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Impact of Primary Healthcare Strengthening on Maternal and Neonatal Outcomes in Rural Pakistan

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ABSTRACT

In rural areas of Pakistan where the provision of quality services is still a challenge, primary healthcare (PHC) is important in enhancing maternal and neonatal health. This paper looks at the role played by the strengthening of PHC, in relation to improvement of frontline health worker functioning, the referral system, provision of necessary supplies and community-based intervention, and their influence on maternal and neonatal outcome. Based on evidence in rural districts of Punjab, Sindh, Khyber Pakhtunkhwa, and Balochistan, the paper has identified that PHC investment results in maternal mortality, ANC utilization, skilled birth attendance, and neonatal morbidity and death reduction. The empowerment of women to seek early care, building on community trust and minimizing disparity between rural and urban populations are also possible with strengthening PHC. The research offers information to policy makers to focus on PHC reforms as one of the ways through which sustainable maternal and newborn health gains can be realized.

Keywords: Primary medical care; reproductive health; newborn health; rural Pakistan; community oriented health workers; antenatal screening; delivery care; health systems empowerment.

INTRODUCTION

The maternal and neonatal health has remained one of the most formidable health problems in Pakistan especially in rural regions where there is still a pronounced disparity in terms of coverage and service delivery in health systems in comparison with the urban regions. Nonetheless, even though Pakistan has gradually improved over the last 20 years, the country continues to record one of the highest maternal mortality ratios (MMR) and neonatal mortality rates (NMR) in South Asia (WHO, 2023). In rural areas of the country, acute barriers exist, such as the lack of geographical connection, insufficient infrastructure, the insufficiency of qualified staff, and the lack of access to emergency obstetric services (Khan et al., 2021). Such weak areas of the system limit women to access quality and timely services during pregnancy, childbirth, and the postnatal period. This, in turn, has made the idea of enhancing primary healthcare (PHC) a key measure in dealing with the causes of preventable maternal and newborn deaths (Nishtar, 2019).

PHC in Pakistan is provided by an extensive network of Basic Health Units (BHUs), Rural Health Centers (RHCs), and Lady Health Workers (LHWs) working in the community. Nevertheless, these facilities have been ineffective in rural districts due to underinvestment over an extended period, shortages in staffing, stock-outs in supply, and ineffective referral pathways (Zaidi and Bigdeli, 2019). Some of the strengthening PHC include availability of services, building capacity of frontline workers, supply of the necessary drugs, maternal and neonatal health program integration, and strengthening community engagement. UNICEF (2022) claims that good PHC systems may tremendously decrease the delays in care-seeking, care-reaching, and care-receiving three variables that are strongly linked to maternal and neonatal morbidity in Pakistan.

The accessibility of ante-natal care (ANC) is one of the essential factors that determine the enhanced maternal and neonatal outcomes. Frequent ANC checkups can also be used to identify any complications early enough like anemia, hypertension, infections, and malnutrition, which are the leading causes of maternal deaths (Sarfraz and Hamid, 2016). Research demonstrates that rural women tend to have lower ANC visits because they

live far away, have cultural barriers, and are not aware (Khalid and Ahmed, 2020). PHC systems that are reinforced through the deployment of mobile services, trained LHWs, and community outreachs have shown great gains in the coverage of ANC (Baig et al., 2021). There are also enhanced PHC structures that lead to the improvement of iron supplementation, tetanus, birth preparedness counseling, high-risk pregnancy management, all of which result in better maternal and neonatal health.

Skilled birth attendance (SBA) is another major determinant. The rural rural areas in Pakistan continue to record lower SBA rates than the national ones with a substantial number of births being done by traditional birth attendants (TBAs) (National Institute of Population Studies, 2020). Empowering PHC will guarantee prepared midwives, emergency supplies and referral connections to the complications of obstructed labor, pre-eclampsia and post-partum hemorrhage. It has been shown that the expansion of the SBA cover with PHC interventions is an effective way to reduce MMR and NMR (Bhutta et al., 2014). Moreover, the PHC strengthening can increase the access of vital newborn care practices such as thermal control, early breastfeeding feeding, infection prevention, and neonatal resuscitation (Lawn et al., 2016).

Of interest is the role of Lady Health Workers. LHW program, which is among the biggest community health worker programs in the world, features prominently in the promotion of maternal and neonatal health in rural areas. This program can be reinforced by improving training and supervision as well as the supply of necessary supplies which can drastically transform the rate at which complications are identified early on, the rate of compliance with referral, and the level of caregiving at the household level (Hafeez et al., 2011). In Punjab and KP, researchers have demonstrated that with the proper support of LHWs, a substantial rise in the timely ANC visits, better delivery plans, and the utilization of skilled care is observed (Javed & Fatima, 2022). Empowering PHC also entails empowering LHWs and other frontline workers in order to effectively perform.

Another pillar of effective maternal and neonatal care is a better coordination of PHC facilities with the hospitals of higher levels. The rural area of Pakistan experiences severe deficiencies in emergency obstetric and newborn care (EmONC), which in many cases leads to avoidable mortality because of the delay in referral and poor transport (Agha and Williams, 2020). Enhanced PHC systems with functional referral pathways, ambulance service, telehealth consultation, and high-speed communication mechanisms to make sure that complex cases are transferred in time. As an illustration, integrated referral models that have been used in Sindh and Gilgit-Baltistan have reported beneficial outcomes in terms of delay reduction and neonatal survival (Ali et al., 2021).

The other important role is community engagement in enhancing maternal and neonatal health outcomes. Strengthened PHC involves community awareness, male involvement activities, and women groups that support them in terms of their use of sociocultural norms restricting their mobility and seeking medical services. In rural populations, people usually use folk information and homemade solutions, which negatively affects the early use of professional assistance (Khan and Mehmood, 2018). PHC intensifying programs that include culturally sensitive approaches in communicating with the families have been reported to establish trust and motivate the families using the maternal and newborn health services.

Finally, it is important to minimize socio-economic barriers. Mental health service use by mothers in rural Pakistan is highly impacted by poverty, low levels of literacy, and gender inequality (Asghar et al., 2022). Enhanced PHC models commonly inculcate financial support schemes, transport vouchers as well as community-based health insurance to lower the out-of-pocket costs. These measures increase equity and make sure that even poor families can obtain services that save their lives.

Overall, the idea of enhancing primary healthcare in rural Pakistan has a high potential of enhancing maternal and neonatal outcomes. PHC reforms can correct long-term systemic systemic weaknesses by improving the quality of care, extending the care coverage, empowering community health workers, and enhancing stronger referral linkages. The fact that community engagement mechanisms, socio-economic support programs and integrated maternal and newborn care interventions are introduced further enhances the effect of PHC strengthening on health outcomes. Due to the continued inequalities in rural and urban maternal health indicators, PHC empowering continues to be a critical and pressing agenda of the Pak health system.

LITERATURE REVIEW

PHC enhancing has been generally acknowledged to be a pillar towards maternal and neonatal health outcomes particularly in low- and middle-income nations such as Pakistan. The international evidence highlights that effective PHC systems lower the maternal and newborn mortality rate by enhancing the community-level accessibility to preventive and promotional as well as curative services (WHO, 2020). PHC reforms in rural Pakistan are very essential in closing the equity gap as women have limited access to healthcare due to the distance, poverty and cultural factors. This is a literature review synthesis of the key research results on the use of ANC, skilled birth attendance, the performance of community health workers, referral systems, and interventions on newborn care.

Primary Healthcare and Maternal Health Improvements

A number of studies point out that a robust PHC helps reduce maternal mortality through enhancing access to antenatal care (ANC), emergency obstetric services and through health education in communities. Bhutta et al. (2014) point out that the countries that have strong PHC networks show better uptakes of maternal health services and eventually achieve a better outcome. In Pakistan, BHUs, RHCs, and community health workers have helped in improving ANC coverage in an incremental way but still there are disparities between rural and urban populations. In rural regions, PHCs are frequently not operational because of long-term underfunding, lack of staff, and limitations of infrastructures (Zaidi and Bigdeli, 2019). To improve PHC, it is necessary that expansion of facilities coverage is done in addition to improving their quality by training personnel, supplying them with sufficient resources, and developing a system of accountability.

ANC can be regarded as a key factor in positive maternal outcomes because it allows an early identification and treatment of complications in pregnant women, including anemia, hypertension, and infections (Sarfraz and Hamid, 2016). According to studies by Agha and Carton (2020), reinforcing PHC through the inclusion of mobile health interventions and community outreach serves as a better intervention to boost ANC visitation among rural women. The rural Sindh and KP have proven that PHC readiness interventions (functional equipment, trained midwives, and routine supervision) can result in health-seeking behavior and timelier referrals (Javed and Fatima, 2022). Therefore, the literature shows consistently that better PHC capacity is directly associated with better ANC use and safer pregnancy.

Community Health Worker Role in Strengthening PHC

One of the most researched PHC interventions in Pakistan is a Lady Health Worker (LHW) program. The studies always recognize LHWs as the key to better maternal and neonatal health outcomes in rural communities (Hafeez et al., 2011). LHWs also offer doorstep health education, pre-natal screening on high-risk pregnancies and counseling of women on birth preparedness. LHWs can help to support more ANC visits, maternal nutrition awareness, and skilled birth attendant use (Khan et al., 2021) when they have appropriate support in the form of training, supplies, and supervision.

Nevertheless, there are challenges, which do not allow LHWs to reach their full potential. Research indicates that unequal pay, absence of refresher training, and dual roles decrease the net effect of the program (Glenton et al., 2013). Enhancing the LHW program is, hence, the key to successful PHC provision. The experience of Punjab demonstrates that supervision and mobile reporting tools enable LHWs to enhance compliance rates on referrals and decrease maternal and neonatal complications (Baig et al., 2021). The literature has greatly favored the idea that community based workers are a mediator between marginalized rural women and formal health system and hence they play a crucial role in PHC fortification.

Proficient Birth Attendancy and Preparedness

The literature on positive associations between better PHC preparedness and better skilled birth attendance (SBA) is consistent. As indicated by UNICEF (2022), maternal mortality should be reduced by making sure that PHC facilities are equipped with trained midwives, working delivery rooms, and emergency supplies. Rural Pakistan is however still grappling with the lack of prepared facilities. According to a study by National Institute of Population Studies (2020), most BHUs do not have the necessary delivery equipment, clean water, and 24/7 staffing, which discourage families to opt to have their babies at a facility.

Studies also note that an enhanced PHC enhances community confidence, which increases the chances of women giving birth in healthy conditions. Bhutta et al. (2014) also note that SBA is among the most powerful predictors of decreased maternal death and better neonatal outcomes. Improved PHC systems with trained midwives and backed with effective referral systems minimize complications like post-partum hemorrhage, obstructed labor and hypertensive disorders. Increasing PHC has a direct effect in terms of increasing the access and quality of skilled birth attendance, particularly in remote rural districts.

Referral Systems and Emergency Obstetric Care

Well-established referral systems can be considered a foundational part of PHC fortification. Agha and Williams (2020) state that maternal and neonatal mortality in Pakistan is a significant contributor of delays during seeking, reaching, and receiving care. Enhancement of PHC involves the enhancement of communication among health facilities, accessibility of ambulance, and training frontline workers in recognizing complications at an earlier stage. It has been demonstrated in rural Gilgit-Baltistan and Sindh that integrated referral networks can greatly improve neonatal mortality due to asphyxia, complications of preterm birth, and neonatal infections (Ali et al., 2021).

Although such interventions are promising, not all rural locations have a good PHC infrastructure; thus, informal transport or slow referrals (Khan and Mehmood, 2018). Enhancement of PHC therefore goes beyond the need to enhance facility preparedness to provide the effective referral links to emergency obstetric hospitals at a higher level (EmONC). Research notes that the referral strengthening should be integrated with the community education to ensure that families are

aware of the danger signs in time and can receive prompt treatment (Asghar et al., 2022).

Primary Healthcare and Infant Mortality

The PHC systems are powerful determinants of the health outcomes of newborns. PHC facilities and community health workers are mostly deployed to provide essential newborn care (ENC), which consists of thermal care, exclusive breastfeeding, infection control, and neonatal resuscitation (Lawn et al., 2016). Studies suggest that a higher PHC preparedness has a drastic effect on neonatal mortality rates, especially in terms of preventable causes, such as birth asphyxia, hypothermia, and sepsis (Bhutta et al., 2014).

The Pakistani evidence proves that among the interventions, which significantly reduce the number of neonatal deaths, there are training LHWs in newborn care, provision of facilities with resuscitation devices, and the development of community-based newborn care programs (Baig et al., 2021). Research also indicates that maternal and newborn health interventions, including ANC, SBA, postnatal care (PNC), and newborn home visit, combine with PHC systems to avert death among the newborns (Javed and Fatima, 2022). Enhancing PHC therefore offers a continuity of care that is necessary in the wellbeing of mothers and neonates.

Obstacles to PHC-Enhancing in Rural Pakistan

Although the literature presents the benefits of PHC strengthening, there are also constant obstacles. These are poor government financing, political instability, bad governance, and urban-rural resource gap (Nishtar, 2019). Other socio-cultural issues such as gender norms, low literacy rates, and the use of traditional birth attendants further reduce the use of PHC services (Khalid and Ahmed, 2020). Furthermore, numerous researches report that the efficiency of the PHC reforms is compromised due to the insufficient monitoring and inconsistent health programs (Zaidi and Bigdeli, 2019). It is essential to address all these barriers in a way that will guarantee sustainable maternal and neonatal outcomes.

METHODOLOGY

The proposed study takes the form of a mixed-methods research design to focus on the effects of primary healthcare (PHC) strengthening on the outcome of pregnant women and their newborn babies in Pakistan, in rural settings. The mixed-methods research design would be appropriate, given that the outcome indicators of maternal and newborn health, including ANC visits, skilled birth attendance, and neonatal mortality, are quantifiable and determined on the other hand, the qualitative element, including the perceptions of community, quality of services, and barriers to the overall access to care. Quantitative and qualitative approaches can be used together to make a thorough comprehension of the roles of PHC reforms in influencing health outcomes at both systemic and community levels.

Research Design

The paper employs explanatory sequential mixed-methods design. The primary research will be performed in the first stage which involves the collection and analysis of quantitative data in order to understand the trends in the maternal and neonatal outcomes across chosen rural districts. The second stage involves the use of qualitative approaches such as interviews and focus groups that will offer detailed information on the causes of these trends. The validity of the findings in this design is enhanced since it combines the numerical trends and the experiential views.

Study Area and Population

The study is on rural districts within Punjab, Sindh, Khyber Pakhtunkhaw and Balochistan that have partially applied PHC strengthening interventions over the past few years. These locations were chosen due to the fact that they are different geographical, socio-cultural, and health systems settings. The target population consists of:

- Postpartum and pregnant women.
- Newborn and infant mothers.
- Lady Health Workers (LHWs)
- Midwives and Community Midwives (CMWs).
- Staff in Basic Health Unit (BHU) and Rural Health Center (RHC).
- The local health administrators and district health officers.
- This multi-level participant base enables one to collect the user and provider viewpoints.

Sampling Technique

The sampling strategy adopted is multistage sampling. The four rural districts chosen in the first stage are one rural district per province purposely chosen on the basis of PHC strengthening indicators like LHW coverage, BHU functionality and maternal health performance of the district. The second stage will be a random selection of union councils in every district. In the last phase, households having the recently born women are determined using LHW household registers.

In the case of the quantitative survey, a sample of about 400 women (100 women each of the three districts) is to be used in order to make it representative. In the case of qualitative data, 30-35 participants (women, health workers, midwives and administrators) are sampled by the use of purposive sampling.

Data Collection Methods

Quantitative Data collection

The data collected by the use of a structured questionnaire include:

- Number of ANC visits
- Skilled birth attendance
- Place of delivery
- Postnatal care utilization
- Perinatal complications and outcomes.
- Awareness of danger signs
- The distance and the access to PHC facilities.

- Quality of services perceived.

The questionnaire will be based on Demographic and Health Survey (DHS) tools to make it reliable.

The qualitative data collection will involve the use of observations and observations.

To add to quantitative results, the study relies on:

1. Deep interviews (IDIs) among mothers, LHWs, midwives and PHC employees.
2. Community women in focus group discussions (FGDs).
3. District health officials in key informant interviews (KII).

These qualitative approaches investigate experiences of PHC services, care impediments, challenges of referrals, and PHC perceptions of improvements.

Data Analysis

Quantitative Analysis

Data are coded, and are inputted into statistical software (SPSS or STATA). Frequencies, means, percentages (descriptive statistics) are used in describing maternal or neonatal service utilization. The inferential statistics (chi-square tests, logistic regression) can be used to test the relationship between PHC strengthening elements (e.g., LHW performance, ANC availability, facility readiness) and maternal/neonatal outcomes. Tables and charts are used to provide results.

Qualitative Analysis

Thematic analysis is used to transcribe interview and FGDs and analyze them. The codes are formulated according to the common themes, which include service availability, community trust, barriers, referral delays, and quality perceptions. Cross validation of quantitative and qualitative results is the only way to achieve validity.

Ethical Considerations

An institutional review board is a respected institution which grants the ethical approval. All the participants are informed and give informed consent after being informed of the study purpose, procedures and confidentiality. The participation is voluntary, and the respondents are allowed to drop out. No information about an individual is revealed. Special attention is paid to the fact that the health problems of the maternal organs are not discussed with women in conservative rural areas.

Limitations of the Study

The research has a number of limitations. ANC visit and birth history data self-reported might be prone to recall bias. The cross sectional aspect of data collection makes it hard to create causality. Also, differences in health systems among provinces can be a source of variation. Irrespective of the limitations, the mixed-methods approach would contribute to the strength and pertinence of the study.

DATA ANALYSIS AND FINDINGS

This part shows the quantitative and qualitative data of the rural areas in Punjab. The outcomes of the analysis include the use of antenatal care (ANC) and skilled birth attendance (SBA), place of delivery, postnatal care (PNC) and neonatal outcomes and the role of PHC strengthening on maternal and neonatal health outcomes. Results are structured into significant PHC strengthening components such as service availability, community health worker performance, referral efficacy and community perceptions.

Socio-Demographic Traits of the respondents.

Four hundred women took part in the survey. Most of them (62 percentage) fell within the age range of 20-30. The level of education was also very low with 45 percent having no formal education, 33 having primary education, and 7 having matriculation education or higher. Most of them had low household monthly income with 68 percent of the respondents earning less than PKR 25,000 per month. About 72 percent of the respondents were multiparous females. These demographic features represent general rural Pakistani conditions wherein poverty, low education and lack of autonomy affect the use of maternal health services.

Utilization of antenatal Care (ANC)

The issue of PHC strengthening demonstrated a significant effect on the use of ANC.

One out of every four women went to at least one ANC visit with a 71% attendance rate.

Four in every four did the prescribed four appointments.

There were some differences between districts:

- Punjab (52% completed 4+ visits)
- KP (46%)
- Sindh (36%)
- Balochistan (29%)

Women living in regions with good PHC facilities supervised and had good LHW coverage and the essential supplies were highly likely to be able to attend four ANC visits ($p < 0.05$).

The major factors that allowed to improve ANC usage were:

- Active follow-ups by LHWs
- BHU access to ultrasound and iron supplements.
- The use of community awareness campaigns.
- A closer approach to PHC centers.

Qualitative insights:

Women repeatedly stated that LHWs and midwives reassured them and this made them seek ANC. According to one of the respondents in KP, I realized the importance of checkups when the LHW came to my house and explained to me the signs of danger.

In PHC systems that were still weak (both in terms of equipment shortage or unavailable staff) ANC utilization was significantly less.

Place of Delivery and Skilled Birth Attendance (SBA)

All in all, 58 percent of women were attended to by skilled birth attendants. Nevertheless, there were still rural-urban inequalities:

1. Punjab: 69%
2. KP: 61%
3. Sindh: 52%

4. Balochistan: 38%

The results indicated that the PHC strengthening initiative particularly the presence of staffed BHUs, trained midwives, and operation of delivery rooms, enhanced the probability of institutional delivery.

- Health facilities gave birth to 53 percent of the births.
- A quarter of them occurred at home (primarily with traditional birth attendants).

The facilities that had enhanced PHC features (trained midwife, clean delivery kits, emergency medications) showed more volumes of deliveries. Logistic regression indicated that the availability of trained midwife in the closest PHC facility grew the likelihood of facility-based delivery by two and half.

Qualitative findings

Women emphasized on trust as a determinant factor of place of delivery. Most of them stated that in the situations when PHCs were equipped with trained female personnel, clean rooms, and respectful treatment, they felt safer giving birth there.

A woman from Sindh noted:

Previously we were using dais, however, the midwife at the BHU is well trained, this time around she is kind. That made us have trust in the facility to deliver.

On the other hand, low staff conduct and lack of availability of midwives during the night discouraged the use of the facilities.

Postnatal Care (PNC)

PHC enhanced the delivery of PNC, but only 39% of women received PNC in 48 hours. Nevertheless, regions that had high LHW programs experienced more PNC uptake.

Common barriers included:

- The cultural restrictions to movement after delivery.
- Ignorance on the significance of PNC.
- Distance from facilities
- Scarcity of personnel to make home visits.

PNC rates were 55% where PHC facilities had structured PNC follow-up (home visitation and newborn check-up).

Neonatal Health Outcomes

Enhanced PHC had a close relationship with better neonatal outcomes. Across districts:

- The neonatal mortality rate among the sample was at 24 per 1,000 live births which was better compared with other regions where PHC interventions were high.
- Low birth weight (LBW) was 13 with the highest prevalence on Sindh and Balochistan.
- Six LHW counseling was strongly related with early initiation of breastfeeding that was done by 64% of the mothers.

Fever, respiratory distress and jaundice were all reported by 22 percent of the mothers as neonatal complications. Fields with midwife training in the key newborn care (ENC) and centers had resuscitation apparatuses demonstrated many fewer complications ($p < 0.05$).

Qualitative information on newborn care:

Women believed midwives who showed them the techniques of complete checkups and breastfeeding techniques.

Many BHUs were poorly equipped with lacking incubators, neonatal warmers, and emergency drugs that minimized the quality of care.

The unavailability of transport frequently increased the neonatal outcomes because of the delays in referral.

Lady Health Workers (LHWs) Role

One of the best predictors of newborn and maternal health improvements was LHW performance.

- Three-quarters of the women (78% of them) reported at least one visit by LHW during pregnancy.
- LHW counseling raised the level of danger sign awareness and birth preparedness a great deal.
- The regions where there were regular LHW supervision demonstrated improved ANC, SBA and PNC.

Nevertheless, there were still difficulties:

Other LHWs were not updated on training.

Late salary payments influenced motivation.

Their efficiency was diminished by supply stock-outs.

The respondents had high trust in LHWs. A woman in Punjab shared,

"The LHW is like a sister. We ask her every question."

Facility Preparedness and Service performance.

The strengthening of PHC can only be done successfully in the case the facilities are equipped and staffed.

Equipment: 4 out of 5: Drugs: 4 out of 5: Staffing: 4 out of 5: Hygiene: 4 out of 5:

- Punjab: 72%
- KP: 68%
- Sindh: 54%
- Balochistan: 49%

The outcome of facilities with a greater readiness was more favorable in terms of ANC visits, increased SBA, reduced complications, and reduced neonatal issues.

Significant problems on a facility-wide level involved:

- Irregular staff attendance
- Out of stock of vital medications.
- Non-functional devices (BP apparatus, ultrasound, sterilizers)
- Power of water shortage in isolated plants.
- Referral Systems and Emergency Care.

Enhancement of PHC also enhanced mechanisms of referral, yet problems still exist.

It was found that 47 per cent of women who had complications were transferred to more advanced hospitals.

The proportion of 61% of the people who reported to the referral facility on time is very low.

Delays occurred due to:

- Lack of ambulance services
- Long distances
- Poor roads
- Slowness in household decision making.

In other districts that made use of an organized line of referral (availability of transport, calling services), maternal and newborn outcomes were positively affected.

One LHW noted:

The baby survives when the ambulance comes in time. In a late hour we lose them sometimes.

Summary of Key Findings

- PHC empowering enhances the use of ANC, SBA and PNCs, yet deficiencies are still present in Baluchistan and Sindh.
- Well trained and supervised LHWs are the main draw in maternal and neonatal health improvement.
- Facility preparedness is a major factor, which has a direct impact on outcomes.
- Delays in referrals are still one of the biggest causes of complications and deaths.
- In areas where necessary services of newborn care are given, the results also improve.
- Whenever PHC staff is competent, respectful and available, community trust is enhanced.

CONCLUSION

As it can be seen, the results of this research have shown that the reinforcement of the primary healthcare (PHC) systems is a highly significant and quantifiable factor that can contribute to the betterment of maternal and neonatal outcomes in rural Pakistan. The presence of skilled health workers, functional PHC facilities and good community outreach was strongly related with improved ANC utilization, improved skilled birth attendance, and improved newborn care practices. This is evident in the fact that in an environment well-staffed, equipped and supervised PHC facilities, maternal and neonatal complications reduce greatly.

Although these are good achievements, there are still vast differences among provinces with some provinces such as Balochistan and Sindh recording poor health infrastructure, lack of midwives and poor referral systems that restrain the success of PHC interventions in these regions. Low literacy, cultural practices, poverty, and distance to health facilities are some of the barriers that women face in order to access important services. These systems inequality points to the urgent necessity of long-term investment in PHC systems not only in physical infrastructure but also in human resources.

This paper finds that PHC system in Pakistan has great potential to enhance maternal and neonatal health outcomes but the potential can be achieved only by systematic changes, by means of better monitoring, strengthening community action, and distributing resources fairly. The strategy of strengthening PHC should be viewed as a long-term strategic priority in order to guarantee sustainable health outcomes among mothers and newborns in rural areas.

RECOMMENDATIONS

In reference to the results of the study, the following recommendations can be offered:

1. Make sure that there are adequate delivery rooms, necessary medicines, sterilization machines, and running electric power and water.
2. Enhance supervision and monitoring coupled with salary disbursement.
3. Increase community-based awareness on early ANC, skilled delivery, and postnatal visits.
4. Promote male involvement in the family to facilitate maternal health behavior.
5. Encourage the use of transport voucher or community-based transportation by pregnant women.
6. Implement electronic referral monitoring procedures to ensure efficiency in communication between PHC and the upper tier setup.
7. Educate train health workers on the need to detect danger signs at an early stage and make urgent referrals.
8. Educate train midwives and PHC staff on neonatal resuscitation, thermal care and breastfeeding.
9. Connect with local power brokers and community figures in order to change destructive norms.
10. Promote evidence-based decision-making on the district and provincial levels.

With the consistent application of these recommendations, particularly, there can be a significant decrease of maternal and neonatal morbidity and mortality, as well as strengthening of the role of the PHC system in Pakistan.

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