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Assessing the Quality of Primary Health Care Services at Basic Health Units in Quetta City, Balochistan, Pakistan

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Abstract ***Background:*** Primary Health Care (PHC) Services are the first level care that are provided to the entire population across the country. Assessing quality of PHC services is important for measuring its impacts on health outcomes of the people, particularly in the capital of Balochistan province where limited is known about the quality of PHC services at Basic Health Units (BHUs) level. ***Objectives:*** This study aimed to assess the quality care of PHC services at BHUs level in Quetta city, Balochistan, Pakistan. ***Methods:*** The cross-sectional, questionnaire-based study was conducted in February 2019. Out of total 39 BHUs in Quetta, we selected 10 through simple random sampling method. A sample of 400 respondents was selected for the questionnaire survey in the selected BHUs. The Donabedian Conceptual Framework, having three components: structure, process and outcome, was used for assessing the quality of care. Descriptive statistics was used for analysis of data. Moreover, the Statistical Package for Social Sciences (SPSS) Version 23 was used for data analysis and ArcMap was used for making the map of study area. ***Results:*** The findings revealed that out of the total respondents, four-fifth (78%) were female users of PHC Services whereas the remaining 22% were males. All (100%) respondents usually visited to BHUs in the case of illnesses. Majority (97.5%) respondents visited BHUs as compare to other health facilities. For structure variables, 50% respondents were strongly agreed about the availability of all equipments, two-fifth (40%) with provision of complete medicines, 64% agreed about the availability of BHU staff. However, 38% were strongly disagreed about availability of dental surgeon. About process variables, 74.5% reported BHU as Usual Source of Care, 58% were strongly disagreed about the availability of obstetric care at BHUs. In the case of outcome variables, around 94.0% were satisfied to strongly stratified with the management of PHC, around three-fourth (77.3%) were strongly agreed about recovery after seeking care at BHUs. ***Conclusions:*** This study suggest that policymakers and PHC implementation agencies need to establish strong coordination and put integrated efforts to ensuring the maternal and obstetric care at the BHUs level in Quetta city. Moreover, People's Primary Health Care Initiative (PPHI) Balochistan needs to ensure the availability of required equipment and human resource as well as basic emergency obstetric care (EmOC) obstetric care at BHUs. Further, the advanced services such as telemedicine, dental services, X-rays, advanced diagnostic laboratories, sufficient stock of medical supplies need to be provided at BHUs in the provincial capital.

Keywords Primary Health Care, PHC, Basic Health Units, BHUs, Donabedian model, Quality of Care, Quetta, Balochistan, Pakistan

1. Background

According to declaration of Alma-Ata, Primary Health Care (PHC) means provision of comprehensive, universal, equitable and affordable healthcare services for all countries (Hall & Taylor, 2003). The Alma Ata Declaration was based on recognition that PHC services should be universally accessible including "preventive, curative and rehabilitative" services (Baum, 2007). It has PHC service providers such as vaccinators, lady medical officers (LMOs), male medical officers (MMOs), dispensers, medical technician (MT) etc. (Rasool, 2019). For promotion of PHC services districts have to submit valid information for health policy makers (Zari, 2018). Further, PHC network decreases the rush of people in tertiary care hospitals and can manage the health issues of the people with good health care system at the basic level for the entire population (Agarwal et al., 2017). These services are provided by PHC professionals. (Hastings & Browne, 1978). Moreover, PHC is considered the first stage towards national standard health provision system (Ahamed et al., 2004). PHC services are not sufficient in the world as well as the utilization which is also poor in many states of the world (Almalki et al., 2011). In addition, PHC services consists of primary health assessment, disease prevention, diagnostic needs, and rehabilitative (White, 1994).

Institute of medicine defines quality of care as "the degree to which health services for populations increase the

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likelihood of desired health outcomes and are consistent with current professional knowledge" (Committee on Quality of Health Care in America, 2001). Quality means degree of performance to improve health within available resources (Khamis & Njau, 2014). The concept of the quality given by health workers is the perfection or expertise in technical field or excellences in health care (Murugan, 2020).

In Pakistan, Basic Health Units (BHUs) are the only source for the provision of Primary Health Care (PHC) services. Hence, it is important to know about BHUs, whether these are properly supporting masses for the promotion of their health (Aziz & Hanif, 2016). World Health Organization (WHO) recommends to allocate 6% of the GDP for health sector but Pakistan spends about 2.4% of GDP (World Health Organisation, 2009). Further, Public health expenditure was 0.9% of GDP of Pakistan in 2014-15, which is the lowest in South Asia (Aziz & Hanif, 2016). In past health budget was only 0.23% of (GDP). For sustainable development, there should be a well-organized health system (Aziz & Hanif, 2016). PHC is given by BHUs, Rural Health Centers (RHCs), Maternal and Child Health Centers (MCHCs), TB centers and dispensaries. The number of MCHCs, BHUs and RHCs in Pakistan are 1084, 5798 and 581 respectively (Bashir, 2020).

Different studies have used various models for quality assessment in Primary Health Care (PHC) services. Tanahashi Model used by Nambiar et al. (2020) and Naseem et al. (2020). Further, Anderson model used by Natera et al. (2020). Besides that, the Donabedian model is better for quality assessment of PHC services. Structure includes Care providers, qualification of medical staff and infrastructure. Process further includes technical arrangements for treatments and quality of medicines. Outcome refers the recoveries from health facilities (Larson & Muller, 2002). In past, quality improvement was dealing as a way to improve the effectiveness of PHC systems especially in Low- and Middle-Income Countries (LMICs) (Rezapour et al., 2019). There is contrast in the utilization of the essential services between cities and villages such a study had been conducted in the area of the province Riyadh. There are many evidences about comparing among access and utilization of PHC Services between urban and rural populations of the world. For understanding the barrier and enablers about assessment of PHC services in rural and urban areas of the Riyadh province, KSA (Alfaqeeh et al., 2017).

A previous study on availability of PHC services from Peshawar Pakistan has reported that family planning (FP) services were available at PHC centers such as BHUs, however, their availability was just 27% in the sampled three villages. Similarly, only 26% of people had access to medicines in the selected three villages (Mujib-ur-Rehman et al., 2007). In another study from Pakistan, Majrooh et al. (2015) have reported that availability and functionality of the instruments was less at 18% of BHUs. 53% of BHUs had facilities of Antenatal Care services and about 15% BHUs had related medicines available. The availability of medicines was limited in 17% of BHUs (Majrooh et al., 2015). Thus, research studies report that availability of PHC services are insufficient in Pakistan.

In the context of Pakistan, studies have reported low quality of PHC services (Hameed et al.; Naseem et al., 2020; Panezai et al., 2020a; Panezai et al., 2020b; Panezai et al., 2017; Panezai et al., 2019). Pakistan has not been able to improve its PHC services to the international level. Presently, there is lack of good quality services in PHC centers at BHUs in Pakistan. Further, there is shortage of quality medicines in BHUs as well in Pakistan (Siddiq et al., 2016). Pakistan's government is trying to fulfil the moto of the health for all. In addition, the organization such as WHO, UNICEF and World Bank help Pakistan by providing rehabilitative, curative as well as preventive care. In Pakistan, there is the high ratio of the death rates related to communicable diseases such Acute Respiratory Infections (ARI) diseases etc. Pakistan is trying to control such diseases by immunization. Mostly, poor and illiterate people visit BHUs in Pakistan while females visit to BHUs are frequent. Thus, the utilization of PHC services at BHUs is much low in Pakistan (Aziz & Hanif, 2016; Hameed et al.; Naseem et al., 2020; Panezai et al., 2020a; Panezai et al., 2020b; Panezai et al., 2017; Panezai et al., 2019).

Research studies from Balochistan have showed the low quality of PHC services. In a previous study from Pishin district, Panezai et al. (2017) have reported gender differences in the non-utilization of PHC Services, in which 43.1% women and 51.2% men had not approached Basic Health Units (BHUs) for seeking primary health care. A very important point to be noted the non-utilization of PHC services at BHUs which represented the low quality of PHC services (Panezai et al., 2017). Therefore, there is need to focus on the quality of PHC services in other parts of Balochistan as well. Further, most of the studies on health care reported that improving PHC services are important to improve social well-being. Previous studies have reported low utilization of PHC services in rural areas due to the gaps in the implementation of PHC policies in the province (Panezai et al., 2020b). In the context of Balochistan, majority of previous research studies have focused assessing PHC services in rural areas (Hameed et al.; Naseem et al., 2020; Panezai et al., 2020a; Panezai et al., 2020b; Panezai et al., 2017; Panezai et al., 2019). There is shortage of research that has focused PHC services in urban areas in Balochistan, Pakistan. This rural focus has undermined the comparison of PHC services at BHUs between rural and urban areas. Therefore, to fill the gap in literature, this study aims to assess the quality of PHC services in Quetta city, the provincial capital of Balochistan.

2. Methods

2.1. Study Design

This is a cross-sectional study. Thus, it has followed a cross-sectional study design for assessing the quality of PHC services at BHUs in Quetta city, Balochistan.

2.2. Setting

Quetta is the only major city, 10th largest city of Pakistan as well as the capital of the Balochistan province (Bazai & Panezai, 2020). The city in north is bounded by Pishin district, in the south by Masting district, in the east by Harnai and in the west by the neighbouring country Afghanistan (Khan et al., 2020). According to the 2017 Census, the population of Quetta city is about 1,001,205 (Pakistan Bureau of Statistics, 2017). Moreover, the geographical location of Quetta is 30° 11′ N and 67° 00′ E. It has semi -arid climate characterized by low annual rainfall, mostly in western Balochistan. Average temperature of the Quetta district is between 23 to 25 degree centigrade in summer season while in winter season, it is about 4 to 5 degree centigrade (Ahmad et al., 2020). Quetta is divided into two tahsils and one sub -tehsil which are further divided into many wards. Tehsils are Quetta city and Sadar while Punjpai is a sub-tehsil. Most importantly, PHC facilities in Quetta include; rural health centers (RHC), basic health units (BHUs), Civil Dispensaries, Maternal and Child Health (MCH) centers, TB Centers etc.

2.3. Participants

In the current study, the participants included a sample of 400 women and men who visited the BHUs for seeking PHC services during the survey.

2.4. The Donabedian Model of Quality of Care

This study used The Donabedian model which is a conceptual model that provides a framework for examining health services and evaluating quality of health care" (McDonald et al., 2011). In this conceptual model care quality is measured by Structure, Process and Outcomes (Donabedian, 1988). The perspective through which care is provided is explained by the Structure in which instruments, staff and physical structure of the hospital are included. The dealings are presented by the Process while the special effects of health care on health status of respondents and population are expressed by the help of the Outcomes (Donabedian, 1988).

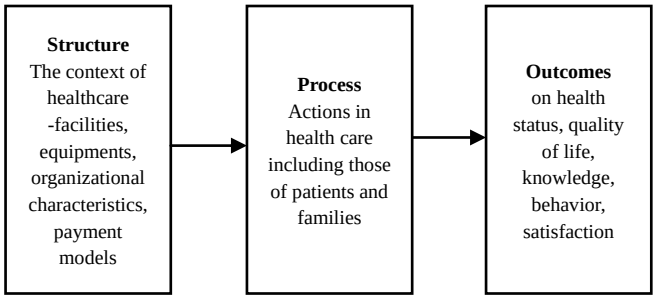

Figure 1. Donabedian Model of Health Care (Donabedian et al., 1982)

2.5. Variables

This study has used 5 sets of variables.

2.5.1. Socio-Demographic Variables

The following socio-demographic variables such as gender, age, language, BHUs, education level, marital status, family type, occupation and economic status were used in current study.

2.5.2. Variables for Utilization

The variables for utilization included visits to BHU in many health cases such as illness, chronic diseases, Acute Respiratory Infections (ARI), child illness and immunization antenatal and postnatal care, laboratory test, delivery and family planning.

2.5.3. Variables for Structure

The variables for structure included sanitary condition, seating arrangement, drinking water, availability of all equipment, skilful doctors, compete medicine, medicine for common illness, medicines for Chronic diseases, availability of ambulance, facility for testing Widal etc. Facility for small surgery, medical staff, bathroom, availability of family planning services, availability of labor room, anaemia treatment and were used.

2.5.4. Variables for Process

The variables for process included well-managed service, visits for USOC, deliveries at BHU, doctors' behavior, children enrolment, staff is cooperative, ambulance for emergency, waiting time for doctor, confidence PHC services at BHUs, waiting time for lab examination and patients pay for services were used.

2.5.5. Variables for Outcome

The variables for outcome included family member recovered after BHUs' treatment, recommending this BHU to others, satisfied about treatment, accuracy of laboratory tests, accurate diagnose, re-visit in case of recovery, doctors' attention, satisfaction level from BHU staff, satisfaction level from BHU services, provision of quality medicine and overall satisfaction were used.

2.6. Data Sources

The primary data was collected at each BHU from the women and men respondents. The structured questionnaire was used as a tool for the collection of primary data in the study area. The questionnaire was pre-tested and also modified according to ground realities. The data were collected from respondents in the catchment areas of ten selected BHUs in the month of February 2019.

2.7. Sample Design

This study intended to assess the PHC Services at the BHUs in Quetta district, Balochistan. A total of 39 BHUs are located in Quetta district for the provision of PHC services. This study selected 10 BHUs by random sampling method through lucky draw method. Later, a sample of 400

respondents was selected for the survey at the selected BHUs. For data collection, each BHU was visited for two days during February to June 2019. The sample of the respondent was selected through the Yamane formula 1967.

$$n = \frac{N}{1+N\,(e)^2} \quad (1)$$

where, n = Sample size
N = Total number of respondents
e = Level of precision (5% = 0.05)

2.8. Data Analysis Methods

Descriptive statistics were used to assess the quality of PHC services at the selected BHUs. Further, ArcGIS 10.2.2 was also used for map generation of Quetta district, Balochistan.

3. Results

3.1. Socioeconomic Characteristics of the Participants

The results in Table 1 demonstrates socioeconomic characteristics of the participants. The results of the gender group indicates that total respondents were 400, in which almost four-fifth (78%) respondents were female while, one-fifth (22% were males. Female responds were 312 as compare to 88 males. Further in language distribution, Pashto language respondents were three-fifth (59.3%). Other larger languages included Balochi 10.3%, Hazargi 10% and others languages like Brahvi, Persian, Siraki collectively were 12.5%. Other languages included Punjabi, Urdu and Sindhi respondents were in least proportions. As far as education level is concerned, most of the respondents (78.5%) were illiterate. Further, respondents with primary, middle and matriculation level education were 13.3%, 5.5% and 2% respectively. While, intermediate and master level respondents were only 0.5% and 0.3% respectively.

Table 1. Socioeconomic characteristics of the participants

Socioeconomic Variables	f	%
Gender		
Female	312	78.0
Male	88	22.0
Language		
Pashto	237	59.3
Balochi	41	10.3
Punjabi	15	3.8
Hazargi	40	10.0
Sindi	5	1.3
Urdu	12	3.0
Others	50	12.5
Basic Health Units (BHUs)		
Pashtun Bagh	40	10.0
BMC Colony	40	10.0
Old Mari Abad	40	10.0
SR/JR Colony	40	10.0
Ahmad Khanzai	40	10.0
Killi Nasaran	40	10.0
Jamia Salfia	40	10.0
Police Line	40	10.0
Huda	40	10.0
Wahdat Colony	40	10.0
Education level		
Illiterate	314	78.5
Primary	53	13.3
Middle	22	5.5
Matric	8	2.0
Intermediate	2	0.5
Master	1	0.3
Marital status		
Married	276	69.0
Unmarried	124	31.0
Family type		
Nuclear	387	96.8
Extended	13	3.2
Occupation		
Unemployed	38	9.5
Agriculture	43	10.8
Wage laborer	8	2.0
Employment	3	0.8
Personal business	278	69.5
Govt. employment	27	6.8
Personal employment	3	0.8
Economic status		
Poor	256	64
Fair	130	32.5
Good	14	3.5
Total	400	100.0

Source: Survey data, 2019

Further, married respondents were 69% while 31% were unmarried or bachelor. In family type nuclear type families were reported to be 96.8% while extended families were rarely reported (3.3%). Moreover, profession distribution explained that personal business such as shopkeepers, greengrocers etc., was the major source of their income, contributing 69.5% at the selected BHUs while 10% of the respondents were related to the agriculture and 9.5% of them were unemployed. Moreover, Government servants, daily wage labour, self-employed and privately employed reported to be 6.8%, 2%, 0.8% and 0.8% respectively. Moreover, the economic status of respondents showed that 64% poor in status while 32.5% were of fair status while only 3.5% were good in economic.

3.2. Utilization of the Basic Health Units (BHUs) Services by the Respondents

The results in Table 2 demonstrates the utilization of the PHC services at Basic Health Units (BHUs) by the respondents. All the respondents reported to visit to BHUs

in case of illness. Further, almost all the respondents (97.5%) visited BHUs as compared to other health care centers such as private clinics (1.8%), Combined Military Hospital (CMH) (0.5%), Civil Hospital Quetta (0.3%) respectively. Moreover, almost half (52.8%) respondents did not visit any BHU while 47.3% respondents visited BHUs for seeking health care in the last month. Besides that, as far as visits to BHUs in last two months is concerned, 43.8% had not visited at all, 29% visited two times, 12% visited three times and 10.8% visited four times. One-time, six-times and five-times visits were 2.8%, 1.3% and 0.5% respectively.

Table 2. Response about utilization of the (BHUs) Services by the respondents

Utilization Variables	f	%
Visits to BHU in illness		
Yes	400	100
No	0	0
Last time visit for seeking care		
Basic Health Unit	390	97.5
Civil Hospital	1	0.3
Combined Military Hospital	2	0.5
Private Clinic	7	1.8
Visits to BHUs in the last month		
No visits	211	52.8
One time	189	47.3
Visits to BHU in last two months		
No visit	175	43.8
One-time	11	2.8
Two-times	116	29
Three-times	48	12
Four-times	43	10.8
Five-times	2	0.5
Six-times	5	1.3
Visits to BHU in last three months		
No visit	159	39.8
One-time	15	3.8
Two-times	10	2.5
Three-times	24	6
Four-times	98	24.5
Five-times	45	11.3
Six-times	25	6.3
Over six-times	24	6.1
Visits for ARI in the last month		
No visits	228	57
One-time	127	31.8
Two-times	16	4
Three-times	9	2.3
Four-times	16	4
Five-times	2	0.5
Seven-times	2	0.5
Visits for child care and immunization in last month		
No visits	397	99.3
One-time	2	0.5
Four-times	1	0.3
Visits for antenatal and postnatal care in last month		
No visits	397	99.3
One-time	3	0.8
Visits for chronic diseases in last month		
No visits	388	97
One-time	6	1.5
Two-times	1	0.3
Three-times	1	0.3
Four-times	4	1
Visits for laboratory test in last month		
No visits	386	96.5
One-time	12	3
Four-times	2	0.5
Visits for delivery in last month		
No visits	400	100
Visits for family planning service in last month		
No visits	389	97.3
One-time	11	2.8
Visits for back/joints pain in last month		
No visits	383	95.8
One-time	11	2.8
Two-times	5	1.3
Five-times	1	0.3
Total	400	100

Source: Survey data, 2019

As far as number of visits in last three months are concerned, no visits were reported by 39.8%, one-time visits were 24.5%, five-time visits were 11.3% and six-times visits were 6.3%. Whereas, only 6.1% respondents visited BHUs over six-times. As far as the last visit for Acute respiratory infections (ARIs) is concerned, 57% of them did not visit at all while 43% of them visited in different frequencies ranging from one to seven-times. Further, number of visits for child illness and immunization to the selected BHUs were almost zero as 397 out of 400 respondents had not visited while only 3 of them had visited there.

Similarly, number of visits for antenatal and postnatal care services to the BHUs were almost zero as 397 out of 400 respondents had not visited while only 3 of them had visited there while identical were the results for chronic disease visits as well. Further, number of visits in last month for the laboratory tests depicts that almost all (96.5%) did not visit for this purpose. Moreover, number of the visits for the child delivery at BHUs were zero even though these deliveries are conducted in BHUs. In addition, number of visits of the respondents in last month for family planning services at the BHUs were very low as 97.3% respondents did not visit. Further, number of visits of the respondents in last month for Back/joints pain at BHUs were also very low as 95.8% had not visited there at all while

one-time, two times and 4five times visits were 2.8%, 1.3%. and 0.3% respectively. Besides that, data shows that 57% of the respondents did not visit BHUs for other health care services while 31% visited only once. Further, two, four, three, seven, ten and five-times visits were reported to be 4.8%, 4.3%, 1%, 0.8%, 0.5% and 0.3% respectively.

3.3. Structure of the PHC Services

The results in Table 3 describes the satisfaction of respondents about the structure of the BHUs. The respondents gave different ideas about the cleanness of the BHUs in the study area as most of them (strongly agree: 60.8% and agree: 37%) were satisfied about sanitary conditions. Respondents' satisfaction with seating arrangement at BHU was also satisfactory with the response rate of agree (64.8%) and strongly agree (13%) while 21% respondents reported to be neutral and only 0.8% reported to be strongly disagreed. Further, respondent's satisfaction for availability of all equipments in BHU showed that most of the respondents were satisfied with response rate of 74.3% and 11.8% for strongly agree and agree while 12% were neutral in this regard.

Moreover, as far as medicines availability was concerned, most of them seemed satisfied with the respondent rate of 40% and 34.3% for strongly agree and agree and even 16.3% stood neutral in this regard. similar was the case for medicines availability for common illness where 52.8% and 45% respondents reported strongly agree and agree respectively which shows that satisfaction level of respondents in BHUs was very high. Similar was the case for the availability of medicines for chronic disease treatments where response of agree and strongly agree stood as high as 58.3% and 36% respectively.

Different was the case for the availability of ambulances in BHUs, as respondents were unsatisfied in this case with the response rate of 49.3% for strongly disagree and 11.8% for disagree. Further, 21.8% respondents reported to be strongly agreed while 13.8%reported to be agree. Moreover, the respondents seemed to be totally satisfied with availability of the tests for diseases such as Widal as response rate stood as high as 49.5% for agree and 48% strongly agree. Similarly, most of the respondents were satisfied about the professional skills of doctors and about the availability of the minor surgeries in the BHUs with over 95% collective percentage rate for agree and strongly agree.

Table 3. Response of the respondents about structure of the BHUs

Variables	Response by the respondents (%)				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Sanitary condition	0.0	0.0	2.3	37.0	60.8
Seating arrangements	0.0	0.3	4.5	73.0	22.3
Drinking water	0.8	0.3	21.3	64.8	13.0
Availability of essential equipment	0.8	1.3	12.0	11.8	74.3
Availability of doctors	0.3	0.0	7.0	42.3	50.0
Complete medicine	3.8	5.8	16.3	34.3	40.0
Medicine for common illness	0.0	0.3	2.0	45.0	52.0
Medicines for chronic diseases	2.0	0.3	3.5	58.3	36.0
Availability of ambulance	49.3	11.8	3.5	13.8	21.8
Facility for testing Widal etc.	0.5	0.0	2.0	49.5	48.0
Facility for minor surgeries	0.3	0.0	3.0	61.3	35.5
Medical staff	0.3	0.0	1.5	64.0	34.3
Washrooms	0.5	0.5	3.3	58.0	57.8
Availability of family planning services	18.0	3.8	4.3	32.5	41.5
Availability of labor room	22.0	7.0	3.3	29.3	38.5
Anaemia treatment	4.8	0.8	8.0	65.3	21.3
Availability of dental surgeon	38.0	6.0	9.3	34.5	12.3

Source: Survey data, 2019

Moreover, the respondents reported to have high satisfaction level for the availability of medical in BHUs with collective response rate 97% for strongly agree and agree. Moreover, the respondents were quite satisfied with the cleanliness of the bathrooms in BHUs as 58% were agree and 37.8% were strongly agree while 3.3% were neutral in this regard. Most importantly, most of the respondents were satisfied with availability of the family planning services in BHUs as 41.5% reported to be strongly agree while 32.5% were satisfied. Quite interestingly 18% and 3.8% respondents also reported to be strongly disagreed and disagree in this regard which shows bit of ambiguity among the availability of the FP services in BHUs. Similarly, the data about the availability of labor room for delivery

in BHUs was quite interesting, as 38.5% and 29% of the respondents reported to be strongly agree and agree respectively yet on the other hand 22% of the respondents reported to be strongly disagree which shows that respondents were indecisive.

Moreover, most of the respondents were quite satisfied about the availability of Anaemia treatment at BHUs with the collective response rate of 86% for strongly agree and agree. Further, the response of respondents about the availability of the Dental Surgeon and dispenser was quite mixed as 38% reported to be strongly disagree while at the same time 34.5% were agree and 12.3% were strongly agree in this regard.

Structure is a very important indicator in assessment of PHC services at BHUs. The perspective through which care is provided is explained by the structure in which instruments, staff and physical structure of the health facilities are included (Donabedian, 1988).

The results in Table 4 demonstrates questions related to process on the basis of Donabedian model for quality care. Initially, respondents showed high level of satisfaction as far as service management in BHUs were concerned as 54.8% reported to be strongly agree while 40.5% reported be agree which shows their overall high level of satisfaction. Further, the response of was also decisive about the selection of BHUs as Usual Source of Care (USOC), as 74.5% respondents reported to be agreed and 15.5% were strongly agree while 6% remained neutral. was different. Moreover, respondents' views about deliveries at BHUs was highly dissatisfied as 58% strongly disagreed while 20.8% disagreed which shows miserable conditions as far as facilities for deliveries are concerned. Other responses included agree (11.5%), neutral (5.8%) and strongly agree (4%). In addition, the response of the respondents about the behavior of the doctors was quite satisfactory as 93% of the respondents collectively reported to be Strongly agree and agree while only a few showed to be dissatisfied.

Besides that, the respondents were quite satisfied as far as enrolment of children for vaccination at BHU is concerned as 63.5% reported to be agree and 29.8% were strongly agree while 6% remained neutral. Similarly, respondents were also satisfied with the cooperation of BHU staff as over 88% of the respondents collectively reported to be either strongly agree or agree while 5.8% and 2% reported to be strongly disagree and disagree respectively.

As far as availability of ambulance in emergency is concerned, the respondents were quite dissatisfied as 62.3% reported strongly disagree while 17.8% reported to be disagree. On the other hand, responses for agree and strongly agree were 12.3% and 6.8% respectively. Similarly, the respondents reported high level of satisfaction about the waiting time of doctor for checkup where over 90% respondents reported either strongly agree or agree which shows that they don't wait too much for doctor.

Further, respondent's satisfaction for PHC services at BHUs was quite satisfactory as 59.3% responses were reported for agree while 34.3% for strongly agree and 6.3% remained neutral in this regard. Similar was the case about waiting time for lab examinations at BHU as most of them were quite satisfied in this regard with 51% of them were agree and 36.8% were strongly agree while 8.3% remained neutral. Further a mixed response was reported by the respondents as far as paying for medicines and other services are concerned. 39.8% refused to have paid yet neutral response was reported by 35.3% which shows that may be due to the fear of the staff they remained neutral. Further, 8.3% reported strongly agree while 6.8% reported to be agree which shows that some of the respondents pay for attainment of the services and medicines even though all the BHUs are run by government to provide medical services free of cost.

3.4. Process of PHC Services

Table 4. Response of the respondents about process of PHC Services

Process Variables	Response by the respondents (%)				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Well-managed PHC services	1.0	0.0	3.8	40.5	54.8
BHU is a USOC	3.5	0.5	6.0	74.5	15.5
Deliveries at BHU	58.0	20.8	5.8	11.5	4.0
Doctors behave politely	1.8	0.8	4.5	45.5	47.5
Children enrolment	0.3	0.5	6.0	63.5	29.8
BHU staff is cooperative	5.8	2	4.0	52.8	35.5
Used ambulance in emergency	62.3	17.8	1.0	12.3	6.8
Waiting time for doctor	2.5	0.8	3.5	50.2	43.0
Confidence on PHC services	0.3	0.0	6.3	59.3	34.3
Waiting time for lab examination	3.3	0.8	8.3	51.0	36.8
Patients pay for services	39.8	10.0	35.3	6.8	8.3

Source: Survey data, 2019

3.5. Outcomes of PHC Services

The results in Table 5 demonstrates about the response of the respondents about outcome of the PHC services at the BHUs in the study area. As far as satisfaction level for the recovery from BHUs are concerned, respondents were quite satisfied about with the response rate of 77.3% for strongly agree and 17% for agree while 3.8% remained neutral in this regard. Moreover, they also had high rate of response to recommend these BHUs as 51.2% were strongly agree while 46.5% were agree in this regard. Similarly, the respondents were quite well satisfied about treatment at BHU as 49.8% were strongly agree and 45.5% were agree while remaining respondents were neutral in this regard.

Besides that, the respondents showed high level of satisfaction about the accuracy of lab tests in BHUs as 69% reported to be agree and 25.3% were strongly agree while 5.3% remained to be neutral in this regard. Similarly, the respondents showed high level of satisfaction about the doctors' diagnosis in BHUs as 66.5% reported to be strongly agree and 25.5% were strongly agree while 7.8% remained to be neutral in this regard. Further, respondents' views about revisiting BHUs were slightly satisfied as response rate for strongly agree and agree remained to be 57.8% and 17.8% respectively. Further, 21.3% remained neutral in this regard while 2.5 were disagree to revisit BHUs.

In addition, respondents' views about doctor's full attention to them at BHU was quite indecisive, as 31.8% were neutral in this regard while responses for strongly agree and agree remained to be 27.3% and 20.3% respectively. On the other hand, 14.5% respondents were disagreed while 6.3% were strongly disagree in his regard. As far as respondents' views about satisfaction with BHU staff is concerned, respondents showed high level of satisfaction with the response rate of 56.3% for strongly agree and 38.5% for agree while 4.8% remained neutral. Similar was the case as most of the respondents showed higher level of satisfaction about satisfaction with BHU services as 59% were agree and 36.3% were strongly agree while 4.3% remained neutral in this regard. Likewise, the respondents showed high level of satisfaction about the provision of the medicines in BHUs as 48.8% respondents reported to be agreed while 43.5% remained strongly agree along with 7.8% neutral responses. In the same way, respondents were overall very much satisfied about the services in BHUs as collective 94.5% reported to be either strongly agree or agree while remaining were neutral.

4. Discussion

This research was carried out to assess the quality of Primary Health Care (PHC) services at ten selected Basic Health Units (BHUs) in Quetta city, Balochistan, Pakistan. Further, this study used Donabedian model for assessing the utilization, structure (instruments, staff and physical structure of the health facilities), process (delivery of PHC services) and outcome (the effects of health care on health status of respondents) of the Primary Health Care (Donabedian, 1988; Donabedian, 2005). The Donabedian model is a conceptual model that provides a framework for examining health services and evaluating quality of health care and is widely used overall the world" (McDonald et al., 2011). The findings revealed that generally the respondents satisfied with the PHC services at the selected 10 BHUs namely; Pashtun Bagh, BMC Colony, Old Mari Abad, SR/JR Colony, Ahmad Khanzai, Killi Nasaran, Jamia Salfia, Police Line, Huda and Wahdat Colony in Quetta city. Among selected BHUs, the largest one was that located in Wadat Colony and had the most advance facilities including telemedicine services. Similarly, Police Line and Wadat Colony BHUs are the only ones in Quetta that had the facility of X-ray machines. Contrary to these, BHU Jamia Salfia was only the BHU that had poor PHC services having limited physical infrastructure.

Table 5. The response of the respondents about outcome of PHC Services

Outcome Variables	Response by the respondents (%)				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Family member recovered after treatment	1.3	0.8	3.8	17.0	77.3
Recommend this BHU to others	0.0	0.0	2.3	46.5	51.2
Satisfied with treatment	0.0	0.3	4.5	45.5	49.8
Tests are accurate	0.5	0.0	5.3	69.0	25.3
Doctors made accurate diagnose	0.0	0.3	7.8	66.5	25.5
I will visit again in case of recovery	0.8	2.5	21.3	17.8	57.8
Doctors give full attention	6.3	14.5	31.8	20.3	27.3
Satisfaction with behavior of BHU staff	0.0	0.5	4.8	38.5	56.3
Satisfaction with the BHU services	0.0	0.5	4.3	59.0	36.3
Provision of quality medicine	0.0	0.0	7.8	48.8	43.5
Overall satisfaction	0.0	0.0	5.5	55.8	38.8

Source: Survey data, 2019

The findings show all the respondents visited the BHUs for attainment of PHC services which was quite clear from the data that even 97% of them had visited the BHUs in last month. Moreover, quite interestingly, most of the respondents preferred BHUs rather than other sources for health care facilities because the BHUs are very accessible to everyone Out of the total respondents, around four-fifth (78%) were females who visited BHUs for seeking PHC services. The high utilization of PHC services by females is due to the fact that the burden of seeking basic health care for the households, mostly of children is the responsibility of females at households because males mostly go for earning livelihood and work outside of the cities and sometimes even the country. Moreover, female face more health issues compared to men. Hence, rush of the females was the one of the findings of this study, which is a hypothesis of the current study. These findings were quite similar to the findings of Aziz and Hanif (2016) who previously reported that 75.7% of the users of PHC services at BHUs in Pakistan are females. Similarly, a previous study from Pishin District, Balochistan, Pakistan also reported the high utilization of PHC services at BHUs was by females Panezai et al. (2017). Another issue was also reported that peoples from other BHUs catchment areas also created pressure in the some of the BHUs. This problem can be solved by the proper registration mechanism to ensure that public get PHC service in the BHUs where they have been registered. Further, the respondents rarely visited BHUs even for common diseases of Acute Respiratory Infection (ARI), antenatal and postnatal care, chronic diseases and back/joints pain. Further, most of the respondents reported to have attained any Family Planning services as well delivery services from BHUs as well. Moreover, visits for the child vaccination and for medical tests were also too low. These finding were quite similar to the findings of the Panezai et al. (2020b) who also reported non utilization of the PHC services in BHUs even though the study was conducted in the rural areas. Moreover, most of the respondents were illiterate as well as married. Further, the ratio of the young married women was high in selected BHUs thus results mostly were related to the married females. Further, it was also reported that females with poor status had more tendency towards utilization of the PHC services due to their higher health care needs. The current findings are similar with those of Panezai et al. (2020b) who reported that most of users of the PHC services at BHUs level belonged to poor income households.

According to Donabedian (1988), structure is a very important indicator in assessment of Primary Health Care (PHC) services at PHC facilities. Similarly, this study had used the structure indicators including PHC services, laboratory and tests, equipment, BHUs staff, availability of medicines, ambulance, professional skills as well as physical infrastructure to assess the PHC services in selected BHUs. These structure indicators are also used by various published studies (Fenny et al., 2014; Getachew et al., 2020; Sharma et al., 2018). Similar to the findings of the Majrooh et al., (2015a & b), the respondents were satisfied with the overall sanitary conditions, availability of drinking water as well as seating arrangements in Out-Patient Departments (OPDs). In contrast to the findings of the Majrooh et al. (2015a), 86% people were satisfied about the availability of equipments in BHUs which was quite evident as height and haemoglobin meter were available in the most of BHUs. Moreover, the medicines for common illness were mostly available along with the medical test availability for blood, urine, Malarial Parasite (MP), Widal, pregnancy and diabetes in BHUs. Besides that, the respondents were satisfied with the competence of the doctors along with the availability of the small surgery services in BHUs. In contrast to that, ambulance unavailability was the common issue reported again and again by the respondents as it was a huge concern which made them avoid the BHUs in case of medical emergencies. Moreover, keeping in view the importance of the family planning services, 18% of the respondents were very dissatisfied about the availability of the family planning services which shows the negligence of the competent authorities even in BHUs of urban. Further, unavailability of the dental surgeons was also frequently reported in the BHUs.

Overall, the process related variables are based on Donabedian framework for quality health care, which were used in this current study for assessing the quality care was satisfied on the basis of the respondent's point of view. General speaking, similar to the findings of Fenny et al. (2014) and Ameh et al., (2017) the respondents were quite satisfied with the management, behavior of the doctors and cooperation from staff in BHUs which showed their professional commitment. Further, the respondents also were satisfied about the waiting time for checkup as well as for results after the medical tests which shows that they are being facilitated by the staff. Besides that, having BHU as a Usual Source of Care (USOC) and children enrolment for vaccination was also reported frequently in BHUs. As far as their confidence at BHUs are concerned, they were highly confident at overall services of BHUs. In contrast to overall high satisfaction of the respondents, the rate of having deliveries at BHUs was very low which was quite similar to the study of Panezai et al. (2020a). Further, the use of ambulance in emergency was very low mostly due to the unavailability of ambulance service in most of the BHUs. As far as paying faculty for medicines are concerned, respondents remained indecisive as 39.8% strongly disagreed to pay anything while 35% remained neutral which shows that they might have been paying in some cases.

The outcome related variables based on Donabedian framework for assessing the quality health care were measured on satisfaction level of the respondents in this study. Generally, respondents were much satisfied about the outcomes of PHC services at BHUs. Similar to the findings of Aziz and Hanif (2016) respondents were satisfied from the treatment services and the response staff at the BHUs. Moreover, the respondents were also satisfied with the quality of tests, accurate diagnosis, quality medicine

availability and reported to have high rate of recovery from BHUs.it as explained earlier, mostly poor visited BHUs, thus they continue visiting until they got fully recovered. Further, in case of recovery, they were also quite satisfied and reported willingness to revisit as well as strongly recommending the BHUs to other for medical facilities which were similar to the findings of the Gangai (2015). Apart from overall high level of satisfaction, the respondents in some cases, however, were not quite decisive about the level of attention given by the doctors where half the respondents were either neutral or dissatisfied. It is the common problem in the study area where patients always lament about the rude behavior and less attention to the patients.

5. Conclusions

The findings of this study showed that quality Primary Health Care (PHC) services are available at Basic Health Units (BHUs) in Quetta district, the provincial capital of Balochistan province, Pakistan. The findings imply that the BHUs in urban Balochistan are better-managed to provide comparatively better-quality PHC services to its catchment population. As Quetta is most urbanized region of the province, the overall conditions of the BHUs services are better compared to rural areas of the region. Each BHU had high level of satisfaction on the basis of the components of Donabedian Quality of Care Framework: structure, process and outcome, except a few indicators. The structure variables which were almost satisfied on the response of the respondents included availability of all equipments, medicines availability, different minor medical tests facilities, accurate diagnosis and treatment, cooperative and polite behavior, availability of medical officers, female medical technicians (FMTs), lady health visitors (LHVs), while the variable of availability of family planning services and labor room reported bit of dissatisfaction as well. On the other hand, few indicators were not satisfied such as conducting child deliveries, availability of ambulance in case of medical emergencies and dental surgeon is BHUs. Moreover, respondents also reported the doctors' behavior not giving proper attention in some BHUs.

Even though findings show overall high level of satisfaction with PHC Services, the dissatisfied indicators can't be neglected as low rates of child deliveries and unavailability of ambulance in case of the emergencies at the BHUs can cause much of trouble for the patients visiting BHUs for seeking emergency care. Therefore, it is suggested to policymakers and the competent authorities such as People's Primary Health Care Initiative (PPHI) Balochistan, the Provincial Health Department and District Health Officer (DHO) Quetta to establish strong coordination and put integrated efforts to ensuring the maternal and obstetric care at the BHUs level in Quetta city. It is direly needed to ensure the availability of basic equipment, sufficient medicine and the availability of lady doctors at the BHUs to insure the child deliveries in each BHUs. Moreover, the BHUs should be provided the stand by ambulance services at the BHUs so that medical emergencies including basic emergency obstetric care (EmOC) services are provided to save lives in case of emergencies. Further, the advanced services such as telemedicine, dental services, X-rays, advanced diagnostic laboratories, sufficient stock of medical supplies need to be provided in the remaining BHUs of the provincial capital in order to reduce the pressure of patients on tertiary care hospitals in the city.

Limitations

The current study has been conducted in the urban area, the Quetta city of Balochistan province. Therefore, its findings may not represent the poor performing BHUs in rural areas. Moreover, the conclusions cannot be generalized to the PHC services at rural areas, as urban areas may have a better degree of satisfaction in contrast to rural areas which have lowest degree of satisfaction as far as PHC services are concerned.

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