

FACILITY ASSESSMENT FOR MATERNAL AND CHILD HEALTH SERVICES IN BANGLADESH USING SERVICE AVAILABILITY AND READINESS ASSESSMENT (SARA) TOOL: A CROSS-SECTIONAL PILOT STUDY

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ABSTRACT

Background: To initiate journey towards the Universal Health Coverage (UHC) it is essential to assess the health facilities. Unfortunately, no health facility assessment has been conducted in Bangladesh so far using “Service Availability and Readiness Assessment (SARA)” tool. Therefore, we aimed to conduct a pilot study to assess health facilities for maternal and child health services using SARA tool so that we can scale-up this assessment throughout the country later.

Aim: We aimed to assess the health facilities for maternal and child health services in Tangail, Bangladesh using service availability and readiness assessment (SARA) tool.

Methods: A cross-sectional pilot study was conducted in Bashail and Shokhipur Upazilla of Tangail district. A sample of 14 health facilities was assessed purposefully for data collection using a modified version of the SARA tool. Data was collected from November 01 to November 15, 2013, using paper-based questionnaire. Finally, following data collection, data were documented into Microsoft Excel by data collectors. Data were analyzed using Microsoft Excel, version 2010.

Results: General service readiness has been segregated into five domains and their readiness scores were basic amenities (53.06%), basic equipment (83.33%), standard precautions for infection prevention (55.56%), and basic equipment (58.93%) for included health facilities. Similarly, specific service readiness includes family planning (48.15%), child immunization (67.71%), preventive and curative care (71.43%), and basic surgery (93.33%).

Conclusion: Since we are moving towards UHC, it is essential to know the current scenario of health facilities. This pilot study reveals the strength and weakness of the health facilities in providing the maternal and child health services. These findings will help us to resolve all the identified gaps through proper planning and action.

Key words: Maternal and Child health, Health facility, Bangladesh

BACKGROUND

The world is going through a progressive reduction in maternal and child mortality, still, we are experiencing 216 maternal deaths per 100000 live births.¹ Similarly, the under-five mortality rate is 42.5 deaths per 1000 live births.² Unfortunately, most of the deaths occur in low and middle-income countries (LMICs). In Bangladesh, maternal mortality ratio is 194 deaths per 100000 live births in 2007-2010³ and infant mortality rate is 46 per 1000 live births.⁴ Despite having so many constraints, Bangladesh has established themselves as an example towards other LMICs by reducing the maternal and child death below the expected level.⁵ Bangladesh is among the few countries that fulfilled The Millennium Development Goal (MDG) goal 4 and close to achieving goal 5.⁶ Following MDG, the Sustainable Development Goal (SDG) stepped in and a new target has been set to achieve.⁷ On top of that, since we are moving towards Universal Health Coverage (UHC) it is essential to assess the facility for service availability and readiness.⁸

Unfortunately, quality information about infrastructure, workforce, logistics, and medicine is not available.⁹ Moreover, different countries follow different tools to collect the information. To resolve this important issue, World Health Organization (WHO) has developed a uniform and complete facility assessment tool titled “Service Availability and Readiness Assessment (SARA)”.¹⁰

Though this tool is widely used in different countries, in Bangladesh, no health facility assessment has been conducted so far using this tool. Therefore, we aimed to conduct a pilot study to assess health facilities using SARA tool to further scale-up the assessment process throughout the country to generate evidence in this

regard. These findings will offer a strong insight to the policy makers of this country regarding the facility readiness and existing gaps among primary health care centers to ensure UHC for every citizen of Bangladesh.

METHODS

Study Design and Study Area

This cross-sectional study was conducted in Bashail and Shokhipur Upazilla of Tangail district. Basail Upazilla occupies an area of 172.70 square kilometers with a population of 176,708 and Sakhipur Upazilla occupies an area of 461.00 square kilometers with a population of 274,537.¹¹

Sampling strategy

A sample of 14 health facilities was assessed purposefully (**Figure 1**) which included Upazilla Health Complex (UHC), Union Sub-center (USC), Community Clinic (CC) and Private hospital (PH) were included in the study.

Study tool

A modified version of SARA tool was used for facility assessment.¹⁰ The SARA is designed as a systematic approach for annual verification of service delivery at the facility level. The SARA aims to assess and monitor a country's service delivery system including the capacity to deliver maternal and child health services (including immunization), prevention of mother to child transmission (PMTCT), antiretroviral therapy (ART), sexually transmitted infections (STIs), tuberculosis (TB), malaria services and others. We emphasized only on general health services along with maternal and child health services for this study. The SARA tool has inbuilt component called data verification module which ensured data quality.

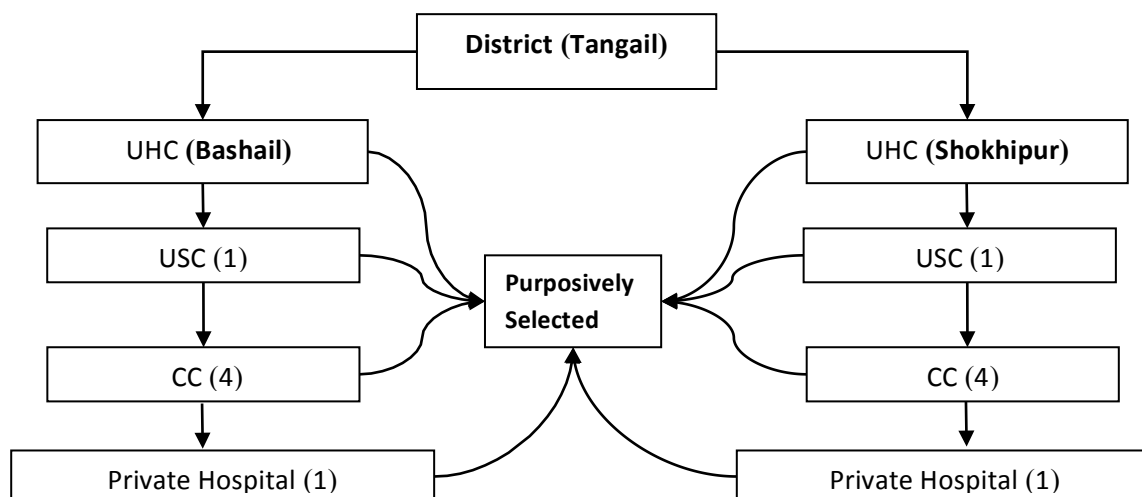


Figure 1. Sampling Strategy

Domains and Tracer Indicators of SARA tool

For assessing general service readiness, there are five domains comprising (1) basic amenities, (2) basic equipment, (3) standard precautions for infection prevention, (4) essential medicines and (5) diagnostic capacity. These domains have different tracer indicator of general service readiness. For example, the domain basic amenities include functional emergency transportation, access to a computer with the internet, communication equipment, adequate sanitation facilities, room with privacy, improved water source and power. Basic equipment includes a light source, blood pressure apparatus, stethoscope, thermometer, child scale, and adult scale. Standard precautions for infection prevention includes guideline for standard precautions, latex gloves, soap and running water or alcohol-based hand rub, single used standard disable or auto-disposable syringes, disinfectants, appropriate storage of infectious waste, appropriate storage of sharp waste, safe final disposal of infectious wastes and safe final disposal of sharp waste. Essential medicine includes

zinc sulphate tablet or syrup, salbutamol syrup, paracetamol tablet, oral rehydration solution, omeprazole tablet or alternative, ibuprofen tablet, gentamicin injection, ceftriaxone injection, ampicillin powder for injection, amoxicillin tablet, amoxicillin syrup/suspension and chlorpheniramine tablet/syrup. All these domains will provide a combined overall general service delivery readiness score.

On the other hand, maternal and child health related service readiness was assessed considering six specific services including (1) family planning, (2) child health immunization, (3) child health service preventive & curative care (4) antenatal care, (5) High-level diagnostic equipment, (6) Basic Surgery.

Data collection and analysis

Data collection was carried out from November 01 to November 15, 2013, using paper-based questionnaire. Data collectors were trained prior to the survey using the survey tool. Overall, data collection was monitored and checked randomly to ensure the data quality. Finally, following data collection, data were documented into

Microsoft Excel by data collectors. Data were analyzed using Microsoft Excel, version 2010. Different domain score and readiness score were calculated manually.

Ethical Consideration

Ethical review committee of James P. Grant School of Public Health, BRAC University provided ethical clearance of this study. A written permission was taken from Management Information System (MIS), Directorate General of Health Services (DGHS), Bangladesh to collect data in Tangail district. Furthermore, Civil Surgeon office of Tangail district gave written circular to the respective health facilities to allow the study team to collect data. Prior to data collection verbal consent was taken from every key informant.

RESULTS

In our pilot study, we assessed general service readiness as well as service specific readiness in the health facility.

General service readiness

Basic amenities

The bar graph shows that the overall basic amenities domain readiness score was 53.06% for the health facilities included in this study. It also reveals that all the health facilities had the communication equipment and 85.71% had access to a computer with internet. However, 28.57% facilities had a power supply, 28.14% had a room with privacy and only 14.29% of the facilities had emergency transportation service. Only 14.29% facilities were equipped with all basic amenities (**Figure 2**).

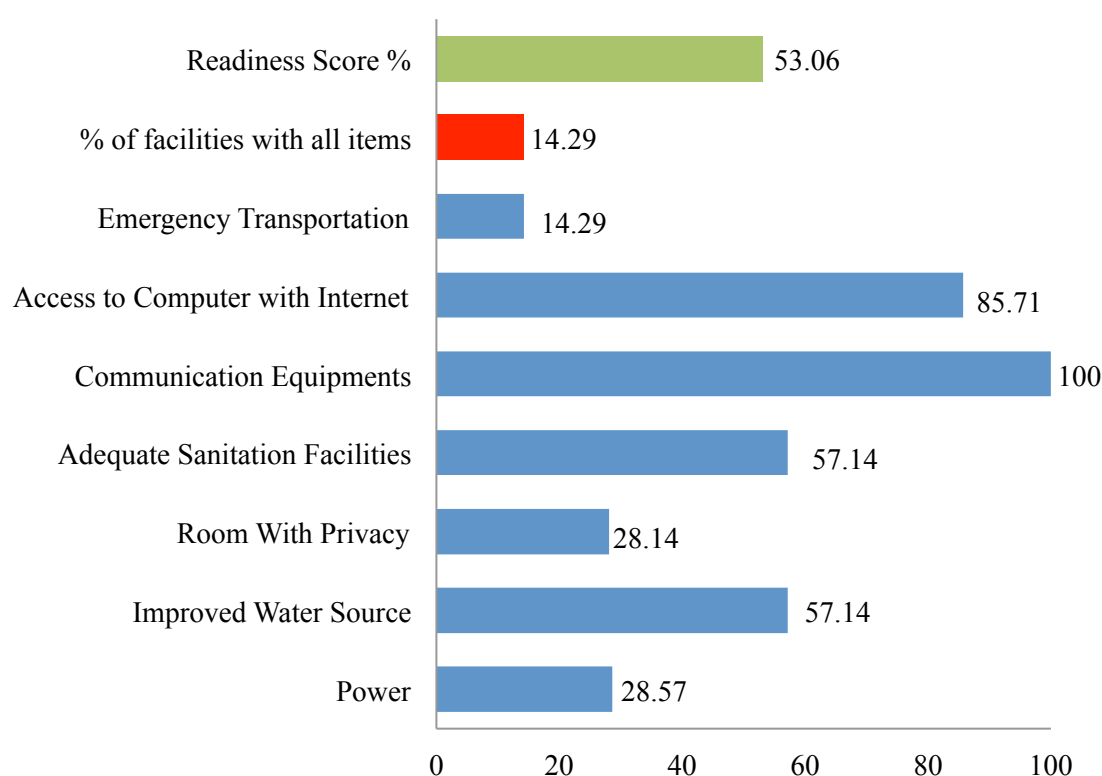


Figure 2. Basic Amenities Domain Score with Tracer Item

Basic equipment

Overall readiness score for basic equipment domain was 83.33%. All the surveyed facilities had blood pressure apparatus, stethoscope, and thermometer.

However, there was a lack of a proper light source in most of the facilities. Only 28.57% of the facilities had all basic equipment (**Figure 3**).

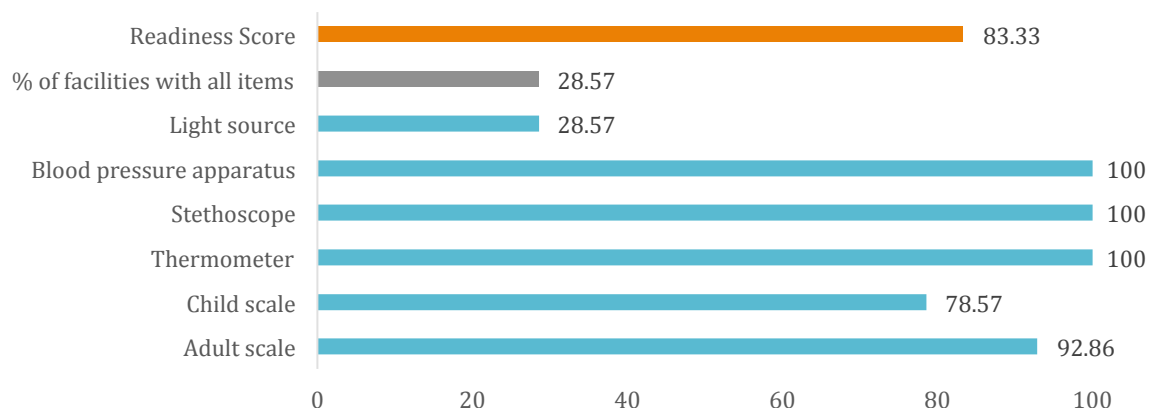


Figure 3. Basic Equipment Domain Score with all Tracer Items

Standard precautions for infection prevention

In terms of standard precautions for infection prevention domain, readiness score was 55.56%. None of the facilities had a standard guideline for infection prevention and control, though only 14.29% of the facility had disinfectants.

Interestingly, in all the facilities, auto-disposable syringes were available and almost all the facilities (92.86%) had appropriate storage for infectious waste as well as sharp waste. In this study, no facility was found having all the necessary items required for infection prevention and control (**Figure 4**).

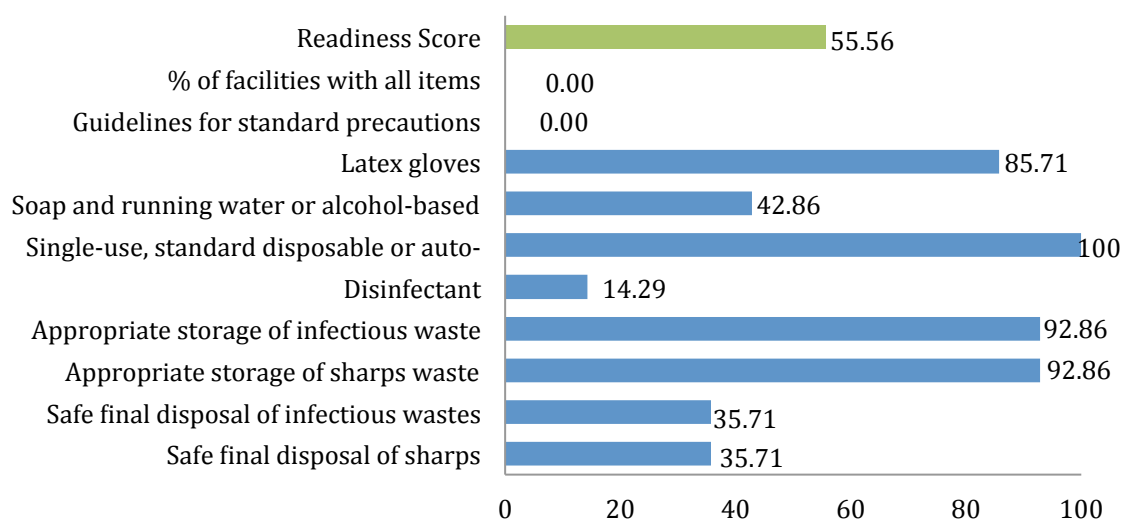


Figure 4. Standard precautions for infection prevention Domain Score

Essential medicine

Although overall facility readiness score for essential medicine was 58.93%, only a little proportion of facilities had all the essential medicines available. It is important to note that, in only 14.29% facilities, injectable antibiotics

(Gentamicin and Ceftriaxone) were available. In addition to that majority of the facilities (85.71%) had the supply of oral rehydration saline (ORS), Zinc sulfate tablet, Paracetamol tablet, Amoxicillin tablet, Amoxicillin suspension and Amoxicillin syrup (**Figure 5**).

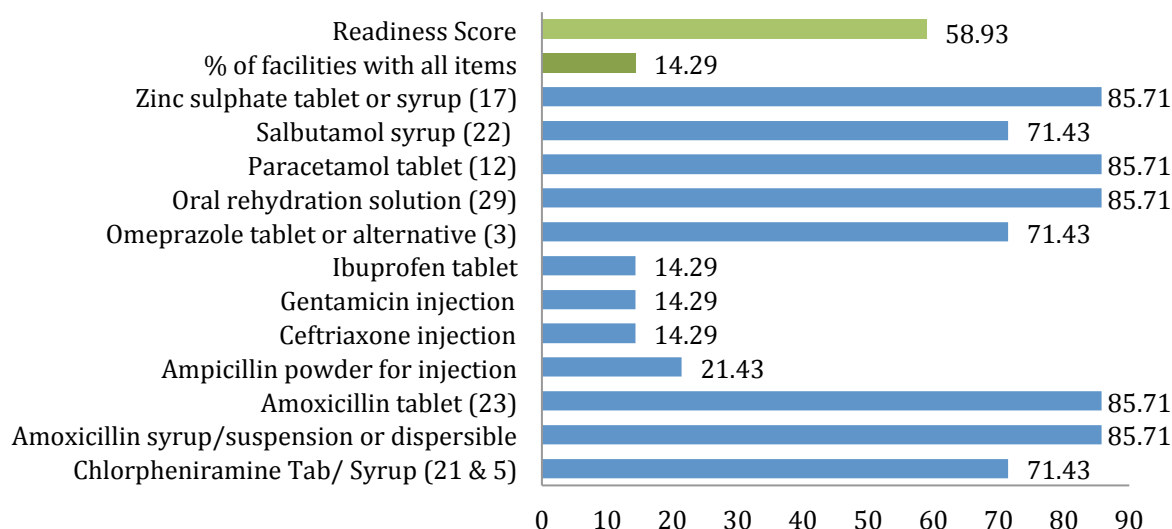


Figure 5. Domain Score of essential medicine with tracer items

Service specific readiness

For specific services like family planning, child immunization, and preventive and curative care, the overall readiness scores were 48.15%, 67.71%, and 71.43%

respectively. Among all facilities, 18.44% had family planning medicines and commodities, however, only 11.11% had both necessary equipment and trained staffs to run the facility (**Figure 6**).

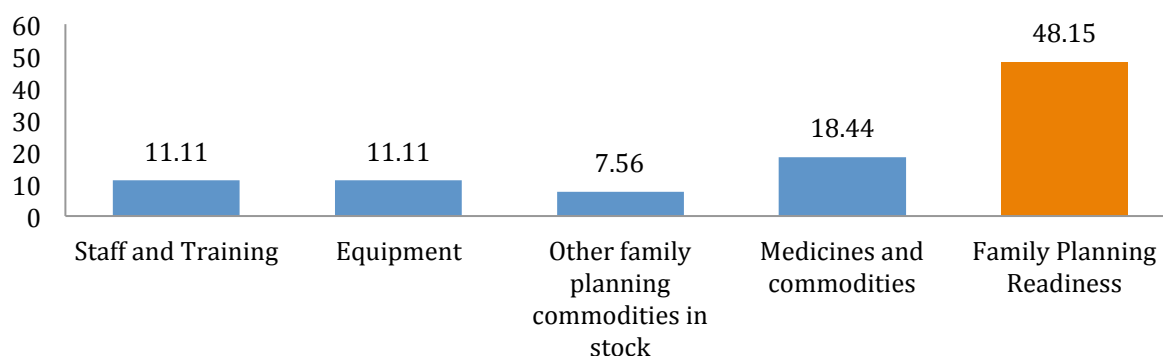


Figure 6. Family Planning Readiness with Domain Score

Regarding child immunization, all the facilities were found to provide every type of vaccine according to the national

guideline, though, no facility was found where EPI guideline was available (**Figure 7**).

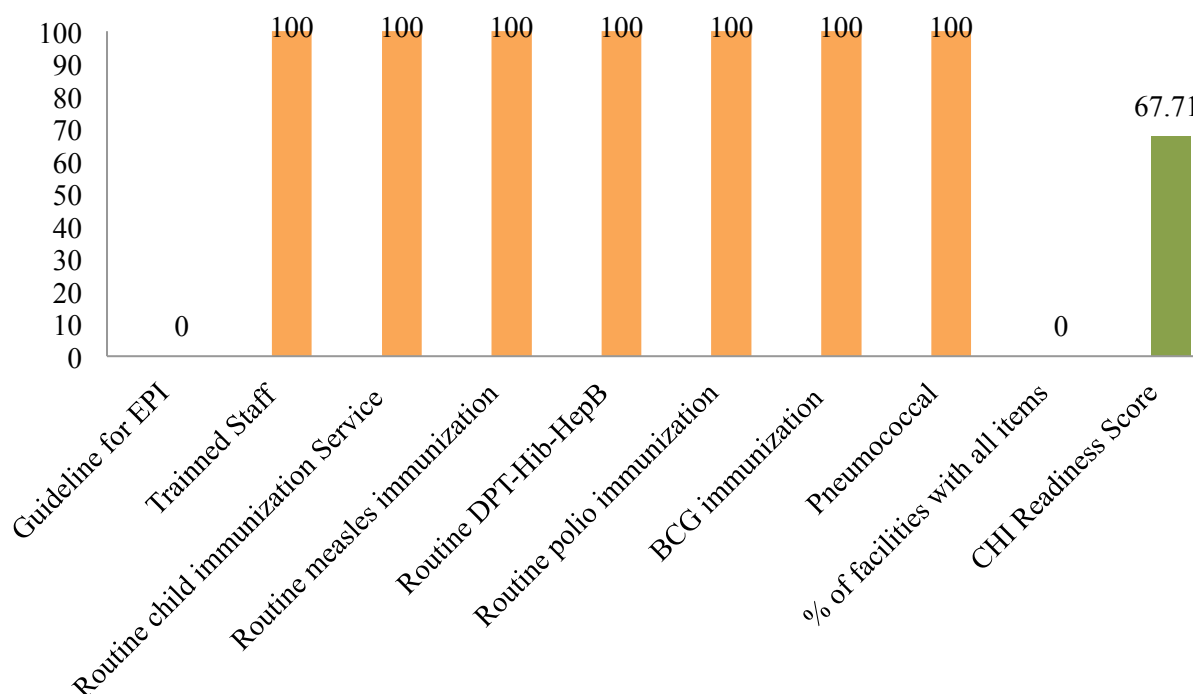


Figure 7. Child Health Immunization Readiness Score

For preventive and curative child care service, 93% facilities had the necessary equipment, however, only 29% had

diagnostic capacity and 50% facility had trained staffs (**Figure 8**).

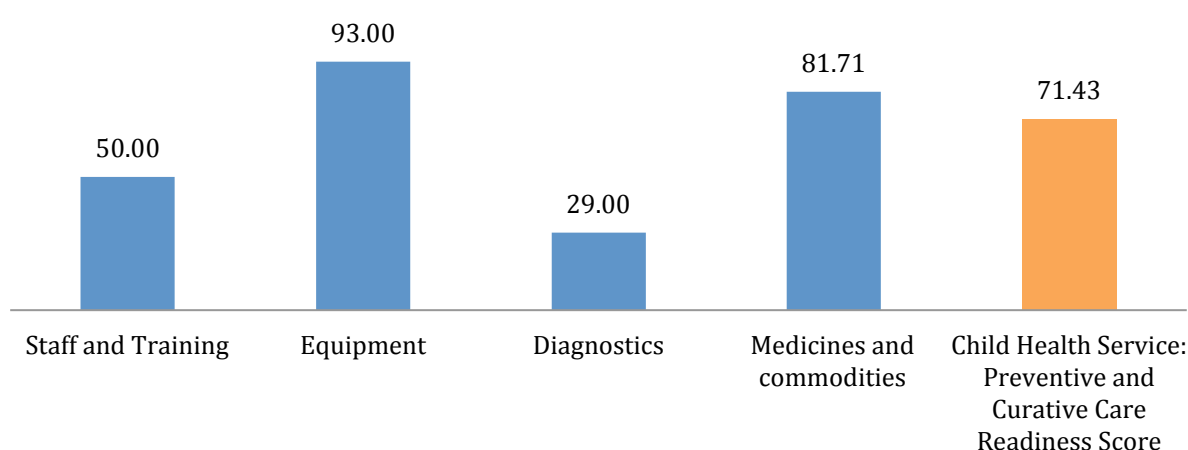


Figure 8. Child Health Service Preventive and Curative Care Readiness Score

A similar finding was observed in case of antenatal service where all the facilities had basic instruments, 29% had the diagnostic capacity and 50% had trained

staffs. Remarkably, in 81% facilities, medicine and commodities were available that were necessary for providing antenatal care (**Figure 9**).

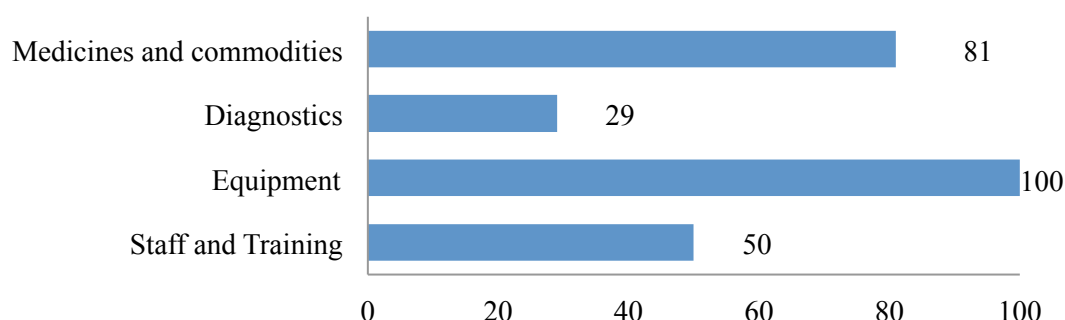


Figure 9. Antenatal Care Domain Score

We considered only Upazilla health complexes and private clinics for diagnostic services since diagnostic facilities are not available in Union sub-centers and community clinics. All the

facilities had the equipment to perform X-ray, 75% had the equipment to do ECG and 50% had the equipment to conduct Ultrasonography (**Figure 10**).

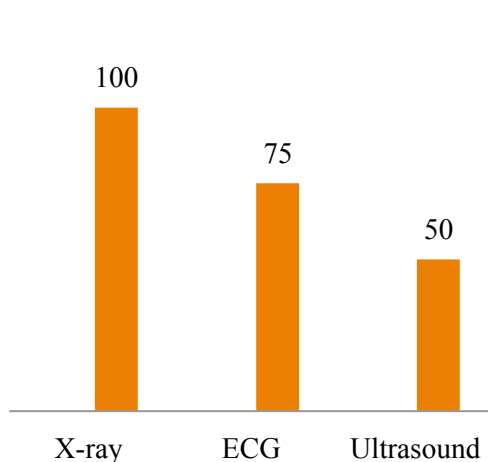


Figure 10. High level diagnostic equipment Tracer Items

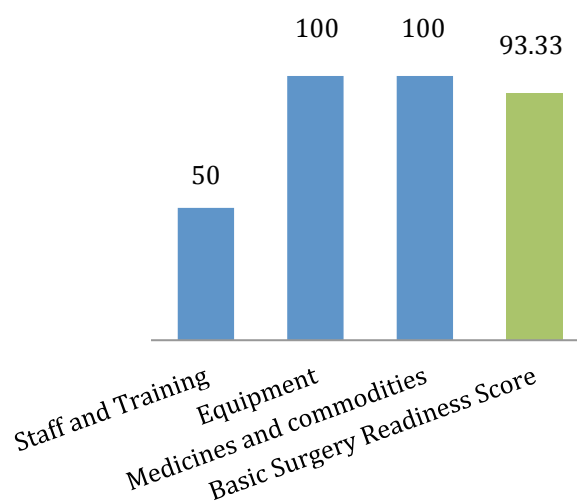


Figure 11. Basic Surgery Readiness Score

Basic surgery readiness score for all the assessed facility was 93.33%. However, necessary equipment, medicine, and commodities were available to carry out

the surgical procedure in all the facilities, but only half of the facilities had trained staff to utilize these resources (**Figure 11**).

DISCUSSION

To the best of our knowledge, this was the first reported pilot study in Bangladesh that assessed the health facility readiness using SARA tool with a vision to scale-up this assessment throughout the country. These findings will contribute to generating evidence about health facility readiness among primary health care centers, which is essential to hasten the journey towards UHC in Bangladesh.

In our study, we found a limited number of facilities (14.29%) had all the basic amenities available, which is essentially needed to provide the expected level of health care to the people. The majority of the facilities had communication equipment and about half of the facilities had good water and sanitation facility. Functional emergency transportation service and power supply were available to a limited number of health centers. This finding is consistent with previous studies conducted in Bangladesh that reported only 11% of health facilities in Bangladesh had five out of six basic items available.¹² As Bangladesh has started its journey towards UHC, it is imperative to make all the basic amenities available to these health facilities otherwise it is quite impossible to ensure quality health care to its citizen.

Overall readiness score for basic equipment domain was more than 80% indicates that majority of the health facilities were well equipped with basic instruments like blood pressure apparatus, thermometer, stethoscope, adult scale, child scale. However, nearly three-fourth of the facilities did not have any light source (for patient's examination). Similar findings were observed in other studies conducted in Zambia, where almost all the facilities had a stethoscope, thermometer, blood pressure machine, child scale, and adult scale.¹³

In our study, we did not find any health facility having a proper guideline to prevent and control infection, though, it is indispensable to follow and practice a standard guideline in this regard. This finding is also in accordance with the finding of other studies. A study conducted in Ethiopia revealed that very few number of the country's health facility had a guideline for infection prevention and control.¹⁴

Usually, the government supplies essential medicines to all the government facilities. The overall domain score for essential medicine was 58.93 which indicates that in the present area 58.93% facilities had essential medicines. But it is alarming that only 14.29% had all the essential medicines needed at the time of this assessment. Our study findings were almost consistent with the study conducted in Tanzania in 2012 where 41% facilities had the essential medicines.¹⁵ One of the reasons for the shortage of medicines might be the inadequate supply of medicines for a quarterly requisition. In some cases, unnecessary use of medicine by the patients could also be the causes of the shortage of medicine. Sometimes people come into the community clinics irrespective of having the diseases or not. We experienced this situation in a few of the community clinics during the survey time.

Almost half of the facilities were found to provide family planning services at the community level. This low number might be due to the fact that we considered all the services including intrauterine device (IUD), implant, and sterilization in our study to assess the facility. It is evident that use of a long-acting contraceptive method (e.g. sterilization, IUD, and implants) is very less in Bangladesh, which might have a direct link with the unavailability of those instruments that we

found in our study.⁴ However, another reason can be, family planning services are available up to UHC level facilities but most of the facilities we included in our study were community clinics, where only male condom and pill are available. Unfortunately, adequate medicines, equipment related to family planning, enough staffs and training were not available at most of the facilities.

Our study finding suggests that all the health facilities had all the necessary vaccines and trained staffs. This finding reflects the success story of this country regarding child immunization.¹⁶ It is well known that Bangladesh has achieved remarkable progress in child immunization.¹⁷ However, we could not find the immunization guideline in any of the facility. None of the facilities of our study had an alternative electric supply (ex: generator) for proper maintenance of the refrigerator temperature which can be assumed as a threat to the quality of the vaccines. Therefore, necessary steps need to be taken to ensure and maintain the cold chain as well as the quality of vaccines to get the best outcome.

In Bangladesh, Director General of Health Services and Director General of Family Planning together provide the antenatal care to the pregnant mothers. In our study, we found that all the essential equipment necessary to provide care were available in all the facilities and medicines were available more than two third of the facilities. However, only half of the facilities were operated by trained staffs. According to Bangladesh Demographic and Health Survey (BDHS) 2014, the proportion of women took antenatal care has increased from 58 to 78 in between 2004 to 2014.⁴

In case of general diagnosis, most of the facilities were equipped with diagnostic machine however, adequate trained staffs were not available to operate the machine.

This finding can be explained by the existing health workforce crisis of Bangladesh. Bangladesh is reeling with a severe shortage of human resource for health in terms of inappropriate skill mix, unequal, and inequitable distribution.¹⁸ Therefore, it is essential to take necessary steps to retain human resources in the rural area.

LIMITATION

In this pilot study, we focused only maternal and child health services in the assessed facilities. Since we piloted the study in a few facilities, we could not assess the service availability. In addition, different types of facilities are being operated differently. However, we assessed different types of the facility using the same questionnaire.

CONCLUSION

In our pilot study, we have found satisfactory as well as unsatisfactory findings for certain issues of general service readiness and specific service readiness. Due to less number of the facility, we could not assess the service availability. A nationwide survey would provide a clear notion of the availability and service readiness in terms of maternal and child health and which will ultimately facilitate the overall improvement of maternal and child health throughout the country. Based on these findings, the government can take necessary steps to resolve all the existing gaps in maternal and child health services and thus ensure our smooth journey towards UHC.

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Authors' Contribution

MH and AA were involved in designing, implementing, data collection, analysis, and

drafting of the manuscript. RB, MDH, AKA, and BI have reviewed the manuscript and provide their intellectual feedback. MS guided the study and provide intellectual feedback on the manuscript.

Disclosure about potential conflict of interest

None declared.

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