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Physicians' Perceptions of the Processes, Barriers and Strategies in the Care of Obstetric Complications

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Abstract

Background: Several studies present evidence of the perceptions of pregnant women on the procedures and barriers in the care of obstetric complications, but there are few involving physicians. This qualitative study reports the perceptions of physicians on the processes of care of pregnant women with obstetric complications, and it identifies the barriers that result in delays in providing care as well as the strategies to prevent them.

Methods: Two focal groups with guided discussion were conducted with nine physicians in charge of the care of pregnant women with obstetric complications. The data were interpreted using an inductive analysis.

Results: Our data showed that the procedures in terms of the management of obstetric complications vary according to the health facility. Even though there are guidelines and manuals, the processes are adapted in accordance with the available resources. The main barriers resulting in delays have to do with clinical, socio-cultural and administrative issues. The ones that stand out at a hospital level are the clinical and administrative problems.

Conclusion: Strategies in terms of participation, education, media-campaign, infrastructure and resources, aimed at building a community model focused on prevention and involving people in every locality, were proposed.

Background

The year 2015 was the deadline defined by the United Nations to reduce maternal mortality by 50% in comparison to the year 2000 [1]. However, statistics show that the goal was not reached, due to a slow reduction of maternal deaths worldwide, mainly in developing countries [2]. The region with the highest number of deaths is sub-Saharan Africa, where more than 162 000 deaths occur annually, due to the lack of access to maternal care and the scarcity of trained personnel for the comprehensive care of obstetric emergencies, as well as other educational aspects and macroeconomic factors [3,4]. Maternal deaths are linked to health-related social determinants, such as poverty, lack of education and lack of resources to take care of maternal complications [5]. People living far away from health services are exposed to a greater risk of dying when there are complications.

The main clinical causes of maternal deaths are hemorrhage, preeclampsia-eclampsia, sepsis, obstructed labor, and unsafe abortion [1,6]. Most of them are preventable if treated timely, and if the necessary personnel, infrastructure and equipment are in place to avoid a fatal outcome. An important factor for survival is the time span necessary to get care. Making the right decisions also plays an essential role, and it involves the pregnant woman (when she recognizes the complication and looks for help), the people in charge of transporting her, and the health personnel that takes care of her upon arrival to the hospital [7].

In Mexico, women from rural communities suffering from an obstetric complication have to seek help following a path that begins at the community level (home, midwife, health center, local authorities), continues in the clinics near their locality, and ends when they are admitted in a hospital with an intensive care unit. The maternal mortality ratio in Yucatan was 59.07 per 100 000 live births up to week 51 in 2014, with 17 maternal deaths during that year [8]. Most of the women that died in 2010 and 2012 due to maternal causes were married or in a common law marriage; they were housewives; they had popular insurance (SeguroPopular) and medical care, and they died in a clinic or a hospital from the health sector [9,10].

Studies have been carried out to find out the perceptions that pregnant women, their relatives and the health personnel have on the care that pregnant women receive in their communities, on the way they seek care, on the people that take care of them, and on their transfer to a hospital. Thus, information on the care before being admitted to a hospital has been gathered [11-13]. However, the studies on the perceptions of the physicians in charge of taking care of the patients with obstetric complications in the hospitals are scarce. Knowing the physicians' perceptions in and orderly, classified way through a category system and comparing them with the sensory and experiential stimuli they receive can lead to determining the perceptual referents. These in turn, can allow identifying new sensory experiences, transforming them into recognizable and comprehensible events within the collective conception of reality in terms of the processes, the barriers and the strategies related to the care of pregnant women with obstetric complications [14].

At a community level, the following issues have been identified: the lack of recognition of the alarm signs of complications, the women's hesitation to seek help and their fear of being transferred to another hospital, and the poor quality of the local health services. The latter includes not only the lack of human resources and equipment to handle the complication, but also the communication difficulties between the health personnel and the women who speak Mayan [11-13,15,16]. In accordance with these findings, intercultural interventions to tackle the identified issues have been launched in order to improve the understanding between the population and the health personnel [17].

Nevertheless, little is known in Yucatan about the perceptions of the physicians that take care of pregnant women with obstetric complications, nor about the barriers resulting in delayed care, especially when women are referred to a clinic or a hospital. The present study reports the physicians' perceptions on the care processes that pregnant women with obstetric complications undergo, the barriers causing delays, and the strategies to prevent them.

Methods

Qualitative Study with Focus Group Discussion (FGD) Technique

The estate of Yucatan is located in the southeastern region of Mexico. It has 1 955 577 inhabitants, out of which 47% are female. Sixteen percent of the population lives in a rural environment, where more than 50% speak Mayan [18,19]. Yucatan is divided in 106 municipalities. Each municipality comprises the municipal seat as well as the small communities and difficult-to-access rural settlements. Health-care services are provided through 388 primary-care medical units, fifteen secondary-care facilities that include general hospitalization, and four tertiary-care specialty hospitals located in the state capital where women with obstetric complications are referred from the Yucatan municipalities, as well as from the states of Campeche and Quintana Roo [19]. In the small communities and the difficult-to-access rural settlements without health personnel, health aids are trained, and they are responsible for helping pregnant women and even for prescribing basic medicines. In Yucatan and the rest of the country, there is a policy in place indicating that births should not be managed at health centers, but rather be referred to a secondary or tertiary care facility with specialized personnel. By 2013, it was reported that 4% of births were managed by midwives at the women's homes, but there are municipalities where 51% to 57% of births are managed in such a way [20].

Sample and Recruitment

The participants in this study were physicians with experience in taking care of pregnant women with obstetric complications. Out of 832 specialist physicians from Yucatan, 110 (13.7%) were specialized in the care of pregnant women with obstetric complications. A sample size with a margin of error of 15% was calculated with the support of the software Epi-Info 7 [21]; the result, with a confidence level of 80%, was nine physicians.

The criteria taken into account for recruitment were the following: that the physicians had a five-year experience minimum taking care of pregnant women with obstetric complications; that they were working in hospitals, clinics and health centers, and that they were aware of the path women undergo when seeking for help, from the onset of the complication to actually being cared for; Other issues were also considered: their willingness in terms of service improvement,

their time to freely address the topics given the confidentiality condition, and their process of reflection and analysis of the procedures and the barriers to the care of pregnant women with obstetric complications. An invitation was extended, first by telephone and then in writing, to the directors of the four hospitals that offer care to more pregnant women with obstetric complications in Yucatan. The same procedure was followed to invite participants from clinics and health centers. In accordance with the inclusion criteria, nine physicians specialized in taking care of pregnant women were selected: four from hospitals, two from secondary-care clinics, and three from health centers.

Data Collection

Data were collected using a Focus Group Discussion (FGD) technique [22-25]. From March to October 2014, six FGD sessions were carried out. The schedule of the sessions was determined according to the physicians' availability in terms of date and hour, and they were agreed upon in advance to guarantee their attendance. Rescheduling was necessary on three occasions due to last-minute urgencies at their work centers. Qualitative research techniques, such as brainstorm, flow charts and diagrams, were used. Through the FGD sessions, the physicians listened to, talked about and analyzed the process of caring for pregnant women from their individual scope of action (micro level), as well as from a broader social context (macro level), where the process that gives rise to the studied problem develops. Moreover, the physicians had a face to face conversation, which ensured the group's internal cohesion [26,27,23]. The dialogue held during the FGD sessions was between more than two people, and the right to speak was alternated among the participants. Although there were discrepancies as well as similarities between the physician's experiences on the procedures and barriers leading to delays in the care of pregnant women, consensus among them was sought in order to propose prevention strategies.

The goal of the study was explained during the first session, and the participants were asked to answer a pre-designed questionnaire including questions on two core topics [27]: 1)existent and applied processes in the care of pregnant women with obstetric complications, and 2) main barriers perceived and proposed strategies to improve care for pregnant women with obstetric complications. The development of the discussion was free, and it followed the question guide. The participants were convened again to share with them a summary of their initial comments and the most relevant categories identified. Topics and comments were defined and clarified, and they were summoned again to validate the findings and to confirm the information (feedback), as well as to ensure data saturation through diagrams that summarized the process. Every session was between 120 and 180 minutes long. Two researchers experienced in FGDs were also present during the sessions; they coordinated the questions and the physicians' answers. Furthermore, two previously trained redactors took notes of the relevant aspects mentioned. The comments from the FGDs were recorded, transcribed (in Spanish) and translated into English.

Data Analysis

Data were subjected to an inductive analysis, following a sequence of interrelated steps: reading, codifying, presenting, reducing and interpreting [28]. Two conditions were taken into account to build knowledge: a) recovery of the social reality through the participants' discourse to identify processes and barriers, and b) inter subjectivities to gain access to the consensus of the human reality in order to propose prevention strategies. Two researchers (ER and RZ) were in charge of all the analysis process, which began with the reading and rereading of the transcribed texts and the revision of the notes. By reading, different topics were identified; these were then classified into categories and assigned codes. In every step, we tried to find the basic meaning of the participants' thoughts, feelings and behaviors, i.e., an initial interpretation of the data from the FGDs was carried out. Finally, following Martinez's work (2007) [23], a global interpretation of the study's results was carried out. At the same time, a characterization and interpretation of the partial discourses of fractions of the group was also performed. Thus, the way in which the topics interrelated was shown, and the way in which the network of concepts responded to the original study question was explained. During the sessions, there were comments about the care received at a community level and about the process that takes place when the pregnant woman arrives to the hospital, goes to triage, and is referred to another service.

Delays in care were grouped into clinical barriers, socio-cultural barriers, and administrative barriers. Clinical barriers include those situations related to the physician's performance, the services offered to the population, and the training in the management of obstetric emergencies, as well as the physician's hesitation to take care of the pregnant woman and the personnel's attitude when facing an emergency. Socio-cultural barriers include the population's habits and customs, their decision-making processes and their self-care practices. Administrative barriers include the lack of budget for the health care programs for pregnant women and for transportation, the lack of space in the triage area, and the lack of human resources, equipment, infrastructure, and operative programs. Quotes about the barriers resulting in delayed care were selected to illustrate the physicians' discourse. Two qualitative research specialists verified the interpretation of the data (YO and GA).

Ethical Consideration

The project was approved by the Bioethics and Research Committee at the "Dr. Hideyo Noguchi" Regional Research Center in the Autonomous University of Yucatan. The goals of the study were explained to every participant during the first group session. All of them voluntarily signed an informed consent form, and they had the right to withdraw from the study at any time.

Results

Out of the nine participating physicians, two (22.2%) were women. Their age ranged from 36 to 70 years, and the mean age was 54 ± 12.73 years; they had an average of 6.6 years of service (Table1). Several topics arose from the physicians' discourse on the existent processes applied in the care of pregnant women with obstetric complications, including the following: the lack of suitable care procedures and the delays in care processes, which involve human and material resources, infrastructure, budget and the personnel's attitude (Table 2).

Table 1: Characteristics of the participating physicians n=9

Age	Gender	Workplace	Years of service
70	M	Hospital	40
55	M	Hospital	30
38	F	Hospital	7
36	F	Hospital	8
62	M	Clinic	28
58	M	Clinic	20
65	M	Health Center	29
62	M	Health Center	25
40	M	Health Center	8

Mean age =54 ± 12.73 years
Years of service (mean) =21.6

Clinical Barriers

The discourse on the maternal health-related care processes currently in place in the Yucatan communities points to the existence of a community model in rural areas, operated by health aids and the midwife, who are in charge of raising awareness of the warning signs of complications. When these cannot be solved on site, they turn to the pregnant woman's relatives or to the local authorities for support, so the woman with a complication can be transferred to the health center. The physicians pointed to the limitations of the current community model when responding to an obstetric emergency. They also talked about the procedures carried out in the hospitals, which are conditioned by the existence of resources, the excess demand for hospital care, and the personnel's abilities as well as scientific and technical knowledge:

The community care model is operated by health aids and the midwife. There are promoters and a committee in the communities with no health services. Although the model should respond comprehensively to the pregnant woman, there is no multidisciplinary monitoring equipment. Health centers must have bibliography on obstetric emergencies, but first there should be training and supervised training and surveillance of the care model, what medicines are needed. We are trying to have it organized so responses to emergencies can be offered at the primary level.

Procedures in hospitals are the consequence of the lack of resources; that is why we have to adapt the procedures we have. For instance, there must be a nurse per every acutely ill patient, and this is not the case: one nurse takes care of three or four acutely ill patients at the same time. A better way to organize service has not been found (…), we pay too much attention to the patient volume. Not all the staff knows the emergency procedures. In my case, the nursing staff is unaware of the procedures; they are not prepared for stressful situations or acting rapidly when facing an obstetric emergency.

Socio-Cultural Barriers

The discourse dealt with local habits and customs that have to be taken into account by the model of care for pregnant women in order for it to be accepted by the population. Need to speak the Mayan language and to be sensitive to the request for vertical birth or other culturally defined positions during delivery were also mentioned:

The basic package of promotion and prevention is very distant from my culture. To achieve community participation, language must matter; there should be health people that speak Mayan. We have had a successful experience with municipal funding related to vertical birth care. We must have a local model, create a real community system where we can exist, an intercultural model that is really integrated a third way, that is, that work is done to promote and disseminate public policies.

Regarding midwives, a double standard can be appreciated: approval and rejection of the practice, as well as acknowledging it as a community alternative: There are no statistics of the midwives' performance in terms of maternal morbidity and mortality. They explore the pregnant women and sometimes they provoke inflammation with too many explorations. This is why the structure that will be in place in the area should be supervised. Midwives should be social community agents that create an intercultural tie. At a national level, it is traditional alternative medicine.

Administrative Barriers

The discourse on maternal care-related budgeting makes reference to a couple of issues regarding the problem: incapacity and excess demand in terms of hospital care. Furthermore, the physicians perceive that the support of other civil society instances and institutions for the maternal health program is necessary. They also mentioned that there is a clear difference in terms of care that gives rise to inequity according to the socio-demographic level. Moreover, there is a lack of human resources and of infrastructure:

In the clinics and the community health centers, there is no budget for maternal health, and in the hospitals there is an excess demand. We have no idea how to tackle the budget and infrastructure issues. Furthermore, the geographical responsibility assigned to public health institutions according to the municipalities is no longer in place as before. There should be a budget from the third sector, that is, the NGOs, and the Equity and Gender Commission should be engaged.

Emerging topics	Categories	Categories
Lack of adequate care procedures	Each institution carries out procedures with the available resources	Difficulty to comply with guidelines and manuals
		Processes are adapted according to existent resources
		Not everyone is familiar with the procedureso treat the obstetric emergency
	Limitations of the community model	It does not include midwives
		Lack of translators of Mayan
		The community doctor does not feel identified with the local people
Delays in the care processes	Clinical barriers	Lack of good medical performance
		Oversaturation of services
		Lack of training in the management of obstetric emergencies
		Lack of medical decisions
		Bad attitude in terms of care
	Socio-cultural barriers	Communication difficulties regarding language
		Home-based birth care
	Administrative barriers	Scarce budget
		Lack of transportation
		Lack of space for triage
		Lack of resources and equipment at the secondary level
		Lack of operative programs

Table 2: Data analytic framework

At my hospital, the undergraduate interns are the first contact for women with obstetric complications. The "gyneco" (gyneco-obstetrician) operates with the intern. During the weekend, it is worse because the "gyneco" appointed to the elective OR is in charge of the floor and in charge of urgencies too. Moreover, there is not enough space at triage; there are only four beds and there is excess demand. There are not enough gurneys to move patients. That delays the process of getting the patient form triage to floor, to the OR to the ICU.

The perceptions of the participants working in hospitals on the causes of delayed care include lack of willingness on the part of the staff to take care of the emergency (especially during shift changes), operating room saturation, and lack of personnel: Obstetric nurses are threatened by extinction; there is little personnel; during the night there is only one anesthesiologist, one physician, one nursing team, and they tell us: "Only two procedures can be carried out" and we leave them [the women] waiting until the next day. This staff prevents us from doing things; fifty percent is the staff's willingness.

But they also said that this is due to the claim culture we are living in nowadays, which keeps physicians under permanent stress and has damaged the physician-patient relationship, creating a defensive environment from both sides. Participants also pointed out that there are delays regarding the physician's decision to offer timely care to the patient with a complication, which is a result of some of the doctors' attitude when they have a case: they tend to place their own convenience first. Furthermore, they perceive that they are not protected by the institution when there is a medical complaint, and that limits their behavior.

Strategies

Finally, strategies to reduce the barriers causing delays were proposed. They were basically related to the organization and operation of the participatory community model, and the training of human resources in obstetric emergencies, as well as giving information and educating the population with respect to medical negligence claims and their impact on the doctor-patient relationship.

The main strategies proposed by the participants were focused on building an educational community model which fosters the participation of the midwives, the pregnant women, and the health sector, and emphasizes prevention more than treatment. Such a model could be monitored and feedback given on a permanent basis. Furthermore, strategies were focused on the training of staff in obstetrical emergencies at all levels, the provision of infrastructure and resources to the primary, secondary and tertiary care units, and offering education to the population and the health personnel on the repercussions of claims in the staff's attitude towards care and the deterioration of the doctor-patient relationship. The proposed strategies are summarized in Table 3

Discussion

The population's perceptions of the processes and barriers causing delayed care of the pregnant woman with an obstetric complication, as well as the strategies to reduce them are well-known worldwide [29,30]. However, the perceptions of the physicians directly involved in the care setting are little known [31]. The perceptions of the physicians from the clinics and community health centers on the current care procedures in Yucatan is in conformity with what is happening in other communities in Mexico as well as in other countries: The participation of traditional midwives continues to be indispensable to manage deliveries and to accompany the mother, as a support to the community health services [32,33]. However, they still mention that the midwives can do harm to the pregnant woman because they perform maneuvers that endanger the women. Nevertheless, it has been shown that current midwives are qualified to manage pregnancy, labor and delivery, and they have the same abilities as the general practitioners and the medical interns at the health centers [31]. Few are the midwives in the Yucatan communities that have refused to participate in the training program, and most of such cases correspond to elderly women for whom transportation to the training sites is difficult (data not published).

There are more and more studies that show that health care models have to be focused on the people's culture [34,35], but the officials in charge of budgeting have not considered incorporating human and material resources to treat obstetric emergencies. One of the main barriers that the community physicians mentioned is the lack of permanence of the practitioners who carry out their social service in the community. The same situation takes place in other states in Mexico, and it has been reported as a problem that does not contribute to the improvement of the services [35]. Hence, it will be necessary to study the causes that prevent the interns to fulfill the mission they have been entrusted with during the 12 months that they have to serve the community. Studies that provide the basis for future ethical investigations on the sanitary work of physicians worldwide have been launched [36].

Lack of transportation at the time of the obstetric emergency has been reported in studies from other countries as a time barrier that prevents providing timely care to the pregnant woman; the delay in the municipal transfer mechanisms has the same effect [37,38]. Recently in Yucatan, transfer ambulances with emergency equipment have been assigned to large municipal seats. However, a lot has still to be done to distribute vehicles to transfer women, given the remoteness of small communities that do not count with this service yet.

When the woman who is seeking care for the complication makes it in time to the referral hospital, this does not mean that everything has been solved, as can be noted in the discourse of the physicians from the hospitals. Although hospitals in Yucatan are considered to be prepared and equipped to offer specialized services in terms of maternal emergencies, the procedures carried out in each of them do not follow the same clinical guidelines.

Type of strategy	Objective	Specific objective
Participation	To develop a participatory community model, includingmidwives, users, the health sector, and the education sector, focused more on prevention than on treatment	To engage partners more so they are informed about family planning
		To empower women in terms of decision-making processes with permanent information on family planning
		To prevent pregnancies in women with chronic-degenerative diseases
		To have the university and the health sector develop an educational preconception proposal
Education	To train medical and non-medical staff 100%on obstetric emergencies at all levels	To train physicians, psychologists, nurses, social workers, health aids, people in charge of transfer, drivers, midwives, etc. on the alarm signs of the pregnant woman with obstetric complication and the management of the obstetric complication
	To give systematic training to midwives	
Information dissemination	To give information on family planning after the obstetric event	To achieve the acceptance of a contraceptive method before hospital discharge
	To inform physicians and population of the negative impact of the medical claims on the doctor-patient relationship	To improve the quality of care of obstetric emergencies to reduce medical claims
Infrastructure and resources	To train community human resources to extend coverage	To improve to access of remote communities to obstetric emergency care
	To provide peripheral clinics with infrastructure and basic resources for the management of obstetric emergencies	To reduce the risk of maternal death during the transfer of women to hospitals outside their communities

Table 3: Strategies proposed by the physicians regarding care for the pregnant woman

Moreover, they do not have the necessary human resources, material or equipment to resolve emergency situations in a timely manner. This is an unsolved problem that can also be found in other countries, in particular regarding the management of hemorrhages [39].The bad medical judgment at the time of the emergency points to the poor quality of care, as has also been reported in other countries such as Malawi, Brazil, India and France [29,30,38,40]. In Yucatan, there are also reports of maternal deaths that resulted from inadequate or untimely medical treatment, as well as from a lack of resources and medicines [12]. Determining the causes that make physicians make bad decisions when there is a complication is one of the challenges that require more studies.

The poor availability of care due to several causes, which was mentioned by the physicians, goes against the ethical principles of medical training, focused on humanism and service vocation in order to preserve life and health. This was one of the main barriers perceived, which damages the doctor-patient relationship, alienates the population from the health services, and promotes the physician's bad reputation. Therefore, even though most doctors try to fulfill their job functions appropriately, they become part of the group considered by the population as negligent [41]. Medical malpractice could be influenced by the increase of medical claims, which have led to what is known as defensive medicine, which consists in carrying out diagnostic and therapeutic procedures as a safeguard against possible negligence claims [42,43]. More studies will be needed to propose strategies to minimize defensive medicine, which is a result of the increased market of medical liability.

The strategies proposed by both study groups physicians in the community (clinics and health centers) and physicians at the hospitals take into account WHO's main recommendations to strengthen the health system: birth services, health workers, information, medicines, funding and government [44], but they emphasize the importance of incorporating an intercultural model in the communities and of developing a proposal that links research and education, and includes training in all levels of obstetric emergency management. Finally, informing the population of the negative impact of medical claims on the performance of physicians and hospitals is of capital importance.

Limitations and Strengths

The study had gender limitations, since it lacked equity in terms of the number of female participants: out of nine physicians, only two were women. This might not be representative of female doctors in Yucatan, although there are no official statistics by gender of these professionals in the state. However, the FGD technique allowed recovering the physicians' perception in order to propose strategies to improve the services.

Conclusions

The topics arisen in this study intend to improve care services for pregnant women with obstetric complications in the state of Yucatan. The specialist physicians themselves acknowledged the need for training in the management of obstetric emergencies at all levels, including the clinical and the administrative perspectives. The results show that the physicians are willing to acknowledge the barriers resulting in delayed care. Moreover, they propose a community prevention model that engages not only the health personnel, but also the population [37,44]. The proposed strategies reinforce those put forward by other developing countries, where interdisciplinary and intersectorial participation, incorporating the community's knowledge and experience, intend to give a comprehensive response to the issue of obstetric emergency management. A future challenge will be to carry out more studies with specialists from other areas in order to design and develop the proposed strategies.

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References

1) United Nations (2010) The millennium development goals. United Nations Report, New York.

2) WHO, UNICEF, UNFPA and The World Bank and The United Nation Populations Division (2014) Trends in maternal mortality: 1990 to 2013. World Health Organization, Geneva, Switzerland.

3) Kinney MV, Kerber KJ, Black RE, Cohen B, Nkrumah F, et al. (2010) Sub-Saharan Africa's mothers, newborns, and children: where and why do they die? PloS Med 7: e1000294.

4) Alvarez JL, Gil R, Hernández V, Gil A (2009) Factors associated with maternal mortality in Sub-Saharan Africa: an ecological study. BMC Public Health 9: 462.

5) Lee H, Kim S, DeMarco R, Aronowitz T, Mtengezo J, et al. (2015) Recognizing global disparities in health and in health transitions in the 21st century: what can nurses do? Appl Nurs Res 28: 60-65.

6) Khan KS, Wojdyla D, Say L, Gulmezoglu AM, Van Look PF (2006) WHO analysis of causes of maternal death: a systematic review. Lancet 367: 1066-1074.

7) Thaddeus S, Maine D (1994) Too far to walk: maternal mortality in context. Soc Sci Med 38: 1091-1110.

8) Observatorio de mortalidad maternal en México (2015) Indicadores nacionales. Avances y retrocesos de la RMM por entidad federativa.

9) Observatorio de la mortalidad materna en México (2015) Numeralia.

10) Observatorio de la mortalidad materna en México (2015) Numeralia 2012. Numeralias de mortalidad materna.

11) Rodríguez AE, Montero CL, Andueza PG, Manrique VW (2007) Medical-social characteristics of maternal deaths in a Mayan community in Yucatán, Mexico. Ginecol Obstet Méx 75: 79-85.

12) Rodríguez E, Aguilar P, Montero L, Hoil J, Andueza G (2012) Demoras en la atención de complicaciones maternas asociadas a fallecimientos en municipios del sur de Yucatán, México. Rev Biomed 23: 23-32.

13) Rodríguez E, Andueza G, Montero L (2012) A qualitative approach on maternity deaths in the Tizimin Municipality in Yucatan, Mexico. Alteridades 22: 145-158.

14) Vargas M (1994) Sobre el concepto de percepción. Alteridades 4: 45-73.

15) Rodríguez E, Palma M, Zapata R (2014) Causes of delay in the care of patients with obstetric complications ¿what is necessary to attend? Ginecol Obstet Méx 82: 647-658.

16) Rodríguez E, Urtecho C, Andueza G, Hoil J, Oliva Y (2014) Factores relacionados con complicaciones obstétricas en embarazadas de Yaxcabá, Yucatán, México. In: M. Ramos, V. Aguilera (eds) Ciencias naturales y exactas. 2nd edition, Ecorfan-México 171-180.

17)Rodríguez E, Andueza G, Pink Alcocer L, Ortíz E, Hernández B (2012) Effect of Community intervention to improve knowledge about warning signs of maternal complications in Mayan women Yucatan, controlled, randomized trial. Rev Invest Clin 64: 154-163.

18) Instituto Nacional de Estadística, Geografía e Informática (INEGI) (2015) Población por Entidad Federativa, 2010. México.

19) Plan Estatal de Desarrollo de Yucatán 2012-2018 (2015) Gobierno del Estado de Yucatán.

20) Instituto Nacional de Estadística, Geografía e Informática (INEGI) (2013) Estadísticas a propósito del Día de la Madre 2013, Datos de Yucatán.

21) Dean AG, Arner TG, Sunki GG, Friedman R, Lantinga M, et al. (2011) A database and statistics program for public health professionals. CDC, Atlanta, GA, USA.

22) Huertas E, Vigier F (2010) El grupo de discusión como técnica de investigación en la formación de traductores: dos caras de su aplicabilidad. Entreculturas 2: 181-196.

23) Martínez M (2007) Ciencia y Arte en Metodología Cualitativa. Métodos hermenéuticos, métodos fenomenológicosy métodos etnográficos. 2nd edition, Trillas, México.

24) Morgan DL (1988) Focus groups as qualitative research. SAGE, Newbury Park, CA.

25) Krueger RA, Casey MA (2009) Focus Groups: A practical guide for applied research. SAGE, California.

26) Stake RE (2010) Qualitative research. Studying how things work. Guilford Press, New York, London.

27) Olson K (2011) Approaches to Data Generation. In: Morse J (eds) Essensials of qualitative interviewing. Left Coast Press, CA 35-49.

28) Huberman A, Miles M (1994) Data management and analysis methods. In: Denzin NK, Lincoln YS (eds) Handbook of qualitative research. Sage 428-444.

9) Combs T, Sundby J, Malata A (2012) Piecing together the maternal death puzzle through narratives: The three delays model revisited. PLoS One 7: e52090.

30) Lotufo F, Parpinelli MA, Haddad S, Surita F, Cecatti J (2012) Applying the new concept of maternal near-miss in an intensive care unit. Clinics 67: 225-230.

31) Walker D, DeMaria LM, Suarez L, Cragin L (2012) Skilled birth attendants in Mexico: how does care during normal birth by general physicians, obstetric nurses, and professional midwives compare with World Health Organization evidence-based practice guidelines? J Midwifery Womens Health 57: 18-27.

32) Centro Nacional de Equidad de Género y Salud Reproductiva (2009) In: Estrategia Integral para Acelerar la Reducción de la Mortalidad Materna en México 1-48.

33) Lowell A, Kildea S, Liddle M, Cox B, Paterson B (2015) Supporting aboriginal knowledge and practice in health care: lessons from a qualitative evaluation of the strong women, strong babies, strong culture program. BMC Pregnancy Childbirth 5: 19.

34) Adames HY, Chavez-Duenas NY, Fuentes MA, Salas SP, Perez-Chavez JG (2014) Integration of Latino/a cultural value into palliative health care: a culture centered model. Palliat Support Care 12: 149-157.

35) Demaria L, Campero L, Vidler M, Walker D (2012) Non-physician providers of obstetric care in Mexico: Perspectives of physicians, obstetric nurses and professional midwives. Hum Resour Health 10: 6..

36) Loh LC, Chae SR, Heckman JE, Rhee DS (2015) Ethical considerations of physician career involvement in global health work: a framework. J Bioeth Inq 12: 129-136.

37) Rosestein M, Romero M, Ramos S (2008) Maternal mortality in Argentina: a closer look at women who die outside of the health system. Matern Child Health J 12: 519-524.

38) Ghazi M, Moudi Z, Vedadhir A (2012) Home birth and barriers to referring women with obstetric complications to hospitals: a mixed-methods study in Zahedan, southeastern Iran. Reprod Health 20: 5.

39) Paul B, Mohapatra B, Kar K (2011) Maternal deaths in a tertiary health care centre of odisha: An in-depth study supplemented by verbal autopsy. Indian J Community Med 36: 213-216.

40) Bonnet MP, Deneux-Tharaux C, Bouvier-Colle MH (2011) Critical care and transfusion management in maternal deaths from postpartum haemorrhage. Eur J Obstet Gynecol Reprod Biol 158: 183-188.

41) Kabali E, Gourbin C, De Brouwere V (2011) Complications of childbirth and maternal deaths in Kinshasa hospitals: testimonies from women and their families. BMC Pregnancy Childbirth 11: 29.

42) Asher E, Greenberg-Dotan S, Halevy J, Glick S, Reuveni H (2012) Defensive medicine in Israel-A nationwide survey. PLoS One 7: e42613.

43) Solaroglu I, Izci Y, Yeter HG, Metin MM, Keles GE (2014) Health transformation project and defensive medicine practice among neurosurgeons in Turkey. PLoS One 9: e111446.

44) WHO (2007) Everybody´s business: strengthening health systems in low and middle income countries. World Health Organization, Geneva.