

Maternal Health Services in Pakistan

ASMA ILYAS

*University of Northampton, United Kingdom**Correspondence to Dr. Asma Ilyas, Email: asma.publichealth@hotmail.com, Cell: 00923429526146*

ABSTRACT

Background: Women must be provided with necessary health services for a child's good health and future during pregnancy. Women's health has experienced a considerable epidemiological change during the past several decades. Maternal well-being and health affect not only the developed world but predominantly the developing nations. Differences in resource allocation between industrialized and developing countries ultimately led to notable differences in pregnancy complications and deaths.

Aim: To investigate these barriers. A literature review was carried out to address this research topic.

Methodology: Six online databases AMED, CINAHL PLUS, PUBMED, MEDLINE, COCHRANE LIBRARY and SCIENCE DIRECT were used for a preliminary search that yielded 6353 articles. No grey literature was discovered due to time restrictions. Seven publications were discovered to be eligible for inclusion in the literature review after carefully reading, analysing, and evaluating them with the help of critical appraisal techniques. After the initially searched articles were filtered using robust inclusion and exclusion criteria.

Findings: Data were taken from different sources like the Pakistan Demographic and Health Surveys (PDHSs), WHO, and a comparison was made with the findings from different factors. The analysis concentrates on women of Pakistan having maternal health issues and maternal health services. The Critical Appraisal Skills Program (CASP) is used for the assessment and qualitative analysis of this study.

Practical implications: By addressing the issues highlighted in this paper there appears to be substantial room for improvements in Pakistan's pregnancy outcomes. This review provides a better understanding of the risk factors determining maternal mortality in Pakistan. Public awareness is important as this paper almost covered the different platforms which are working on maternal health services to aware the society. To promote maternal health messages and encourage pregnant women to receive maternal healthcare services, policymakers, healthcare professionals, and health organizations can adopt a variety of campaigns.

Results: This study discussed the impact of different factors which effect on maternal health. Different factors are associated with utilizing maternal healthcare services at antenatal care and delivery stages of pregnancy in Pakistan. This review concentrated on the economic and social vulnerability of pregnant women and emphasized the importance of parallel, more all-encompassing initiatives, like poverty reduction and women's empowerment. Poor maternal health in Pakistan has many root causes, including undernourishment of young girls, early marriage, high fertility rates, and unmet contraceptive needs.

Conclusion: The key factors influencing women's hesitation and refusal to use the health facilities in Pakistan include structural hurdles, maternal knowledge and education levels, and men's dominance in decision-making, according to the themes drawn from the literature.

Keywords: Pregnant women, Maternal health, Ante-natal care, Pakistan, Demographic and health surveys,

INTRODUCTION

Pregnancy is a biological term describing a fetus's development inside a woman's body (uterus)¹. It typically has three stages, or trimesters, and lasts for around 40 weeks, or nine months. The first trimester lasts from conception to approximately the 12th week of pregnancy, the second trimester is between 13 and 27 weeks, and the third trimester starts at around 28 weeks and lasts until the baby is delivered. During pregnancy, different physiological and hormonal changes occur in the female body². Common physiological changes are vomiting, nausea, frequent urination, and mood swings. The oxygen and iron requirements of the body also increase 2 to 3 times during pregnancy. Maternal health refers to a woman's physical and mental well-being during pregnancy, childbirth, and the postpartum period (time following childbirth). Post-natal and post-partum refer to the time period after the delivery of a child, respectively, while ante-natal and pre-natal refer to the time period before the birth of a kid³. Maternal mortality is the term used to describe a woman's passing due to complications during pregnancy or childbirth that happen during the pregnancy or less than six weeks after it ends⁴. Maternal morbidity refers to any acute or chronic health condition that affects pregnant women^{3,4}.

Worldwide in 2017, approximately 3 lac women died during pregnancy or when giving birth to a child in areas with low resources. Death and injury during pregnancy occur directly due to excessive loss of blood, high blood pressure, infectious diseases, and unsafe abortions. Cardiovascular diseases, anemia, and malaria indirectly cause maternal death and injury^{5,6}. If a woman gets pregnant at a young age due to poverty and poor education,

there are high chances of increased health risks for the female and her child. Of all maternal deaths globally, approximately 86% (254,000) occurred in Sub-Saharan Africa and Southern Asia. At about 120 births per 1000 adolescent women, the African area has the highest birth rate among adolescents (WHO, 2018). Due to problems and limitations associated with pregnancy, social and economic development is also impacted^{7,8,9}.

Pakistan is the sixth most populous country in the world with 207 million inhabitants, 64% of whom reside in rural areas. Four provinces, Balochistan, Khyber Pakhtunkhwa (KP), Punjab, and Sindh, as well as four federal territories, Azad Kashmir, Gilgit Baltistan, Federally Administered Tribal Areas (FATA), and Islamabad, make up its 770,875 km² of varied and expansive terrain. FATA was recently amalgamated with KP¹⁰. Maternal mortality in Pakistan stands at 178 per 100,000 live births, which is much higher than the average for affluent nations of 12 per 100,000. This indicates a serious problem with mother health¹¹.

Pakistan is ranked 126th out of 149 countries in the Human Development Report's Gender Inequality Index (GII), which evaluated women's equality in terms of reproductive health, independence, and economic activity. Due to low levels of emancipation, restricted economic participation, and underutilization of reproductive and maternity healthcare, Pakistan's female inhabitants have a low rating. Strong connections between maternal healthcare and women's empowerment have been found in earlier studies compared to South Asian nations (such as Bangladesh, India, Nepal, etc.), suggesting that there may be a causal link between women's empowerment and maternal health-seeking behaviours¹².

Pakistan is an excellent testing ground for suggested index due to the country's terrible socioeconomic and health conditions for women. Despite attempts to improve access to maternal

Received on 13-09-2022

Accepted on 15-02-2023

healthcare, only 52% of births in Pakistan are attended by a competent birth attendant, 73.1% receive antenatal care from a skilled provider, and only 63.9% receive comprehensive protection against neonatal tetanus. It is unacceptable that so few women are using maternity healthcare services (National Institute of Population Studies, 2013). Rural and urban settings still have disparities in maternal and reproductive healthcare¹³.

In urban areas, over 71% of births are attended by a professional birth attendant, and 67.9% of women give birth in a health facility. In contrast, only 44% of births in rural communities are attended by a skilled birth attendant, and 40% of women give birth in a health facility. Also, Pakistani women's poor social status within their families has an adverse impact on their general health and limits their access to reproductive healthcare treatments. Women may need to get permission to spend money on healthcare and travel to a medical institution because men frequently control all elements of finances, transportation, and access to healthcare¹³.

Pakistan Demographic and Health Survey findings show that 57% of married or engaged women have never attended school. This research is particularly instructive to empowerment studies because previous research in Pakistan found a positive relationship between educational attainment and maternal healthcare use in particular, with Pakistani women who lived in areas with high levels of secondary education being 74% more likely to give birth in a health facility than Pakistani women who lived in areas with lower levels of community education attainment¹⁴. Moreover, cultural restrictions on male-female relations are linked to maternal mortality; women who encounter issues during labour and delivery might not be able to seek medical help unless a male family member is present¹⁵.

In order to create comparable estimates across culturally similar nations and to account for counterbalancing influences, a composite women's empowerment measure may prove scientifically valuable. This is due to the fact that it would consider the proven effects of specific proxies for women's empowerment. Because the multifaceted nature of empowerment is frequently not fully accounted for by indirect or proxy approaches¹⁶.

By combining positive and negative forces into a single coefficient, a multidimensional index, as we are suggesting, might be extremely helpful to both global health academics and public health practitioners. For instance, education is frequently used as a stand-in for empowerment; yet, access to school is restricted by societal conventions, family socioeconomic status, and access across regions, in addition to gender¹⁷. Although wealth and income have also been investigated as potential indicators of empowerment, these studies indicated that multidimensional empowerment does not always follow gains in economic productivity¹⁴.

The majority of the Millennium Development Goals (MDGs), including MDGs 4 and 5, were not met by Pakistan, and under nutrition and maternal and infant mortality continue to be major problems. According to the Sustainable Development Goals (SDGs) assessment, Pakistan is the second least progressing nation in south Asia. In Pakistan, which is making great efforts to eradicate poverty and hunger, 38% of the population still lives below the poverty line despite the country's poverty headcount ratio falling from 6.1% in 2013 to 4% in 2015¹⁸. The death rate for children under five decreased from 147 per 1000 live births in 1990 to 78 in 2015, according to Fragile and Conflict States (FCS)¹⁹.

According to Pakistan Demographic and Health Survey (PDHS), under-5 mortality reduced from 89 to 75 per 1000 live births in 2017. This decline is comparable to the fall in infant mortality from 74 to 62 per 1000 live births in 2012 to 2013²⁰. The fundamentals of reproductive, maternal, newborn, child, and adolescent health and nutrition (RMNCAH&N), such as vaccine coverage, have improved, despite growth being sluggish and uneven²¹.

In order to provide health services in conflict zones, there ought to be specific policies and strategies, but these are typically

lacking. The study being presented here is therefore a part of a multi-nation study that is being managed by the Linking Research and Action in Conflict Situations for the Health of Women and The Children (BRANCH) Consortium focuses on ten nations that experience violence: Afghanistan, Colombia, DRC, Mali, Nigeria, Pakistan, Somalia, South Sudan, Syria, and Yemen. This country case study focuses on the most recent violence in Pakistani regions that started after 2001 and accelerated after 2006. It is based on the Battle Related Deaths (BRDs) and incidents reported by the Uppsala Conflict Data Program²².

Due to persistent nature of violence in these regions, this study focuses on two regions of Pakistan: FATA and Baluchistan, particularly the southern Baluchistan region known as the Makran belt, which comprises the districts of Gwadar, Keich, and Panigur. This study's objectives are to investigate the availability of RMNCH&N interventions in Baluchistan and FATA and to outline the variables that affect decision-making and implementation²³.

In the past, Pakistan's Gross Domestic Product (GDP) has grown at a rate of about 5% year on average. Its social development score, particularly in terms of health outcomes, lags behind that of nations with comparable economic standing. Pakistan fell short of the targets for newborn and maternal mortality outlined in MDGs 4 and 5. Recently, it was ranked first among the countries with the greatest neonatal mortality rate^[24]. The low priority that successive governments have placed on the health sector when allocating public money is one of the frequently cited explanations of the poor health results. The most recent National Health Accounts for 2015-2016 show that less than 1% of GDP was spent on public health^{25,26}.

The lack of resources in the health sector has persisted since the turn of the millennium, but mother and child health (MCH) has been given top priority by the Government of Pakistan (GoP) and its development partners. The MCH subsector's funding as a result saw a large increase. Three significant programs with significant foreign funding—the Women's Health Project (2000–2006), Pakistan Initiatives for Mothers and Newborns (PAIMAN, 2004–20108), and the Norway–Pakistan Partnership Initiative—helped to improve MCH and provided about PKR 24 billion (US\$225 million, at 2015 prices) (NPPI, 2009–2014). Between 2000 and 2014, these programs jointly intervened in the MCH delivery system of 44 districts (out of 113 total), which account for over 40% of the country's population and are mostly situated in rural areas^{27,28}.

In Sindh, Pakistan's second-largest but most impoverished province, there are some of the worst wealth and health gaps between rural and urban areas. According to the Multiple Indicator Cluster Survey 2003-2004, the maternal mortality ratio (MMR) in rural Sindh was 410 (compared to 240 in urban regions). In rural areas, there were 80 infant deaths for every 1000 live births, compared to 50 in urban areas. Pregnant women's slow or nonexistent access to expert care is a major contributor to Pakistan's high MMR (276 deaths per 100 000 live births) and IMR (78 per 1000 live births) in general¹² and in rural Sindh in particular^[29].

In the province's rural areas, 23% of expectant mothers (compared to 68% in urban areas) received professional birth assistance, while 29% of expectant mothers (compared to 72% in urban areas) sought expert antenatal care (ANC). The majority of these health disparities are linked to unequal wealth distribution. Second, numerous studies revealed supply-side issues that constrained pregnant women's options for obtaining care through the district-based healthcare delivery system^[29].

To reduce neonatal and maternal mortality, UN members have established 17 goals with 149 targets collectively called United Nations Sustainable Development Goals, which they have committed to achieve by 2030. Men and women have different health care needs, but they both have the same right to live longer and in better health. On the other hand, gender discrimination prevents many women and girls from accessing health care for a

variety of reasons, primarily in low-income countries due to a lack of financial means, knowledge, and awareness [30].

If new-borns and their mothers had access to affordable, high-quality healthcare, wholesome food, and clean water, millions of human lives could be saved every year. The women and infants who need these necessities the most cannot get them in a developing nation like Pakistan. These fatalities are attributable to inadequate vaccine coverage and poor pregnancy and neonatal care. 75% of new-born fatalities are caused by premature deliveries, difficulties during labor and delivery, and illnesses including sepsis, meningitis, and pneumonia, all of which are preventable and curable [31].

Baluchistan, Khyber Pakhtunkhwa, Punjab, Sindh and the Islamabad Capital Territory are the four provinces that make up Pakistan's administrative system. Pakistan is one of those developing nations where the number of people living in cities is fast increasing due to people moving there in search of employment and better possibilities. Although the country's economy is expanding and its population is becoming more urbanized, maternal and newborn morbidity and mortality rates are still high when compared to other Asian nations, necessitating a thorough investigation. The researcher's decision to undertake in-depth analyses of maternal health and well-being indicators is driven by the shockingly high rates of maternal disease and mortality in Pakistan, which justifies the motivation for this study endeavor⁷.

METHODOLOGY

In Pakistan, a significant area of the Asian subcontinent, pregnant mothers encounter barriers to obtaining health care services. The goal of this analysis was to investigate these barriers. The essential variables and their synonyms were used in a literature review and database search to help answer this research question. An initial tally of 6353 articles was obtained from eight online databases: Amed, Cinahil Plus, Pubmed, Medline, Cochrane Library and Science Direct. Due to time restrictions, grey literature was not found. After carefully reading and analysing the entire articles and evaluating them with the use of critical appraisal tools, robust inclusion and exclusion criteria were used to filter the initially searched articles, and 7 papers were found to be eligible for inclusion in the literature review. The chosen 7 articles^{32,33,34,35,36,37} were saved on Mendeley, a reference manager, in physical copies, as well as a backup in a USB port. This approach ensured that the researcher did not misplace the articles, and many seasoned researchers recommended them. Numerous critiquing techniques are used to help the process because there is no one way to combine the enormous amounts of data and diverse forms of evidence used in literature reviews^{8,26}. Tools for critical evaluation are lists of questions that may be used to assess the strengths and weaknesses of the text being read. However, there is disagreement about their acceptability and efficacy, and the researcher must utilize the proper criticism tool depending on the requirements and guidelines of the selected literature and the nature of the research project [38]. The researcher also employed critical evaluation techniques to meticulously analyze the data because this study combines qualitative and quantitative research. The Critical Appraisal Skills Program (CASP), the CASP Cohort Study Checklist, and the CASP Case-Control Study Checklist were the critical appraisal instruments used to assess and analyse qualitative investigations^{39,40}. Figure 1 shows a flowchart of specific databases and articles according to the PICO framework.

The PICO framework was discovered most suitable and convenient for this project. This issue does not have a comparison or control group since it seeks to understand why it contributes to Pakistan's underuse of maternal health care⁴¹. The PICO framework has become more well-known because of how well it informs and guides the research question. The study question is divided into four pieces using the PICO framework, which stands

for "population, intervention, control, and outcomes," to make it easier to obtain relevant data⁸.

Figure 1. Flowchart of Databases and search strategy



Table 1: Describes the PICO framework in detail:

Population	Pregnant women in Pakistan, anywhere in the country
Intervention	Pregnancy / Antenatal services and care
Control	No control/comparison group has taken
Outcome	Increasing antenatal care use and improved maternal health result in lower rates of maternal and foetal mortality and morbidity.

Keywords Combination: According to Cronin *et al.* (2008), the advantage of using an electronic database search for secondary analysis is that it allows the researcher to quickly find a significant amount of information by using the right keywords and their synonyms. It also allows the researcher to retrieve official government sources for that particular subject. By using Boolean operators like AND, OR, and NOT when combining keywords, many databases help provide the most appropriate literature. To guarantee that each variable was accurately reflected in the search phrases and to maximize the number of results, each synonym of the essential variables was combined using the Boolean operators AND, OR^{42,43}. Table 2 is an example of some of these combinations that were created using the Boolean operators and used to search databases.

Table 2: Combination of keywords created using Boolean operators

Pregnant women AND antenatal care, Expectant mothers AND womb care, Gravid women AND care in pregnancy Childbearing ladies AND antenatal care, Pregnant women AND antenatal care AND Pakistan Expectant mothers AND womb care AND Pakistan	Pregnant women OR expectant mothers AND antenatal care Gravid women OR childbearing ladies AND pregnancy care AND Pakistan
---	--

Inclusion Criteria

- Research that was done and published during the last ten years
- Primary research on Pakistani pregnant moms and those who just given birth (child not more than 5 years of age)
- Research on pregnant mothers of all ages, from all racial and religious backgrounds
- Research showing how pregnant women in Pakistan use maternal health services in the public or private sectors.
- Studies published in English language
- Primary research on any one or all of Pakistan's provinces
- Research on mothers in Pakistan's cities and rural areas

Exclusion criteria

- Grey literature, blogs, magazines, editorials, commentaries

- Secondary studies including but not limited to systematic reviews and meta-analysis
- Research on the function and relationship of genetic disorders in pregnancy and childbirth
- Research on Pakistani women's overall health and well-being, excluding pregnancy
- Studies that have been published in languages other than English
- Research on pregnant mothers' attitudes towards health services in developed and developing regions, besides Pakistan
- Research on the function and impact of the mother-in-law on the use of maternity health care

Data Analysis: Thematic analysis was chosen as the data analysis technique because most publications under consideration for this research project included qualitative case-control and cohort studies. Thematic analysis is a suitable method for interpreting experiences, ideas, or behaviors within a data collection. It not only aids in data description but also makes an effort to create codes and develop themes. A defining characteristic of thematic analysis is its adaptability to a broad range of theoretical and epistemological frameworks, research topics, formats, and sample sizes^{8,10}. The issues for this project came into focus after carefully reading and analyzing the articles that were chosen, as well as after carefully examining the new patterns and trends that were connected to the study question. Separate categories were given to these new subjects.

The results were presented using the PRISMA framework. The PRISMA framework could not be utilized to analyze the study data in its entirety due to the size of the project and the researcher's inexperience. After carefully examining all of the chosen literature, three overarching themes structural barriers, maternal education and awareness levels, and men's dominance

in decision-making were developed to address the research question and analyses the causal factors resulting in Pakistan's declining use of maternal health services. The themes selected for the research study are:

- i) ANC visits are delayed by maternal resistance due to structural obstacles
- ii) A reluctance to seek medical care due to a lack of knowledge and awareness
- iii) Due to the dominance of men in decision-making, there is a reluctance to use health care.

Included Studies Analysis: All of the research that were examined in this review were carried out across Pakistan, in both rural and urban settings. In the Sindh province of Pakistan, where the literacy rate is around 40% and more than half of the population works in agriculture, Qureshi et al. (2016)⁴⁴, Agha and Tappis (2016)³¹, Kanwal et al (2019)⁴⁵ and Asim et al (2021)⁴⁶ conducted their studies. The three additional studies—Sarraz et al. (2015)⁴⁷, Nisar et al. (2016)⁴⁸ and Ashraf et al. (2017)⁴⁹ that were incorporated into the literature review were conducted in both urban and rural areas of Punjab Province. The entire body of study examined both the factors that facilitate the utilisation of maternal health services by pregnant women in Pakistan and the barriers they encounter. Among all the chosen research, Qureshi et al. (2016)⁴⁴ study was the only one that had undergone peer review. All of the studies put a lot of focus on participant anonymity and authorization, and these investigations also heavily relied on ethical approval. Nevertheless three of the selected studies (Ashraf et al., 2017, Kanwal et al., 2019, Sarraz et al., 2019)^{49,45,47} lacked depth in terms of not addressing their strengths and flaws. The table below lists the specific study characteristics in terms of sample size, methodology, and country of origin for ease of understanding and evaluation.

Table 3: Characteristics of studies included in this review

Study name	Date of Publication	Journal Name	Country	Sampling type and Size	Follow-up if Applicable	Study design
Qureshi et al., (2016) ⁴⁴	2016	<i>Reproductive Health</i>	Pakistan	Purposive Sampling n=327	None	Qualitative study
AghaandTappis (2016) ³¹	2016	<i>BMC Pregnancy and Childbirth</i>	Pakistan	Stratified sampling design n=4000	None	Survey (Cross-sectional design)
Kanwal Et al. (2019) ⁴⁵	2019	<i>Journal of Pakistan Medical Association</i>	Pakistan	Random sampling n=100	None	Cross-sectional study
Asim et al. (2021) ⁴⁶	2021	<i>Healthcare</i>	Pakistan	Purposive Sampling n=60	None	Qualitative study
Nisaretal.,(2016) ¹²	2016	<i>BMC Pregnancy and Childbirth</i>	Pakistan	Purposive Sampling n=83	None	Qualitative exploratory study
Ashraf et al., (2017) ⁴⁸	2017	<i>Journal of Ayub Medical College, Abbottabad: JAMC.</i>	Pakistan	Convenient sampling(non-probability sample) n=278	None	Cross-sectional study design
Sarraz et al.,(2015) ⁴⁹	2015	<i>Journal of Ayub Medical College, Abbottabad: JAMC.</i>	Pakistan	Purposive Sampling n=58	None	Qualitative study

DISCUSSION

The purpose of this investigation is to examine pregnant women's resistance to using maternity services in Pakistan. The material that was mentioned has offered insightful information. Numerous obstacles and constraints to the maternity use of health services have been studied in research. Some of these restrictions include individual ones relating to the target population's education and awareness, socioeconomic traditions and customs relating to their movement within the community, and access to health facilities, as well as a further factor brought on by infrastructure and the absence of health resources in the area. Comparatively, it was discovered that the use of health services was less impacted by transportation in Pakistan's metropolitan regions. Compared to research done in rural areas, studies conducted in urban settings indicated a better picture of health facility use and maternal awareness of the value of antenatal care, suggesting that the conclusions cannot be applied to women living in any area of Pakistan²⁶.

The study identified statistically significant risk factors and population-attributable fractions for maternal mortality using data

from a comprehensive count of pregnancies, births and deaths over the course of a year by an upgraded surveillance system in various districts of Pakistan. A higher maternal mortality rate of 247 per 100,000 live births was predicted in the research area compared to the mortality rate reported by the Pakistan Demographic and Health Surveys. Our findings corroborate those of a multicounty prospective study that was carried out in the Democratic Republic of the Congo, Guatemala, India, Kenya, Zambia, and Pakistan, as well as pregnancy registration sites in periurban and rural areas. The study, which used data on all pregnancies from 2010 to 2018, found that Pakistan has consistently⁵⁰.

According to Pakistan Demographic Health Survey 2017-2018, 97% of women in the highest wealth quintile visit a doctor for a prenatal checkup, in contrast to 63% of women in the lowest wealth quintile. In contrast to 37% of women in the lowest wealth quintile, 89% of women in the highest wealth quintile had their babies delivered by a doctor, according to the National Institute of Population Studies (Pakistan) and ICF International (2018). These findings were in accordance with a research conducted in Pakistan which discovered that women in the wealthiest quintile were four

times more likely than those in the poorest quintile to give birth in a medical facility with skilled birth attendants. Poverty has a comparable effect on the usage of maternal health services in other developing countries²⁰.

The study's findings came to the unanimous conclusion that most Pakistani women are still ignorant of the international standards and recommendations (NICE and WHO guidelines) for advised antenatal visits and that most of them do not meet them. The results of this analysis, which show differences in the use of medical care in rural and urban Pakistan, are in line with those of other studies that have found comparable trends in other developing Asian nations like Indonesia and the Philippines^[26]. To ensure that the quality of health services provided across the nation is uniform, these inequities require immediate and prompt interventions by the government and financial organizations. The largest problem for expecting moms and their families is timely access to medical facilities. It is significantly restricted in rural and isolated areas due to inadequate road infrastructure and a transportation shortage.

The maternal trait that sticks out the most in the Pakistani site as compared to the other sites is the absence of a formal education. Only 12% of women in the other sites combined had no formal education, compared to nearly 83% of Pakistani women. Low educational attainment is a significant factor linked to poor access to essential maternal health care as well as worse outcomes for maternal and child health, according to national reports by UNICEF and the PDHS.

The relationship between maternal care usage and other parameters has been investigated in a number of studies. The current study demonstrates that mother education levels and maternal age have an impact on the likelihood of utilizing maternal care, which is consistent with the general findings of earlier studies. Women who live in rural areas have fewer visits on average for maternity care. According to earlier research, women in rural areas visited their mothers less frequently than women in metropolitan areas. For the current analysis, women with advanced-age spouses have higher predicted positive counts of antenatal care visits^{51,52}.

Abused women were less likely to receive proper prenatal care, according to prior studies¹⁸. With rising income levels, more prenatal care appointments are anticipated. Evidence from the past suggested that antenatal care use was more likely to occur in families with higher income levels. According to earlier research, women who had access to the media were much more likely to use their antenatal care visits. Similarly with earlier studies, the use of prenatal care is found to be highly correlated with the desirability of pregnancy^[51]. According to the collected data, birth order is correlated with maternal care visit frequency, use, and non-use. Earlier studies provided an explanation for this link, citing the knowledge and assurance received from prior delivery experiences¹³.

As was already mentioned, maternity health and wellness is a worldwide health issue, and there is considerable scope for further study in this area. Research and development (R&D) offer potential solutions to various socioeconomic problems by creating new goods and services or enhancing existing ones. Particularly in developing nations like Pakistan, research in the health sector may assist close many gaps and offer practical solutions to many disparities. Regrettably, Central Asia has the lowest proportion of studies conducted globally (0.1%), followed by Sub-Saharan Africa (0.8%), and as a result, they urgently need measures to enhance their health statistics.

The strengths and limitations of the review: While the participants in the bulk of the important publications were carefully selected, the review is qualitative in character and has limits because the findings cannot be applied uniformly throughout all of Pakistan. The review was further constrained by the fact that it only contained a few important papers and did not cover all five of Pakistan's provinces. The initiative had to only use English-language literature because of time restrictions. No grey literature

was found because it was difficult to find and analyze it in such a short amount of time, which adds to the review's other drawback³⁸. The review's strength in examining the causes of Pakistani pregnant women' underutilization of health services stems from the inclusion of papers from both urban and rural regions of the nation. The inclusion of ideas and viewpoints from expectant women of diverse ages, ethnic backgrounds, and educational levels was another distinctive feature that reflected the diversity of the participants and led to more reliable results. Despite its limitations, the review was able to pinpoint and compile a wide range of contributing factors, barriers, and links that are related to mothers' underuse of health care in Pakistan. The studies provide the most recent information that is currently accessible in terms of time, giving important insight into contemporary practice¹⁵.

CONCLUSION

In addition to preventing women from receiving timely treatment, a lack of funding and resources prevents families from giving their pregnant relatives access to the finest medical care. Due to financial limitations, both men and women continue to be bound, endangering not only the health of the mothers but also that of the unborn child. Numerous findings in this literature review support those discovered in national surveys, demonstrating the reliability of the arguments made in this study. This research empirically identifies the reasons why mothers underuse healthcare services. Still, it also raises the issue of why individuals choose private healthcare over public ones, which are even more affordable and conveniently located. By adding more in-depth primary research on this target demographic and more rich literature from all of Pakistan, future scholars might better understand the significance of the research findings.

Conflict of interest: Nil

REFERENCES

1. Crear-Perry J, Correa-de-Araujo R, Lewis Johnson T, McLemore MR, Neilson E, Wallace M. Social and structural determinants of health inequities in maternal health. *Journal of Women's Health*. 2021 Feb 1;30(2):230-5.
2. UNICEF (2019) Maternal mortality - UNICEF DATA. UNICEF DATA. [Online]. Available from: <https://data.unicef.org/topic/maternal-health/maternal-mortality/> [Accessed January 13, 2022].
3. Vasileiou, K., Barnett, J., Thorpe, S., Young, T. Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over 15 years. *BMC Medical Research Methodology*. 2018 Jan 18(1).
4. Aveyard, H. (2014) *Doing a literature review in health and social care: a practical guide*. 3rd Ed. England: McGraw-Hill Education. Vaishnav A, Lindquist K. Racial Disparities in Maternity Care: Maternity-Related Outcomes in the State of Michigan.
5. Olonade O, Olawande TI, Alabi OJ, Imhonopi D. Maternal mortality and maternal health care in Nigeria: Implications for socio-economic development. *Open access Macedonian journal of medical sciences*. 2019 Mar 3;7(5):849.
6. World (2018) Maternal mortality. Who.int. [online]. Available from: <https://www.who.int/en/news-room/fact-sheets/detail/maternal-mortality> [Accessed January 13, 2022].
7. World Health Organization (2016) WHO recommendations on antenatal care for a positive pregnancy experience. www.who.int. [online]. Available from: <https://www.who.int/publications/i/item/9789241549912> [Accessed February 9, 2022].
8. World Health Organization: WHO (2019) Maternal health. Who.int. [online]. Available from: https://www.who.int/health-topics/maternal-health#tab=tab_1 [Accessed January 13, 2022].
9. WHO (2018) Maternal Health. WHO | Regional Office for Africa. [online]. Available from: <https://www.afro.who.int/health-topics/maternal-health> [Accessed February 11, 2022].
10. Makacha L, Makanga PT, Dube YP, Bone J, Munguambe K, Katageri G, Sharma S, Vidler M, Sevene E, Ramadurg U, Charantimath U. Is the closest health facility the one used in pregnancy care-seeking? A cross-sectional comparative analysis of self-reported and modelled geographical access to maternal care in Mozambique, India and Pakistan. *International Journal of Health Geographics*. 2020 Dec;19(1):1-0.
11. Mustafa M, Batool A, Fatima B, Nawaz F, Toyama K, Raza AA. Patriarchy, maternal health and spiritual healing: Designing maternal health interventions in Pakistan. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems 2020 Apr 21* (pp. 1-13).
12. Hearld KR, Anderson JL, Budhwani H. Examining the relationship between individual characteristics, community-level traits, multidimensional empowerment, and maternal health care utilization in the Islamic Republic of Pakistan. *Maternal and Child Health Journal*. 2018 Sep;22:1319-26.

13. Aslam M, Sadiq M, Mehmood T. Assessment of maternal health services utilization in Pakistan: the role of socio-demographic characteristics. *Asian Biomedicine*. 2020 Feb 1;14(1):3-7.
14. Siddiqi M, Shah GH, Mayo-Gamble TL, Zubair A. Determinants of Child Stunting, Wasting, and Underweight: Evidence from 2017 to 2018 Pakistan Demographic and Health Survey. *Journal of Nutrition and Metabolism*. 2023 Mar 4;2023.
15. Ali A, Zar A, Wadood A. Factors associated with modern contraceptive use among men in Pakistan: Evidence from Pakistan demographic and health survey 2017-18. *Plos one*. 2022 Sep 1;17(9):e0273907.
16. Akbar M, Asif AM, Hussain F. Does maternal empowerment improve dietary diversity of children? Evidence from Pakistan demographic and health survey 2017-18. *The International Journal of Health Planning and Management*. 2022 Nov;37(6):3297-311.
17. Sathi NJ, Ahammed B, Alam K, Hashmi R, Lee KY, Keramat SA. Socioeconomic inequalities in low birth weight in South Asia: A comparative analysis using Demographic and Health Surveys. *SSM-Population Health*. 2022 Dec 1;20:101248.
18. Perin J, Mulick A, Yeung D, Villavicencio F, Lopez G, Strong KL, Prieto-Merino D, Cousens S, Black RE, Liu L. Global, regional, and national causes of under-5 mortality in 2000-19: an updated systematic analysis with implications for the Sustainable Development Goals. *The Lancet Child & Adolescent Health*. 2022 Feb 1;6(2):106-15.
19. World Health Organization. WHO presence in fragile and conflict-affected situations (FCS), 2021.
20. Anwar J, Torvaldsen S, Morrell S, Taylor R. Maternal Mortality in a Rural District of Pakistan and Contributing Factors. *Maternal and Child Health Journal*. 2023 Jan 7:1-4.
21. Marsh AD, Muzigaba M, Diaz T, Requejo J, Jackson D, Chou D, Cresswell JA, Guthold R, Moran AC, Strong KL, Banerjee A. Effective coverage measurement in maternal, newborn, child, and adolescent health and nutrition: progress, future prospects, and implications for quality health systems. *The Lancet Global Health*. 2020 May 1;8(5):e730-6.
22. Zhang T, Qi X, He Q, Hee J, Takesue R, Yan Y, Tang K. The effects of conflicts and self-reported insecurity on maternal healthcare utilisation and children health outcomes in the democratic republic of congo (Drc). *InHealthcare* 2021 Jul 3 (Vol. 9, No. 7, p. 842). MDPI.
23. Strand H, Hegre H. Trends in armed conflict, 1946-2020. *Conflict Trends*. 2021;3:4.
24. Papanek GF. Pakistan's development: Social goals and private incentives. Harvard University Press; 2023 Jan 25.
25. AHMAD K, SENTURK I. HEALTH STRUCTURE, NUTRITION AND ECONOMIC GROWTH IN PAKISTAN: A TIME SERIES ANALYSIS. *Bulletin of Business and Economics (BBE)*. 2021 Dec 10;10(1):42-50.
26. Wulandari, R.D., Laksono, A.D., Rohmah, N. (2021) Urban-rural disparities of antenatal care in South East Asia: a case study in the Philippines and Indonesia. *BMC Public Health*. 21(1).
27. Malik MA, Rohm LR, van Baal P, van Doorslaer EV. Improving maternal and child health in Pakistan: a programme evaluation using a difference in difference analysis. *BMJ global health*. 2021 Dec 1;6(12):e006453.
28. Siddiqi M, Shah GH, Mayo-Gamble TL, Zubair A. Determinants of Child Stunting, Wasting, and Underweight: Evidence from 2017 to 2018 Pakistan Demographic and Health Survey. *Journal of Nutrition and Metabolism*. 2023 Mar 4;2023.
29. Jamali QZ, Shah R, Shahid F, Fatima A, Khalsa S, Spacek J, Regmi P. Barriers and enablers for practicing kangaroo mother care (KMC) in rural Sindh, Pakistan. *PloS one*. 2019 Jun 17;14(6):e0213225.
30. Khalid A, Adamjee R, Sattar S, Hoodbhoy Z. Maternal and child surveillance in peri-urban communities: Perceptions of women and community health workers from Pakistan. *PLOS Global Public Health*. 2022 Apr 26;2(4):e0000295.
31. Agha S, Tappis H. The timing of antenatal care initiation and the content of care in Sindh, Pakistan. *BMC pregnancy and childbirth*. 2016 Dec;16:1-9.
32. Nisar, Y. B., Aurangzeb, B., Dibley, M. J., & Alam, A. (2016). Qualitative exploration of facilitating factors and barriers to use of antenatal care services by pregnant women in urban and rural settings in Pakistan. *BMC pregnancy and childbirth*, 16(1), 1-9.
33. Asim, M., Saleem, S., Ahmed, Z. H., Naeem, I., Abrejo, F., Fatmi, Z., & Siddiqi, S. (2021, October). We won't go there: barriers to accessing maternal and newborn care in District Thatta, Pakistan. In *Healthcare* (Vol. 9, No. 10, p. 1314). MDPI.
34. Qureshi, R. N., Sheikh, S., Khowaja, A. R., Hoodbhoy, Z., Zaidi, S., Sawchuck, D., & von Dadeslzen, P. (2016). Health care seeking behaviours in pregnancy in rural Sindh, Pakistan: a qualitative study. *Reproductive health*, 13(1), 75-81.
35. Kanwal, S., Kumar, R., Somrongthong, R., & Ashfaq, U. (2019). Women's preferences and factors influencing their obstetric care service utilization in rural Sindh: A Cross sectional Study. *Education*, 20000(27), 27.
36. Sarfraz, M., Tariq, S., Hamid, S., & Iqbal, N. (2016). Social and societal barriers in utilization of maternal health care services in rural Punjab, Pakistan. *Journal of Ayub Medical College Abbottabad*, 27(4), 843-849.
37. Ashraf, F., Thaver, I. H., Imtiaz, F., & Ayub, A. (2017). Quality assessment of focused antenatal care service delivery in tertiary care health facility. *Journal of Ayub Medical College Abbottabad*, 29(2), 219-224.
38. Carroli, G., Villar, J., Piaggio, G., Khan-Neelofur, D., Gülmezoglu, M., Mugford, M., Lumbiganon, P., Farnot, U., Bergsjø, P. (2001) WHO systematic review of randomized controlled trials of routine antenatal care. *The Lancet*. 357(9268), 1565-1570.
39. Purcell E. Can the critical appraisal skills programme check- lists be used alongside grading of recommendations assessment, development and evaluation to improve transparency and decision-making?. *Journal of advanced nursing*. 2020 Apr;76(4):1082-9.
40. Long HA, French DP, Brooks JM. Optimising the value of the critical appraisal skills programme (CASP) tool for quality appraisal in qualitative evidence synthesis. *Research Methods in Medicine & Health Sciences*. 2020 Sep;1(1):31-42.
41. Long HA, French DP, Brooks JM. Optimising the value of the critical appraisal skills programme (CASP) tool for quality appraisal in qualitative evidence synthesis. *Research Methods in Medicine & Health Sciences*. 2020 Sep;1(1):31-42.
42. Malik M, Prescott K, Khalid M, Hashmi A, Kiani A. Expectations and experiences of women regarding maternal healthcare services in Pakistan: challenges and lessons to be learnt. *Journal of Pharmaceutical Policy and Practice*. 2021 Dec;14(1):1-9.
43. Mumtaz N, Saqulain G. Hospital and health administrator level barriers and priorities for National Neonatal Hearing Screening in Pakistan: A thematic analysis. *Pakistan Journal of Medical Sciences*. 2020 Jul;36(5):1036.
44. Qureshi, R. N., Sheikh, S., Khowaja, A. R., Hoodbhoy, Z., Zaidi, S., Sawchuck, D., & von Dadeslzen, P. (2016). Health care seeking behaviours in pregnancy in rural Sindh, Pakistan: a qualitative study. *Reproductive health*, 13(1), 75-81.
45. Kanwal, S., Kumar, R., Somrongthong, R., & Ashfaq, U. (2019). Women's preferences and factors influencing their obstetric care service utilization in rural Sindh: A Cross sectional Study. *Education*, 20000(27), 27.
46. Asim, M., Saleem, S., Ahmed, Z. H., Naeem, I., Abrejo, F., Fatmi, Z., & Siddiqi, S. (2021, October). We won't go there: barriers to accessing maternal and newborn care in District Thatta, Pakistan. In *Healthcare* (Vol. 9, No. 10, p. 1314). MDPI.
47. Sarfraz, M., Tariq, S., Hamid, S., & Iqbal, N. (2016). Social and societal barriers in utilization of maternal health care services in rural Punjab, Pakistan. *Journal of Ayub Medical College Abbottabad*, 27(4), 843-849.
48. Nisar, Y. B., Aurangzeb, B., Dibley, M. J., & Alam, A. (2016). Qualitative exploration of facilitating factors and barriers to use of antenatal care services by pregnant women in urban and rural settings in Pakistan. *BMC pregnancy and childbirth*, 16(1), 1-9.
49. Ashraf, F., Thaver, I. H., Imtiaz, F., & Ayub, A. (2017). Quality assessment of focused antenatal care service delivery in tertiary care health facility. *Journal of Ayub Medical College Abbottabad*, 29(2), 219-224.
50. Anwar J, Torvaldsen S, Sheikh M, Taylor R. Under-estimation of maternal and perinatal mortality revealed by an enhanced surveillance system: enumerating all births and deaths in Pakistan. *BMC Public Health*. 2018 Dec;18:1-4.
51. Bauserman M, Thorsten VR, Nolen TL, Patterson J, Lokangaka A, Tshetu A, Patel AB, Hibberd PL, Garces AL, Figueroa L, Krebs NF. Maternal mortality in six low and lower-middle income countries from 2010 to 2018: risk factors and trends. *Reproductive health*. 2020 Dec;17:1-0.
52. Aziz A, Saleem S, Nolen TL, Pradhan NA, McClure EM, Jessani S, Garces AL, Hibberd PL, Moore JL, Moore SS, Dhaded SM. Why are the Pakistani maternal, fetal and newborn outcomes so poor compared to other low and middle-income countries?. *Reproductive Health*. 2020 Dec;17:1-2