

# Assessment of the facilities provided to patients in selected Basic Health Units (BHUs) of Peshawar, Pakistan

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**ABSTRACT**

**Introduction:** Primary health care is essential healthcare made universally accessible to individuals and acceptable to them through their full participation and at an affordable cost. It can be effectively delivered at the Basic health unit (BHU). Assessment of its performance at regular basis is also crucial for the health care system.

**Objectives:** To assess the services (EPI, antenatal care and basic healthcare) provided at selected BHUs of Peshawar with a view to determine service provision gaps in these BHUs.

**Materials & Methods:** It was a questionnaire based descriptive survey conducted from September to November 2019, in which simple random sampling technique was used to select 15 BHUs of district Peshawar for assessment and evaluation purposes. Data were collected using a checklist and an indigenous structured questionnaire where responses were recorded in yes/no format. Data analyzed using SPSS V.22 for descriptive statistics.

**Results:** All vaccines of the EPI program were being provided in BHUs except for Hepatitis B. Regarding BHU staff, in 80% BHUs male medical officers were absent, and in 40% BHUs female medical officers were absent. For the Maternal and Child Health Care (MCHC) services, Tetanus Toxoid vaccine and Folic Acid supplements were present in all BHUs but status of malnutrition was unsatisfactory. About 80% of BHUs had a satisfactory infrastructure; the safety and sanitation precautions in BHUs were not up to the mark regarding disposal of hazardous waste and needles.

**Conclusion:** Majority of the healthcare facilities were present in sampled BHUs including immunization services, MCHC services, infrastructure, safety, and sanitation. While the female staff was adequate in number, the attendance of male staff was poor.

**Keywords:** Primary health care; basic health unit; Immunization; Prenatal care.

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**INTRODUCTION**

Primary healthcare is an essential and monumental type of healthcare delivery system that expresses the health needs of a population at their door step. This care is available, acceptable, and affordable, strengthened by community participation. In the public sector of Pakistan, this care is provided at a Basic Health Unit (BHU). BHU is the first level of health delivery system, provides primary healthcare for maintenance of health and protection from diseases, and targets primary as well as secondary prevention. The purpose of the BHU is to provide necessary treatment and medication to catchment population, give them health education, protect them from specific diseases and vaccine preventable diseases by vaccination, provide Integrated Maternal and Neonatal Child Illness (IMNCI) services, and implement national programs related to prevention of diseases such as poliomyelitis and measles. The BHUs were established to provide basic health care to rural populations during the era 1975-85.<sup>1</sup>

A pivotal role of BHUs in healthcare delivery system cannot be denied. Monitoring and evaluation of its performance at regular basis is also crucial for a working and responding health system. The World Health Organization (WHO) presented a framework to evaluate the performance of a Basic Health Unit which is considered a global standard. According to the framework there are 6 characteristics of performance evaluation: overall health status of the general population; distribution of health in population; overall level of progressiveness indicated by quality of care, satisfaction of care, and availability of services; distribution of progressiveness; distribution of resources; distribution of financial aid and its proper use. Performance evaluation of a BHU based on WHO standards becomes difficult in developing countries due to lack of data, financial assistance, and resources that affect the quality of data as well as services.<sup>2</sup>

It can be shown from the evidence that antenatal checkups are one of the cornerstones of safe motherhood, and an essential component of the services that a BHU must provide; every pregnant woman must have at least 4 antenatal visits before

her delivery. According to research, in Pakistan the proportion of pregnant women who have at least one antenatal care visit is 76%, whereas the proportion of women having four visits is 37%.<sup>3</sup>

Yet again, the bare minimum criteria according to WHO for Antenatal visits include Blood pressure measurement, urine testing, screening for hepatitis B and C, anemia and weight.<sup>4</sup> However in reality these services are not provided to patients fully due to lack of resources. The result is a high maternal mortality ratio of 297 per 100 000 live births in the country. Pakistan is one of six countries contributing to more than 50% of all maternal deaths worldwide.<sup>4</sup>

A 2011 survey about conditions of BHUs in Sindh showed that besides unavailability of staff and equipment in several BHUs, there were also no facilities of drinking water, sanitation and waiting rooms, especially for women visiting the facilities. In the absence of these facilities, the people, especially women and children visiting the units faced many problems.<sup>5</sup> Even in Punjab the condition is not very different from Sindh; a survey showed that at least 284 Basic Health Units are operating without doctors in only 13 districts of Punjab.<sup>6</sup> Reluctance of the staff as well as poor management by the government all contribute to poor performance of BHUs, the aftermath of which is borne by the general masses. In 2017, provisional census data available with the Pakistan Bureau of Statistics showed that District Malir had a population of 2.08 million people. For them, government had allotted 13 BHUs and sanctioned 28 doctors, 89 paramedical staff, and 12 midwives; budget of Rs. 22.5 million was also given. However, when a survey was conducted, it showed that the number of appointed medical staff was much lower than the sanctioned posts. According to data, only fifteen doctors were appointed in the 13 BHUs, and no paramedical staff or midwives were appointed.<sup>7</sup>

It is universally accepted that primary healthcare is essential for achieving public health and that evaluation of its performance is critical for continuous improvement. The purpose of this study is to assess the quality of healthcare services provided in the BHUs of district Peshawar, Khyber Pakhtunkhwa.

The objectives of the study were: to assess the services (EPI, antenatal care and basic health care) provided at the selected

BHUs and to determine the service provision gaps in the primary healthcare delivery system in the BHUs.

**MATERIALS & METHODS**

This research was conducted from September to November, 2020; it was a questionnaire based descriptive survey.

Simple random sampling technique was used to select 15 BHUs for assessment and evaluation purposes. There are total 47 BHUs in district Peshawar out of which 32 were functional. Four BHUs from each administrative town were selected using the lottery method. Inclusion criteria comprised all the BHUs in district Peshawar. Non-operational BHUs were excluded during sampling process.

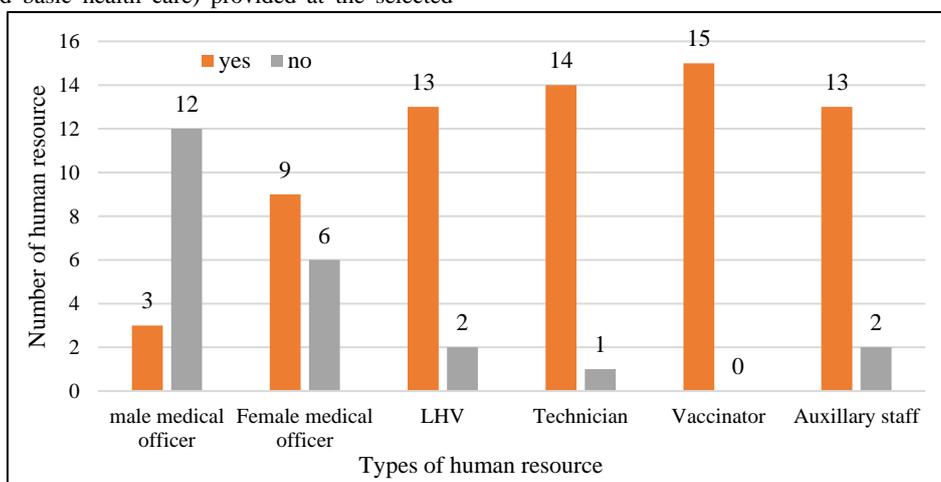
Out of 32 operational BHUs, 15 BHUs from the four administrative towns of Peshawar were selected for assessment purposes. These included: Bazaid Khel, Chaghar Mitti, Charpareeza, Darmangi, Faqeer Kalay, Gulabad, Gulshan Rehman Colony, Hazar Khawani, Mathra, Mashu Khel, Nasirbagh, Palosi, Pishtakhara, Regi Model Town, and Sheikh Muhammadi.

Data were collected using a checklist and an indigenous structured questionnaire, containing questions about services provided by the BHU. The responses were recorded in yes/no format.

Data were entered and analyzed using SPSS V.22. Data were presented in the form of frequencies and percentages in tables and graphs.

**RESULTS**

Human resource was the first indicator that was assessed. Figure 1 shows the status of human resource. It was noted that staff designated for every BHU included, but was not limited to, male and female medical officers, vaccinators, LHVs, technicians and auxiliary staff. The assessment showed that only 20% of the assessed BHUs had Male medical officers and in 60% of them female medical officer was present. Whether the vacancies were not filled by the government or they were not coming to duties, this could not be ascertained.



**Figure 1: Human Resource Distribution in selected BHUs (n=15).**

Table 1 depicts that safety and sanitation precautions taken by BHU's were efficient such as availability of clean water (93%), usage of personal protective equipment (87%) in view of COVID-19 pandemic, proper disposal of expired medicines (80%) and needles (73%) except Proper disposal of hazardous trash (60%) and availability of color coded waste bins (53%) which was not satisfactory and absent in most BHUs.

**Table 1: Safety Precaution and Sanitation Checklist for BHUs (n=15).**

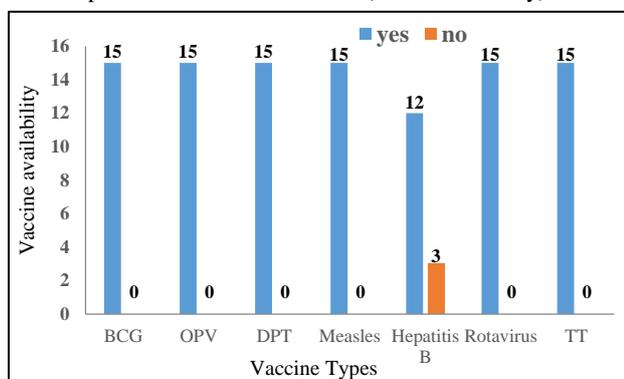
Safety & Sanitation items	Yes n (%)	No n (%)
Availability of Clean Water	14 (93)	01 (7)
Usage of PPE	13 (87)	02 (13)
Disposal of Expired Medicines	12 (80)	03 (20)
Proper Disposal of Needles and Sharps	11 (73)	04 (27)
Proper Disposal of Hazardous Trash	09 (60)	04 (40)
Availability of Color Coded Waste Bins	08 (53)	07 (47)

Table 2 shows MCHC services available in BHUs; TT vaccine (100%) and folic acid supplements (93.3%) were present in almost all BHUs. Services lacking in BHUs included iron supplement tablets (13%), facility for pregnancy test (20%), Hb testing (13%), equipped labor room (13%) and assessment of child malnutrition (27%).

**Table 2: Maternal and Child Health Care Facilities in selected BHUs (n=15).**

Healthcare Services Indicators	Yes n (%)	No n (%)
Availability of Folic Acid	14 (93)	1 (7)
Availability of Iron supplements	2 (13)	13 (87)
Antenatal Tetanus Toxoid vaccine	15 (100)	0
Availability of Pregnancy Test	3 (20)	12 (80)
Availability of Hb test	2 (13)	13 (87)
Equipped labor room	2 (13)	13 (87)
Facility for Malnutrition Assessment in Children	4 (27)	11 (73)

Vaccine availability was assessed using a checklist and interview. Fixed facilities are the first places where parents bring their children to get them vaccinated for vaccine preventable diseases. Figure 2 shows that nearly all the vaccines in the EPI program were available in the BHUs except for hepatitis B vaccine which was not present in 3 out of 15 BHUs (80% availability).



\*BCG; Bacillus Calmette-Guerin, OPV; oral polio vaccine, DPT; Diphtheria pertussis and tetanus, TT; tetanus toxoid

**Figure 2: Vaccine Availability in selected BHUs (n=15).**

Table 3 shows that 80% of BHUs had separate waiting areas for males and females and also had the facility of electricity and backup power supply. Their maintenance was also up to the mark.

**Table 3: Infrastructure facilities in selected BHUs (n=15).**

Infrastructure Facilities	Yes n (%)	No n (%)
Waiting areas for Male and Female patients	12 (80)	3 (20)
Facility of Electricity and Generators	12 (80)	3 (20)

## DISCUSSION

There is a general perception that public sector healthcare system in Pakistan is suffering from many problems related to human resource and infrastructure. This perception developed because of certain evidence based studies which mentioned poverty, illiteracy, and inadequate healthcare services for the decline in health status of population, especially rural population.<sup>8</sup> With these perceptions in mind, this study focused on the assessment of facilities and services provided to patients in selected BHUs of Peshawar.

Safety precautions and sanitation include provision and usage of personal protective equipment (PPE) e.g. gloves, gowns, masks, safe handling of potentially contaminated equipment, proper disposal of needle and hazardous waste and availability of clean drinking water. In this study, the safety precautions and sanitation results show that 87% of BHUs were using PPE and almost all of the BHUs had the facility of clean drinking water (93%). Majority of the basic care units had an appropriate system for the proper disposal of needles, expired medicine and hazardous wastes. It was also observed that in 53% of the care facilities, there was availability of color coded waste bins. Therefore, the safety measures taken by the sample BHUs are quite satisfactory as is evident from the results. These findings are consistent with the research conducted by Cambodian department of hospital services and health partners which also showed similar results with regards to clean water and proper waste disposal of sharps, infectious and non-infectious general wastes and majority of them had their health care wastes segregated into different color coded bins.<sup>9</sup> A study conducted by regional administration and local government of Tanzania showed that only 33% of their health facilities had provision of safe and clean water which showed that hygiene and sanitation is still a big problem in most of health care facilities.<sup>10</sup> This is in contrast to findings of the present study.

Human resource provision and management is essential in providing quality healthcare. This study showed that primary medical staff i.e. male and female doctors, were absent in most BHUs particularly the male medical officers; 80% lacked male doctor while in 40% female doctor was not present at the time of assessment. However, vaccinators, LHVs and technicians were adequately present in majority of BHUs. Unavailability or absence of primary medical staff means that patients are treated by allied staff. Similar findings have been noted by a study conducted in Southern Punjab by the National University of Modern Languages, Multan Campus, which showed that only 25.3% patients were examined by medical officers while the

remaining were seen by a medical technician, dispenser or a lady health supervisor.<sup>7,11</sup> A study conducted by University of Punjab showed that lesser numbers of patients were examined by medical officers while most were seen by dispensers, technicians and lady health workers.<sup>12</sup>

Though health has been devolved to provinces, yet the budgetary allocation for this sector is less as compared to other sectors. Primary healthcare, in this budget allocation is ignored as large proportion of this budget is utilized by hospital services, for purpose of administration and planning, medical institutes and health education programs.<sup>13</sup> In this study, the infrastructure of sample BHUs were satisfactory as results showed that there only 20% of the BHUs lacking separate waiting areas and backup power supply. In contrast to these findings, research conducted by the Services Institute of Medical Sciences, Lahore showed that the overall infrastructure was poor in majority of BHUs of Punjab.<sup>7</sup> In service provision, EPI vaccination and care of the females in their reproductive age is the basic care provided by these basic units. Study showed 100% availability of tetanus toxoid and EPI vaccines for all vaccine preventable diseases in BHUs and 93% provision of folic acid supplements to pregnant and anemic women. The facilities which were lacking included iron supplements, hemoglobin (Hb) testing and equipped labor room which were not present in 87% BHUs. Pregnancy testing facility was not available in 80% of units. A study conducted by primary health care delivery and management levels in Lahore, Pakistan<sup>14</sup> showed that 13% of pregnant women were not given TT doses because of vaccine unavailability. This is in contrast to this study which showed 100% availability of the vaccine. In a country where stunting is a public health problem, there are meagre facilities for malnutrition assessment; 73% BHUs lacked

this facility. The results are however, similar to a study conducted in Dhaka, Bangladesh, which showed that only 13% of the primary healthcare units had the facility of management of malnourished child.<sup>15,16</sup> Improving maternal and child nutritional status is prerequisite for achieving good health status of the population and achievement of sustainable development goals (SDGs) set by WHO.

## CONCLUSION

Majority of the healthcare facilities were present in the sampled BHUs including immunization services, MCHC services, infrastructure, safety and sanitation; while the female staff was adequate in number, the attendance of male staff was poor.

## RECOMMENDATIONS

The data from BHUs should be upgraded. Data on human resource will help to find key deficiencies including staff attendance as well as vacant slots. Primary medical staff i.e. male and female medical officers should be available in all BHUs and in both shifts. The impact assessment should be done with the help of third parties. Hepatitis B vaccination was deficient hence, its availability needs to be ensured on priority basis. Regarding safety precautions, there should be proper disposal of hazardous waste and availability of color codes bins. Iron supplements and pregnancy kits should be made available in the antenatal care. Medical staff should be trained in the diagnosis and management of malnourished children.

## LIMITATIONS

Only 15 BHUs from district Peshawar were selected due to the ongoing COVID-19 pandemic. Detailed analysis of budgetary trails could not be done.

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