morbidity in Chiapas (Kirsch & Cedeno, 1999; Physicians for Human Rights [PHR] & Human Rights Watch, 1994, and unpublished data; Yamin, Crane, & Penchaszadeh, 1999). These reports described pertussis outbreaks in villages refusing immunizations for political reasons, maternal deaths in villages refusing to use governmental health services, the development of multi-drug-resistant tuberculosis because of interruption of tuberculosis-control programs, deaths from childhood malnutrition, politically motivated harassment of health workers, and instances in which political or military obstacles (such as roadblocks) prevented sick persons from accessing medical care. Some alleged that health status in Zapatista-associated villages had deteriorated because of the Zapatistas' refusal to accept government-sponsored health services; others suggested that the Zapatista supporters enjoyed better health because of the availability of their parallel health systems. However, no published quantitative data supported or refuted these assertions.

Therefore, we decided to undertake a descriptive study of health status within the conflict zone. Our full study was designed to evaluate mortality, malnutrition, immunization coverage, tuberculosis morbidity, utilization of health services, conflict-associated barriers to health service utilization (including those related to intra-community conflict), and health-related human rights problems. Here, we present only those data pertaining to pregnancy, delivery, and the perinatal period. The principal aims of the perinatal component of the study were to describe maternal and perinatal mortality ratios and related health-service utilization within the Zapatista conflict zone, and to identify associations between mortality, health-service utilization, and conflict-related factors such as political-party affiliation and intra-community division.

Methods

Study design: This was a cross-sectional, population-based household survey supplemented by semi-structured interviews.

Study population: We consulted published reports and regional experts in health, human rights, and Chiapanecan history (Table 1) in order to select the three (of nine) Chiapanecan administrative regions most adversely affected by the Zapatista conflict, and their most affected municipalities (Table 2). We used census data (Instituto Nacional de Estadística, Geografía, e Informática, 1990, 1996) to create lists of all population centers within these municipalities, then stratified them by size and political affiliation (aligned with the Mexican government that was in power until 2001, opposing that