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EFFECTIVENESS OF GOVERNMENT PRIMARY HEALTHCARE SERVICES: A FIELD STUDY ON SHAILKUPA UPAZILA OF JHENAIDAH DISTRICT, BANGLADESH

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Abstract

This study empirically evaluates the effectiveness of government primary healthcare (PHC) services in improving maternal and child health outcomes in Shailkupa Upazila of Jhenaidah district, Bangladesh. A cross-sectional mixed-method design was employed, and primary data were collected from 110 mothers selected through multi-stage random sampling. Descriptive

and inferential statistical techniques were applied to examine accessibility, medicine availability, provider behavior, infrastructure adequacy, and patient satisfaction. Findings reveal that although 87% of respondents primarily depend on the Upazila Health Complex, 95% travel more than 4 km to access services, indicating significant geographic barriers. While 83% reported that services were generally available, only 2% consistently received prescribed medicines, highlighting severe supply shortages. A statistically observable gap exists between service availability and patient satisfaction. While immunization coverage reached 100%, overall satisfaction remained moderate (Mean = 2.22 on a 4-point scale). Infrastructure inadequacy, medicine shortages, and high patient load were the dominant systemic constraints. The study suggests strengthening medicine supply chains, improving infrastructure, expanding human resources, and integrating digital health tools. Although limited to one upazila and a specific respondent group, the findings offer policy-relevant insights for strengthening rural primary healthcare systems in Bangladesh.

Keywords: Government Healthcare, Maternal Health, Service Accessibility, Healthcare Infrastructure, Medicine Availability, Shailkupa Upazila

INTRODUCTION

The saying “Health is Wealth” means that health of a man is as much important as the wealth in the realm of life satisfaction. Primary healthcare (PHC) represents the foundation of equitable health systems and is central to achieving Universal Health Coverage (UHC). According to the WHO operational framework, effective PHC requires accessibility, continuity, comprehensiveness, coordination, and community participation (WHO & UNICEF, 2023). While Bangladesh has made commendable progress in maternal and child health indicators, rural health systems continue to experience structural inefficiencies.

Since endorsing the Alma-Ata Declaration in 1978, Bangladesh has formally committed to strengthening community-based healthcare delivery. It is the constitutional obligation of the state to ensure adequate health services for the population (The Constitution of the People’s Republic of Bangladesh’, Article-18: Public Health and Mortality). Poor and middle-income people rely heavily on primary healthcare services. To provide primary health care (PHC) services in rural areas, Bangladesh initiated establishing community clinics in 1998.

Over the past decades, Bangladesh has achieved remarkable progress in immunization coverage and maternal-child health indicators. However, structural inequalities persist between urban and rural healthcare systems. Rural primary healthcare facilities frequently encounter shortages of medicines, inadequate infrastructure, limited diagnostic capacity, and human

resource constraints. These challenges raise critical questions about the functional effectiveness of PHC beyond mere service availability.

Government primary healthcare services are the backbone of rural healthcare systems, particularly for rural populations to ensure them the delivery of essential health services in Bangladesh (Kabir et al., 2020). Accessibility significantly influences healthcare utilization. Studies indicate that long distances to health centers, transportation challenges, and financial constraints discourage people from seeking medical care (Rahman et al., 2017). Patient satisfaction is one of the critical determinants of effective healthcare. Khan et al. (2020) recommended strategies by enhancing communication between patient and provider, reducing waiting times and providing sufficient supplies of essential medicines to improve satisfaction in government healthcare services. Primary healthcare facilities are measured by accessibility. Studies have shown that while community clinics in Bangladesh have enhanced access, challenges remain in reaching remote populations due to constrained mobility (Ahmed et al., 2020). The proposed research aims to address these gaps by conducting a field study to strengthen the healthcare system in Shailkupa Upazila, ensuring equitable and quality healthcare for all.

Statement of the Problem

Despite expanded public healthcare infrastructure, rural populations in Bangladesh continue to face barriers in accessing quality primary healthcare services. In Shailkupa Upazila of Jhenaidah district, service effectiveness is hindered by long travel distances, irregular medicine supplies, limited diagnostic facilities, staff shortages, and insufficient integration of technology. The mismatch between service availability and perceived satisfaction suggests systemic inefficiencies that undermine health outcomes, particularly for mothers and children who rely heavily on public facilities.

Objectives of the study

The main objective of the study is to evaluate the effectiveness of government primary healthcare services in Shailkupa Upazila of Jhenaidah district regarding quality, accessibility, and patient satisfaction. To attain this, the specific objectives are:

- To assess the current status of government PHC services
- To identify factors affecting healthcare accessibility.
- To measure patient satisfaction levels.
- To examine operational challenges faced by providers and service recipients
- To propose evidence-based policy recommendations

LITERATURE REVIEW

Primary healthcare effectiveness is multidimensional, encompassing accessibility, availability, quality, responsiveness, and equity (WHO & UNICEF, 2023). Studies in Bangladesh indicate improvements in immunization and maternal health outcomes through community clinics (Ahmed & Islam, 2018). However, persistent structural deficiencies remain.

Healthcare effectiveness is often conceptualized through Donabedian's Structure–Process–Outcome (SPO) model. Structural factors (infrastructure, human resources, equipment) influence processes (service delivery, provider behavior), which ultimately determine outcomes (patient satisfaction, utilization, health improvement).

Ahmed et al. (2021) emphasize that shortages of skilled personnel and essential medicines reduce public confidence in government facilities. Similarly, Ferdous et al. (2019) report that inadequate infrastructure and logistical weaknesses significantly affect rural healthcare quality.

Rahman (2001) shows that accessibility barriers, particularly distance and transportation costs, are repeatedly identified as major determinants of service utilization.

Patient satisfaction has emerged as a critical performance indicator. Khan et al. (2017) argue that provider behavior, waiting time, and medicine availability strongly influence public perception. While several macro-level evaluations exist, most studies focus on national indicators or policy frameworks. However, micro-level empirical studies linking structure, process, and satisfaction remain limited.

Research Gap

Most studies assess macro-level health indicators but fail to provide localized, statistically grounded evaluations connecting service availability, medicine supply, accessibility, and satisfaction. This study addresses this gap through field-based quantitative assessment.

RESEARCH METHODOLOGY

Research Design

This study adopts a mixed-method descriptive research design combining quantitative survey data with qualitative interpretative insights.

Data Sources

Primary data were collected through structured questionnaires administered to mothers who utilize government primary healthcare services.

Sample and Sampling Technique

The study surveyed 110 mothers selected using random sampling. Three unions were randomly selected from 14 unions in Shailkupa upazila of Jhenaidah district. One village from each union was chosen randomly, and respondents were selected proportionately. The focus on mothers ensures analytical relevance to maternal and child healthcare utilization patterns.

Model specification

A multivariable logistic regression model is specified as follows:

$$\log\left(\frac{P}{1-P}\right) = \beta_0 + \sum_{k=1}^{k} \beta_k X_k$$

Logistic Regression Model is:

$$\log\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1(\text{Distance}) + \beta_2(\text{Medicine Availability}) + \beta_3(\text{Provider Behavior}) + \beta_4(\text{Service Availability}) + \beta_5(\text{Access Difficulty}) + \beta_6(\text{Digital Support}) + \varepsilon_t$$

where,

p is the probability of being satisfied. Adjusted odds ratios (AOR) with 95% confidence intervals (CI) were reported.

Data Analysis Tools & Techniques

Data were analyzed using MS Excel and SPSS. Descriptive statistical tools including frequency distribution, percentage analysis, mean, standard deviation, and variance were applied to summarize the data. Cross-tabulation was used to examine relationships between key variables. The Pearson Chi-square test was employed to assess the statistical significance of associations between categorical variables. Additionally, a Satisfaction Index was constructed using weighted scoring to measure the overall level of patient satisfaction with government primary healthcare services.

FINDINGS AND DISCUSSION

This section presents and interprets the findings of the study based on primary data, highlighting key aspects of service accessibility, availability, quality, and operational challenges in government primary healthcare services in Shailkupa Upazila.

Accessibility to Healthcare Facilities

Table 1: Distance to Healthcare Facility

Distance	Frequency	Percentage (%)	Interpretation:
≤ 2 km	6	5.4	A statistically dominant proportion (94.6%) resides beyond 4 km, indicating significant geographic inaccessibility. Distance correlates with reported dissatisfaction
> 4 km	104	94.6	
Total	110	100	

Primary Healthcare Utilization

Table 2: Primary Healthcare Source

Facility Type	Frequency	Per (%)	Mean	SD	Variance
Community Clinic	6	5	18.33	38.21	1459.87
Upazila health complex	96	87			
Zilla Sadar hospital	8	7			
Union health and family welfare centers	0	0			
Private MBBS doctor	0	0			
NGO-operated health facility	0	0			
Total	**110**	**100**			

The findings show that the Upazila Health Complex is the dominant source of healthcare, used by 87% of respondents. In comparison, only small proportions seek care from the Zilla Sadar Hospital (7%) or Community Clinics (5%). None of the participants reported using union-level facilities, private practitioners, or NGO-operated centers, indicating a clear dependence on government Upazila-level services.

Availability of Prescribed Medicines

Table 3: Medicine Availability Status

Category	Frequency	Percentage (%)
Always Available	2	2
Sometimes Available	73	66
Rarely Available	35	32
Never	0	0
Total	**110**	**100**

The table shows that consistent availability of prescribed medicines is very limited. Only 2% of respondents reported that medicines were always available, while the majority (66%) stated that medicines were available only sometimes. A considerable proportion (32%) indicated that medicines were rarely available, and none reported that medicines were never available. Overall, the findings suggest that medicine supply at government healthcare facilities is irregular, which may affect treatment continuity and patient satisfaction.

Provider Behavior Assessment

Table 4: Provider Behavior Rating

Category	Frequency	Percentage (%)	Mean	SD	Variance
Excellent	0	0			
Good	21	19	22	29.89	894
Average	73	66			
Poor	15	14			
Not satisfied	1	1			
Total	**110**	**100**			

The table shows that most respondents (66%) rated the behavior and attitude of healthcare providers as average. About 19% considered the behavior good, while 14% rated it as poor. Only 1% reported being not satisfied, and none rated the providers as excellent. Overall, the findings suggest that provider behavior is generally acceptable but lacks a high level of patient satisfaction.

Overall Satisfaction Level

Table 5: Satisfaction Index

Category	Frequency	Percentage (%)	Mean	SD	Variance
Very satisfied	0	0			
Satisfied	38	35	27.5	25.68	659.66
Dissatisfied	14	13			
Neutral	58	53			
Total	**110**	**100**			

The table indicates that none of the respondents were very satisfied with government primary healthcare services. About 35% reported being satisfied, while the majority (53%) remained neutral. Additionally, 13% expressed dissatisfaction. Overall, the results suggest that although some respondents are satisfied, most perceive the services as average rather than highly satisfactory.

Service Availability vs Satisfaction (Cross-Tab Summary)

Table 6: Service Availability vs Satisfaction

Service Always Available	Satisfied (%)	Neutral (%)	Dissatisfied (%)
Yes (83%)	40	48	12
No (17%)	18	55	27

The table compares service availability with patient satisfaction levels. Among respondents who reported that services were always available (83%), 40% were satisfied, while 48% remained neutral and 12% were dissatisfied. In contrast, among those who did not consistently receive services (17%), satisfaction decreased to 18%, and dissatisfaction increased to 27%. This pattern suggests that consistent service availability is positively associated with higher satisfaction and lower dissatisfaction.

Operational Challenges

Table 7: Operational Challenges

Constraint	Percentage (%)
Inadequate Equipment	28
Medicine Shortage	27
High Patient Load	23
Poor Infrastructure	17
Staff Shortage	5

The table highlights the main operational challenges affecting government primary healthcare services. Inadequate medical equipment (28%) and medicine shortages (27%) were identified as the most pressing issues. High patient load (23%) and poor infrastructure (17%) were also significant concerns. Staff shortages were reported by a smaller proportion of

respondents (5%). Overall, the findings indicate that resource limitations and service pressure are major barriers to effective healthcare delivery.

Digital Health Potential

Table 8: Perception of Digital Health Integration

Category	Frequency	Percentage (%)
Yes (Support Digital Health Integration)	92	84
Not Sure	18	16
No	0	0
Total	**110**	**100**

The table shows that a substantial majority of respondents (84%) expressed support for integrating digital health solutions into primary healthcare services. A smaller proportion (16%) were uncertain, while none opposed the idea. These findings suggest a generally positive attitude toward technological innovation in rural healthcare delivery, indicating potential readiness for initiatives such as telemedicine, mobile health applications, and digital record systems.

Correlation Matrix

Table 9: Correlation Matrix (Pearson)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Satisfaction	1.000						
(2) Distance (>4 km)	-0.079	1.000					
(3) Medicine Availability	-0.191*	0.074	1.000				
(4) Provider Behavior	0.281***	-0.042	0.158	1.000			
(5) Service Availability	0.003	-0.521***	0.049	0.000	1.000		
(6) Access Difficulty	-0.253**	0.171*	0.076	-0.014	-0.026	1.000	
(7) Digital Support	0.073	-0.123	0.030	0.068	0.100	-0.023	1.000

Note: Values represent Pearson correlation coefficients. *p < 0.01, p < 0.05, p < 0.10.

The correlation analysis reveals several meaningful relationships among the study variables. Satisfaction is positively and significantly associated with provider behavior ($r = 0.281$, $p < 0.01$), indicating that better perceived staff conduct is linked to higher patient satisfaction. Conversely, satisfaction shows a negative association with access difficulty ($r = -0.253$, $p <$

0.05) and medicine availability constraints (r = -0.191, p < 0.10), suggesting that structural barriers and irregular medicine supply reduce satisfaction levels. A strong negative correlation is observed between distance and service availability (r = -0.521, p < 0.01), implying that respondents living farther from facilities tend to perceive lower service availability. Overall, the correlation coefficients are moderate, and no excessively high correlations are detected, indicating the absence of serious multicollinearity concerns and supporting the suitability of the variables for regression analysis.

Regression Analysis

Table 10: Multivariable Logistic Regression Predicting Satisfaction with Government Primary Healthcare Services (N = 110)
Dependent variable: Satisfaction (1 = Satisfied; 0 = Neutral/Dissatisfied)

Predictor	AOR	Std. Error	95% CI	p-value
Distance (>4 km)	0.48	0.41	0.21 – 0.93	0.031**
Medicine Availability	2.91	0.38	1.42 – 5.94	0.003***
Provider Behavior	3.78	0.36	1.88 – 7.60	0.000***
Service Availability	1.95	0.33	1.05 – 3.61	0.034**
Access Difficulty	0.39	0.40	0.18 – 0.84	0.015**
Digital Support	1.74	0.29	1.01 – 3.02	0.046**
Model Fit Statistics				
−2 Log Likelihood = 82.41				
Model χ^2 (6) = 69.88, p < 0.001				
Cox & Snell R^2 = 0.58				
Nagelkerke R^2 = 0.72				
McFadden Pseudo R^2 = 0.61				
Classification Accuracy = 86.4%				
AOR = Adjusted Odds Ratio; CI = Confidence Interval.				
**p < 0.01, *p < 0.05, p < 0.10.				

The regression results indicate that satisfaction with government primary healthcare services is significantly influenced by both structural and service-quality factors. Provider behavior shows the strongest positive effect, as respondents reporting better provider behavior were more likely to be satisfied (AOR = 3.78, p < 0.01). Similarly, improved medicine availability significantly increased the likelihood of satisfaction (AOR = 2.91, p < 0.01). In contrast, long travel distance and perceived access difficulty significantly reduced satisfaction, highlighting

persistent geographic and accessibility barriers in rural healthcare delivery. Service availability and perceived usefulness of digital health tools also positively contributed to satisfaction, suggesting that strengthening service reliability and expanding digital healthcare interventions may improve overall patient satisfaction.

CONCLUSION

This study assessed the effectiveness of government primary healthcare services in Shailkupa Upazila of Jhenaidah district using descriptive, correlational, and regression analyses. The findings indicate that while government facilities, particularly the Upazila Health Complex, serve as the principal source of care, overall patient satisfaction remains moderate. Most respondents reported neutral satisfaction levels, suggesting that services are functional but not optimal.

The regression results demonstrate that provider behavior and medicine availability are the most influential determinants of satisfaction. Conversely, long travel distance and perceived access difficulty significantly reduce the likelihood of being satisfied. Although service availability is generally reported as consistent, irregular medicine supply and structural barriers weaken perceived service quality. The strong public support for digital health integration further indicates readiness for modernization of rural healthcare delivery.

Overall, the evidence suggests that institutional presence alone does not ensure service effectiveness. Quality of interaction, reliability of medicine supply, and accessibility conditions play decisive roles in shaping patient perceptions.

This study has several limitations. It is geographically limited to one upazila, restricting the generalizability of the findings. The sample size is relatively small and focuses only on mothers, which may not reflect the experiences of other population groups. The use of self-reported data introduces potential recall and perception bias. Additionally, the cross-sectional design limits causal inference between variables. Finally, important aspects such as clinical outcomes and long-term health impacts were not assessed due to data constraints

POLICY RECOMMENDATIONS

- **Strengthen Medicine Supply Systems:** Establish improved inventory management and monitoring mechanisms to ensure continuous availability of essential medicines at primary healthcare facilities.
- **Enhance Provider-Patient Interaction:** Implement regular training programs focusing on communication skills, patient-centered care, and service ethics to improve provider behavior.

- **Reduce Geographic Barriers:** Expand outreach services, introduce mobile health units, and improve transportation support to assist populations living far from healthcare centers.
- **Improve Service Reliability:** Ensure consistent service hours and adequate staffing to reduce perceived access difficulty and patient burden.
- **Promote Digital Health Solutions:** Introduce telemedicine platforms, mobile appointment systems, and digital record management to enhance efficiency and accessibility in rural areas.

Strengthening these areas would likely increase patient satisfaction and improve the overall effectiveness of government primary healthcare services in rural Bangladesh.

REFERENCES

Ahmed, S. M., & Islam, Q. (2018). Community clinics in Bangladesh: A study on revitalization efforts. *Health Policy and Planning, 33*(2), 195–203.

Ahmed, S., Hossain, M., & Chowdhury, A. (2021). Strengthening primary health care systems in Bangladesh. International Journal of Health Planning and Management, 36(1), 45–59.

Donabedian, A. (1988). The quality of care: How can it be assessed? JAMA, 260(12), 1743–1748.

Ferdous, F. et al. (2019). *Challenges in Rural Healthcare: Insights from Bangladesh*. BMC Public Health, 19(1), 345.

Hossain, S. et al. (2020). *Evaluation of Primary Healthcare Systems in Bangladesh*. International Journal of Health Policy, 7(1), 21-29.

Khan, M. M., et al. (2017). *Healthcare Delivery Systems in Bangladesh: A Review*. WHO South-East Asia Journal of Public Health, 6(1), 18-24.

Liu, X., Hotchkiss, D. R., & Bose, S. (2008). The effectiveness of contracting-out primary health care services in developing countries: a review of the evidence. *Health policy and planning*, *23*(1), 1.

Ministry of Health and Family Welfare. (2020). *Health Bulletin 2020*. Dhaka: Government of Bangladesh.

Rahman, S. A. (2001). *Utilization of primary health care services in rural Bangladesh: the population and provider perspectives* (Doctoral dissertation, London School of Hygiene & Tropical Medicine).

Shahen, M. A., Islam, M. R., & Ahmed, R. (2020). Challenges for health care services in Bangladesh: an overview. *IOSR Journal of Nursing and Health Science*, *9*, 13-24.

Washington, DC: World Bank.

WHO and UNICEF. (2023). *Operational Framework for Primary Health Care: Transforming Vision into Action*. Geneva: WHO.

WHO. (2017). *The Alma-Ata Declaration on Primary Health Care*. Geneva: WHO. Ahmed, S. M., & Islam, Q. (2018). *Community Clinics in Bangladesh: A Study on Revitalization Efforts*. Health Policy and Planning, 33(2), 195-203.

World Bank. (2021). *Strengthening primary healthcare in rural Bangladesh*. World Bank Publications.

World Health Organization & UNICEF. (2023). *Operational framework for primary health care: Transforming vision into action*. WHO.

World Health Organization. (2017). *The Alma-Ata declaration on primary health care*. WHO.