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Factors Affecting the Accessibility of Maternal Healthcare Facilities in Punjab Province, Pakistan

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Abstract: The study was conducted to identify the hidden factors that influence maternal health services in the Punjab region. The study was conducted in Punjab province. A multistage sampling technique was used to cover the large area. The area was separated into three stages. In the first stage, one division of the nine divisions in Gujranwala was selected using a random sampling technique. In the second stage, two districts, Sialkot and Gujranwala, were selected using a random sampling technique. In the third stage, four hundred respondents were selected, 200 from each district, through a convenience sampling technique. A well-organized questionnaire was used to collect data, which were analyzed using SPSS software. The research findings demonstrate that most respondents lived in rural areas. The majority of respondents were high school graduates, and their husbands' education was at the intermediate level. Most of the respondents' total household monthly income was 20001-30000. The majority of the respondents have less awareness about pregnancy problems, and respondents faced complications during pregnancy. Most of the mothers faced difficult access to maternal health care services and had a long distance to the health care center from home, while most of the respondents hardly had access to transport. The majority of the respondents could not afford any maternal health care services and were waiting long hours for checkups at the maternal health centers. The majority of the respondents adopted a traditional method, and they delivered the baby at home; most of the respondents agreed that patriarchy impacts maternal health care services. It is recommended that the government ensure basic education, particularly in rural areas of Punjab.

Keywords: Maternal health, healthcare accessibility, socio-cultural factors, rural health services, Punjab

1. Introduction:

The term "maternal health" refers to a woman's health during pregnancy and labor, as well as after delivery (Siddiqui & Siddiqui). To create a healthy world, women's and children's health plays a crucial role, since maternal health is directly linked to the health of mothers and children. A woman dies every day as the sun rises because of preventable causes related to fertility and pregnancy (Puspitasari & Bulan). Maternal morbidity is a condition that adversely impacts the health and well-being of a woman during pregnancy and childbirth. Women suffering from severe maternal morbidity, also referred to as acute maternal morbidity, often suffer negative health outcomes after giving birth (Koblinsky & Ronsmans). When a qualified health professional works in a supportive environment, the majority of maternal deaths can be prevented. The global agenda must remain focused on ending preventable maternal deaths. Furthermore, the mere fact of surviving pregnancy and childbirth cannot be viewed as an indication of successful maternal healthcare. According to recent studies, hunger and malnutrition increase the incidence and mortality of conditions accounting for up to 80% of maternal deaths (Unicef).

Around the world, there are differences in access to reproductive health care and sex. The quality of care available to individuals is influenced by several factors, including age, socioeconomic status, and location (e.g., urban versus rural areas) (Geller & Lawton). In recent research, it has been found that age group appears to be the most significant determinant of contraceptive access, as well as economic status and location in terms of urban versus rural (Black & et al.). In developing countries, access to sexual and reproductive health services tends to be limited; however, even in developed nations, universal access to these services has not been achieved. In most countries, abortion rates, unintended pregnancies, and unintended births are racial and socioeconomic

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disparities. Pakistan has the third-highest burden of maternal and child mortality across the globe. According to the literature, more than 30,000 Pakistani women die annually from pregnancy and childbirth-related complications (Henning-Smith & Moscovice). Reducing maternal mortality and improving child health have been the major targets of Pakistan's Millennium Development Goals (MDGs) under the sustainable development program (Achana & et al.).

The Government of Pakistan has made extended efforts and paid close attention to the issue since 1990; consequently, a steady decline in maternal mortality rate (MMR) was observed in Pakistan (Siddiqui & Siddiqui). Approximately 53% of pregnant women in Punjab have access (only once) to ANC services from medical staff during the pregnancy. However, only 41% can utilize the postnatal facilities. The study also reported that 25% of women in urban and rural areas of Punjab consulted medical professionals at public-sector health facilities (Rizvi & Bhutta).

Maternal health issues are more common in rural areas than in urban areas. Several factors influence maternal health in Pakistan. It was observed that these factors have a crucial effect on maternal health. These factors include individual factors, community factors, lack of awareness, long distance, socio-cultural factors, and psychological factors. This study has been conducted to explore the importance of maternal healthcare services, to analyze the effect of socio-economic factors on the accessibility of maternal health services, to determine the female status in the household and their visit to maternal healthcare facilities during pregnancy, and to give suggestions to the policymakers about issues faced by women in Punjab.

2. Methodology

2.1 Study population, study area, and data

This was a randomized cross-sectional study. Based on the data collected in 2020 from the province of Punjab, the respondents involved in this study were mothers (21-45 years) who have at least one live birth. The name Punjab means "five waters" or "five rivers" and refers to the land drained by the Jhelum, Chenab, Ravi, Beas, and Sutlej rivers, tributaries of the Indus. Punjab is Pakistan's second-largest province, the most densely populated, covering 79,284 square miles (205,345 square km), and with an estimated population of 91,379,615. The study population in Punjab province was the main focus of this study. The current study surveyed mothers with one live birth. The survey population was the Punjab province, which has nine divisions. The study was conducted in Punjab Province. To cover a large area, a multistage sampling technique, step-by-step, from wide to narrow. The study area was divided into three stages. In the first stage, one division (Gujranwala) out of nine was selected by random sampling in the Punjab province. In the second stage, two districts (Sialkot & Gujranwala) were randomly selected from the selected division (Gujranwala). In the third stage, 400 respondents were selected, 200 from each district, through a convenience sampling technique.

In the present research, the interview schedule was constructed based on research objectives. The respondents' socio-demographic characteristics, such as age, education, Monthly income, Number of births, family structure, and family type, were assessed. The interview schedule was prepared in English and the local language of respondents, Such as Urdu and Punjabi.

2.2 Statistical Analysis

In the current study, various statistical analysis techniques were used to determine different parameters. Frequency distribution was determined using univariate analysis. The formula was given as: P= f/n×100 whereas, P = Percentage, f= Frequency, and n total number of respondents. In univariate analysis, only a single variable is used. Double-variate analysis was used to determine the relationship between two variables. In this, the gamma test is used to determine the strength and association between two variables. The following formula was used to determine the relationship between two variables $\gamma = \frac{N_c - N_d}{N_c + N_d}$ Where: Nc = the total number of pairs and Nd the number of pairs that don't rank the same.

3. Results and Discussion

3.1 Data analysis

In this section, we present the results of our analyses in tabular form. This has been conducted to determine the different parameters involved in maternal health.

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3.1.1 Socio-demographic characteristics

We interviewed a total of 400 respondents; 200 each from the Sialkot and Gujranwala districts (Table 1). Here, 38% of women were aged 31-35 years. Further, 35% of women lived in extended families. In our study, the majority of women (66%) resided in rural areas with fewer maternal health facilities. There, we determined the household size of respondents' families, with 35% belonging to households of size 7-9. Further, the spouses' and respondents' educational status were analyzed. The respondents' spouses had 19% of the highest ratio who passed intermediate education, while the education status of respondents was matric pass with 24%. Most respondents' spouses had a profession in agriculture, as shown in the table. The highest percentage of respondents were housewives, and none had any other profession.

Some had private jobs, and others were government employees. Different ranges of the monthly income of respondents' families were determined, with 34% of families having monthly income ranges between 20001-30000Rs. The study discovered several socioeconomic variables that either support or impede the use of maternal health services. Socioeconomic status, education level, women's autonomy, living in an urban area, gender norms, proximity to other places, media access, high social capital, social support, media exposure, and a functioning health system are among the factors identified. In sub-Saharan Africa, the use of maternal healthcare is still quite low, with differences observed based on socioeconomic class and whether a person lives in an urban or rural area. Social factors driving inequality should be the focus of programs and initiatives aimed at improving maternal health (Belay & Loevinsohn).

Table 1: Dataset Containing Basic Information of All Respondents

Categories		**Frequency**	**Percent**
	16-20	23	**5.75**
	21-25	78	**19.5**
	26-30	145	**36.25**
	31-35	154	**38.5**
	Total	400	**100.0**
Categorization of respondents concerning their Type of family			
Categories		**Frequency**	**Percent**
	Nuclear	125	**31,25**
	Joint	135	**33.75**
	Extended	140	**35.0**
	Total	400	**100.0**
Classification of respondents concerning their Living area			
Categories		**Frequency**	**Percent**
	Rural	265	**66.25**
	Urban	135	**33.75**
	Total	400	**100.0**
Categorization of respondents concerning their total household size			
Categories		**Frequency**	**Percent**
	1-3	63	**15.75**
	4-6	105	**26.25**
	7-9	135	**33.75**
	10 or above	97	**24.75**
	Total	400	**100.0**
Arrangement of respondents concerning their respondent's education			
Categories		**Frequency**	**Percent**
	Illiterate	57	**14.25**
	Primary pass	69	**17.25**
	Middle Pass	73	**18.25**
	High school pass	98	**24.5**
	Intermediate pass	70	**17.5**

	Graduation or above	33	**8.25**
	Total	400	**100.0**
Classification of respondents concerning their spouse's education			
Categories		**Frequency**	**Percent**
	Illiterate	42	**10.5**
	Primary pass	70	**17.5**
	Middle Pass	72	**18.0**
	High school pass	69	**17.25**
	Intermediate pass	79	**19.75**
	Graduation or above	68	**17.0**
	Total	400	**100.0**
Frequency distribution concerning their spouse's Occupation			
Categories		**Frequency**	**Percent**
	Agriculture	125	**31.25**
	Self-Employee	93	**23.25**
	Government employee	105	**26.25**
	Private employee	77	**19.25**
	Total	400	**100.0**
Categorization of respondents concerning their Respondents Occupation			
Categories		**Frequency**	**Percent**
	Agriculture	53	**13.25**
	Self-Employee	15	**3.75**
	Government employee	41	**10.25**
	Housewife	291	**72.75**
	Total	400	**100.0**
Arrangement of respondents concerning their Total household monthly income			
Categories		**Frequency**	**Percent**
	Up to 20000	66	**16.5**
	20001-30000	136	**34.0**
	30001-40000	70	**17.5**
	40001-50000	106	**26.5**
	Up to 50000	22	**5.5**
	Total	**400**	**100.0**

3.1.2 Services essential for maternal health care in the Punjab region

The current research also identified the years of marriage. Because the years of marriage also have close relation with complications during pregnancy and maternal mortality, the research shows that 25.75% of respondents' years of marriage were 1-6, 41% of respondents' marriage were 7 to 12 years, 27% of mothers years of marriage were 13-18, while 6.25% respondents years of marriage was 19-24. Most of the respondents (41%) had been married for 7-12 years. Moreover, in this study, the previous number of births reported by respondents was identified: 43% had 1-2 previous births, 34.75% had 3-4 previous births, and 22.5% had 5-6 previous births. The research shows that 43% of respondents have 1-2 previous births.

The data in Table 2 show the mothers' ages at the last birth. According to data, 6% of respondents' ages at last birth were 17 to 20 years, 15.75% of mothers' age at previous last birth was 21 to 24 years, while 31.25% of respondents' age at last birth were 25 to 28 years of age, whereas 32.75% respondents age were 29 to 32 years, whereas 14.25% mother age at the time of previous birth were 33 to 36 years. The current research indicated that the majority of the respondents were 29-32 years old. The table presents data on awareness of pregnancy complications. It's one of the most important variables for mothers to know about pregnancy problems; the current research tries to analyze the issues and factors that affect maternal health services. So the data shows that 35.75% of mothers have high awareness regarding pregnancy problems, 53.75% of respondents have less awareness about pregnancy complications, and 10.5% of mothers have no awareness regarding pregnancy complications. So it's shown that most of the respondents have less awareness about pregnancy problems. Table 2 presents data on complications encountered during pregnancy. The table shows that 78.75% of respondents experienced complications during pregnancy, while only 21.25% did not. So the research revealed that 78.75% of respondents faced complications during pregnancy. Our study results are also in compliance with previous

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studies as Jordanian women are not very aware of the warning signs and symptoms of pregnancy complications. The Millennium Development Goals highlight the need for prenatal care that includes adequate information on pregnancy-related danger signs and symptoms to meet the demand for safe motherhood (Aziz & et al.).

The data revealed that 90.75% of respondents discussed their pregnancy complications with their husbands, whereas only 9.25% of respondents did not discuss pregnancy problems with their partners. Research shows that the majority of the 90.75% of respondents discuss pregnancy problems with their spouse. Further, the data show that 61.5% of respondents receive social support from their husbands, while 38.5% are not happy with their husbands' social support (Musizvingoza).

The research revealed that 61.5% of respondents receive social support from their partner. It was discovered that there were communication gaps between husbands and spouses regarding reproductive health. In particular, several husbands reported frustration when trying to start health conversations with their spouses (Okour & Amarin). It seems that women are more reluctant than men to start or participate in some of these conversations. Given the communication hurdles some couples experience and husbands' willingness to help, it seems possible that providing couples' services could offer a chance to "break the ice" and discuss these crucial subjects (Mullany).

Table 2: Dataset Detailing Medical History and Personal Experiences of Respondents

Categorization of respondents concerning their Years of marriage			
Categories		**Frequency**	**Percent**
	1-6	103	**25.75**
	7-12	164	**41.0**
	13-18	108	**27.0**
	19-24	25	**6.25**
	Total	400	**100.0**
Arrangement of respondents concerning their Total number of previous birth			
Categories		**Frequency**	**Percent**
	1-2	172	**43.0**
	3-4	139	**34.75**
	5-6	90	**22.5**
	Total	400	**100.0**
Frequency distribution concerning the Age of the respondent at last birth			
Categories		**Frequency**	**Percent**
	17-20	24	**6.0**
	21-24	63	**15.75**
	25-28	125	**31.25**
	29-32	131	**32.75**
	33-36	57	**14.25**
	Total	400	**100.0**
Categorization of respondents concerning their awareness related to pregnancy problem			
Categories		**Frequency**	**Percent**
	High awareness	143	**35.75**
	Less awareness	215	**53.75**
	No awareness	42	**10.5**
	Total	400	**100.0**
Arrangement of respondents concerning any complications faced during pregnancy			
Categories		**Frequency**	**Percent**
	Yes	315	**78.75**
	No	85	**21.25**
	Total	400	**100.0**
Categorization of respondents concerning their Do you discuss pregnancy problems with Spouse			
Categories		**Frequency**	**Percent**
	Yes	363	**90.75**

	No	37	**9.25**
	Total	400	**100.0**
Categorization of respondents to their social support from their husband			
Categories		**Frequency**	**Percent**
	Yes	246	**61.5**
	No	154	**38.5**
	Total	**400**	**100.0**

3.1.3 Analysis of the socio-cultural factors that have an impact on the accessibility of maternal health services

Table 3: Data on Respondents' Interactions and Experiences with Healthcare Facilities

Statements	**Agree**		**Strongly Agree**		**Disagree**		**Strongly Disagree**	
	Freq	%	Freq	%	Freq	%	Freq	%
Patriarchy	195	48.75	165	41.25	25	6.25	15	3.75
Lack of Education	207	51.75	165	41.25	15	3.75	13	3.25
Limited Health Facilities	213	53.25	173	43.25	09	2.25	05	1.25
Early Marriages	123	30.75	115	28.75	83	20.75	79	19.75

The data presented regarding sociocultural factors that affect the accessibility of maternal health care services. Table 3 presents factors influencing maternal health services, measured on a Likert scale. The first factor patriarchy presents that most of the respondents 48.75% agreed with the statement, 41.25% of respondents strongly agreed and believed that patriarchy impacts maternal health services, while on the other side, 6.25% disagreed regarding the patriarchal impact on the accessibility of maternal health services, whereas 3.75% mothers strongly disagreed regarding the statement.

From the previous studies, we know that Lack of education is one of the main factors that strongly impact maternal health care services. In this research, we would also like to identify factors that affect maternal health services (Orboi & Mallongi).

The above table shows that a lack of education is the primary factor affecting maternal health services. Table 3 shows that 51.75% of respondents agree, 41.25% strongly agree, and consider that the lack of education is the key factor impacting maternal health care services; 3.75% of respondents disagreed, and 3.25% strongly disagreed (Mannava & Luchters).

A limited health facility is another factor that affects maternal health care services. Table 3 shows data concerning limited health facilities (Puspitasari & Bulan). The data show that 53.25% of respondents agreed that limited health facilities had a strong impact on maternal health services, 43.25% of mothers strongly agreed, while only 2.25% and 1.25% respondents disagreed. Table 3 revealed data concerning early marriages. The data show that 30.75% of respondents believe that early marriage affects maternal health care services, and 28.75% strongly agree, whereas 20.75% disagree and 19.75% strongly disagree.

4. Conclusion

Worldwide maternal health care is now a major concern, especially in developing countries. In developing countries, socio-cultural aspects influence maternal healthcare utilization. The key purpose of this research was to explain the relationship between socio-cultural factors and maternal care.

Pakistan is an Asian country with high maternal mortality, and the government has made a lot of efforts to reduce maternal and infant mortality. The present study identified several socio-cultural factors that serve as barriers to the utilization of maternal health care services. Family income also affects access to and utilization of maternal health care services. Long distances, high cost of private and public transport, and high cost of health care services make it difficult for families with low income and high birth rates to access health care services.

Lack of education is a major factor in understanding the importance of occupational health. Maternal education is very important because mothers with higher education are more aware of health issues and more likely to use health services.

A mother with higher education is more confident in her interactions with her doctor because there is no language barrier when communicating with health care providers. Misconceptions and taboos have also played a major role in acknowledging the importance of professional health care for both mother and child. The study found that less educated women were more likely to use traditional birthing techniques and home remedies for mother and newborn during antenatal care.

Spouses' lack of interest in women's health care is also considered an obstacle to accessing maternal and child health care services. Husbands with less education are less likely to be active in seeking maternal and child health services.

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Data availability
The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent
Not applicable. This study uses publicly available, de-identified secondary data and does not involve human participants or personal information.

Competing interests
The authors declare no competing interests.

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