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AVAILABILITY AND READINESS OF MATERNAL AND NEONATAL HEALTH SERVICES IN THE NEWLY MERGED DISTRICTS OF KHYBER PAKHTUNKHWA. A CROSS-SECTIONAL STUDY

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ABSTRACT

BACKGROUND: Maternal and newborn mortality and morbidity are major concerns in rural areas of KPK. One of the major causes of this is the lack of quality services.

OBJECTIVE: The study aims to evaluate MNCH services in health care facilities within the newly merged districts of KPK and to compare those services across different Health Care Centers with the Minimum Initial Service Delivery Package

METHODOLOGY: A cross-sectional study was conducted from June 2023 to December 2023. Primary health facilities were randomly selected, while secondary health facilities were chosen on a census basis. 10 facilities from each district will be selected, including Basic Health Units (BHUs), Rural Health Centers (RHCs), Tehsil Headquarters Hospitals (THQs), and District Headquarters Hospitals (DHQs). Data were collected using a pre-validated questionnaire developed by the World Health Organization, known as the SARA tool, which includes various variables for assessing service availability and readiness.

RESULTS: The majority of hospitals, 85.7%, are situated in urban areas, while only 14.3% are located in rural regions. Alarmingly, 66% of these facilities provide poor health services, with just 33% categorized as average and a mere 1% deemed good. There is a distinct difference in mean health service scores based on facility type; however, there is no significant difference (P = 0.567) in health care services between rural and urban facilities.

CONCLUSION; The present study showed that the health facilities in the merged districts are below the standards. Government should take measure to improve these facilities.

KEYWORDS: : Maternal, Neonatal, Services, Newly Merged Districts, Khyber Pakhtunkhwa

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INTRODUCTION

Pakistan is currently facing a significant challenge on a global scale when it comes to reducing maternal, neonatal, and child morbidity and mortality.[1,2] According to recent statistics, the rates of maternal mortality, neonatal mortality, and mortality among children under the age of five in Pakistan are 178 per 100,000 live births, 42 per 1000 live births, and 74 per 1,000 live births, respectively.[3] Unfortunately, the country has not met its goals related to reducing mortality rates among mothers and children under the age of five, as indicated by the most recent countdown report on the MDGs in Pakistan.[4]

According to the World Health Organization (WHO), Pakistan is one of the ten countries responsible for sixty percent of maternal deaths globally.[5] This is due to several factors, including the lack of precise information on maternal mortality and the causes of death, as well as the complicated relationship between healthcare delivery systems, socioeconomic status, and demographic factors.[6]These challenges have hindered progress in reducing maternal mortality rates. Research indicates that the factors that increase the risk of maternal mortality during childbirth vary depending on a country's healthcare delivery system and socio-economic status.

Despite this, there is still a low level of coverage of essential interventions in Pakistan, and the discrepancies between urban and rural healthcare consumption, as highlighted in the Pakistan Demographic and Health Survey, pose a significant obstacle to improving maternal, newborn, and child health indicators. These inequalities exist in Pakistan.[7,8] In the Khyber Pakhtunkhwa province of Pakistan, the situation of maternal and neonatal health is particularly dire, especially in tribal areas. In Khyber Pakhtunkhwa province of Pakistan situation of maternal and neonatal health is worst especially in tribal areas. The local people in these areas are having poor outcomes of maternal and child health due to lack of effective healthcare delivery system.[9]

In 2018 federally administered tribal areas (FATA) were merged into the neighboring district of KPK with the purpose of enhanced political stability and good governance of these areas.[10] The basic aim of this research is to evaluate the health facilities of these

newly merged districts for the significant improvement that was made after the merging. This study will help the healthcare authorities and other stakeholders to see shortcomings and improvements that will need in the area of maternal and newborn health services of particular health facilities of the newly merged districts.

METHODOLOGY:

A cross-sectional study was conducted from June 2023 until December 2023. About 70 health facilities were assessed using Simple random sampling to select BHUs and RHCs (basic health units and Rural Health Centers) and census method to select THQ (Tehsil Headquarter) and (District Headquarter) Hospitals. From the list of all primary health care facilities of the seven newly merged districts of KPK 28 BHUs and 28 RHC were selected (four from each district). DHQ and THQ hospitals were selected using census method by including all 14-health facilities from the seven newly merged districts (In each district there is 1 DHQ and 1 THQ hospital). The pre-validated questionnaire utilized for this study was the WHO SARA tool,[29] which includes various variables to assess service availability and readiness. The head of each facility was contacted to obtain informed consent. Trained data collectors supported the data collection process under the supervision of the principal investigator. Data analysis was conducted using the Statistical Package for Social Sciences (SPSS Version 26), where frequencies and percentages were calculated for all variables. To compare the average scores of healthcare services across different facilities, a one-way ANOVA test was employed. P-value less than 0.05 were taken as significant.

The data for this study were collected after obtaining approval from the graduate committee and the Advanced Studies Review Board of Khyber Medical University, as well as ethical approval from the University's Ethical Committee (No: KMU/IPHSS/Ethics/2022/EO/081).

RESULTS

Seventy facilities were included in the study. These facilities were from seven different merged districts such as Khyber, Bajaur, Orakzai, Kurram, N-Waziristan, S-Waziristan and Mohmand. All these health care setups were BHUs (44.3%), RHCs (8.6%), DHQs (10%), CHCs (8.6%) and THQs (7.1%). Government managed all these health care setups. The majority (66%) of the facilities was categorized in poor health services category, followed by average (33%) and good health care services (1%) shown in figure 1.

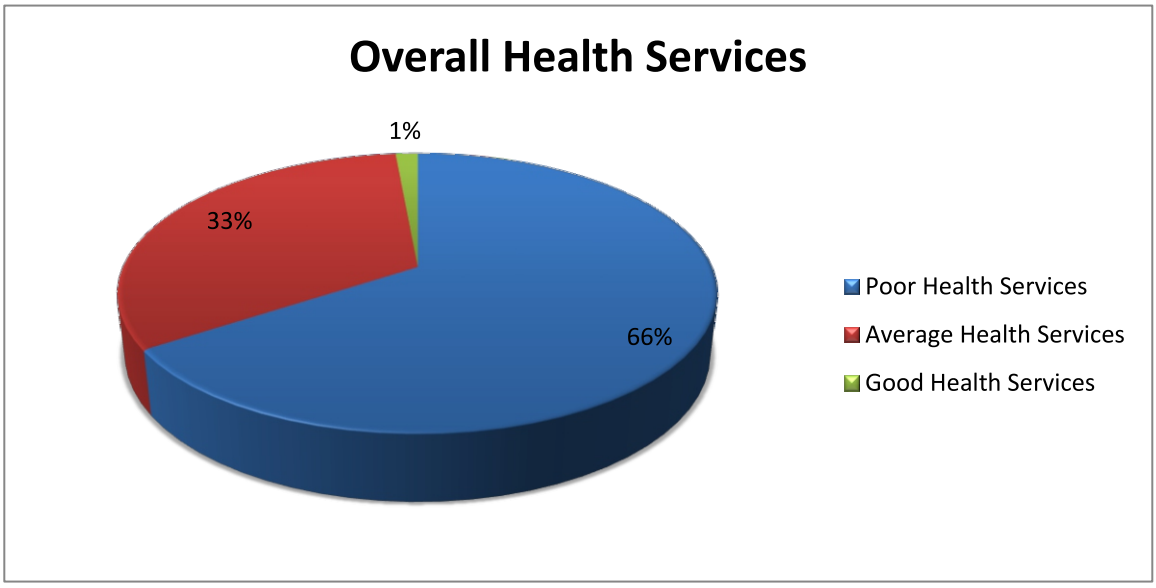

Figure 1: overall health care facilities

The participants were asked regarding the modern family planning methods. The participants reported different types of family planning techniques given in table 1. The facilities were assessed for the availability of medications and equipment's. BP apparatus was available in 85.7% facilities, iron tablets were available in 68.6% facilities, folic acid and iron tablets were available in 65% facilities and TT vaccination were available in 94.3% health care facilities.

Table 1: Family planning methods provided by facility

Family planning methods	Yes	No
Combined oral contraceptive pills	45(64.3%)	25(35.7%)
Progestin-only contraceptive pills	38(54.3%)	32(45.7%)
Combined injectable contraceptives	39(55.7%)	31(44.3%)
Progestin-only injectable contraceptives	29(41.4%)	41(58.6%)
Male condoms	32(45.7%)	38(54.3%)
Female condoms	21(30.0%)	49(70.0%)
Intrauterine contraceptive device (IUCD)	43(61.4%)	27(38.6%)
Implant	2(2.9%)	68(97.1%)
Cycle beads for standard days method	11(15.7%)	59(84.3%)
Emergency contraceptive pills	20(28.6%)	50(71.4%)
Male sterilization	13(18.6%)	57(81.4%)
Female sterilization	24(34.3%)	46(65.7%)

The response regarding the availability of combined oral contraceptive pills,

progestin, combined injections, male condom and female condom are given in the table 2.

Table 2: Family Planning medications and commodities

Family planning medications and commodities	Yes	No
Combined oral contraceptive pills	23(32.9%)	47(67.1%)
Progestin-only contraceptive pills	35(50.0%)	35(50.0%)
Combined injectable contraceptives	11(15.7%)	59(84.3%)
Progestin-only injectable contraceptives	7(10.0%)	63(90.0%)
Male condoms	0(0.0%)	70(100.0%)

The participants were inquired regarding the antenatal care services in the facility. The majority (73%) of the participants reported that they facility have antenatal care services. In addition, the participants were also asked that whether the facility provide any medication to the pregnant mothers. The responses of the participants regarding the availability of different medications such as iron supplements, folic acid, Intermittent preventive treatment for malaria, tetanus and antihypertensive are given in Table 3.

Table 3: Availability of medications for pregnant women in the facility

Medications	Yes	No
Iron supplementation	57(81.4%)	13(18.6%)
Folic acid supplementation	56(80.0%)	14(20.0%)
Intermittent preventive treatment (IPT) for Malaria	43(61.4%)	27(38.6%)
Tetanus toxoid vaccination	56(80.0%)	14(20.0%)
Monitoring for hypertensive disorder of Pregnancy	41(58.6%)	29(41.4%)

All the health care facilities were reported that they offer newborn care services. Table 4 reports the frequency of different types of equipment available in the health facility for mother and newborn care during delivery.

Table 4: Available equipment's in the facilities for mother & Newborn care during Delivery

Equipments	Observed	not seen	Not Available
Examination light (flashlight ok)	53(75.7%)	1(1.4%)	16(22.9%)
Delivery pack	51(72.9%)	5(7.1%)	14(20.0%)
Cord clamp	39(55.7%)	14(20.0%)	17(24.3%)
Episiotomy scissors	45(64.3%)	16(22.9%)	9(12.9%)
Scissors or blade to cut cord	57(81.4%)	4(5.7%)	9(12.9%)
Suture material with needle	55(78.6%)	29(2.9%)	13(18.6%)
Needle holder	45(64.3%)	2(2.9%)	23(32.9%)
Suction apparatus (mucus extractor)	24(34.3%)	8(11.4%)	38(54.3%)
Manual vacuum extractor	22(31.4%)	34(48.6%)	14(20.0%)
Vacuum aspirator or D&C kit	49(70.0%)	7(10.0%)	14(20.0%)
Neonatal bag and mask	33(47.1%)	7(10.0%)	30(42.9%)
Incubator	28(40.0%)	2(2.9%)	40(57.1%)
Disposable latex gloves	60(85.7%)	2(2.9%)	8(11.4%)
Blank partograph	22(31.4%)	15(21.4%)	33(47.1%)
Delivery bed	54(77.1%)	10(14.3%)	6(8.6%)

A One-way ANOVA test was used to compare the average scores of healthcare services across various healthcare facilities. The results, as shown in Table 5, indicate a significant difference in the mean scores of health facility services based on the type of healthcare facility.

Table 5: Type of health care facility and health care services

	N	Mean	Std. Deviation	Std. Error	95% CI		Minimum	Maximum
BHU	31	46.61	7.383	1.326	43.90	49.32	26	59
RHC	6	51.33	4.274	1.745	46.85	55.82	46	58
DHQ	7	58.43	5.940	2.245	52.93	63.92	50	65
CHC	6	48.00	12.133	4.953	35.27	60.73	33	64
THQ	5	56.00	8.426	3.768	45.54	66.46	45	67
Others	15	52.67	6.997	1.807	48.79	56.54	39	63
Total	70	50.29	8.351	.998	48.29	52.28	26	67
				ANOVA				
Health Facility Services								
		Sum of Squares		df	Mean Square		F	P value
Between Groups		1168.550		5	233.710		4.105	0.003
Within Groups		3643.736		64	56.933			
Total		4812.286		69				

DISCUSSION

The basic purpose of the study was to evaluate maternal and neonatal services in the newly merged district of Khyber Pakhtunkhwa. High maternal and child mortality rates in newly merged districts of Khyber Pakhtunkhwa (KP), Pakistan, can be attributed to a combination of complex factors. Historically, these districts have had limited access to healthcare, inadequate infrastructure, and lack of security, resulting in high rates of maternal and child mortality. In this study, the majority (66%) of the facilities were categorized in poor health services category, followed by average (33%) and good health care services (1%). According to a study, maternal and neonatal health services in Pakistan are very poor, which supports the findings of the current study. Healthcare infrastructure in many merged districts of KP is inadequate and lacks crucial facilities like hospitals, clinics, and maternity wards. This shortage of healthcare facilities often results in delays in accessing and receiving medical care during pregnancy and childbirth, which can increase the risk of maternal and child mortality.[11] Regarding modern family planning techniques, this study found several types including combined oral contraceptive pills, injectable contraceptives, progestin-only contraceptive pills, and intrauterine contraceptive devices (IUCDs).As previously stated, just 34% of Pakistanis use contraception, with condoms (9.0%) and female sterilization (9.0%) being the most often used method.[12] In 2015, the global prevalence of modern contraceptive method use was 64%. According to the UN, in order to achieve the anticipated fertility drop by 2025, contraceptive prevalence in developed countries must be 66%-75% and 67% in poor ones.[13] However, this tendency has not been observed in underdeveloped countries, where modern contraception is used by approximately 43% of women of reproductive age.[14]

In newly merged districts of KP, healthcare infrastructure is underdeveloped, lacking essential facilities such as hospitals, clinics, and maternity wards. This shortage often results in delays in seeking and receiving medical attention. During pregnancy and childbirth, inadequate medical care can increase the risk of maternal and child mortality. Maternal and neonatal health services affect the child and maternal mortality across Pakistan. The high maternal, neonatal, and infant death rates in Pakistan continue to impede the country's overall growth and development. In 2017, the global maternal mortality ratio was estimated to be 211 maternal deaths per 100 000 live births, while 2019 estimates from the United Nations inter-agency group for child mortality estimation place neonatal mortality at 18 deaths per 1000 live births and under-5 mortality at 39 deaths per 1000 live births per year globally.[15]

In this study several factors such as limited availability of the equipment's, unavailability for the patients during antenatal and labor were reported. Along with these factors, some other factors also lead to poor maternal and neonatal health. The reproductive-aged women at Pakistani sites are predominantly uneducated, undernourished, anemic, and deliver a high percentage of low-birth weight babies in settings with often insufficient maternal and newborn care.[16] There appears to be significant room for improvement in Pakistan's pregnancy outcomes by addressing all the factors which contribute to poor maternal and neonatal health. Besides, the health care facilities provided in the health care units are very important to overcome the issues in mother and child.[17]

Pakistan's healthcare system is struggling due to economic pressure and limited resources. Despite progress, the country still has high rates of newborn and maternal mortality. To understand the challenges facing the health sector, we can examine issues such as poor governance, unequal access to resources, a subpar Health Information Management System, corruption within the system, inadequate monitoring of health policy and planning, and a shortage of qualified professionals.[18]

The best outcomes are achieved through continuity of treatment from ANC all the way through to child health, with each component helping to support and enhance the others, which ultimately leads to improvements in MNCH outcomes including death.[19] Good antenatal care is very important as it directly affects the maternal and child mortality and morbidity. ANC is one of the key elements of the continuum of treatment, contributing significantly to the decline in mortality caused by prenatal complications such eclampsia and antepartum hemorrhage. Lack of access to emergency obstetric care contributes to maternal mortality due to childbirth complications, which can be managed by cesarean sections.[20] Similarly, this study reported the availability of limited medication used during antenatal, labor and delivery and post-natal period. Essential medicines (EMs) meet the majority of the population's primary healthcare needs and must be provided in acceptable quantities and dosage forms at all times. A range of medications are accessible at government hospitals in Pakistan, such as Antidotes for poison (60%), diuretics (47%), anticonvulsants/antiepileptics (42%), hormones and contraceptives (38%), medicines for mental and behavioral disorders (30%), anti-infectives (27%), medicines for pain and palliative care (26%), medicines for neonatal care (25%), medicines for joint diseases (25%), gastrointestinal medicines (24%), and cardiovascular medicines (15%).However, there are issues with insufficient supply of these medicines which could negatively impact patients both clinically and financially. Availability of the emergency medicine used in antenatal, natal and post-natal period is very important. Unavailability of these medicines may lead to poor health care services in maternal and child health.

The shortage of medicine in Pakistan has led to significant healthcare challenges, such as differences in treatment, safety concerns, and financial implications.[21] This is due to the fact that a smaller portion of the country's healthcare spending is allocated to pharmaceuticals and medical equipment.[22] The distribution of medicine follows a standard system, with pharmaceutical

manufacturers supplying distributors and wholesalers who then stock retail outlets and healthcare facilities. Medical practitioners prescribe the medication, which is then dispensed at pharmacies or medical shops and finally taken by the patients.[23] However, drug shortages are a recurring problem in Pakistani hospitals and require improved communication between stakeholders. Health policies need to be reviewed, and the healthcare sector should be appropriately funded to prevent future shortages.

According to a recent study, several obstacles hinder the provision of good healthcare for neonates and mothers. These barriers include inadequate services, lack of government support, and insufficient human resources. Other studies have also identified additional challenges, such as low socioeconomic status, limited decision-making power for women, trust issues with traditional birth attendants, inadequate education on pregnancy danger symptoms, and fear of seeking medical assistance.[24]

Barriers to accessing healthcare were identified at interpersonal, community, organizational, and policy levels. These include traditional attitudes, male dominance in decision-making, and lack of family support. Organizational or policy impediments include a lack of privacy in healthcare facilities, transportation issues, poor functional services, negative experiences, and limited access to proper referral systems.[25] Pregnant women facing emergencies may face difficulties reaching healthcare facilities due to poor road infrastructure, challenging terrain, and limited transportation options. Inadequate medical equipment and limited staff, such as doctors and nurses, are also widespread issues in Pakistan's healthcare sector, contributing to high maternal and child mortality rates. Security concerns and conflicts in certain areas may also disrupt healthcare services and deter healthcare workers from working, further limiting access to healthcare.[26-28]

This study was completed within a limited six-month period as a requirement for a master's degree in health research. Secondary data was utilized to conduct the research study. The validity of the data is questionable. Certain things such as transportation, infrastructure of the health care sector, number of staff also indicate the health care services. Information about these things was missing. The findings of the study would be more reliable if the data was collected directly from the head of facility.

CONCLUSION

The findings of the study concluded that there is poor maternal and child health facilities provided in the health care facilities of merged districts of Khyber Pakhtunkhwa. Although different technique of family planning was advised in the facilities but the available supplies of contraceptives do not reflect proper family planning services. Besides, limited availability of equipment's and machinery was reported which ensure poor neonatal and maternal health services in the hospitals of merged districts. These facilities should be equipped with equipment's and medicines which are necessary for maternal and child health. No difference in facilities was reported in the different health care sectors of merged districts. Besides, lack of services, governmental interest and lack of human resources are the barriers for good health services.

There should be proper surveillance of all the heath care facilities in the merged districts of KPK and proper attentions should be given to the facilities provided in these hospitals. All the necessary equipment's and medications should be arranged in the hospitals to provide good care to the mother and child. A similar study is required with a huge sample size and inclusion of all the health care facilities of merged districts. In addition, factors lead to poor health care facilities should be investigated via another exploratory research study.

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