



Social Determinants of Maternal Health in Afghanistan: A Review

Said Ahmad Maisam Najafizada¹, Ivy Lynn Bourgeault², Ronald Labonté³

¹Division of Community Health and Humanities, Faculty of Medicine, Memorial University of Newfoundland, Canada;

²Telfer School of Management, University of Ottawa, Canada;

³School of Epidemiology, Public Health and Preventive Medicine, University of Ottawa, Canada

Vol. 6, No. 1 (2017) | ISSN 2166-7403 (online)

DOI 10.5195/cajgh.2017.240 | <http://cajgh.pitt.edu>



New articles in this journal are licensed under a Creative Commons Attribution 4.0 United States License.



This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).

Abstract

Introduction: Afghanistan has a high maternal mortality rate of 400 per 100,000 live births. Although direct causes of maternal morbidity and mortality in Afghanistan include hemorrhage, obstructed labor, infection, high blood pressure, and unsafe abortion, the high burden of diseases responsible for maternal mortality arises in large part due to social determinants of health. The focus of this literature review is to examine the impact of various social determinants of health on maternal health in Afghanistan, filling an important gap in the existing literature.

Methods: This narrative review was conducted using Arksey and O'Malley's framework of (1) defining the question, (2) searching the literature, (3) assessing the studies, (4) synthesizing selected evidence in context, and (5) summarizing potential programmatic implication of the context. We searched Medline, CABI global health database, and Google Scholar for relevant publications.

Results: A total of 38 articles/reports were included in this review. We found that social determinants such as maternal education, sociocultural practices, and social infrastructure have a significant impact on maternal health. Health care may be the immediate determinant, but it is influenced by other determinants that must be addressed in order to alleviate the burden on health care, as well as to achieve long-term reduction in maternal mortality.

Conclusion: Because of the importance of social factors for maternal health outcomes, committed involvement of multiple government sectors (i.e. education, labor and social affairs, information and culture, transport and rural development among others, alongside health care) is the long-term solution to the maternal health problems in Afghanistan. National and international organizations' long-term commitment to social investment such as education, local economy, cultural change, and social infrastructure is recommended for Afghanistan and globally.

Keywords: *Maternal health, Afghanistan, healthcare utilization, review*

Social Determinants of Maternal Health in Afghanistan: A Review

Said Ahmad Maisam Najafizada¹, Ivy Lynn Bourgeault², Ronald Labonté³

¹Division of Community Health and Humanities, Faculty of Medicine, Memorial University of Newfoundland, Canada;

²Telfer School of Management, University of Ottawa, Canada;

³School of Epidemiology, Public Health and Preventive Medicine, University of Ottawa, Canada

Research

Afghanistan has a high maternal mortality of 400 per 100,000 live births, compared to 320 regionally and 280 globally.¹ While the maternal mortality rate has decreased dramatically since 2000², there is still a significant burden of maternal morbidity and mortality in Afghanistan mainly attributed to hemorrhage, obstructed labor, infection, high blood pressure, and unsafe abortions³.

Marmot describes the high burden of disease responsible for premature loss of life arising primarily from the conditions in which people are born, grow, live, work, and age.⁴

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



The social determinants of health refer to the societal factors and the unequal distribution of these factors that contribute to the overall health of the population and health inequalities. There is compelling evidence that social injustice, including inequity in social conditions, distribution of resources, power, and opportunities, takes a massive toll on health of the population of this region, especially for women.^{4,5}

Afghanistan is struggling to build an efficient, self-reliant, and sustainable health care system. International organizations such as USAID, World Bank, and the European Commission are the main donors contributing to the health care system development, with national and international non-governmental organizations providing health care services. Other organizations, such as Canadian International Development Agency (CIDA), the UK's Department for International Development (DFID), German Department for International Cooperation (GIZ) and other international development agencies help to strengthen the health care system. The Afghan Ministry of Public Health plays a stewardship role and is the only organization that most people consider to be responsible for maintaining the general health of the population. The primary health care services provided for the Afghan population are delivered through the Basic Package of Health Services (BPHS). The primary health care is

linked to the tertiary services also known as the Essential Package of Hospital Services (EPHS). The BPHS is designed to focus on maternal and newborn health, child health and immunization, public nutrition, communicable diseases, mental health and disability, and the supply of essential drugs. Maternal care provided in this package includes antenatal, delivery and postpartum care, family planning, and care for the newborn.⁶ However, utilization of these services is variable and inconsistent among Afghan women⁷.

In general, health care systems are focused on treating and preventing population-based diseases; however, the comprehensive population health approach intervention takes into account social determinants of health, such as education, income, gender, housing, socioeconomic status, etc. Availability of health care services often does not guarantee their utilization. Improvement in socioeconomic factors, sociocultural beliefs, and education level has a great potential to improve utilization of health services. The level and the pathway of impact of the social determinants of health also differ depending on geographical and geopolitical regions. The aim of this literature review is to examine the impact of various social determinants of health on maternal health in Afghanistan, filling an important gap in the existing literature, and to identify the social determinants that influence maternal health, in

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



order to inform policy and programs that target maternal health in Afghanistan.

Methods

Review process

This review was conducted using Arksey and O'Malley's framework of (1) defining the question, (2) searching the literature, (3) assessing the studies, (4) synthesizing selected evidence in context, and (5) summarizing potential programmatic implication of the context.⁸ Based on a preliminary literature search of maternal health in Afghanistan and social determinants of health, the reviewers developed and then refined the research question. Keywords utilized in this research included "maternal health", "maternal health services", "maternal mortality", "women's health", "Pregnancy", "Pregnancy complications", "Afghanistan", "health care", "social determinants of health", "sociocultural", "social and cultural factors", and "socioeconomic factors".

Data sources

A primary search of the Medline database identified 78 relevant citation titles, sociological abstract database identified 8 articles, CABI global health database identified 30 articles, and Nursing and Allied Health database identified 9. Overall, 125 citations were reviewed for this research.

Google Scholar was also searched for published articles. After a process of identification and screening of citations identified, 38 article/reports met the inclusion criteria and were included in the review (Figure 1). All of the articles were published in academic journals and 32 articles had abstracts.



Figure 1: Flow chart of the review

Inclusion and exclusion criteria

The following inclusion criteria were used: articles and reports on maternal health in Afghanistan, articles discussing social determinants of maternal health, reports published between 2000 and 2016, articles and reports written in English, and quantitative and

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



| Study design | | Number of Articles |
|---------------------|--------------------------------------------------------------------------------------|---------------------------|
| Observational Study | Household Survey (Retrospective Cohort Study, Multiple Indicator Cluster Survey) | 8 |
| | Cross-sectional Survey | 3 |
| | Administrative data base study (labour and delivery logbook, Operating Room logbook) | 2 |
| | Case Study | 3 |
| | Descriptive Survey, | 1 |
| | Needs assessment survey | 1 |
| | Questionnaire/Interview/Observation | 1 |
| | Baseline and endline Survey | 1 |
| | Subtotal | 20 |
| Experimental Study | Nonrandomized Experimental Control Design | 2 |
| | Community based intervention | 1 |
| | Knowledge-Attitude-Practice Survey | 1 |
| | Subtotal | 4 |
| Others | Perspective and Observation | 6 |
| | Editorial | 4 |
| | World Report | 2 |
| | Literature review | 1 |
| | Conference proceeding | 1 |
| | Subtotal | 14 |
| Total | | 38 |

Table 1: Designs of studies and reports

qualitative studies. Articles were excluded according to the following criteria: articles and reports with main focus other than Afghanistan, articles and reports with main focus other than maternal health in Afghanistan, articles focused on refugees,

articles published before 2000 or after 2016, and articles not in English.

Results

Articles reviewed in this study included: cross-sectional studies, cluster surveys,

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



facility-based surveillance systems, nonrandomized experimental control designs, and observational and qualitative studies (Tables 1 and 2). The most important social determinants identified in this research included health care, education, employment and income, sociocultural practices, food and sanitation.

Health care

Healthcare factors were identified as the major determinant in the reviewed studies. Accessibility, lack of healthcare professionals, and variability in the utilization of health care services were major problems for Afghan women. In a study of maternal mortality conducted in western Afghanistan before the start of the BPHS program, Amowitz et al. found that only 63% of the health facilities listed by WHO as functional were in operation.⁹ All health facilities with Emergency Obstetric Centers were located in one district, which was not accessible by women in any of the rural districts. In a reproductive-health knowledge, attitudes, and practices (KAP) survey in the capital Kabul, Egmond et al. found that 18.2% of the population thought the health facility was too far away and 14.2% reported that transportation to the medical facility was a problem.¹⁰ The situation was even worse for women residing in the rural areas. In 2002,

Amowitz et al. found that seven districts of Herat Province namely Adraskan, Pashtun Zarghon, Zendajan, Enjil, Karokh, Herat, and Guzarah had only one or two physicians.⁹ Later studies found that the Caesarean section (CS) rate was 10% in Kabul Maternity Hospital, and 3.5% in general hospitals,^{11,12} demonstrating wide variation in the utilization of this life-saving operation. In 2010, in a nonrandomized experimental control study to test the safety, acceptability, feasibility, and effectiveness of community-based education and distribution of misoprostol for prevention of postpartum hemorrhage at home birth, only 16% of women in the intervention group and 21% of women in the comparison group received prenatal care from a midwife.¹³ Lack of human and technical resources were the major reported reasons associated with adverse maternal and infant health outcomes in the poor-resource setting of Afghanistan.¹⁴⁻¹⁶ The findings of the studies conducted between 2001 and 2011 that there is a need to improve health facilities, and to increase the number of professionals in both urban and rural areas in order to improve maternal health.¹⁷⁻²⁶

Published research suggests that the provision of expanded health services alone would not lead to the increased utilization of

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



| Articles | Design | Social Determinants |
|-----------------------------------|-----------------------------------------|---------------------------------------------------------------------------------|
| 1. Ahmed, Edward, & Burnham, 2004 | *Obs: Multiple indicator cluster survey | Education; sanitation (water and latrine); health care; sociocultural practices |
| 2. Amowitz & Iacopino, 2000 | Perspective | Health care; sociocultural practices |
| 3. Amowitz, Ris, & Iacopino, 2002 | Obs: Cross-sectional survey | Food; housing; sanitation (lack of clean water); sociocultural practices |
| 4. Ayotte, 2002 | Perspective | Sociocultural practices |
| 5. Bartlett et al., 2005 | Obs: Household survey | Health care; education; housing; food |
| 6. Bick, 2007 | Editorial | Health care |
| 7. Bristol, 2006 | World Report | Health care |
| 8. Brown, 2010 | Perspective | Health care |
| 9. Currie, Azfar & Fowler, 2007 | Case study | Health care (Human Resources for Health: midwives) |
| 10. del Valle, 2004 | Perspective | Sociocultural practices |
| 11. Stephenson, 2004 | Editorial | Health care (HRH) |
| 12. Egmond et al., 2004 | **Exp: KAP | Health care; Education |
| 13. Garwood, 2006 | Perspective | Health care; Transport |
| 14. Guidotti et al., 2009 | Obs: Administrative database | Health care |
| 15. Gupta et al., 2011 | Obs: Multiple Indicator Survey | Health care; Education; Food |
| 16. Hadi et al., 2007 | Obs: Cross-sectional approach | Education; Income/employment; Health care |
| 17. Hadi et al., 2007 | Obs: Descriptive survey | Health care |
| 18. Huber, Saeedi & Samadi, 2010 | Exp: Community-based intervention | Health care; sociocultural practices |
| 19. Hussein et al., 2009 | Obs: Cross-sectional | Health care; sociocultural |

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



| | | |
|-------------------------------|------------------------------------------------|---------------------------------------------------------|
| | | practices |
| 20. Kaartinen & Diwan, 2002 | Obs: Needs assessment survey | Health care; sociocultural practices |
| 21. Kandasamy et al., 2009 | Obs: Administrative logbooks | Health care |
| 22. Khorrami et al., 2008 | Obs: Needs assessment survey | Health care; transport; income |
| 23. Mayhew, 2009 | Perspective | Health care |
| 24. Mayhew et al., 2008 | Obs: Cross-sectional | Health care; education; income; transport |
| 25. Sanghvi et al., 2010 | Exp: Nonrandomized Experimental Control Design | Health care |
| 26. Smith & Burnham, 2005 | Perspective | Health care; sociocultural practices |
| 27. Smith et al., 2008 | Obs: Case study | Health care; education |
| 28. Walraven et al., 2009 | Perspective | Health care |
| 29. Walsh, 2007 | Perspective | Health care |
| 30. Williams & McCarthy, 2003 | Perspective | Health care |
| 31. Wilson, 2011 | Perspective | Health care; sociocultural practices |
| 32. Rahmani et al., 2015 | Exp: Multiple indicator regression | Health care; sociocultural practices |
| 33. Akseer et al., 2016 | Exp: Household survey analysis | Health care; sociocultural practices; education |
| 34. Rasooly et al., 2014 | Exp: Household survey analysis | Health care; sociocultural practices, education; income |
| 35. Shahram et al., 2015 | Exp: Household survey analysis | Health care; sociocultural practices; education; income |
| 36. Newcomer, 2014 | Perspective | Sociocultural practices; education; income |

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



| | | |
|---------------------------|-------------------------------|------------------------|
| 37. Tappis et al., 2016 | Exp: Cross-sectional analysis | Health care; income |
| 38. Speakman et al., 2014 | Case study | Health care; education |
| *Obs = Observational | | |
| **Exp = Experimental | | |

Table 2 Design of articles and social determinants discussed in the papers

antenatal care,^{19,27} as some women were more likely to use services than others, depending on their education, family income, social status, and beliefs. A national cross-sectional study by Mayhew et al. in 2008 found that only 13% of women who gave birth two years prior to the study had a skilled birth attendant at the time of delivery.¹⁶ At the same time, access to basic health care (within a two-hour walk) was estimated to be nearly 85%.²⁸ This demonstrates that despite availability of services, utilization of these services remains low, possibly due to low level of education.^{29,30} In northern Afghanistan, (Balkh province), Hadi et al. found that utilization of antenatal care remained low, mainly due to significant accessibility-related problems.²⁹ Their study concluded that inaccessibility, illiteracy, poverty, and involvement of pregnant women in economic activities (farm work) were major barriers to the use of antenatal care. Haidi et al. concluded that the health status of the population could not be improved further without fundamental changes in education, income, and quality of life.²⁹

Education

Education was another major determinant of maternal health in Afghanistan identified in this review. Our review of the literature found that education level has been associated with improved health care utilization, increased birth spacing, and empowered women.^{3,10,31–33} Bartlett et al. found that 93% of women who died due to maternity-related causes were illiterate.³ Ahmed et al. reported that in western Afghanistan less than 5% of pregnant women had ever attended school.³¹ Egmond et al. found that in the capital city of Kabul that 64% of the women participating in the reproductive health survey never attended a regular school, and 62% were illiterate.¹⁰ A study by Khorrami and his colleagues found that higher levels of education were associated with lower rates of hemorrhagic complications during pregnancy.³⁴ On the other hand, studies have found that years of schooling had a significant positive influence on the level of health services a woman would receive, birth

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



spacing, family planning, and their overall health.^{10,16,29,34,35}

Studies found that educated women recognize emergency obstetric complications and seek medical care immediately³⁴, receive antenatal care, use skilled birth attendants, use contraceptives^{10,16,35}, and have lower rates of adolescent pregnancies.¹⁰ Women's education, irrespective of other socioeconomic factors, had positive contribution to improved reproductive health.¹⁰

Sociocultural practices

Patriarchal societal practices such as early marriage, rights surrounding sexual practices, and need to obtain husband's permission to receive health care, all have large impact on women's health in Afghanistan.^{15,27,32,36–39} One study in the capital city revealed the mean age at marriage was 17.2 years with 16% married at age 14 or younger.¹⁰ Another study in rural western Afghanistan found that 47% of women became pregnant before the age of sixteen.³¹ Two studies revealed that 83% and 75% of women respectively, expressed the view that it was a wife's duty/obligation to have sex with her husband even when she did not want to have sex.^{9,10} In the same study, 93% of women said that they needed authorization from their husband or a male relative to seek professional health care.¹⁰ In addition, published studies

reported that that around half of the female respondents (45% and 56% respectively) reported that it was the right of a husband to beat his wife when she disobeys.^{9,10} These factors are strongly linked to the traditional attitudes that prevail in Afghan society, where reproduction remains the predominant role for women.^{10,40–42}

Employment and Income

There is no published evidence about the link between women's formal employment and their health status, which may be related to the low employment level among women in Afghanistan. Published evidence suggests a correlation between the husband's employment, household income, the woman's economic activity, and the woman's health. Egmond et al. found a significant association between the husband's "qualified regular job" and use of family planning, antenatal care, and the woman's delivery at a health care institution in Kabul.¹⁰ Qualified regular job was defined as employment in a government or non-government organization for men with post-secondary education. However, they did not find any association between the husbands' general employment and the woman's health.¹⁰

Various studies found a positive association between household income/wealth and women's health care utilization.^{10,16,29} Egmond et al. suggested that the high cost of

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



birth in a health care facility was a reason for women not using health care services.¹⁰ Mayhew et al. found that wealth was the strongest determinant of skilled birth attendant use.¹⁶ Women in the poorest quintile had lower odds of skilled birth attendant use compared to women in each of the other quintiles; the strength of the association increased with each wealth quintile.¹⁶ While the health system is designed to accommodate the low income population, even a small fee for health care or drugs can prevent the low income population segment from accessing health care specialists.

A study by Hadi et al., which was carried out in rural areas, showed the association between women's economic activity and their health.²⁹ The study conducted in northern Balkh province indicated that in rural areas, economically active women are much less likely to access antenatal care services compared to non-economically active women.²⁹ The relationship is the opposite in the urban areas, where economically active women are slightly more likely to access antenatal care services.²⁹ It probably implies that women participating in farming, agriculture, or cattle-raising do not have control over the income generated from these activities.

Education played an important role in health care utilization among economically active women. Hadi et al. found that in rural areas, among women with at least six years of schooling, those who were economically active were more likely to use antenatal care services.²⁹ Also, among women with little or no education, economic activity was an impediment to the use of antenatal care services. Therefore, the combination of low education, rural residence, and the need to work outside the home meant that these women were much less likely to use antenatal care services than were those who were not economically active.²⁹

Sanitation and Food

Lack of food, clean water, and latrines were identified as primary problems for the population in various studies.^{9,10,16,31,43} In a study in western Afghanistan in 2002, protected water sources and appropriate control of feces were lacking in districts under investigation.⁹ Latrines were used by 85.1% of households in Karokh and 28.4% in Chesht-e-Sharif.³¹ The most common type of latrine was the open-back latrine from which night soil is removed for fertilization of crops. The main alternative to this type of latrine was using an open field.³¹ In a survey, women participants identified their primary problems such as lack

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



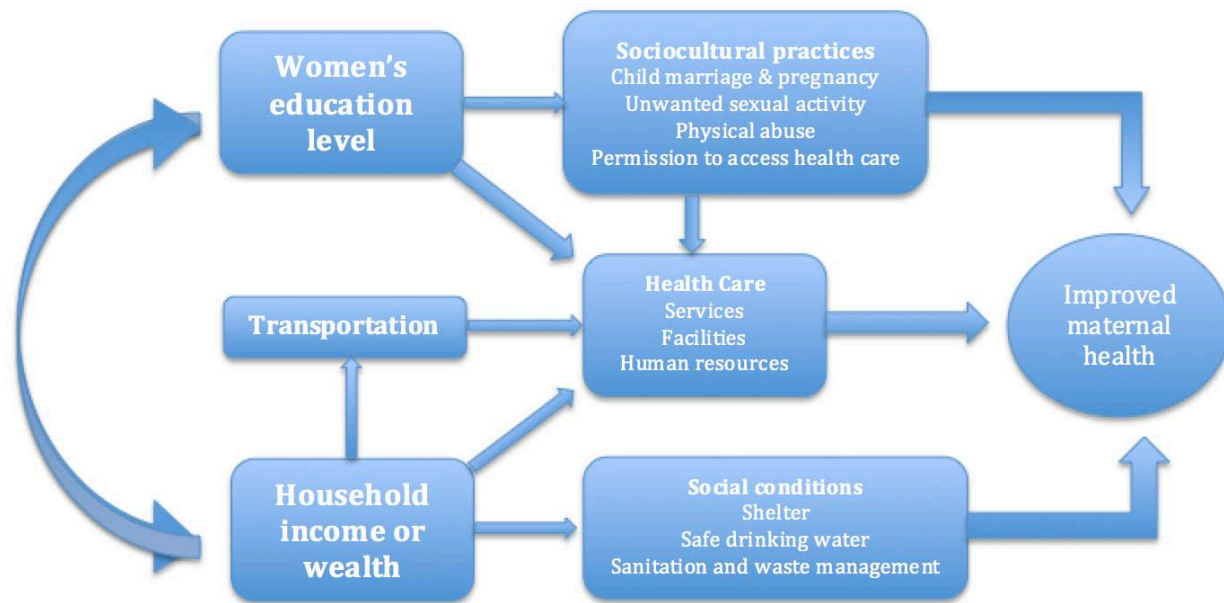


Figure 2. Pathways through which determinants influence maternal health

of food (41%), shelter (18%), and clean water (14%).⁹ Lack of food (malnutrition with subsequent anemia) contributes to the increased risk of complications among pregnant women.⁹ Though some improvement has been made in the first decade of 21st century, 63% of the population have no access to improved toilet facilities in 2010 and 50% were without improved water sources.⁴⁴

Discussion

The literature on maternal health in Afghanistan reveals that health care, education, sociocultural practices, employment, income, food, and sanitation are important determinants for maternal health.

Almost every article focusing on maternal health in Afghanistan points to the lack of women's decision-making ability in regards to their marriage, contraceptive use, family planning, birth spacing, and seeking health care. They are all linked to lower levels of education for women, patriarchal traditions, and weak social infrastructure and services in the country. A study in Pakistan by Agha and Carton found that education was the most important predictor of women's institutional delivery.⁴⁵ Education was linked with better maternal health in other rural settings of low-income countries such as Pakistan, India, Laos, and Malawi.⁴⁵⁻⁴⁸ Women's education levels demonstrated a significant association

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



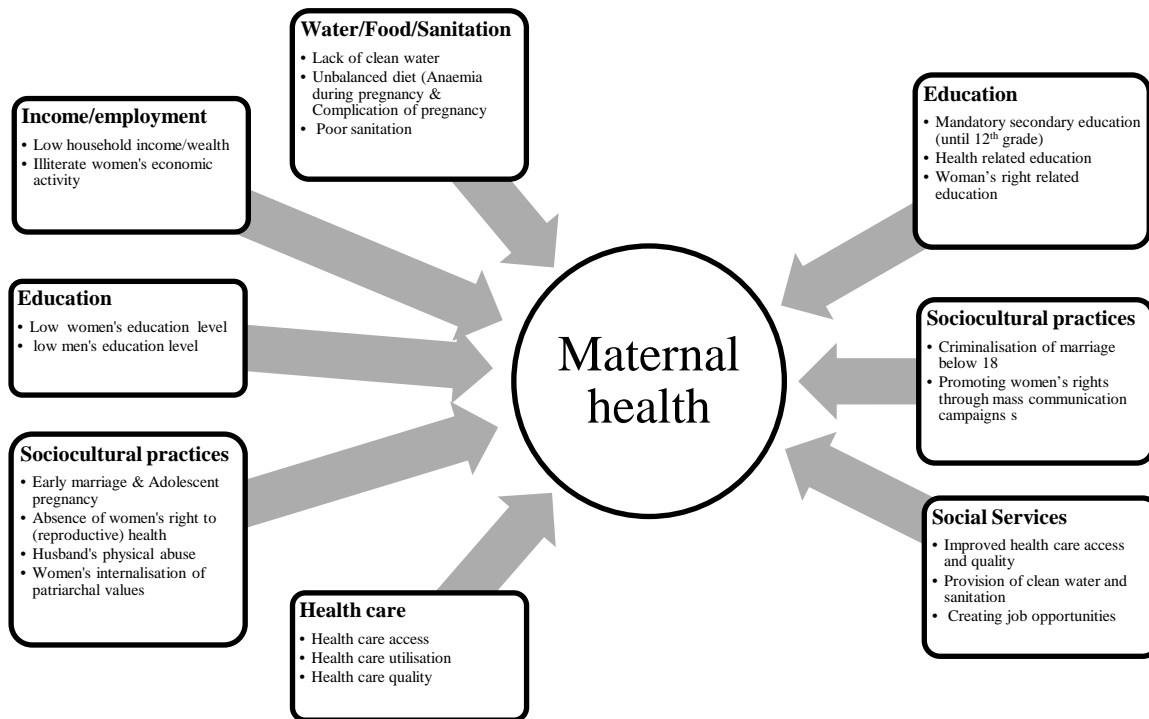


Figure 3. Factors negatively (left side) and positively (right side) influencing maternal health in Afghanistan

with health care utilization, lower fertility rate, family planning, and improved maternal health. In general, better education decreases unhealthy social practices such as early childhood marriage and adolescent pregnancy. In addition to education, access to primary health care has also been a significant determinant, but the ability to access primary care does not help to address the underlying problems. Quantitative and qualitative studies have established that health care services,

although increased in numbers, lack quality.^{9,10,16} There are buildings for clinics, but no doctors or midwives; there are ambulances, but no fuel; there is high-technology equipment, but not the skills to operate them.⁴⁹ Mayhew argues that there is a need for large-scale implementation of low-technology, simple solutions in rural areas where the majority of people live. “Defining reality and maintaining simplicity are too often

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



forgotten prerequisites for success in such a challenging environment”.⁵⁰

The notion that social determinants impact maternal health is well established in the literature.⁵¹ Studies included in this review suggest that health determinants in Afghanistan have either direct impact on maternal health or are mediated by other determinants (Figures 2 and 3). Health care services including health promotion, disease prevention, treatment facilities, and presence of skilled health personnel have a direct impact on maternal health.^{9,10,13,27,30,52,53} Studies also documented the direct health effects of local sociocultural practices such as childhood marriage and pregnancy, unwanted sexual activity, physical abuse, and the need to obtain permission to access health services.^{10,32,38,52} Undesirable social conditions such as lack of proper shelter, lack of potable water, and poor waste management definitely impacts maternal health.^{9,10,29,31}

Women’s education, on the other hand, improves the social status of women in the family and alters the undesirable and health-deteriorating sociocultural practices, and thus improves maternal health.^{3,29–31,34} Improved transportation systems such as paved roads and availability of emergency vehicles, for example, provide access to health services, improves health service utilization, and subsequently improves maternal health.^{10,30}

Employment, income, and wealth also influence health through access to the health care and through the intersection with education.^{10,30,54}

Studies in other developing countries support our findings that social determinants such as education, economic status, sociocultural practices, and weak infrastructure are strongly associated with maternal health.⁵⁵ However, we attempted to explain the pathways by which these individual determinants intersect and impact maternal health. We believe that individual determinants cannot explain the complexity of maternal health; therefore, a web of correlations between the determinants makes the impact greater compared to the sum of all of the determinants. Thus, we suggest that interventions that are targeted to improve maternal health should be comprehensive. Improving maternal health is such a complex task that the Ministry of Public Health alone cannot handle it. Other governmental and non-governmental sectors (educational organizations, labor and social services, cultural organizations, and mass media organizations) need to recognize their vital role in improving maternal health, and take appropriate policy level actions to address it. Aside from programmed approaches to address immediate maternal health challenges (such as obstetric care, access to skilled birth

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



attendant, antenatal and post-natal care) in the health sector, we propose three other recommendations.

First, women's education should become a cornerstone of maternal health. The literature review suggested that higher level of schooling increases the age of marriage, improves woman's control over her reproductive health, health care utilization, and overall health. At the policy level, the Ministry of Education and Higher Education should recognize the significance of education and work collaboratively with the Ministry of Public Health to encourage education of women and girls.

Second, gender specific initiatives have proven to be very useful in improving women's health. The Afghan Ministry of Public Health's strategy of deploying female health workers to remote areas to help increase acceptance and utilization of health care among women proved to be effective in secure areas.⁷ Recruiting more female teachers in the schools resulted in higher attendance by female students.⁵⁶ Najafizada found that the presence of female physicians on television health shows leads to an increased number of female callers responding to the show, ultimately resulting in an increased coverage time for topics related to women's health.⁵⁷ However, involvement of men in promoting women's rights is also necessary, as true empowerment takes place only when both men

and women believe in the capacities of women as equitable to those of men.

Finally, without improved social infrastructure such as provision of clean water and sanitation and work opportunities for women, further improvements in maternal health will be difficult to achieve remain a dream. Weak social infrastructure is a well-recognized barrier to health protection and promotion for the entire population in Afghanistan.

One of the limitations of this review was its inability to include all relevant studies due to limited database selection, exclusion of grey literature, and exclusion of articles published in languages other than English. The goal of this review was to capture the breadth of the available literature, thus allowing for the inclusion of multi- and cross-disciplinary articles. Using these findings as a starting point, future studies can focus on more in-depth analyses of each individual health determinant important for maternal health.

References

1. WHO. *Afghanistan: WHO Statistical Profile.*; 2015. <http://www.who.int/gho/countries/afg.pdf?ua=1>.
2. Bartlett L a, Mawji S, Whitehead S, et al. Where giving birth is a forecast of death: maternal mortality in four districts of Afghanistan, 1999-2002.

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



- Lancet*. 2005;365(9462):864-870.
doi:10.1016/S0140-6736(05)71044-8.
3. Bartlett LA, Mawji S, Whitehead S, et al. Where giving birth is a forecast of death: maternal mortality in four districts of Afghanistan, 1999-2002. Afghanistan AMMST, ed. *Lancet (British Ed)*. 2005;365(9462):864-870. doi:10.1016/S0140-6736(05)71044-8.
 4. Marmot M. *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health*. Geneva: Commission on Social Determinants of Health; 2008. doi:10.1080/17441692.2010.514617.
 5. Wilkins R, Marmot M. *Social Determinants Of Health: The Solid Facts*. (Europe RO for, Denmark., eds.). World Health Organization; 2003.
 6. Health M of P. Islamic Republic of Afghanistan Ministry of Public Health Islamic Republic of Afghanistan Ministry of Public Health. 2010;(July).
 7. Ameli O, Newbrander W. Contracting for health services: Effects of utilization and quality on the costs of the Basic Package of Health Services in Afghanistan. *Bull World Health Organ*. 2008;86(12):920-928. doi:10.2471/BLT.08.053108.
 8. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol*. 2005;8(1):19-32. doi:10.1017/CBO9781107415324.004.
 9. Amowitz LL, Reis C, Iacopino V. Maternal mortality in Herat Province, Afghanistan, in 2002: an indicator of women's human rights. *JAMA, J Am Med Assoc*. 2002;288(10):1284-1291. doi:10.1001/jama.288.10.1284.
 10. Egmond K, Bosmans M, Naeem A, Claeys P, Verstraelen H, Temmerman M. Reproductive Health in Afghanistan: Results of a Knowledge, Attitudes and Practices Survey among Afghan Women in Kabul. *Disaster*. 2004;28(3):269-282.
 11. Guidotti RJ, Kandasamy T, Betrán AP, et al. Monitoring perinatal outcomes in hospitals in Kabul, Afghanistan: The first step of a quality assurance process. *J Matern Fetal Neonatal Med*. 2009;22(4):285-292. doi:10.1080/14767050802464510.
 12. Kandasamy T, Merialdi M, Guidotti RJ, et al. Cesarean delivery surveillance system at a maternity hospital in Kabul, Afghanistan. *Int J Gynaecol Obstet*. 2009;104(1):14-17. doi:10.1016/j.ijgo.2008.08.024.
 13. Sanghvi H, Ansari N, Prata NJ V, Gibson H, Ehsan AT, Smith JM. Prevention of postpartum hemorrhage at

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



- home birth in Afghanistan. *Int J Gynaecol Obstet*. 2010;108(3):276-281. doi:10.1016/j.ijgo.2009.12.003.
14. Bick D. The importance of midwifery to maternal and infant health in Afghanistan: midwives making a difference. *Midwifery*. 2007;23(3):219-220. doi:10.1016/j.midw.2007.07.002.
 15. Huber D, Saeedi N, Samadi AK. Achieving success with family planning in rural Afghanistan. *Bull World Health Organ*. 2010;88(3):227-231. doi:10.2471/BLT.08.059410.
 16. Mayhew M, Hansen PM, Peters DH, et al. Determinants of skilled birth attendant utilization in Afghanistan: a cross-sectional study. *Am J Public Health*. 2008;98(10):1849-1856. doi:10.2105/AJPH.2007.123471.
 17. Bristol N. Reconstructing Afghanistan's health system. *Lancet*. 2006;366(9503):2075-2076. doi:10.1016/S0140-6736(05)67871-3.
 18. Brown G. A day in the life. *J Am Acad Physician Assist*. 2010;23(6):15-16.
 19. Tappis H, Koblinsky M, Doocy S, Warren N, Peters DH. Bypassing Primary Care Facilities for Childbirth: Findings from a Multilevel Analysis of Skilled Birth Attendance Determinants in Afghanistan. *J Midwifery Women's Heal*. 2016;61(2):185-195. doi:10.1111/jmwh.12359.
 20. Kaartinen L, Diwan V. Mother and child health care in Kabul, Afghanistan with focus on the mother: women's own perspective. *Acta Obstet Gynecol Scand*. 2002;81(6):491-501. doi:10.1034/j.1600-0412.2002.810604.x.
 21. Stephenson P. Midwives for Afghanistan. *Safe Mother*. 2004;31:4.
 22. Williams JL, McCarthy B. Observations from a maternal and infant hospital in Kabul, Afghanistan--2003. *J Midwifery Womens Health*. 2005;50(4):e31-5. doi:10.1016/j.jmwh.2005.02.009.
 23. Walsh D. Afghanistan's midwives tackle maternal and infant health. *Lancet*. 2007;370:1299.
 24. Walraven G, Manaseki-Holland S, Hussain A, Tomaro JB. Improving maternal and child health in difficult environments: the case for "cross-border" health care. *PLoS Med*. 2009;6(1):e5. doi:10.1371/journal.pmed.1000005.
 25. Faso B, Caisses R. payment to a pre-payment system , whether you use. 2006;84(November):845-847.
 26. Bartlett L a, Dalil S, Salama P, Mawji S, Whitehead S. Conceiving and dying in Afghanistan. *Lancet*. 2005;365(9476):2006. doi:10.1016/S0140-6736(05)66692-5.
 27. Hirose A, Borchert M, Niksear H, et al.

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



- Difficulties leaving home: a cross-sectional study of delays in seeking emergency obstetric care in Herat, Afghanistan. *Soc Sci Med.* 2011;73(7):1003-1013. doi:10.1016/j.socscimed.2011.07.011.
28. Acerra JR, Iskyan K, Qureshi ZA, Sharma RK. Rebuilding the health care system in Afghanistan: An overview of primary care and emergency services. *Int J Emerg Med.* 2009;2(2):77-82. doi:10.1007/s12245-009-0106-y.
29. Hadi A, Mujaddidi MN, Rahman T, Ahmed J. The Inaccessibility and Utilization of Antenatal Health-Care Services in Balkh Province of Afghanistan. *Asia-Pacific Popul J.* 2007;22(1):29-42.
30. Shahram MS, Hamajima N, Reyer JA. Factors affecting maternal healthcare utilization in Afghanistan: secondary analysis of Afghanistan Health Survey 2012. *Nagoya J Med Sci.* 2015;77(4):595-607. <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=4664591&tool=pmc-entrez&rendertype=abstract>.
31. Ahmed A, Edward A, Burnham G. Health indicators for mothers and children in rural Herat Province, Afghanistan. *Prehosp Disaster Med.* 2004;19(3):221-225.
32. Newcomer J. Maternal Mortality in Afghanistan : An Emerging Cultural Complexity Maternal Mortality in Afghanistan : An Emerging Cultural Complexity. *J Student Nurs Res.* 2014;3(1).
33. Smith JM, Currie S, Azfar P, Rahmanzai AJ. Establishment of an accreditation system for midwifery education in Afghanistan: maintaining quality during national expansion. *Public Health.* 2008;122(6):558-567. doi:10.1016/j.puhe.2008.03.009.
34. Khorrami H, Karzai F, Macri CJ, Amir A, Laube D. Maternal healthcare needs assessment survey at Rabia Balkhi Hospital in Kabul, Afghanistan. *Int J Gynecol Obstet.* 2008;101(3):259-263. doi:10.1016/j.ijgo.2007.11.022.
35. Rahmani AM, Wade B, Riley W. Evaluating the impact a proposed family planning model would have on maternal and infant mortality in Afghanistan. *Int J Health Plann Manage.* 2015;30(1):71-85. doi:10.1002/hpm.2206.
36. Amowitz L, Iacopino V. Women's health and human rights needs. *Lancet.* 2000;356:S65. doi:10.1016/S0140-6736(00)92052-X.
37. Hussein J, Newlands D, D'Ambruso L, Thaver I, Talukder R, Besana G.

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



- Identifying practices and ideas to improve the implementation of maternal mortality reduction programmes: findings from five South Asian countries. *BJOG*. 2010;117(3):304-313. doi:10.1111/j.1471-0528.2009.02457.x.
38. Raj A, Gomez CS, Silverman JG. Multisectorial Afghan perspectives on girl child marriage: foundations for change do exist in Afghanistan. *Violence Against Women*. 2014;20(12):1489-1505. doi:10.1177/1077801211403288.
39. Wilson C. A “boots on the ground” perspective of caring for the women and children in Afghanistan. *J Obstet Gynecol Neonatal Nurs*. 2011;40(3):255-261. doi:10.1111/j.1552-6909.2011.01251.x.
40. Ayotte B. Women ' s Health and Human Rights in Afghanistan : Continuing Challenges. *J Ambul Care Manage*. 2002;25(2):75-77.
41. Currie S, Azfar P, Fowler RC. A bold new beginning for midwifery in Afghanistan. *Midwifery*. 2007;23(3):226-234. doi:10.1016/j.midw.2007.07.003.
42. Hadi A, Rahman T, Khuram D, Ahmed J, Alam A. Raising institutional delivery in war-torn communities: experience of BRAC in Afghanistan. *Asia Pac Fam Med*. 2007;6(1):51.
43. Gupta S, Shuaib M, Becker S, Rahman MM, Peters DH. Multiple indicator cluster survey 2003 in Afghanistan: outdated sampling frame and the effect of sampling weights on estimates of maternal and child health coverage. *J Heal Popul Nutr*. 2011;29(4):388-399. doi:10.3329/jhpn.v29i4.8456.
44. Requejo J, Bryce J, Victora C. *Countdown to 2015: Maternal, Newborn & Child Survival. Building a Future for Women and Children*. World Health Organization and UNICEF; 2012.
45. Agha S, Carton TW. Determinants of institutional delivery in rural Jhang, Pakistan. *Int J Equity Health*. 2011;10(1):31. doi:10.1186/1475-9276-10-31.
46. Kitui J, Lewis S, Davey G. Factors influencing place of delivery for women in Kenya: an analysis of the Kenya demographic and health survey, 2008/2009. *BMC Pregnancy Childbirth*. 2013;13(1):40. doi:10.1186/1471-2393-13-40.
47. Nair M, Ariana P, Webster P. What influences the decision to undergo institutional delivery by skilled birth attendants? A cohort study in rural Andhra Pradesh, India. *Rural Remote Health*. 2012;12:2311. <http://www.ncbi.nlm.nih.gov/pubmed/2>

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).



- 3148477.
48. Palamuleni M. Determinants of non-institutional deliveries in Malawi. *Malawi Med J.* 2011;23(4):104-108. <http://www.ncbi.nlm.nih.gov/pubmed/23451561>.
 49. Tappis H, Koblinsky M, Winch PJ, Turkmani S, Bartlett L. Context matters: successes and challenges of intrapartum care scale-up in four districts of Afghanistan. *Glob Public Health.* 2016;11(4):387-406. doi:10.1080/17441692.2015.1114657.
 50. Mayhew M. Salon Shame and simplicity in Afghanistan. *Can Med Assoc J.* 2009;180(8):896.
 51. Marmot M. Social determinants of health inequalities. *Lancet.* 2005;365:1099-1104.
 52. Hirose A, Borchert M, Niksear H, Alkozai AS, Gardiner J, Filippi V. The role of care-seeking delays in intrauterine fetal deaths among “near-miss” women in Herat, Afghanistan. *Paediatr Perinat Epidemiol.* 2012;26(5):388-397. doi:10.1111/j.1365-3016.2012.01299.x.
 53. Hirose A, Borchert M, Cox J, Alkozai AS, Filippi V. Determinants of delays in travelling to an emergency obstetric care facility in Herat, Afghanistan: an analysis of cross-sectional survey data and spatial modelling. *BMC Pregnancy Childbirth.* 2015;15(14):(5 February 2015).
 54. Akseer N, Salehi AS, Hossain SMM, et al. Achieving maternal and child health gains in Afghanistan: a countdown to 2015 country case study. *Lancet Glob Heal.* 2016;4(6):e395-e413. doi:10.1016/S2214-109X(16)30002-X.
 55. Ahmed S, Creanga AA, Gillespie DG, Tsui AO. Economic status, education and empowerment: Implications for maternal health service utilization in developing countries. *PLoS One.* 2010;5(6). doi:10.1371/journal.pone.0011190.
 56. Valle H del. Beyond the burqa : addressing the causes of maternal mortality in Afghanistan. *FMR.*:10-12.
 57. Najafizada SAM. Health content of Afghan Media. *Univ Ottawa.* 2011;(August).

This work is licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#) and is cosponsored by the [University of Pittsburgh Press](#).

