

# Maternal health service utilization in urban slums of selected towns in Ethiopia: Qualitative study

Mirgissa Kaba<sup>1</sup>, Girma Taye<sup>1</sup>, Muluken Gizaw<sup>1</sup>, Israel Mitiku<sup>2</sup>,

## Abstract

**Introduction:** Although Ethiopia is one of the least urbanized countries in the world, the pace at which urbanization increases is unprecedented. During the last twenty years, urbanization has expanded rapidly and is estimated to be at 38% in 2050 from the current proportion of 19%. Despite the fact that urbanization is associated with relatively, better access to social services including health, residents in urban setting are believed to suffer from health disparities in health indicators such as use of Antenatal care (ANC), institutional delivery and postpartum care (PNC). This study aims to identify reasons why urban women fail to use available maternal health services in selected urban settings in Ethiopia.

**Methods:** A qualitative study using focus group discussions and in-depth interview was conducted in six purposively selected urban settings such as Adama, Dire Dawa, Hawassa, Debre Berhan, Gondar, and Mekelle. A total of 11 Focus Group Discussions and 40 in-depth-interviews were completed with residents of these urban settings who were living in the section of urban setting characterized as slum. The data collected were categorized in to themes and analyzed using thematic method.

**Results:** Study participants anonymously argued that there are positive changes in maternal health service utilization in all study settings over the years. However, students, daily laborers, widows, divorced and separated women, commercial sex workers, house maids, and migrants were found to be reluctant in using maternal health services such ANC follow-up, institutional delivery and PNC. Reasons were found to be attributed to individual characteristics, perceived capacities of health facilities and friendliness of service providers and socio-cultural factors including socially sanctioned expectations at community level in connection with pregnancy, delivery and postpartum.

**Conclusion:** Although service utilization in urban setting is believed to have been relatively better over the years, still women in urban settings do not use available maternal health services. Especially women living in slum areas tend to neglect use of available health services. This study suggests that blanket programmatic approach should give way to intervention that target specific section of population. Furthermore, programs are expected to be tailored to addresses individual, institutional and socio-cultural factors in tandem to improve maternal health service utilization in urban setting. [*Ethiop. J. Health Dev.* 2017;31(2):96-102]

**Key words:** Maternal Health Services, Urban Health, Social Determinant of Health, Ethiopia

## Introduction

Following the population boom, cities become the predominant mode of living and the major challenge for public health in the 21st century (1, 2). An estimated total of 54% of the world's population is residing in urban areas in 2014. This proportion is projected to reach 66% by 2050 (3). Although Africa and Asia remain mostly rural, currently 40% and 48% of their respective populations live in the urban settings; they are urbanizing faster than the other regions of the world. In this connection, slum quarters are also expanding faster (3).

Today, more than one-third of the urban population in many low and middle income countries lives in slums and shanty towns. Many people in such settings live in neighborhoods with limited provision of education and health services, safe water supplies, poor sanitation and waste management (4).

Although there is a paucity of data on the urban health profile in Ethiopia, it is by no means exceptional to the rest of the world in general and sub-Saharan Africa (SSA) in particular. The country is one of the least

urbanized in the world with 19% of the population lives in urban areas in 2016 (3). This is estimated to reach 38% in 2050. In connection with poor housing conditions and lack of access to safe water and sanitation, access and utilization of maternal health services remain challenging for some residents of urban settings in the country.

Globally, about 830 women die from pregnancy- or childbirth-related complications around the world every day. It was estimated that in 2015, roughly 303, 000 women have died during and following pregnancy and childbirth (5). Almost all maternal deaths (99%) occur in developing countries. More than half of these deaths occur in SSA. Ethiopia is among the ten countries accounting for nearly 59% of global maternal deaths (6). The high number of maternal deaths reflects, among others, inequities in access to health services, and highlights the gap between rich and poor (7).

Maternal healthcare utilization is a major determinant of maternal mortality. Despite their proven role for in the prevention of obstetric risks (8, 9); the use of Antenatal care (ANC), skilled delivery and postnatal care (PNC)

---

<sup>1</sup>mirgissk@yahoo.com, girmataye2009@gmail.com, muluken.gizaw@yahoo.com - Department of Preventive Medicine, School of Public Health, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia; <sup>2</sup>israelmitiku@yahoo.com -Department of Public Health, College of Medicine and Health sciences, Wollo University, Dessie, Ethiopia

services in urban setting is not universal. Several studies have confirmed that women and children who live in urban slums are less healthy than those who live in non-slum areas (10, 11). A study from Mumbai, India documented that women who reside in informal settlements were found to be less likely than women living in non-slum areas to make first trimester antenatal care (ANC) visits and deliver their babies at health facilities (12).

According to Ethiopian Demographic and Health Survey report of 2016, overall only forty-one percent of women received ANC from a skilled provider for their most recent birth, which was 80.3% in urban areas. Moreover, only 58.4% of pregnant women residing in urban settings were assisted by a skilled provider during delivery and 40% of urban women gave birth at home in 2014 (13). In a study conducted in Hossaina, Ethiopia, 62.6 % of deliveries were assisted by skilled attendants and 51.4 % of the women received at least one postnatal check-up (11). Based on the findings from research reports conducted elsewhere, these figures could be much lower among women living in a slum area and informal settlements of urban settings. Evidences show that socio-economic status is a primary determinant of access to maternal healthcare, and public health interventions (14-16).

In 2013, Ethiopia introduced Maternal Death Surveillance and Response System which has been globally recognized public health tool for reducing maternal mortality (17). In this system, all deaths are reported on the weekly surveillance form and followed by verbal autopsy or facility based investigation to collect detailed information about events leading to the woman's death (17). Ethiopia has emphasized on the need to address inequities in access to and quality of sexual, reproductive, maternal and newborn health care (6), which is one of the objectives of strategic framework recommended by the WHO to end preventable maternal mortality(18). In 2015, Federal Ministry of Health designed a new health sector strategy, the Health Sector Transformational Plan (HSTP) with an ambitious goals to improve equity, coverage and utilization of essential health services, improve quality of health care, and enhance capacity of the health sector at all levels of the system (19).

Meeting such goals requires to pin down factors that affect health care delivery in general, those associated with utilization of maternal health services particularly urban setting. To date, there is dearth of evidence on settings. To improve maternal health service provision in urban setting, it is important to address factors associated with utilization of available health services(1, 2). Thus, the current study aims to explore on why women residing in a slum area of selected urban settings in Ethiopia do not use available maternal health services such as ANC, institutional delivery and PNC. The result from this study may provide a baseline evidence for policy makers and programmers to design targeted interventions for specific quarters of urban settings.

## Methods

**Study settings:** The study was conducted in six JSI Strengthening Ethiopian Urban Health Extension Program (SEUHP) targeted urban settings. The towns/cities included in the study were: Dire Dawa, Adama, Hawassa, Debre Berhan, Gondar and Mekelle. The specific study settings within each town sites were selected based on prior vulnerability mapping exercise which identified sections of the urban settings that were characterized as slums. United Nations Human Settlement Program (UNHABITAT) (4) definition was employed to guide identification of study settings within the targeted study. UNHABITAT defines slum as a section of urban setting characterized by lack of basic services, relatively substandard housing, overcrowding, vulnerable to hazards, insecure tenure, and social exclusion.

**Study design and population:** Explorative qualitative study design was employed since there has not been such study that has identified vulnerable section of the town and residents at least in Ethiopian setting. Such a design guided to define vulnerable people in urban settings. Data was collected from city administrators at *Kebele* level, community members, community leaders, Urban Health Extension Professionals (UHE-ps), health care providers at health center level, and NGO representatives operating in the selected cities.

**Methods of data Collection:** Prior to data collection discussions were held with town administrators to identify places that meet part or all of Habitat's definition above and where residents are assumed to use available maternal health services relatively less. Accordingly, at least two quarters of the town that meet the criterion were considered as vulnerable places where people use available services relatively less. Data was collected using focus group discussions (FGDs), in-depth interviews (IDIs) and case studies.

A total of 40 in-depth interviews (IDIs) were administered with health providers, representatives of non-governmental organization, program coordinators and health professionals at facility levels. In addition, a total of 11 Focus Group Discussions (FGDs) were carried out with selected community members in selected quarters to generate evidences on relative vulnerability of slums/informal settlements and its residents. Participants were purposively selected based on their particular characteristics and willingness to participate in this study. For both the IDIs and the FGDs, checklists that guide discussions were developed. Team members independently checked on whether the checklists help answer the research questions. Data were collected by trained research assistants who have prior experience in such data collection. During data collection, scribbles were expanded to field notes while recorded information was transcribed at a later stage.

**Methods of Analysis:** The tape-recorded interviews were transcribed to local language and were later translated into English. Our data consisted largely of interview transcripts, focus group transcripts and expanded field notes. Three members of the research

team independently coded the transcripts following the objectives and emerging themes from the data. Accordingly, findings were categorized in to different themes and sub-themes. Vulnerable persons, vulnerable places; determinants of vulnerability; maternal health service use and reasons for non-use were identified as outstanding themes. Under each of the themes, subthemes were developed. Interpretations of results follow the respective themes and verbatim that capture dominant views were considered wherever appropriate to substantiate the findings.

**Data Quality maintenance:** The discussion guides were developed in English and translated into local languages and retranslated back into English to ensure its consistency. Data collectors were selected based on their familiarity with the local culture, fluency of the local languages and experience on qualitative research method. Research assistants, so identified, were trained on the data collection process. At the end of every day, debriefing was carried out to exchange notes between data collectors.

**Ethical Considerations:** Ethical clearance was sought and obtained from the Research Ethics Committee (REC) of the School of Public Health, Addis Ababa University. Official letter was taken from the School to the respective town administration to obtain permission. The interviews were also carried out at research participants' places so as to ensure privacy of the discussion. Participation was entirely voluntary and participants were informed that at any time during the IDI or the FGD, they could opt out. Participants received an explanation about the purpose of the study, invited to participate and asked to provide oral consent. Personal identifiers were not used in the report to ensure confidentiality.

## Results

**Demographic characteristics of participants:** Participants' characteristics reveal that 54% were 25-44 years of age while 22% were over the age of 45 years. Nearly 70% of the participants were women. Educational characteristics of the participants reveal that 13% did not have formal education while 15% have tertiary level education. Economic engagement of participants reveal that most are housewives while students, government employees, petty traders, sex workers and daily laborers were involved in the study. The living characteristics of the study participants in the selected cities are confined to crowded places, lack of sanitation that creates favourable condition for undesirable health outcomes. Case study participants were non-users for maternal health indicators.

**Maternal health service utilization:** Participants anonymously argued that there are evident changes in the availability and use of maternal health services such as ANC, institutional delivery and attending PNC in urban settings. Such changes are attributed to availability of health facilities close to their residence and more awareness creation endeavour about the service by urban health extension professionals (UHEPs). Despite such changes, there are still women

who are not attending ANC, delivery in health facilities and PNC. Responses to questions on who among residents in slums do not use available services and their reasons for non-use revealed diverse sections of the population.

Finding from this study has clearly demonstrated that women who reside in slum part of the urban settings were less likely to consider visit to health facility for ANC, deliver in health facilities and consider PNC after delivery. One of the key informants argued that "Most women use Maternal, Neonatal and Child Health services. Yet, migrants, daily laborers and women who live in slum area often ignore the use of maternal health services (MNCH officer, Gondar)".

It was consistently the case that students, teenagers, CSWs, daily laborers, housemaids, widowed, separated or divorced and commercial sex workers and migrants on transit to other area often do not use the services. One of the participants reported; "I do not see how students and housemaids who become pregnant in connection to casual sex could seek health care at facilities. In our community this is shameful and embarrassing. In old days you do not even hear about such incidents of getting pregnant out of wedlock. These women are interested to terminate their pregnancy instead of going for ANC or delivery in health facility. If the pregnancy is not terminated, usually such women deliver at home" (Housewife, Hawassa). Another participant noted, "For in-school girls, maids, daily laborers and generally the poor, getting pregnant is considered abnormal. This is unacceptable not only by the public but also by these sections of the population themselves. As a result, they keep their pregnancy away and do not take it to public places such as health facilities" (HDA leader, Dire Dawa).

Every woman does not believe on the necessities to visit health facility for ANC. Although, HEWs were mentioned to continuously track women to visit available service related to pregnancy, half of the participants are not convinced. In all study settings, social norms dictate pregnant women out of wedlock to feel ashamed and do not feel at ease to seek health care services in connection to that particular pregnancy, do not tend to deliver in health institution and seek postpartum care. Besides, competing priorities and conditionality of daily laborers, housemaids and migrants seeking permission from employers for time off makes it difficult to consider participation in educational activities and visit to health facility for different maternal health services. One of the participants argued, "For us poor women major concern is how to get food to survive and we do not have time to spend to visit health facility. In connection to pregnancy for us visit to health facility for mere checkups is a luxury" (petty trader women, Adama).

Furthermore, lack of appropriate information is a major bottleneck to seek and use available maternal health services. One of the participants argued; "I think those who come from rural area in search of job and ended up as housemaids, CSWs or those who are in transit to

other town do not have information about the importance of health care during pregnancy, delivery and postpartum” (HDA leader, Adama). Another participant pointed out, “Street girls who get pregnant often do not know on how this could have been avoided and do not know what to do about it. Besides, they may not have someone to guide and support them. As a result, they do not visit health facilities for ANC and always deliver in the place where they are” (1-5 network, Mekelle).

More specific evidences related to maternal health service use were further elaborated for there are differences in how the problems explained for each of those.

**ANC attendance:** Currently, more women attend ANC but, there are still few who are not using the available service. It was found that those women who are older and are still getting pregnant tend to cherish established practices related to pregnancy and delivery. With the FGD, as many as eight out of ten women participants in the study setting did not believe that every women should visit health facility during pregnancy for mere check-up since pregnancy is not a disease. A woman participant stressed, “Why do you have to visit health facility for getting pregnant. Pregnancy is not a health problem at all. For me and other women alike running to health facility because you are pregnant is not normal although there is continuous push from UHEPs” (Housewife, Adama). She implied that as pregnancy is normal it does not require special attention including visiting a health facility.

As much as occurrence of pregnancy is believed to be common, in the study settings due to widespread factors facilitating such occurrence, low level of awareness about maternal health problems and what services are available were found to be evident.

In the study settings, street children, sex workers, widows and divorcees tend to discriminate themselves from the services mainly because of feeling of shame. One of the participants argued, “Street girls who get pregnant may not have someone to support them i.e., advise them to visit health facility and escort them to facility for ANC. As a result, they do not visit health facilities for ANC and deliver in the place where they are (1-5 network, Mekelle).

In urban settings, although distance to health facilities is not major problem, in this study, it was found that repeated visit to health facilities among those who tend to do so is still challenging. Suburbs of Mekelle, Dire Dawa and Gondar towns were particularly identified to host relatively poor women members who not only lack awareness but also cannot afford to pay for local transport to visit health facilities. According to a respondent from Dire Dawa, “Health extension workers do not reach out to women who live in relatively remote areas where transport including bajaj is not easily available. As a result they are not getting information about the services and do not use available service as well” (Health professional, Dire Dawa).

**Delivery in health facility:** Participants in all the study settings argued that there has been on-going awareness creation endeavours by Health Extension Professionals on institutional delivery. Almost half of the participants pointed out that distance to health facilities is still an important factor in consideration of delivery in health facilities. Suburbs in the study settings were found to host relatively poor members of the community who cannot afford to pay for transportation on the onset of labor. A participant shared her experience as a neighbour of a laboring woman in the suburb of Gondar, “At the onset of labor, we called the ambulance because we in this neighbourhood have the driver’s number. Unfortunately, we learnt that the ambulance is out of function. We did not have option since it was nearly midnight. So, she delivered at home (Housewife, Gondar). A participant from other study setting shared the concern regarding ambulances, “You call the ambulance but drivers rarely pick their phone. Even if they pick their phone, they do not come as immediately as you would like them to. Meanwhile the women may deliver at home as labor at times takes shorter and we have so many of such experiences” (Elderly women, Debre Berhan).

A woman participant substantiated that even for those who regularly use ANC and decided to deliver at a facility, intense labor may unavoidably compel women to deliver at home unless earlier preparation is made. She pointed out, “At times labor occurs and it becomes intense making it difficult to take the woman to the nearest health facility. I know a young woman who recently delivered at home with assistance from a neighbour. Her labor was so fast and did not give us time to even organize ourselves. Thus, home delivery may not be avoided even for those of us who wish to deliver at facility let alone for those who are undecided” (Member of HDA, Dire Dawa).

In connection with institutional delivery, it was gathered that friendliness of health professionals in providing service was a major concern that affect decision to consider delivery in health facility on the part of the service seeker. It was argued, “There are some health professionals that do not respect women who is suffering from labor. Firstly, they take time and secondly they do not show any sign of sympathy for women suffering from labor. Besides, I learnt that they do not give equal attention to all women. The poor ones are not as much cared for. This is unfair.” (Petty trader, Debre Berhan). Participants contemplated if providers are well trained to care for women, “I think those health care providers who disrespect and abuse poor and helpless women when they come for service may need to be trained” (CSW, Hawassa). Another participant suggests, “To make health professionals responsible and accountable, government should put in place strong control mechanism. Otherwise, I think poor women find it difficult to decide to deliver in health facility” (Housewife, Mekelle).

**Postnatal Care:** Most women FGD participants pointed out that visit to health facility right after delivery is the most difficult expectation. It was unanimously argued

that even those who delivered at health facility would find it unacceptable to return back for postnatal care. One of the participants argued, *“Although there is so much effort by Urban health Extension Professional on the need to get medical attention right after delivery, women including myself feel unhappy to get back to health facility few days after delivery. It is widely believed that, women and new born’s body is open and susceptible to. So, staying at home in warmth is critical since otherwise the life of a mother and new born would be jeopardized”* (Women one-five network member, Hawassa). Another participant pointed out, *“I delivered at home and wished my new born is vaccinated but due to social sanctions to stay at home for 80 days after delivery, I could not take my child to health facility for vaccination”* (housewife, Debre Berhane). Staying in door after delivery for 80 days or 40 days has to do with not only religious and cultural expectations but also fear of exposure to wind and sun to affect the health of the mother as well as the new born.

### Discussion

Although it was not the intention of this study, slum areas are unprecedented in terms of the pace at which it is expanding and the number of people residing in these places in all the study settings. According to the latest Global Report on Human Settlements, about 32% of the world’s total urban population lives in slums. Forty-three percent of the urban population of all developing regions combined live in slums and 78% of the urban population in the least developed countries live in slums. In African cities, on average 50% of the population are documented to live in slums or vulnerable areas (4). While further study may help to map how the pace at which slum is expanding, slum areas are distributed across the cities and are believed to be expanding commensurate with fast growing urbanization.

WHO report argued that living and working conditions in slum areas worsen and create health vulnerability due to unsafe water, lack of sanitation, poor housing, overcrowding, hazardous locations and exposure to substance use, especially among vulnerable subgroups such as women (20). Unhealthy living conditions compromise the growth of young children, their nutritional status, their psychomotor and cognitive abilities, and their ability to attend school. This is true among women and their children in all the six cities under study, where home delivery was not an exception, timely vaccinated or mothers never attended ANC due to lack of access or other reasons.

Following Watts and Bohle’s proposition, vulnerability is an outcome of the risk of exposure, lack of necessary resources to cope and being subjected to the consequences (21). In view of this, living in slums opens up opportunities for more vulnerability to unwanted pregnancies, lack of awareness to available services and/or feeling of entitlements to such services. Findings show that those living in slum areas claim to have relatively limited awareness about the problems related to pregnancy and its consequences. Similar report has shown that those in slum areas do not have as much access to information (22). This is the case because they

do not have time to participate in educational activities and on the one hand, they do not belong to regular social groups.

Characteristically, unemployed women in slum areas, have low educational level, do not have access to information about health services, tend to be isolated from society, have fear of stigma, and hold traditional belief related to pregnancy and delivery as normal. Similar findings were also reported in previous studies from Ethiopia (23,24). Women in slum areas tend to generate their living from commercial sex work, sell of local beverage (Areke, Tela, Koreffe, etc...), do petty trade, and daily labor (reported in all cities. Besides, existence of factories, bars and drinking establishments, Shisha and Chat houses facilitate vulnerability to unwanted pregnancy and compromise potential use of available maternal health services. This is further reinforced by disconnect from social groups in the community and their own self discrimination for fear of stigma for breaking expectations if becoming pregnant under such conditions.

Women living in slum segments of the study settings were not only vulnerable to unwanted pregnancies and its consequences, they were not actively engaged in the valued social functions at community level. The fact that women in slums are not officially registered as regular residents; they are not members of local ‘Idir’ (self-help informal group). As a result, they do not feel to have the same right to social services provided in the community and they do not feel at ease to benefit from interventions including awareness creation forums at *Kebele* level and/or health facilities. This further affects their access to local credit schemes to get credit in times of serious problems including complicated labor.

This clearly depicts the evident disparities in awareness and use of available maternal health services in urban settings. Urban settings have multiple faces and there are groups of diverse characteristics whose health is compromised. The finding has also the gender face of vulnerability in slum places where women in slum settings suffer from unwanted pregnancy and have to bear its consequences. They do not know how to protect themselves because they do not have time to benefit from awareness building interventions and they do not know what to do about it once the problem occurs. Even if they know, they find it counterproductive to spend time for check-up, do not have the services right where they need it making service utilization among these group limited. Consequently, within urban setting marked disparities in ANC attendance, delivery in health facilities and postnatal care remains wide (25,26) assisted by reports from elsewhere documented that there are marked disparities in the use of maternal health services in slum and non-slum setting calling for a coordinated endeavor to improve the situation (22, 26).

### Conclusion

It was gathered that there are positive changes in maternal health service utilization in Ethiopia. Residents in urban settings are widely recognized to have benefitted from such services and changes appear to be

glaringly evident. However, there are still some population groups and specific places that are relatively vulnerable to unwanted pregnancies and reported for low utilization of maternal health services in urban settings. Slums were particularly found to be places where such problems are apparent. Students, daily laborers, widows, divorced, separated, commercial sex workers, house maids, and migrants who reside in slum settings were usually reluctant to use ANC services, deliver in health facilities and attend PNC. Lack of awareness about the services, limited access to the services, competing priorities, weak social connectedness, perceived lack of respectful service providers and socio-cultural factors including socially sanctioned expectations as pregnant and after delivery were common reasons for low service utilization by the women in slum areas. These determinants of service utilization are so intertwined at community level that they operate together. Following Watts and Bohle's proposition, this finding shades light on the fact that there are specific groups who are vulnerable to unwanted pregnancy and its consequences. Interestingly, such vulnerabilities are reinforced by different factors. At individual level, factors such as unemployment and consequent means to generate livelihood, relatively limited awareness about the problem and services and feeling of disconnect from social groups and self-discrimination were found to compromise potential service use. At community level, wider understanding of pregnancy and delivery as normal and expectations that pregnancy out of wedlock is still abnormal makes it difficult to seek services in time even if there is an opportunity for that.

This finding has clearly demonstrated that efforts to improve maternal health service utilization in urban setting need to realize the differences among urban residents and should determine which settings and which groups are vulnerable. Not only should interventions to promote awareness about maternal health problems and services be crafted specific to those in vulnerable sections, but also service constellation should as well introduce outreach services to the particular groups who may not be able to make it to the facility. This requires fundamental reform and introduction of comprehensive interventions at different levels.

#### Acknowledgement

The study team would like to thank all data collectors and those who have provided us with candid information about their place of residence and themselves. Financial resource from JSI SEUHP through the School of Public Health is also duly acknowledged.

#### References

- David V, Nick F, Fernando P, et al. A conceptual framework for organizing determinants of urban health, WHO Centre for Health Development, 2008.
- David V, Nick F, Fernando P, et al. Urban as a Determinant of Health. *Journal of Urban Health*. 2007;84(Suppl 1):6-26.
- United Nations, Department of Economic and Social Affairs, Population Division, World Urbanization Prospects: The 2014 Revision, Highlights (ST/ESA/SER.A/352).
- WHO. Hidden cities: unmasking and overcoming health inequities in urban settings. Geneva: World Health Organization Centre for Health Development and United Nations Human Settlements Programme. 2010.
- Leontine A, Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. *Lancet*. 2016; 387(10017):462-474.
- WHO. Trends in maternal mortality: 1990 to 2015: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva, Switzerland 2015.
- WHO, Maternal mortality Fact sheet. 2016. <http://www.who.int/mediacentre/factsheets/fs348/en/>
- Darmstadt G. Evidence-based, cost-effective interventions: how many newborn babies can we save? *Lancet*. 2005;365(9463):977-988.
- Rubens C, Global report on preterm birth and stillbirth: evidence for effectiveness of interventions. *BMC Pregnancy Childbirth*. 2010; 10(11):S3.
- Bhargava S, Singh K, Saxena B, ICMR Task Force National Collaborative Study on identification of high risk families, mothers and outcome of their off-springs. *Indian Pediatr*. 1991;28:1473-80.
- Awasthi S, Agarwal S, Determinants of childhood mortality and morbidity in urban slums in India. *Indian Pediatric*. 2003;40(12):145-61.
- IIP Sand Macro International, National Family Health Survey (NFHS-3), India, 2005-06: Maharashtra. Mumbai: International Institute for Population Sciences and Macro International; 2008.
- Ethiopian Central Statistical Agency, Mini Ethiopia Demographic and Health Survey 2014.
- Liang J, Preventable maternal mortality: Geographical/rural-urban differences and associated factors from the population based maternal mortality surveillance system in China. *BMC Public Health*. 2011;11:243.
- Linda S, Inequity in India: the case of maternal and reproductive health. *Global Health Action*, 2013;6: 19145- <http://dx.doi.org/10.3402/gha.v6i0.19145>.
- Simkhada B, Factors affecting the utilization of antenatal care in developing countries: systematic review of the literature. *J Adv Nurs*. 2008;61(3): 244-60. doi: 10.1111/j.1365-2648.2007.04532.x.
- Mama Y, Evidence for Action Stories of Change: Selected Case Studies. London: E4A. 2015: p. [http://www.who.int/maternal\\_child\\_adolescent/epidemiology/maternal-death-surveillance/country-profiles/en/](http://www.who.int/maternal_child_adolescent/epidemiology/maternal-death-surveillance/country-profiles/en/).
- The H4+ partnership: joint support to improve women's and children's health: progress report 2014. Geneva: World Health Organization. 2015:([http://apps.who.int/iris/bitstream/10665/189285/1/9789241508889\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/189285/1/9789241508889_eng.pdf), accessed 19 December 2016).

19. Ethiopian FMOH, Health Sector Transformational Plan: 2015/16 - 2019/20. 2015.
20. WHO Center for Health Development, Our city, our health, our future: Acting on social determinants for health equity in urban settings: Report to the WHO commission on social determinants of health from the knowledge network on urban setting. 2008.
21. Michael J, Hans G, Bohle G, Hunger, famine and the space of vulnerability. *GeoJournal*. 1993; 30(32):117-125.
22. Shiferaw S, Spigt M, Godefrooij M, et al. Why do women prefer home births in Ethiopia? *BMC Pregnancy and Childbirth*. 2013;13:5.
23. Mirgissa K, Zelalem A, Tafesse B. Home delivery and associated factors in an urban context: A qualitative study in Hawassa City, Southern Ethiopia. *EJHD*. 2015;29(1):3-12.
24. Monica M, Eliya Z, Martin B. The Inequality of Maternal Health in Urban Sub-Saharan Africa in the 1990's. *Population Studies*. 2003;57(3):347-366.
25. Oxfam GB Kenya Programme, Urban Poverty and Vulnerability in Kenya: The urgent need for co-ordinated action to reduce urban poverty. 2000. <http://policy-practice.oxfam.org.uk/publications/urban-poverty-and-vulnerability-in-kenya-the-urgent-need-for-co-ordinated-actio-123932>.
26. Danielle C, Sandro G, Waleska T, et al., Social Determinants of the Health of Urban Populations: Methodological Considerations. *Journal of Urban Health*. 2007;84(1):42-53.