



Maternity Health Workers' Views on the Effect of Social Conditions on The Maternal Mortality Rate in Hyderabad District, Pakistan

Muhammad Abdullah Avais¹, Hamida Narijo², Mike Parker³, Muhammad Bilal⁴

¹ Regional Manager, Rural Education & Economic Development Society (REEDS), Pakistan.

Email: abdullahawais77@yahoo.com

² Assistant Professor, Department of Sociology, The University of Sindh, Jamshoro, Pakistan.

Email: h_narejo@hotmail.com

³ Biostatistician, Clinical Trial Unit, Postgraduate Medical Institute, Anglia Ruskin University, Cambridge, UK.

Email: realmikep@btinternet.com

⁴ Ph.D. Scholar, Department of Criminology, Karachi University, Pakistan. Email: blknk@gmail.com

ARTICLE INFO	ABSTRACT
<p>Article History: Received: March 27, 2022 Revised: February 10, 2023 Accepted: February 10, 2023 Available Online: March 27, 2023</p> <p>Keywords: Maternal mortality rate (MMR) Maternal death Illiteracy Poverty Negligence Health care</p> <p>Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.</p>	<p>The objective of the study was to find out the leading social factors causing maternal mortality in Hyderabad district. A total of 125 maternity health workers including qualified gynecologists /obstetricians and undergraduate trained obstetricians from Hyderabad district (Sindh, Pakistan) were interviewed on the effect of social conditions on the maternal mortality rate with a predesigned close ended questionnaire. The period of study was four months from November 2016 to February 2017. It has been found that majority of the respondents revealed that a good number of complicated maternity cases are refused for admission due to unavailability of required facilities to treat such patients. This is considered one of the major reasons for maternal mortality death. Unavailability of required transport on an urgent basis is considered yet another cause. Leading causes of maternal mortality were poverty (41.6%), negligence of family men (27.2%), illiteracy (12%), malnutrition (11.2%) and non-availability of medical facilities (8%) at the center of primary care. It is a fact that socio cultural factor does influence the maternal mortality. Our findings resonate with the findings elsewhere. This necessitates to take corrective measures to improve the healthcare conditions of pregnant mother.</p> <p>© 2023 The Authors, Published by iRASD. This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License</p>

Corresponding Author's Email: abdullahawais77@yahoo.com

1. Introduction

The maternal mortality rate has long been recognized as a critical indicator of healthcare quality in the United States and worldwide (Kassebaum et al., 2016). It is a serious issue to healthcare systems and family dynamics in developed and developing countries. Pregnancy problems have been a serious concern for both developing and industrialized countries (Nasrin, Md Nazirul Islam Sarker, & Huda, 2019). Every year, more than 525,000 women in underdeveloped nations die due to difficulties during pregnancy (Haider, Qureshi, & Khan, 2017). Different researchers estimated that in 2015, 303,000 women died because of maternity and pregnancy complications worldwide, with 66 % of these women were from underdeveloped nations such as Sub-Saharan Africa the remaining 22 % from South Asia (Gedefaw, Alemnew, & Demis, 2020; Hassan & Woodbury, 2020; Islam & Masud, 2018). The majority of women in developing countries are unaware of the importance of antenatal check-ups, and it has been reported that almost half of maternal deaths occur at the time of birth or within one day of delivery due to conditions that were either not managed or not detected during birth or antenatal check-ups (Hagey, Rulisa, & Pérez-Escamilla, 2014; Tuyisenge et al., 2019). Women's access to maternal health care facilities is hampered by a variety of social and cultural barriers, including poor road conditions, non-availability of transportation for a check-up or during hospitalization of pregnant women, untrained birth attendants, unidentified malnutrition or male family

members' negligence, high healthcare costs, and poverty (Bucagu et al., 2012; Condo et al., 2014; Grede, de Pee, & Bloem, 2014; Tuyisenge et al., 2019).

Chances for maternal mortality is closely related to social, economic, geographic remoteness of mother's home and cultural norms of her society. The World Health Organization (WHO) certified that maternal mortality rate is unacceptably very high around the globe (Crear-Perry et al., 2021). Around 290,000 pregnant women died during and after pregnancy, mostly in developing countries in 2017. Indeed, a marginalized and poor woman is at greater risk of dying during pregnancy as discrepancy between prosperous and poor countries is a measure of health state. In under-developed countries such as Sub-Saharan Africa, woman live with lifetime risk of giving up their life as a consequence of pregnancy or childbirth as compared to those in developed and industrialized countries (Olonade, Olawande, Alabi, & Imhonopi, 2019).

Beyond these facts, women like trained doctor, trained health professional and midwife are unable to show skilled and regular attendance at the time of delivery which in result correspond to high maternal mortality rate in several countries. Mostly, least qualified and poorest women become more vulnerable to face disability during the course of pregnancy and ultimately die (Collier & Molina, 2019). However, inadequate management of health system is not only the reason that leads to higher death rate of pregnant women during pregnancy or after delivery, but there are also additional factors. Inequalities regarding deep-seated gender also leave mothers with little say in decision making, social support, health care and economic opportunities (Amjad et al., 2019).

In fact, gender discrimination signifies early in life of girls who are born into poverty where they are subjected to either child marriage or exploitation in the form of forced labor or sex trafficking. In addition, adolescent girls most often lack decision power and knowledge about sex. Some of them even unaware of contraception method (Heslehurst, Brown, Pemu, Coleman, & Rankin, 2018). As a consequence, they are most likely to get pregnant at an early age and face multiple complications. The legal system in various developing countries provides little support to women in protecting even their basic rights. Many studies reveal that legislation in some cases deliberately contradicts laws and rights that inhibit women not only from using contraception but also seeking permission from their husbands or parents for contraception (Wang, Glazer, Howell, & Janevic, 2020). Nevertheless, if non-discriminatory laws prevail, they are not universally implemented. Lack of appropriate legal support provokes gender discrimination that ultimately put women at lifetime risk of maternal mortality. According to various maternal health workers, there are some social conditions that cause high rate of maternal mortality (Sageer et al., 2019).

The basis and purpose of the study were lack of data on maternity health workers' view on the effect of social conditions on the maternal mortality rate under local conditions (Hyderabad). The study was considered significant because no data on this topic was available for the study environment. The article will contribute in the understanding the effect of social conditions on maternal mortality and the factors leading to it.

1.1. Definitions of Maternal Mortality

Maternal death: The death of a woman during pregnancy or within 42 days following termination, regardless of the length or location of the pregnancy, that is not due to chance or circumstance but is related to pregnancy or its management (Mahler, 1987).

Maternal mortality rate (MMR): Maternal mortality rate (MMR) refers to deaths due to complications from pregnancy or childbirth per 100 000 women of reproductive age in a specific period. According to UN report worldwide maternal mortality ratio (MMR) has declined by 38 percent from 2000 to 2017 with average reduction of 2.9 percent. For South Asia the reduction in MMR was 59 percent. UNICEF plans to reduce the global MMR to less than 70 deaths per 100,000 live births (UNICEF, 2021).

The lifetime risk of maternal death: The likelihood of a woman's mortality throughout her reproductive life, usually given at odds. The number of maternal deaths per 100,000 live births over a period of time (Ronsmans, Graham, & group, 2006).

1.2. Causes of Maternal Mortality

Direct Causes: Abortion: Some researchers found that abortions cause 7-9 % of all maternal deaths. Unsafe abortion is considered a primary source of abortion-related maternal mortality (Say et al., 2014). Even in industrialized countries where abortion is legal, there is a stigma associated with it due to religious and cultural obstacles, and women are unable to disclose their abortion attempts or the fatalities that result (Gerds, Vohra, & Ahern, 2013).

Obstructed Labor: Because of numerous clinical circumstances such as bleeding, infection, and uterine rupture, obstructed labor is a significant cause of maternal death (Leitao et al., 2013).

Indirect Causes: HIV/AIDS: HIV/AIDS is a significant source of misclassified and indirect maternal mortality. When death occurs in a hospital setting, the cause of death on the death certificate only indicates HIV/AIDS. Still, an obstetric complication such as sepsis is neglected because of this misclassification (Organization, 2012).

2. Literature Review

Absence of Autonomy and Mobility: Women usually do not possess autonomy in order to ask for care whenever they require it, specifically in local culture of developing countries such as Pakistan. It has been observed by several researchers that pregnant women require consent from many stakeholders to seek care from any health care department (Dahab & Sakellariou, 2020). One maternal health worker certifies that pregnant women are not allowed to decide whether to or when to ask for health care. Her mother-in-law, husband, husband's brother or sometimes his father-in-law has the authority to make decision in accordance with the perceived intensity of the illness, nature of the risk, competence of health care department, availability of care providers and the cost in addition to other conditions (Chattopadhyay, Mishra, & Jacob, 2018). Some maternal health workers stated that preference and priority are major issues beside poverty. Women whose parents are not influential and wealthy are most likely to face health issues as they are ignored, and their ill condition is taken for granted by their in-laws (Sripad, Warren, Hindin, & Kara, 2019).

Low Nutritional Status: Due to lack of influential background, women must face discrimination as their dietary requirements are ignored during pregnancy. As a matter of fact, a healthy diet is highly essential for women during conceiving and after delivery of baby as they affect her health extensively (Ashari, 2021). Lack of sufficient and appropriate nutrition can adversely influence her health leading to several maternal complications. Few gynecologists in health care departments certify the poor health condition of women due to poor nutrition. They state that pale ghostly faces of pregnant women horrify them when they come with their maternal complications (Geller et al., 2018). The dietary requirement of women is not given preference over men and children (Ashari, 2021). The maternal health workers, being related to rural households, observed that poverty in addition to lack of power within the family structure cause delay of pregnant women in approaching healthcare. They do not even get appropriate medical care and meals on time (Sobhy et al., 2019).

Early marriages: Early marriage, cousin marriage and forced marriage is considered normal in terms of culture, specifically in backward rural families of developing countries like Pakistan and India (Paul & Chouhan, 2019). Several literature reviews reveal the negative physical outcomes of early marriage. Some physicians have reported child marriage as the major factor of maternal mortality. They certify that the girls who are married at an early age are not mature enough for self-care and primarily depend on their husbands and in-laws in order to meet her healthcare requirements (Irani & Latifnejad Roudsari, 2019). However, child marriage is considered right for certain reasons according to norms of the local culture. One of the mothers-in-law justified her strong belief in early marriage of girls by stating that poor people do not feel safe at home in keeping their girls unmarried for long duration of time (Kurniati, Chen, Efendi, & Berliana, 2018). On the other hand, younger girls are considered brighter for giving birth to many children. In rural areas, After getting married at an early age, girls undergo many pregnancies even before getting 25 years of age. A female physician states that she is unable to believe and accept the age of pregnant women most of the times. Such women are forced to produce children after every year and so they become vulnerable to maternal mortality at large scale (Yaya, Odusina, & Bishwajit, 2019).

According to one maternal healthcare worker, powerless and poor people consider their daughters as burden, so they marry them as soon as possible. They think that early marriage can prohibit their daughters from sex before marriage (Paul, 2018). They believe that risk of sex scandals and affairs can be eliminated by marrying their girls before attaining puberty. Another female physician certifies that most of the young mothers come to them for delivery with numerous pregnancy complications and it becomes difficult to save them from mortality. Such women are usually unaware of their reproductive health and family planning (Mehra, Sarkar, Sreenath, Behera, & Mehra, 2018).

Lack of Reproductive Autonomy: Lack of involvement in economic factors and social exclusion are leading causes of low awareness in women regarding human rights. According to several research findings, women who conceive baby girl feels disempowered as her baby girl is not warmly welcomed (Smith, Sundstrom, & Delay, 2020). Therefore, pregnant woman with baby girl are less likely to get adequate care during the course of her pregnancy. Current studies reveal lack of family planning specifically in rural households of developing countries which ultimately results in large size of average family as various people consider family planning as prohibited in religion (Kost & Zolna, 2019). In fact, many maternal health workers claim that the desire for a son is the leading factor of large size of family (Potter et al., 2019). Many women become the victim of maternal mortality due to multiple pregnancies with lack of sufficient health care. Family planning is considered as conspiracy against culture. It is evident from series of observations that some women are physically abused by their husbands and in-laws if they appeal for a contraceptive medicine (Dehlendorf et al., 2018). Many female physicians in gynecology department state that mostly mother-in-law holds authority for making decision regarding next course of action related to pregnancy of her daughter-in-law. Some of them even ask for saving the life of baby boy instead of mother just to fulfill her desire for a baby boy (Bunnik, Kater-Kuipers, Galjaard, & de Beaufort, 2020).

Poor Understanding of Pregnancy Complications and Risk Factors: Several studies related to maternal mortality indicate that pregnant women in addition to their families are least aware of risk factors and complications during pregnancy. However, timely diagnosis of pregnancy problems is certainly possible if women frequently visit gynecologist during pregnancy. Nevertheless, the local culture possesses its own terms and conditions relevant to pregnancy and implement in their own way according to their cost, desired factors and social norms (Heslehurst et al., 2018). Numerous maternal health care workers reported that there was no opportunity for pregnant women to visit health care centers for their antenatal care in their respective local areas. According to some gynecologist, people from such families do not trust the procedure of diagnosis and medication that is performed at clinics or hospitals for pregnant women. Such people even consider ultrasound as suspicious device for planning, which leads to lack of formal care by female physicians (Yarney, 2019). Some of the maternal health care workers state the condition of pregnant women who have no perspective regarding prenatal care. They are only allowed to avail medical facilities when something reaches a severe condition like bleeding, loss of consciousness or fits. Some people consider frequent visits of pregnant women to doctor as wastage of time and money because they think that doctors further complicate the issues. This is one of the major factors in causing high rate of maternal mortality. Web of certain misconceptions regulates the course of pregnancy as some women are not allowed to get exposure of sun during their trimester. They are kept at home. Many pregnant women lose their lives just because of these superstitious beliefs (Crear-Perry et al., 2021).

Seeking Care Within a Pluralistic Medical System: Pakistan in addition to other developing countries possesses pluralistic medical system where biomedical system has a strong competition with representatives of indigenous systems like tradition healers including hakeems, spiritual healers or folk healers. The social class of pregnant women, level of education, perceived understanding of their respective aliment and their income are the major factors for allocating a specific health care provider or many health care givers at a particular frame of time. A majority of the female physicians report that multiple set of suggestions from various care providers cause a definite delay in getting adequate medication from a qualified doctor. As a consequence, women face long-term problems like gestational diabetes and high blood pressure. Women in rural areas with pregnancy desire for immediate remedy and therefore visit spiritual and traditional healers who promise for immediate relief (Crear-Perry et al., 2021). Many South Asian societies still blame presence of supernatural powers for their mental and physical illness. They follow common practice of consulting their spiritual healers even for

providing medical assistance to their women during pregnancy. They are advised to stay away from sunlight and keep knife under their pillow. Few research studies reveal the death of pregnant women who loss their life simply due to bleeding as she was not allowed by her spiritual healer to travel outside her home to consult a doctor because she was at risk of being hit by evil forces (Asefa, 2021). Due to strong belief of many women in rural areas regarding evil eye, pregnant women are not allowed to consult doctors for delivery. In such condition, midwife is called at home to provide medical assistance during delivery of baby but some midwives become the major cause of maternal deaths at an extensive level. This method saves money but takes lives of many helpless and poor women. Midwives do not hesitate in cutting umbilical cord of baby with a kitchen knife (Jolivet et al., 2018). They even take responsibility of treating cases like high blood pressure during pregnancy which is highly critical for the life of baby as well as for the mother. Sometimes, half-dead pregnant women are brought to the hospitals that have been ill-treated by midwives and traditional birth attendants due to inappropriate knowledge and experience. As a consequence, many pregnant women die and in some way it's a murder (Mekonnen, Dune, & Perz, 2019).

2.1. Objective of The Study

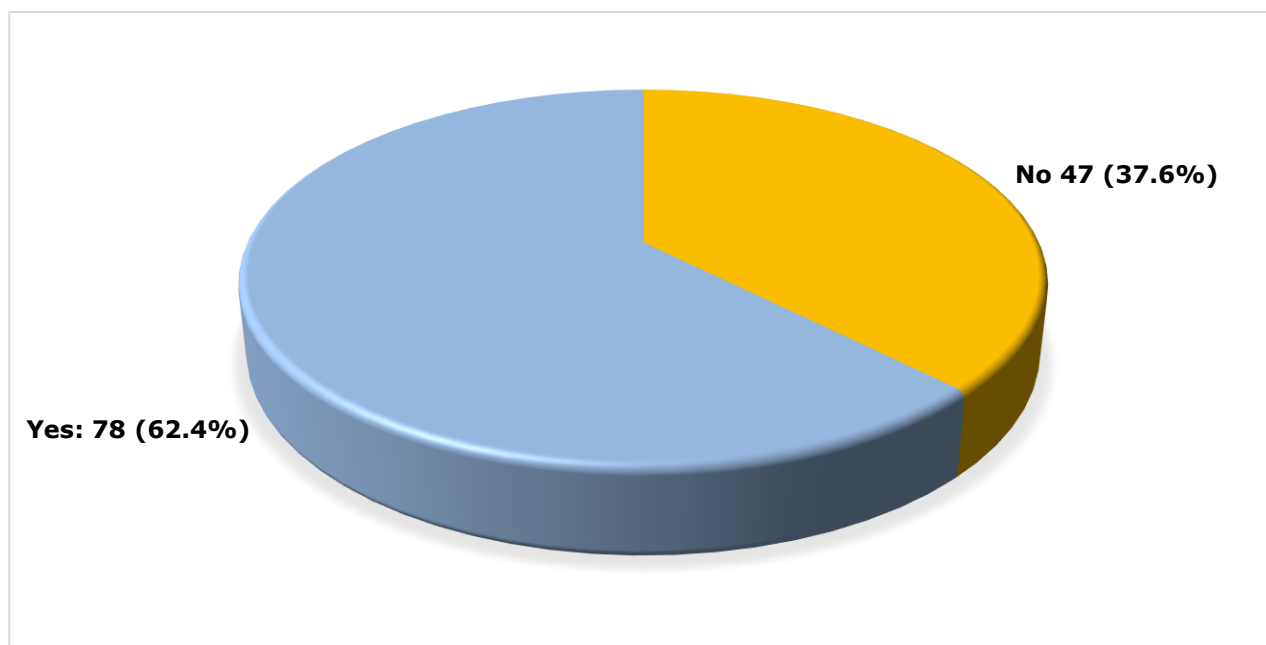
The objective of the study was to find out the leading social factors causing maternal mortality in Hyderabad district.

2.2. Materials and Method

A total of 125 maternity health workers from Hyderabad district (Sindh, Pakistan) were interviewed on the effect of social conditions on the maternal mortality rate with a predesigned close ended questionnaire. The period of study was four months from November 2016 to February 2017. The maternity health care workers included graduate qualified gynecologists (20) and trained health care workers (95) including midwives/trained birth attendants, lady health visitors and lady health workers. The data has been analysed using Excel software application.

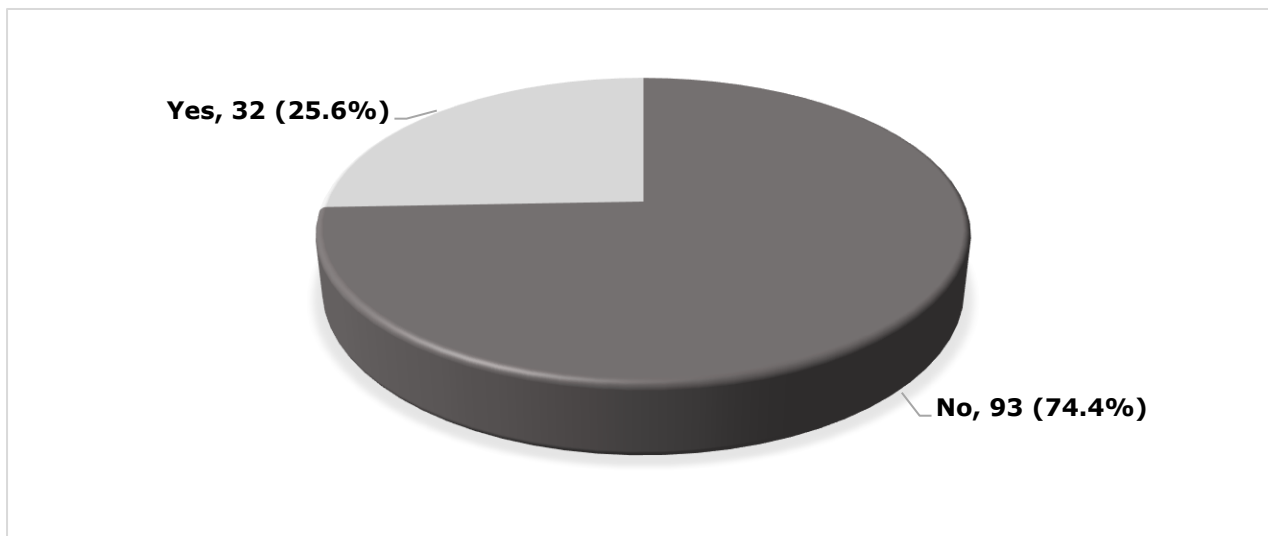
3. Result

As high as 62.4% of the respondents mentioned that they refuse cases (by the health care institutions (hospitals and maternity homes) due to pregnancy complications for which the required facilities were not available (Graph 1).



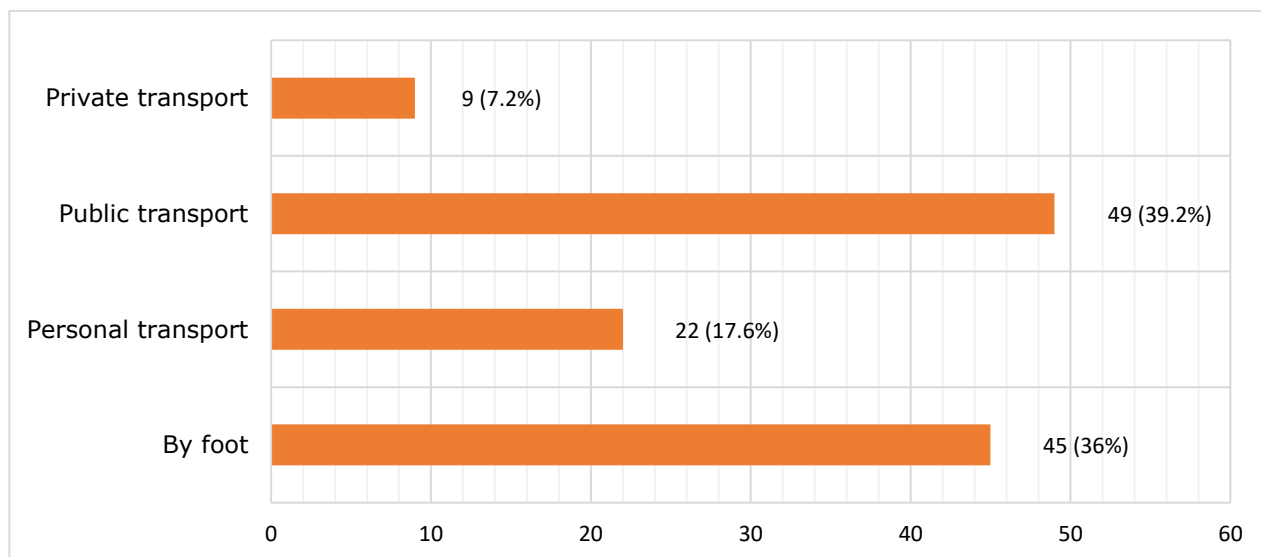
Graph 1: Refusal to Provide Healthcare Facilities because of the Complications

Maternal death was indeed a problem and 25.6% of the respondents mentioned that maternal deaths do occur due to pregnancy complications (Graph 2).



Graph 2: Maternal Death During Delivery or Within 42 Days of Pregnancy Termination

Regarding mode of transport, 39.2% of the respondents mentioned that the patients use public transport, while 36% mentioned that they reach the primary care centers by foot (Graph).



Graph 3: Mode of transport to reach the Gynecologists

This was followed by personal transport 17.6% and private transport 7.2%. Leading causes of maternal mortality were poverty 41.6%), negligence of family men (27.2%), illiteracy (12%), malnutrition (11.2%) and non-availability of medical facilities (8%) at the center of primary care (Table 1).

Table 1: Leading causes of Maternal Mortality as Reported by

	Gynecologists Frequency (%)	Trained health care workers Frequency (%)	Total
Poverty	3 (15%)	49 (46.7%)	52 (41.6%)
Illiteracy	9 (45%)	6 (5.7%)	15 (12%)
Non-Availability of Medical facilities	0	10 (9.5%)	10 (8%)
Negligence of family men	6 (30%)	28 (26.7%)	34 (27.2%)
Malnutrition	2 (10%)	12 (11.4%)	14 (11.2%)
Total	20	105	125

3.1. Discussion

Our data shows that maternal death is indeed a problem and 25.6% of the respondents mentioned that maternal deaths do occur due to pregnancy complications. This finding resonates with the findings of some authors (Ozimek & Kilpatrick, 2018). According to (Adjiwanou, Bougma, & LeGrand, 2018) lack of education (illiteracy), negligence, misconception about

pregnancy, culturally backward and poor families are major factors of maternal mortality. Our findings resonates with these findings. Health inequalities and difficulties in accessing health facilities are a major drawback for health care in developing countries like Pakistan (Health, 2009). The lack of resources due to poverty is a crucial factor affecting the health of pregnant women. Undernutrition, micronutrient deficiency, and obesity afflict many women in low- or middle-income countries (Keats et al., 2021). We have found the same thing in our research where poverty is considered the leading cause of maternal mortality. It is a well-known fact that the social factors influencing health care may be found in various circumstances including cultural and physical (Omer, Zakar, Zakar, & Fischer, 2021; Shaikh & Hatcher, 2005).

4. Conclusions and Recommendations

It is a fact that socio cultural factor does influence the maternal mortality. Our findings resonates with the findings elsewhere. This necessitates to take corrective measures to improve the healthcare conditions of pregnant mother. Awareness should be created that pregnant mothers need special diet and care. Since nutritional deficiency due to poverty inhibits the family members to give proper diet to the pregnant mothers, it would be a good idea to give some nutritional diet to the pregnant women free of cost through the local government hospitals or maternity homes. The small number of respondents is a limitation of the study.

References

- Adjiwanou, V., Bougma, M., & LeGrand, T. (2018). The effect of partners' education on women's reproductive and maternal health in developing countries. *Social Science & Medicine*, 197, 104-115. doi:<https://doi.org/10.1016/j.socscimed.2017.11.054>
- Amjad, S., MacDonald, I., Chambers, T., Osornio-Vargas, A., Chandra, S., Voaklander, D., & Ospina, M. B. (2019). Social determinants of health and adverse maternal and birth outcomes in adolescent pregnancies: a systematic review and meta-analysis. *Paediatric and perinatal epidemiology*, 33(1), 88-99. doi:<https://doi.org/10.1111/ppe.12529>
- Asefa, A. (2021). Unveiling respectful maternity care as a way to address global inequities in maternal health. *BMJ Global Health*, 6(1).
- Ashari, A. (2021). Maternal Referral Delay Factors. *Journal of Applied Nursing and Health*, 3(2), 40-47. doi:<https://doi.org/10.1136/bmjgh-2020-003559>
- Bucagu, M., Kagubare, J. M., Basinga, P., Ngabo, F., Timmons, B. K., & Lee, A. C. (2012). Impact of health systems strengthening on coverage of maternal health services in Rwanda, 2000–2010: a systematic review. *Reproductive health matters*, 20(39), 50-61.
- Bunnik, E. M., Kater-Kuipers, A., Galjaard, R.-J. H., & de Beaufort, I. D. (2020). Should pregnant women be charged for non-invasive prenatal screening? Implications for reproductive autonomy and equal access. *Journal of Medical Ethics*, 46(3), 194-198. doi:<https://doi.org/10.1136/medethics-2019-105675>
- Chattopadhyay, S., Mishra, A., & Jacob, S. (2018). 'Safe', yet violent? Women's experiences with obstetric violence during hospital births in rural Northeast India. *Culture, health & sexuality*, 20(7), 815-829. doi:<https://doi.org/10.1080/13691058.2017.1384572>
- Collier, A.-r. Y., & Molina, R. L. (2019). Maternal mortality in the United States: updates on trends, causes, and solutions. *Neoreviews*, 20(10), e561-e574. doi:<https://doi.org/10.1542/neo.20-10-e561>
- Condo, J., Mugeni, C., Naughton, B., Hall, K., Tuazon, M. A., Omwega, A., . . . Ngabo, F. (2014). Rwanda's evolving community health worker system: a qualitative assessment of client and provider perspectives. *Human resources for health*, 12(1), 1-7.
- Crear-Perry, J., Correa-de-Araujo, R., Lewis Johnson, T., McLemore, M. R., Neilson, E., & Wallace, M. (2021). Social and structural determinants of health inequities in maternal health. *Journal of Women's Health*, 30(2), 230-235. doi:<https://doi.org/10.1089/jwh.2020.8882>
- Dahab, R., & Sakellariou, D. (2020). Barriers to accessing maternal care in low income countries in Africa: a systematic review. *International journal of environmental research and public health*, 17(12), 4292. doi:<https://doi.org/10.3390/ijerph17124292>
- Dehlendorf, C., Reed, R., Fox, E., Seidman, D., Hall, C., & Steinauer, J. (2018). Ensuring our research reflects our values: The role of family planning research in advancing reproductive autonomy. *Contraception*, 98(1), 4-7. doi:<https://doi.org/10.1016/j.contraception.2018.03.015>
- Gedefaw, G., Alemnew, B., & Demis, A. (2020). Adverse fetal outcomes and its associated factors in Ethiopia: a systematic review and meta-analysis. *BMC pediatrics*, 20, 1-12.

- Geller, S. E., Koch, A. R., Garland, C. E., MacDonald, E. J., Storey, F., & Lawton, B. (2018). A global view of severe maternal morbidity: moving beyond maternal mortality. *Reproductive health*, 15(1), 31-43. doi:<https://doi.org/10.1186/s12978-018-0527-2>
- Gerds, C., Vohra, D., & Ahern, J. (2013). Measuring unsafe abortion-related mortality: a systematic review of the existing methods. *PloS one*, 8(1), e53346. doi:<https://doi.org/10.1371/journal.pone.0053346>
- Grede, N., de Pee, S., & Bloem, M. (2014). Economic and social factors are some of the most common barriers preventing women from accessing maternal and newborn child health (MNCH) and prevention of mother-to-child transmission (PMTCT) services: a literature review. *AIDS and Behavior*, 18(5), 516-530.
- Hagey, J., Rulisa, S., & Pérez-Escamilla, R. (2014). Barriers and solutions for timely initiation of antenatal care in Kigali, Rwanda: Health facility professionals' perspective. *Midwifery*, 30(1), 96-102. doi:<https://doi.org/10.1016/j.midw.2013.01.016>
- Haider, M. R., Qureshi, Z. P., & Khan, M. M. (2017). Effects of women's autonomy on maternal healthcare utilization in Bangladesh: Evidence from a national survey. *Sexual & reproductive healthcare*, 14, 40-47. doi:<https://doi.org/10.1016/j.srhc.2017.09.002>
- Hassan, L., & Woodbury, L. (2020). Delays Recognized in Maternal Mortality. In *Labour Room Emergencies* (pp. 19-30): Springer.
- Health, C. o. S. D. o. (2009). Subsana las desigualdades en una generación: alcanzar la equidad sanitaria actuando sobre los determinantes sociales de la salud: informe final de la Comisión Sobre Determinantes Sociales de la Salud.
- Heslehurst, N., Brown, H., Pemu, A., Coleman, H., & Rankin, J. (2018). Perinatal health outcomes and care among asylum seekers and refugees: a systematic review of systematic reviews. *BMC medicine*, 16(1), 1-25. doi:<https://doi.org/10.1186/s12916-018-1064-0>
- Irani, M., & Latifnejad Roudsari, R. (2019). Reproductive and sexual health consequences of child marriage: A review of literature. *Journal of Midwifery and Reproductive Health*, 7(1), 1491-1497.
- Islam, M. M., & Masud, M. S. (2018). Health care seeking behaviour during pregnancy, delivery and the postnatal period in Bangladesh: Assessing the compliance with WHO recommendations. *Midwifery*, 63, 8-16.
- Jolivet, R. R., Moran, A. C., O'Connor, M., Chou, D., Bhardwaj, N., Newby, H., . . . Langer, A. (2018). Ending preventable maternal mortality: phase II of a multi-step process to develop a monitoring framework, 2016–2030. *BMC pregnancy and childbirth*, 18, 1-13. doi:<https://doi.org/10.1186/s12884-018-1763-8>
- Kassebaum, N. J., Barber, R. M., Bhutta, Z. A., Dandona, L., Gething, P. W., Hay, S. I., . . . Lim, S. S. (2016). Global, regional, and national levels of maternal mortality, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. *The Lancet*, 388(10053), 1775-1812. doi:[https://doi.org/10.1016/S0140-6736\(16\)31470-2](https://doi.org/10.1016/S0140-6736(16)31470-2)
- Keats, E. C., Das, J. K., Salam, R. A., Lassi, Z. S., Imdad, A., Black, R. E., & Bhutta, Z. A. (2021). Effective interventions to address maternal and child malnutrition: an update of the evidence. *The Lancet Child & Adolescent Health*.
- Kost, K., & Zolna, M. (2019). Challenging unintended pregnancy as an indicator of reproductive autonomy: A response. *Contraception*, 100(1), 5-9. doi:<https://doi.org/10.1016/j.contraception.2019.04.010>
- Kurniati, A., Chen, C.-M., Efendi, F., & Berliana, S. M. (2018). Factors influencing Indonesian women's use of maternal health care services. *Health care for women international*, 39(1), 3-18. doi:<https://doi.org/10.1080/07399332.2017.1393077>
- Leitao, J., Chandramohan, D., Byass, P., Jakob, R., Bundhamcharoen, K., Choprapawon, C., . . . Frøen, F. (2013). Revising the WHO verbal autopsy instrument to facilitate routine cause-of-death monitoring. *Global health action*, 6(1), 21518. doi:<https://doi.org/10.3402/gha.v6i0.21518>
- Mahler, H. (1987). The safe motherhood initiative: a call to action. *Lancet (London, England)*, 1(8534), 668-670.
- Mehra, D., Sarkar, A., Sreenath, P., Behera, J., & Mehra, S. (2018). Effectiveness of a community based intervention to delay early marriage, early pregnancy and improve school retention among adolescents in India. *BMC public health*, 18(1), 1-13. doi:<https://doi.org/10.1186/s12889-018-5586-3>
- Mekonnen, T., Dune, T., & Perz, J. (2019). Maternal health service utilisation of adolescent women in sub-Saharan Africa: a systematic scoping review. *BMC pregnancy and childbirth*, 19, 1-16. doi:<https://doi.org/10.1186/s12884-019-2501-6>

- Nasrin, Md Nazirul Islam Sarker, & Huda, N. (2019). Determinants of health care seeking behavior of pregnant slums dwellers in Bangladesh. *Medical Sciences*, 23(95), 7.
- Olonade, O., Olawande, T. I., Alabi, O. J., & Imhonopi, D. (2019). Maternal mortality and maternal health care in Nigeria: Implications for socio-economic development. *Open access Macedonian journal of medical sciences*, 7(5), 849. doi:<https://doi.org/10.3889/oamjms.2019.041>
- Omer, S., Zakar, R., Zakar, M. Z., & Fischer, F. (2021). The influence of social and cultural practices on maternal mortality: a qualitative study from South Punjab, Pakistan. *Reproductive health*, 18(1), 1-12. doi:<https://doi.org/10.1186/s12978-021-01151-6>
- Organization, W. H. (2012). *The WHO application of ICD-10 to deaths during pregnancy, childbirth and puerperium: ICD-MM*: World Health Organization.
- Ozimek, J. A., & Kilpatrick, S. J. (2018). Maternal mortality in the twenty-first century. *Obstetrics and Gynecology Clinics*, 45(2), 175-186. doi:<https://doi.org/10.1016/j.ogc.2018.01.004>
- Paul, P. (2018). Maternal age at marriage and adverse pregnancy outcomes: findings from the India human development survey, 2011-2012. *Journal of pediatric and adolescent gynecology*, 31(6), 620-624. doi:<https://doi.org/10.1016/j.jpag.2018.08.004>
- Paul, P., & Chouhan, P. (2019). Association between child marriage and utilization of maternal health care services in India: Evidence from a nationally representative cross-sectional survey. *Midwifery*, 75, 66-71. doi:<https://doi.org/10.1016/j.midw.2019.04.007>
- Potter, J. E., Stevenson, A. J., Coleman-Minahan, K., Hopkins, K., White, K., Baum, S. E., & Grossman, D. (2019). Challenging unintended pregnancy as an indicator of reproductive autonomy. *Contraception*, 100(1), 1-4. doi:<https://doi.org/10.1016/j.contraception.2019.02.005>
- Ronsmans, C., Graham, W. J., & group, L. M. S. S. s. (2006). Maternal mortality: who, when, where, and why. *The lancet*, 368(9542), 1189-1200.
- Sageer, R., Kongnyuy, E., Adebimpe, W. O., Omosehin, O., Ogunsola, E. A., & Sanni, B. (2019). Causes and contributory factors of maternal mortality: evidence from maternal and perinatal death surveillance and response in Ogun state, Southwest Nigeria. *BMC pregnancy and childbirth*, 19, 1-8.
- Say, L., Chou, D., Gemmill, A., Tunçalp, Ö., Moller, A.-B., Daniels, J., . . . Alkema, L. (2014). Global causes of maternal death: a WHO systematic analysis. *The Lancet global health*, 2(6), e323-e333. doi:[https://doi.org/10.1016/S2214-109X\(14\)70227-X](https://doi.org/10.1016/S2214-109X(14)70227-X)
- Shaikh, B. T., & Hatcher, J. (2005). Health seeking behaviour and health service utilization in Pakistan: challenging the policy makers. *Journal of public health*, 27(1), 49-54.
- Smith, E., Sundstrom, B., & Delay, C. (2020). Listening to women: Understanding and challenging systems of power to achieve reproductive justice in South Carolina. *Journal of Social Issues*, 76(2), 363-390. doi:<https://doi.org/10.1111/josi.12378>
- Sobhy, S., Arroyo-Manzano, D., Murugesu, N., Karthikeyan, G., Kumar, V., Kaur, I., . . . Khan, K. (2019). Maternal and perinatal mortality and complications associated with caesarean section in low-income and middle-income countries: a systematic review and meta-analysis. *The Lancet*, 393(10184), 1973-1982. doi:[https://doi.org/10.1016/S0140-6736\(18\)32386-9](https://doi.org/10.1016/S0140-6736(18)32386-9)
- Tuyisenge, G., Hategeka, C., Kasine, Y., Luginaah, I., Cechetto, D., & Rulisa, S. (2019). Mothers' perceptions and experiences of using maternal health-care services in Rwanda. *Women & health*, 59(1), 68-84.
- UNICEF. (2021). *Maternal mortality. Maternal mortality declined by 38 per cent between 2000 and 2017*. Retrieved from <https://data.unicef.org/topic/maternal-health/maternal-mortality/>
- Wang, E., Glazer, K. B., Howell, E. A., & Janevic, T. M. (2020). Social determinants of pregnancy-related mortality and morbidity in the United States: a systematic review. *Obstetrics and gynecology*, 135(4), 896. doi:<https://doi.org/10.1097/AOG.0000000000003762>
- Yarney, L. (2019). Does knowledge on socio-cultural factors associated with maternal mortality affect maternal health decisions? A cross-sectional study of the Greater Accra region of Ghana. *BMC pregnancy and childbirth*, 19, 1-12. doi:<https://doi.org/10.1186/s12884-019-2197-7>
- Yaya, S., Odusina, E. K., & Bishwajit, G. (2019). Prevalence of child marriage and its impact on fertility outcomes in 34 sub-Saharan African countries. *BMC international health and human rights*, 19(1), 1-11. doi:<https://doi.org/10.1186/s12914-019-0219-1>