Chapter

Maternal Mortality in Rural Areas of Pakistan: Challenges and Prospects

Muhammad Hanif, Siddra Khalid, Akhtar Rasul and Khalid Mahmood

Abstract

Pakistan is one of the countries in South Asia ranking high in maternal mortality rate. Though, a signatory of Agenda 2030, the country still lags behind considerably in achieving Sustainable Development Goals (SDGs). The ratio of maternal mortality is, even higher in rural areas of the country. Lack of health care facilities, education, malnutrition, poverty, high prevalence of violence against women in rural areas, and socioeconomic factors are some of the major contributing elements for elevated levels of maternal mortality and morbidity rate in Pakistan. By making inclusive policies at the national level to improve the reach of the rural population to healthcare facilities, educating women and eliminating gender-based disparities, introducing family planning interventions, accountability, and continuity of democracy are essentially needed to improve maternal health in Pakistan's rural areas. This chapter focuses on challenges to maternal health in rural areas and possible options to resolve these issues.

Keywords: Maternal mortality, Maternal mortality rate, Maternal mortality rate in Pakistan, maternal mortality ratio

1. Introduction

The maternal mortality rate is highest for Asia and it is even higher for South Asian countries including Pakistan. As per most recent stats around 295,000 women die during and following childbirth worldwide in a year. South Asia alone accounts for almost 1/5th of all these deaths (**Figure 1** and **Table 1**). It is regrettable to note that about 94% of maternal deaths occur in underdeveloped countries [1]. A most recent survey naming 'Pakistan Maternal Mortality Survey 2019' conducted by the National Institute of Population Studies funded by USAID shows considerable demographic variations in maternal mortality rates of women residing in rural and urban areas of Pakistan. The maternal mortality ratio in Pakistan is 186 deaths per 100,000 live births. The ratio is nearly 26% higher in rural areas as compared to urban areas [2]. In order to avoid complications, it is imperative to provide mothers with skilled care and safety during pregnancy, childbirth, and the postnatal period. There are various contributing factors including poverty, lack of education, gender-based inequalities, inadequate and poor quality of healthcare services, distant facilities, sociocultural values, malnutrition and violence against women, unfair distribution of resources, and political environment; can be termed as key indicators

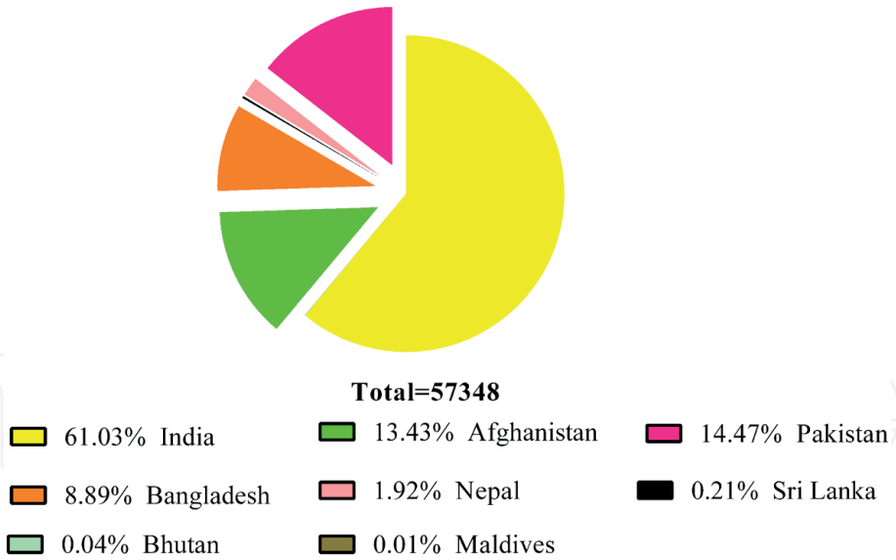

Figure 1.
The number of maternal deaths in the region of South Asia. Stats by the World Health Organization on maternal mortality trends 2000–2017 estimates that South Asia accounts for 57,000 maternal deaths.

Sr. No	Country	Number of maternal deaths	Percentage of maternal deaths	Maternal Mortality Ratio (per 100 K live births)
1.	India	35,000	61.03%	145
2.	Pakistan	8,300	14.47%	140
3.	Afghanistan	7,700	13.43%	638
4.	Bangladesh	5,100	8.89%	173
5.	Nepal	1,100	1.92%	186
6.	Sri Lanka	120	0.21%	36
7.	Bhutan	24	0.04%	183
8.	Maldives	4	0.01%	53

Table 1.
Trends of maternal deaths and MMR in the region of South Asia as per most recent stats (Year 2017) provided by the World Health Organization [9, 10].

for increased maternal death burden in rural areas. Moreover, having the Millennium Development Goals (MDGs) failed, now Pakistan is lagging far behind in achieving Sustainable Development Goals (SDGs). Domains of unmet SDGs include a reduction in child death, improvement in maternal health, and a greater number of births by skilled personnel [3]. This chapter concentrates on challenges to maternal health in rural areas alongside options and interventions to deal with these challenges.

2. Definitions

2.1 What is the maternal mortality ratio?

The maternal mortality ratio (MMR) is defined as the number of maternal deaths in a certain time duration of 100,000 live births. It is an indicator of the possibility of maternal death with relevance to the number of live births. It is a measure of the risk of maternal death as per pregnancy or one live birth [4, 5].

2.2 Maternal deaths

It is the total number of annual women death expressed per 100,000 live births because of complications during pregnancy and childbirth or inside the time of 42 days following the end of pregnancy, regardless of the length and site of pregnancy, in a specified period. It is important to note that it does not include the incidental or accidental occurrence of maternal deaths [4].

2.3 Live birth

It is defined as the removal or extraction of the whole conceived product from the mother, regardless of the period of pregnancy, which after the expulsion shows any sign of life such as breathing, a beating heart, pulsating umbilical cord, moving voluntary muscles (irrespective of the fact that the placenta has been detached or not) [4].

2.4 What is the maternal mortality rate?

The maternal mortality rate can be defined as the number of mothers who die per 1000 women [6].

2.5 Formula to calculate the maternal mortality rate

Below is given the formula (Eq. 1) to calculate the maternal mortality rate in a specific geographical area [7].

$$\text{Maternal mortality rate} = \frac{\text{Number of inhabitant maternal deaths}}{\text{Number of inhabitants live births}} \times 100{,}000 \quad (1)$$

2.6 Pregnancy-related mortality ratio

The pregnancy-related mortality ratio (PRMR) is defined as the number of pregnancy-related deaths per 100,000 live births [8].

3. Current scenario of maternal health in rural areas of Pakistan

Pakistan ranks fifth in the world according to population. Pakistan is an agriculture-based economy and recent stats show that 64% of the Pakistani population lives in rural areas [11]. According to the most recent report on the nationwide maternal mortality survey in Pakistan, MMR is 186. The report also indicates a considerably increased incidence of maternal deaths in the rural areas of Pakistan. MMR for urban areas of Pakistan is 158 while on the other hand MMR for rural areas is 199 which shows there a difference of 41 deaths per 100,000 live births [2].

4. Major issues associated with maternal mortality in rural areas of Pakistan

With a majority of the population living in the rural areas, there is a major difference in health care services provided to the people living in urban areas as compared to those living in distant regions. Here are some of the contributing factors in poor health conditions of women during the prenatal and postnatal era which subsequently result in elevated levels of maternal deaths in rural areas.

4.1 Lack of education in rural women population

Pakistani women, especially those belonging to rural Pakistan are lacking in education which in turn serves as a stimulus for increasing maternal mortality ratio. According to recent surveys, 62% of the rural women population of reproductive age is uneducated which is way more than the uneducated percentage of the urban women population. A 34% women population of childbearing age living in urban areas has no education. While in urban Pakistan the percentage of women of reproductive age, possessing secondary or higher education is 39%. Only 14% of the rural women population have secondary or higher education. In Sindh and Balochistan, 4 in every 5 women are uneducated. When compared to the urban Sindh population, 2 in every 5 women have an education of secondary or higher levels. It has been estimated that around 63% of the maternal deaths account for those women who had no education (**Table 2** and **Figure 2**) [2].

It is pertinent to mention here that Article 25A of the constitution of Pakistan states that the onus is on the state to provide free and compulsory education to individuals between the ages of 5–16. Article 25 also enables the state to make any special provisions to ensure women's protection and the children thereon [12]. School dropout rate because of distant educational centers, inadequate safety measures such as missing boundary walls in schools, gender-based inequalities, and poverty are the main causes of vast differences in the educational attainment of the women living in urban and rural areas. The spirit of article 25 of the constitution of Pakistan is to empower every individual irrespective of gender and regardless of the area where one lives. Women who have no education at all have higher maternal

Attributes	Women with no education		Provincial distribution of uneducated women
Residence	**Rural**	**Urban**	
Level of schooling	62.3%	33.6%	Total uneducated = 51.7%
Punjab	50.5%	27.2%	41.7%
Sindh	82.4%	36.5%	57.1%
Khyber Pakhtunkhwa	70.0%	48.5%	66.8%
Balochistan	80.4%	66.5%	76.2%

Table 2.
A comparison of ever-married women between the ages of 15 to 49 having no education in rural and urban areas of Pakistan according to Pakistan Maternal Mortality Survey 2019 [2].

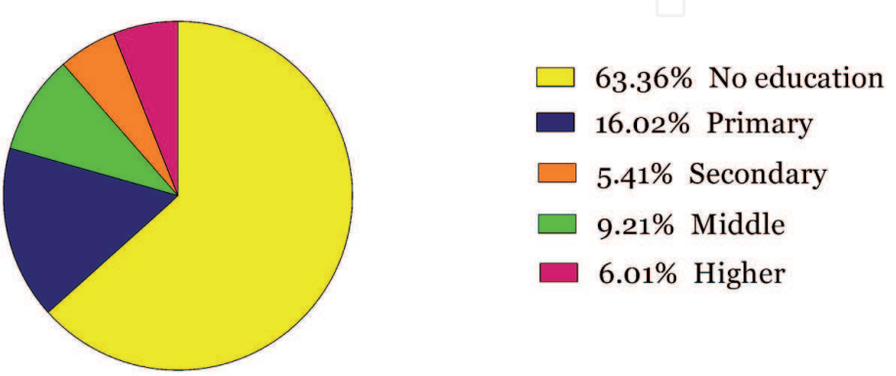

Figure 2.
Percentage distribution of educational attainment of deceased women who died three years before the Pakistan Maternal Mortality survey 2019 (Ages 15-49 yrs). Primary level education: Class 1–5, Middle-level education: Class 6–8, Secondary level education: Class 9–10, Higher level education: Class 11 and above.

mortality, malnutrition, children with stunted growth, and infant mortality rates. The disparities in educational infrastructure which the women face in rural areas are holding back them to showcase their full potential in all domains of life. There is a famous Chinese proverb, "If you are planning for a year, sow rice; if you are planning for a decade, plant trees; if you are planning for a lifetime, educate people."

4.2 Gender inequality

Women's reproductive behaviors are largely influenced by gender-based inequalities, by depriving them of their basic rights and self-sufficiency [13]. Pakistan ranks at number 151 out of 153 countries in Global Gender Gap Index which depicts Pakistan's bad standing in the global gender equality scenario [14]. It is a grim situation where almost 48% of the country's total population doesn't have equal opportunities in educational achievement, political participation, economic opportunities, and survival and health. A large chunk of the female population is deprived of basic healthcare facilities in rural areas of Pakistan. 69% of the total maternal mortalities occurring in Pakistan belong to women living in rural areas. When it comes to maternal health, the majority of the women don't have decisive powers even to seek healthcare facilities for themselves. Women's reproductive health, as well as maternal mortality rates, are largely dictated by their decision-making powers for their health [15]. Gender disparities directly predispose women to malnutrition, violence, delay in seeking healthcare, neglect, and ill-treatment during pregnancy, child marriages, and uncalled-for maternal mortality and morbidity. Some of the issues are explained in detail below.

4.2.1 Violence against women

Violence against women especially spousal violence has a negative impact not only on maternal health but also on antenatal care [13]. Vulnerability to all forms of violence—psychological, emotional, physical, verbal, and sexual—of rural women increases manifolds as they have no education, lack of skills and awareness to guard themselves. In many instances, domestic abuse is used to control and overpower women in rural areas. According to studies, spousal violence aggravates the risks associated with bad maternal health conditions. Women experiencing violence are likely to have more chances of pregnancy termination or lost pregnancies. In addition, in areas where healthcare facilities are already scarce, spousal violence contributes to decreasing the probability of maternal healthcare visits for antenatal care. In low-income countries like Pakistan, one in every ten women is subjected to spousal violence during the gestation period. Data shows that 24% of women experience less severe physical violence while 7.6% women population experience violence during pregnancy [16]. Women are more prone to domestic abuse in the case of female fetuses and in worst cases are even beaten to death [13]. This terrible reality further raises concerns for gender equality and equitable opportunities for maternal healthcare for women residing in remote areas.

4.2.2 Child marriages and honor killing

Rural women are victims of honor killing and similar crimes such as nose-cutting, acid attacks, burning, imprisonment, and forced or child marriages [17]. In a society with deeply ingrained social norms including killing girls in the name of honor and forcing them into early marriages result in exacerbation of the impacts of gender disparities. Pieces of evidence of child marriages remain high in the female population with no or low education residing in rural parts of the country. Women

with early marriages i.e. before the legal age of marriage as per law are unlikely to utilize maternal health care services via trained medical staff. Hence they are more likely to have their children delivered at homes which are associated with the increased maternal mortality and morbidity rate. No denying the fact, high MMR correlates with early or child marriages which is essentially not as greater a concern for the neighboring countries like India, Bangladesh, and Nepal as it remains for Pakistan [18]. The majority of the women in Pakistan, let alone those living in the rural parts of the country, are generally vulnerable to old customs, and outdated cultural traditions which sometimes cost their lives.

4.3 Poverty

Poor health conditions of women in Pakistan especially those living in rural areas are essentially attributed to socioeconomic factors [6]. Pakistan is a developing economy with a population of 210million people, and the rural population is more prone to poverty and impoverishment. Recent trends show that 1/4th of the total population lives below the poverty line. With a majority of the people living in rural areas, 31% of the rural population is impoverished in comparison to 13% urban population [19]. A vast difference in the economic factors of rural and urban populations increases the reproductive health-related concerns in rural women. They are more vulnerable to undernourishment and their kids are more likely to be malnourished. Furthermore, poverty is a predisposing factor in seeking healthcare facilities before, during, or after pregnancy (**Table 3**). Women in impoverished households usually have higher fertility rates, more incidence of undergoing unsafe or traditional delivery practices performed by unskilled persons, and less evidence of following a family planning regimen. All these factors negatively impact the reproductive health of rural women and in turn, increases MMR for Pakistan.

4.4 Political instability in Pakistan

As per population, Pakistan ranks in 5th place in the world. Since the very first population census held in 1951, the population of the country has grown by more than 6-folds [20, 21]. Census is meant for the purpose to access and gather data about the individuals living in a country which enables the policy-developers to make policies and plan programs accordingly. Census is prescribed to be held in the country every ten years. Unfortunately, except for the second and the fourth census, none has been held according to the prescribed schedule. After 1951, the second census in Pakistan was carried out 1961. The third census was due in 1971, but it was held in 1972. The fifth census was to be organized in 1991, but it was

Economic status	Percentage of deceased women	Women with no education	Percentage of women seeking for treatment of pregnancy-related complications
Lowest wealth quintile	21.0%	91.2%	44%
Second wealth quintile	21.6%	73.8%	52%
Middle wealth quintile	21.4%	57.1%	52%
Fourth wealth quintile	18.4%	32.0%	56%
Highest wealth quintile	17.6%	13.7%	55%

Table 3.
Association of maternal mortality with economic conditions, educational attainment, and treatment-seeking behavior according to Pakistan Maternal Mortality Survey 2019.

conducted in 1998. And the most recent census in Pakistan has been arranged in 2017 [22]. Reasons for the delayed census are primarily political instability in the country. Pakistan has three times faced decade-long military rules. To date, none of the elected Prime Ministers in the country has ever completed a 5-years term. Additionally, the country has fought three major wars with India. Overcoming longs delay in census is a necessary element to curtail discrepancies in the health care infrastructure. Rural areas in Pakistan are deprived of necessary and essential healthcare facilities and so does the women living there. Many rural mothers die on their way to distant hospitals situated in cities. There is a dire need to ensure political stability and making long-term policies for the development of healthcare infrastructure in all areas of Pakistan. After all, health is wealth!

5. Towards finding solution

Since the day of inception, Pakistan has made very little progress towards improving key indicators of maternal health. Pakistan has been a signatory to many international conventions regarding improvement in maternal health and decreasing MMR. Despite various programs and efforts, the implementation regimen remains poor. Many disparities are prevailing between the rural and urban population and access to maternal healthcare services is one of them. Elevated levels of MMR in rural Pakistan are directly linked to a variety of factors such as compromised status of women in society, undernutrition, high-risk pregnancies, poor or delayed access to health care facilities, illiteracy, and poverty. Here are some options and interventions which are essential to improve maternal health in rural areas of Pakistan.

5.1 Women empowerment and gender equality

Women empowerment and gender equality contribute to a great extent in making women able to understand their own needs, a value in the family system, and a broader perspective in society as a whole. They can ask for their rights to access quality health care services and can better take care of themselves as well as their newborns. Moreover, to prevent maternal deaths and improving the wellbeing of rural mothers, this knowledge plays a fundamental role. Gender equality allows women to avail the lifesaving opportunities, taking all benefits from the public policies and programs which in turn uplifts the condition of maternal and neonatal health. Besides, equal participation of women in the healthcare workforce of rural areas is also crucial to curtailing MMR.

Pakistan has long remained hard on women and nonetheless, the situation is the same. Studies have shown that pregnant women living in rural areas of Pakistan are more victims of deprived mental health as compared to those of urban women [23]. The economic status of women, social relations and social conditions, and pregnancy-related concerns are major determinants of maternal mental health. Women in rural areas are more prone to subjugated roles, old customs and traditions, Watta Satta (exchange marriage of women from two families), and inheritance issues are some of the predominant causes of the depressed mental state of pregnant women in rural areas of Pakistan. Studies have suggested that depression is twice more common in rural mothers in comparison with urban pregnant women. On top of that, discussing or treating mental health issues is taken for granted in Pakistani society. A depressive mental state can have severe negative implications for the mother's health and the health of the kid and family associated with her [23]. Hence, investment in addressing social determinants of maternal health of rural women is of prime importance to reduce MMR and move a step forward in achieving SDGs.

Women consist of almost half of Pakistan's population [24]. For one, their participation is all the more important in the development and the progress of society. Countries, where women are empowered and getting equal opportunities, are quoted as instances of progress and prosperity. On the contrary, in Pakistan women, health care workers get targeted for the polio vaccine immunization program. This further poses a hindrance to the recruitment of women health care staff in high-risk rural districts. Consequently, the MMR for Pakistan especially in rural regions remains high.

Following are some key factors recommended by WHO to achieve essential goals to save women lives and to decrease maternal mortality by means for empowering women [25].

1. Reduction of the routine burden of physical labor on women in rural areas

2. Improving gender equality in relationships

3. Investing in the health-related literacy in women, and the overall community

4. Increasing and understanding the value of a girl-child and decreasing son preference

5. Abolishing harmful conventional norms and practices surrounding gestation and the postpartum period.

6. Eliminating child marriages

All aforementioned factors are equally necessary to improve maternal health and reduce the lifelong risk of maternal death and disability in rural Pakistan.

5.2 Political will and stability

Abraham Lincoln has said, "Democracy is the government of the people, for the people and by the people." Pakistan is a country with constitutional democracy. Respecting the constitution and understanding the letter and spirit of laws is indispensable for every citizen of the country. Where democracy goes from strength to strength, people are empowered. It also ensures the continuity of public programs and policies in the long run. Furthermore, the onus is on the policymakers to prioritize the health sector by allocating more budget to the health sector.

The recent ranking of Pakistan in the Open Budget Index 2019 is 93 out of 117 countries. Whereas the budget transparency score for Pakistan is 28 out of 100, which is way below the other South Asian countries. Budget transparency is an estimate of access of information of the general populace to the information about the central government's expenditure of public resources. It also estimates the involvement of the public in national budgetary concerns. Afghanistan, India, Nepal, Sri Lanka, and Bangladesh are ranking at better positions in comparison to Pakistan [26]. In 2017 Pakistan's expenditure on healthcare per capita was $42 and in 2018 it was $43 [27]. Pakistan is not at par with the developed economies in providing health security to all the citizens. Those living in distant areas are more affected by this grim reality. Rural women are reportedly seen to pay fewer maternal visits to the healthcare settings during and after pregnancy in contrast to urban women. Culturally and socially bound women living in rural areas need better healthcare

facilities for themselves and their children. By taking into consideration suggestions from all the prominent stakeholders while planning and policymaking, creating long-term health-associated policies, and prioritizing a health-sensitive budget are vital factors to reduce MMR, improve human rights status, and obtaining success in Agenda 2030 (SDGs).

5.3 Success stories of exemplar countries and factor associated with achievement of low maternal mortality

A tremendous chance to learn how to reduce maternal mortality is knowing about the interventions and decisions from the exemplars who have achieved fairly low maternal mortality. A comparison of maternal mortality data of 1990 and 2013 (**Table 4**) shows that through the successful interventions—Bangladesh, China, Cambodia, Egypt, Nepal, Peru, Vietnam, Rwanda, and Lao PDR—have reduced almost 70,000 maternal deaths at a substantially faster pace [28]. Despite the enormous and individual political, social, and economic challenges; understanding that how these countries have got success in reducing child death and maternal mortality rates will be of great help to learn about the strategies, policies, and areas of investment and achieving desired outcomes in no time.

5.4 Recommendations for improving the status of maternal health in rural women in Pakistan

To reduce maternal mortality and morbidity in the rural Pakistan, there is a need to focus on the following aspects:

1. Increasing allocation of budget and funding in the health sector to the provinces (as per their needs) in NFC award (National Finance Commission) by a re-evaluation of healthcare infrastructure.

2. A collaboration of the center and provinces in integrating health with the economic progress and promoting the judicious distribution of resources.

3. Prioritizing women's reproductive health and investing more in maternal and child healthcare programs especially in rural areas of Pakistan.

4. Expanding the quality and quantity of primary healthcare services for maternal, neonatal, and child health care in remote and rural districts.

5. Introducing family planning programs and educating women and the community about the nutritional needs for maternal and neonatal care.

6. Spending in awareness campaigns and education of women to address social determinants of maternal mortality and morbidity in the remote areas.

7. Investing to strengthen the district healthcare information system, routine monitoring, accountability, and regular-evaluation of performance at district level health care centers and hospitals.

8. Investing in reachable, affordable, and quality education for women living in remote areas of Pakistan.

Sr. no	Countries	Reduction in Maternal mortality	Reduction in <5 child mortality	Successful interventions made by fast track countries
1	Bangladesh	66%	65%	Successful coverage of vital interventions (family planning, immunization, oral rehydration treatment in rural areas) Public-private partnership Gender equity Access to education for women Access to the latest information and communication technology Improving road networks
2	Cambodia	75%	57%	Timely access to immunization Developments in socioeconomic conditions Timely breastfeeding
3	China	80% (approximately)	80%	Successful coverage of vital interventions Strengthening healthcare workforce Access to water Access to sanitation
4	Egypt	69%	75%	Family planning Immunization Improving literacy rate Improving water access Improving access to sanitation facilities
5	Lao PDR	6.8%	56%	Strengthening coverage of vital immunization Preventing malaria Family planning Timely and exclusive lactation Improvements in socioeconomic status
6	Nepal	80%	66%	Increasing number of skilled birth attendance Integrating and prioritizing health in politics Improving education Improvements in transportation and communication Access to water and sanitization
7	Peru	65%	70%	Social progress Political will and stability Economic growth Addressing cultural barriers Increasing access to health care facilities by minimizing geographical barriers
8	Rwanda	22%	50%	Increasing healthcare workforce Improvements in healthcare infrastructure Improving access to healthcare centers Increasing access to education Prioritizing women political and economic involvement Addressing issues of malnutrition in women
9	Viet Nam	70%	60%	Prioritizing timely immunization Nutrition and child-survival regimes Skilled birth attendance Availability of contraceptives Access to clean drinking water Access to sanitation Increasing primary school enrollments

Table 4.
Successful interventions made by fast-track countries in curtailing maternal mortality rate and improving child health and survival rate. Data in the table shows a comparison of rapid reduction in maternal mortality and child mortality between 1990 and 2013 [28].

6. Conclusion

Maternal health is not only linked to a woman but also her kids and the family. Healthy mothers are a prerequisite for healthy children. And children are an asset for a country's future human capital. Mothers are directly involved in improving the nutritional outcome of this human capital. Women in Pakistan are dying because of many complications that are either avoidable or treatable. By bridging the gaps of gender-based inequalities, providing equal opportunities to all women in rural areas, social reforms, prioritizing a health-sensitive budget, promoting women education, long term policy development, and planning programs to improve maternal and child health, investing in bringing down disparities between urban and remote areas, health care system interventions at the district level, not only can help Pakistan in achieving the SDGs 2030 but also help in ranking the country higher in human development index. Whether these are rural or urban areas, at every level, all-inclusive regimens are required to achieve global goals to reduce the maternal death burden. As we grow, we grow up collectively!

Acknowledgements

Authors are very much thankful to Higher Education Commission (HEC) Pakistan for providing the financial assistance under the NRPU research project.

Conflict of interest

All the authors have no conflict of interest.

Notes/thanks/other declarations

Authors are very much thankful to you for the Dean faculty of Pharmacy, Prof. Dr. Muhammad Uzair, Chairman department of Pharmaceutics, Prof. Dr. Syed Nisar Hussain Shah, Associate professor department of statistics Dr. Muhammad Ahmad shahzad for providing the research facilities and survey based data.

Appendices and nomenclature

SDGs	Sustainable Development Goals
USAID	United States Agency for International Development
MDGs	Millennium Development Goals
MMR	Maternal mortality ratio
PRMR	Pregnancy-related mortality ratio
WHO	World Health Organization
NFC	National Finance Commission

Author details

Muhammad Hanif[1*], Siddra Khalid[1], Akhtar Rasul[2] and Khalid Mahmood[3]

1 Department of Pharmaceutics, Faculty of Pharmacy, Bahauddin Zakariya University Multan, Pakistan

2 Department of Pharmaceutics, Faculty of Pharmaceutical Sciences, Government College University, Faisalabad, Pakistan

3 Institute of Chemical Sciences, Bahauddin Zakariya University Multan, Pakistan

*Address all correspondence to: muhammad.hanif@bzu.edu.pk

References

[1] Maternal mortality 2019 [updated 19 September 2019; cited 2021 10-02]. Available from: https://www.who.int/news-room/fact-sheets/detail/maternal-mortality.

[2] Pakistan Maternal Mortality Survey 2019: Key Indicators Report. Islamabad, Pakistan, and Rockville, Maryland, USA: NIPS and ICF.: National Institute of Population Studies (NIPS) [Pakistan] and ICF, 2020 2020. Report No.

[3] Adnan M, Mahmood H, Hassan M, Humayun A. Maternal Health Care Expenditure among Women in Rural Areas of Pakistan. Annals of King Edward Medical University. 2017;23(2).

[4] Mortality and burden of disease [cited 2021 10-02]. Available from: https://www.who.int/data/gho/indicator-metadata-registry/imr-details/26.

[5] Maternal Mortality and Pregnancy-related Mortality [cited 2021 10-02]. Available from: https://dhsprogram.com/Data/Guide-to-DHS-Statistics/Maternal_Mortality_and_Pregnancy-related_Mortality.htm#Pregnancy_related.

[6] Khan YP, Bhutta SZ, Munim S, Bhutta ZA. Maternal health and survival in Pakistan: issues and options. Journal of obstetrics and gynaecology canada. 2009;31(10):920-9.

[7] Maternal Mortality and Related Concepts. USA: National Center for Health Statistics, Services USDoHaH; 2007 Contract No.: 33.

[8] Maternal deaths [cited 2021 02-11]. Available from: https://www.who.int/data/gho/indicator-metadata-registry/imr-details/4622.

[9] Maternal mortality ratio (modeled estimate, per 100,000 live births) 2019 [cited 2021 02-12]. Available from: https://data.worldbank.org/indicator/SH.STA.MMRT?locations=PK.

[10] Number of maternal deaths - South Asia 2019 [cited 2021 02-12]. Available from: https://data.worldbank.org/indicator/SH.MMR.DTHS?end=2017&locations=8S&start=2000&view=chart.

[11] Nasir Javed MK. 6th Population & Housing Census 2017 A Comprehensive Summary of Results. Unit TU; 2018.

[12] THE CONSTITUTION OF THE ISLAMIC REPUBLIC OF PAKISTAN. Eighth ed. Islamabad, Pakistan2018. p. 15.

[13] Rizvi N, Khan KS, Shaikh BT. Gender: shaping personality, lives and health of women in Pakistan. BMC women's health. 2014;14(1):1-8.

[14] Global Gender Gap Report. World Economic Forum, 2020.

[15] Jafree SR. The Sociology of South Asian Women's Health: Springer; 2020.

[16] Hassan S-U-N, Memon E, Shahab M, Mumtaz S. Utilization of maternal healthcare services in women experiencing spousal violence in Pakistan: A comparative analysis of 2012-13 and 2017-18 Pakistan Demographic Health Surveys. PloS one. 2020;15(9):e0239722.

[17] Country Policy and Information NotePakistan: Women fearing gender-based violence. In: Office UH, editor. UK2020. p. 1-68.

[18] Nasrullah M, Zakar R, Krämer A. Effect of child marriage on use of maternal health care services in Pakistan. Obstetrics & Gynecology. 2013;122(3):517-24.

[19] Farooq S, Ahmad U. Economic Growth and Rural Poverty in Pakistan:

A Panel Dataset Analysis. The European Journal of Development Research. 2020:1-23.

[20] U.S. and World Population Clock USA: U.S. Department of Commerce; 2021 [cited 2021 02-11]. Available from: https://www.census.gov/popclock/world.

[21] Pakistan's Population Challenge. Development Advocate of Pakistan. 2021 01-23.

[22] Population Census: Pakistan Bureau of Statistics; 2021 [updated 12-02-2021; cited 2021 02-12]. Available from: https://www.pbs.gov.pk/content/population-census.

[23] Zahidie A, Kazi A, Fatmi Z, Bhatti MT, Dureshahwar S. Social environment and depression among pregnant women in rural areas of Sind, Pakistan. JPMA-Journal of the Pakistan Medical Association. 2011;61(12):1183.

[24] Young Women in Pakistan – Status Report 2020 2020 [cited 2021 02-17]. Available from: https://asiapacific.unwomen.org/en/digital-library/publications/2020/11/young-women-in-pakistan-status-report-2020.

[25] Organization WH. Women's Empowerment and Gender Equality: Essential Goals for Saving Women's Lives. 2008. p. 4.

[26] Open Budget Survey 2019 2019 [cited 2021 02-13]. Available from: https://www.internationalbudget.org/open-budget-survey/country-results/2019/pakistan.

[27] Pakistan Healthcare Spending 2000-2021 [cited 2021 02-13]. Available from: https://www.macrotrends.net/countries/PAK/pakistan/healthcare-spending.

[28] Success Factors: Ten countries spotlighted for reducing mortality rates [press release]. Sandton Convention Centre, Johannesburg, South Africa: The partnership for maternal newborn and child health, 06-30 2014.