Community Clinics (CCs) and Women's Healthcare-seeking Behaviour: Evidence from Bangladesh

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Background and context

- Bangladesh is one of the countries which signed the "Alma-Ata Declaration" in 1978 aiming to ensure "Health for All (HFA)" through Primary Health Care (PHC) by 2000.

- PHC is the fundamental principle of universal health coverage (UHC) stating that it is everyone's right to access quality health services without facing financial difficulties (WHO 2023).

- Bangladesh has made notable progress in health indicators:

  - reducing maternal and child mortality, and increasing immunization coverage (WHO, 2022).

- However, some challenges remain:

  - no Universal Health Coverage yet.

  - high out-of-pocket healthcare expenditure, inequitable healthcare access across income groups, and lack of quality healthcare (WHO, 2022).

Background and context (2)

- Consequently, Bangladesh was lagging behind in reaching the set standards for achieving HFA due to the lack of accessibility of PHC for the rural community which is three-fourths of the total population (Riaz et. al, 2020).

- Bangladesh established Community Clinics (CCs) initially in 1998 to provide basic healthcare services mainly in rural areas, mainly for women and children.

- CCs have the prospects to help Bangladesh to achieve Sustainable Development (SDG) Goals 2 and 3- 'Zero Hunger' and 'Good Health and Well-being' (World Vision, 2021).

Background and context: History of Community Clinics

- Administrative units in Bangladesh:

- Bangladesh is divided into eight divisions, 64 districts, 546 sub-districts, 4545 unions in rural areas (a union consists of multiple wards), and 3215 wards in urban areas which are under municipalities (DGHS, 2022).

- Public healthcare services in Bangladesh before establishing CCs:

- As of 2019, the country had 10 Postgraduate Institutes & Hospitals, 26 Medical College Hospitals, 60 District/General Hospitals, 429 Sub-district Health Complexes, and 5245 Union health and family welfare centers and Union health centers/sub-centers.

Background and context: History of Community Clinics (2)

- There is a lack of static health facilities within villages.

- CCs were initially established in 1998 to fill this healthcare provision gap.

- 10723 CCs were built and 8000 started functioning between 1998 and 2001 before their setup was stopped in 2001 due to a change in political regime.

- Between 2001 and 2008 these were illegally occupied and turned into places for anti-social activities (e.g. drug use) (DGHS, 2018).

- A New journey began in 2009 when the previous government came into power again.

- There are 14012 functioning CCs as of 2019.

Background and context: Services Provided By CCs

- Every CC has one full-time community healthcare provider and two healthcare workers who alternatively conduct part-time work in a CC and part-time visits to households in the catchment area.

  - they receive 12 weeks of training (half theoretical and half practical)

- It serves at least 6000 people and is available within a 30-minute walking distance to more than 80% of that population (Al-Zubayer, et al., 2023).

Background and context: Services Provided By CCs (2)

- The following services are provided by CCs:

(i) maternal and neonatal services including family planning and reproductive health, immunization, acute respiratory infection, and diarrhoeal diseases;

(ii) combined childhood illness management including nutrition learning and micronutrient supplements;

(iii) screening and guidance for treating non-communicable chronic illness, such as diabetes, cancer, heart disease, hypertension, and disabilities;

(iv) treating minor illness and simple injuries;

(v) education for health and family planning, and identifying difficult and urgent cases with referrals, and

(vi) providing some basic medicines free of cost.

Research questions

- Is there any association between community clinics and women's healthcare-seeking behaviour for themselves?

- Is there any association between community clinics and women's healthcare-seeking behaviour for their children?

Literature

- Developed countries:

➢ Community Health Centres (CHC) in the USA have positive impact on mortality rates (Goodman-Bacon, 2015) and child-birth weight (Kose et al., 2022).

- Developing countries:

➢ Breastfeeding rates are higher for the CHC goers in China (Yu et al., 2016).

➢ Community-based Health Services and Planning Initiative Plus (CHPS+) in Ghana's Upper East Region has a significant effect on maternal antenatal and postnatal care visits, delivering in the health centers, and taking oral rehydration salts (Sakeah et al., 2023).

➢ Community health units (CHUs) increase antenatal care visits, skilled birth attendants, and examining newborns within 2 days of delivery in rural Ghana (Gatakaa et al., 2019).

Literature (2)

- Bangladesh:

➢ Visiting CCs is comparatively low for women in general as compared to women who are aware of the availability of CCs (Al-Zubayer et al., 2023).

➢ Positive relationship between CC awareness/visitation and geographical location, education, wealth, and reading newspapers (Yaya et al., 2017).

➢ CCs increase the healthcare utilization of adolescent girls- contraceptive use, antenatal care visits, facility-based delivery, and the presence of skilled birth attendants during the last delivery (Sarker et al., 2018).

Existing evidence of market competition

- There is evidence that low mortality is observed in less concentrated areas than in more concentrated areas in the USA (Kessler & McClellan, 2000), and, similarly, low mortality is also observed due to increasing competition after NHS reforms in the UK (Gaynor et al., 2013; Cooper et al., 2010).

- On the contrary, a higher number of providers may sometimes decrease the quality of services and increase mortality rates (Propper et al., 2003; Volpp, et al., 2003) as lower concentration potentially reduces the price-cost margin which, in turn, disincentivizes providers from delivering high-quality services (Katz, 2013).

Impact mechanism: How can provisions of new clinics yield positive change?

- First theory: People who work with Not-for-profit (NFP) or public providers-
  - ➢ are more altruistic
  - ➢ have a greater interest in people's well-being, and, in turn,
  - ➢ have more incentives to focus on improving peoples' well-being if there is a health policy (Wilson, 1989).

- Second theory: Due to the profit distribution nature of the For-profit (FP) providers-
  - ➢ they would be more likely to be incentivized to provide higher healthcare services as a result of any public health policies (Duggan, 2000).

Dataset

- Bangladesh Demographic and Health Survey (BDHS) 2011, 2014, and 2017-18

  - Repeated cross-section data

  - Nationally representative of Bangladesh

  - Representative of the eight divisions of Bangladesh

- Ever married women of childbearing age (15-49 years)

  - between 17,000 and 21,000 in each wave

- Supplementary community survey:

  - between 600 and 700 clusters in each wave

Outcome variables and variable(s) of interest

- **Outcome variables**

  - Use of family planning method (Yes/No)

  - Antenatal care visits (Yes/No)

  - Caesarean delivery (Yes/No)

  - Seeking treatment for children's diarrhoea (Yes/No)

  - Seeking treatment for children's fever/cough (Yes/No)

  - Immunization coverage: Polio 1, Polio 2, Polio 3

- **Explanatory variable**

  - At least one CC in the cluster.

Estimation strategy

Regression Specification

$$H_{ircdt} = \alpha_0 + \alpha_1 CC_{ct} + \alpha_2 X_{irct} + \alpha_3 Z_{rct} + \alpha_4 Y_{ct} + \alpha_5 H_{dt-1} + \alpha_6 Year_t + \alpha_7 TFR_{dt-1} + \varepsilon_{irct} \qquad (1)$$

Where, H_{ircdt} is the health behaviour of woman i from household r from cluster c from district/division d in year t, CC_{ct} is the dummy variable of having one CC in cluster c in year t, weighted by the population in cluster c at year t, X_{ircdt} is the vector of individual characteristics, Z_{rcdt} is a vector of households characteristics, Y_{ct} is a vector cluster characteristics over time (e.g., distance to district and sub-district headquarters, main economic activity, distances to educational institutions, number of different healthcare facilities, number of health and family planning workers, and no. of doctors etc.) in year t, H_{dt-1} is the lagged mean healthcare behaviour of district/division d, TFR_{dt-1} is the lagged mean total fertility rate (TFR) of district/division d, $Year_t$ are the wave/year dummies, and ε_{irct} is the error term. Standard errors are clustered by cluster.

Descriptive statistics: Percentage of women who ever used family planning method, antenatal care, and had a caesarean delivery

CCs in the cluster	Ever use of family planning method (n=55,832)	Antenatal care (n=16,829)	Caesarean delivery (n=16,829)
No CC	85.9%	84.4%	34.9%
At least one CC	83.7%	75.3%	20.0%
Difference	-2.2%	-9.1%	-14.9%
P-value	0.000	0.000	0.000

Descriptive statistics: Percentage of women who sought treatment for their children's diarrhoea and fever/cough, and percentages of children who had polio vaccines

CCs in the cluster	Diarrhoea treatment (n=18,679)	Fever/cough treatment (n=21,168)	Polio 1 (n=18,684)	Polio 2 (n=18683)	Polio 3 (n=18683)
No CC	82.3%	79.1%	93.2%	88.7%	83.2%
At least one CC	79.9%	79.5%	92.3%	87.7%	82.6%
Difference	-2.4%	0.4%	-0.9%	-1.0%	-0.6%
P-value	0.397	0.684	0.052	0.078	0.382

Overview: Descriptive statistics

- Less women from clusters with CCs:
  - use family planning method
  - visit for antenatal care
  - have caesarean delivery
  - receive polio 1 and 2 vaccinations for their children

- Implying that the clusters with CCs are worse off than the clusters without CCs

Results: LPM regression results; dependent variable: women ever adopted a family planning method.

VARIABLES	(1)	(2)	(3)	(4)
Having at least one CC in the cluster (yes=1)	0.006	0.018	0.005	0.146***
	(0.010)	(0.012)	(0.009)	(0.042)
	0.506	0.149	0.565	0.001
At least one private clinic in the cluster				0.188***
				(0.034)
				0.000
At least one NGO clinic in the cluster				0.009
				(0.015)
				0.545
At least one CC*one private clinic in the cluster				-0.140***
				(0.043)
				0.001
At least one CC*one NGO clinic in the cluster				-0.011
				(0.016)
				0.474
Controlling women and household characteristics	Yes	Yes	Yes	Yes
Controlling lagged district characteristics	No	Yes	No	No
Controlling lagged division characteristics	No	No	Yes	No
No. of observations	55,689	35,030	55,689	55,711
R-squared	0.164	0.181	0.166	0.165

Results: LPM regression results; dependent variable: women had a caesarean delivery.

VARIABLES	(1)	(2)	(3)	(4)
Having at least one CC in the cluster (yes=1)	0.010	0.010	0.011	-0.059
	(0.015)	(0.018)	(0.015)	(0.093)
	0.516	0.561	0.457	0.521
At least one private clinic in the cluster				-0.034
				(0.083)
				0.680
At least one NGO clinic in the cluster				-0.036
				(0.023)
				0.114
At least one CC*one private clinic in the cluster				0.026
				(0.091)
				0.772
At least one CC*one NGO clinic in the cluster				0.030
				(0.025)
				0.217
Controlling women and household characteristics	Yes	Yes	Yes	Yes
Controlling lagged district characteristics	No	Yes	No	No
Controlling lagged division characteristics	No	No	Yes	No
No. of observations	16,788	11,620	16,788	16,793
R-squared	0.204	0.192	0.205	0.203

Results: LPM regression results; dependent variable: women's antenatal care visit.

VARIABLES	(1)	(2)	(3)	(4)
Having at least one CC in the cluster (yes=1)	0.035*	0.029	0.035*	0.134**
	(0.020)	(0.024)	(0.020)	(0.060)
	0.083	0.233	0.083	0.026
At least one private clinic in the cluster				0.144***
				(0.029)
				0.000
At least one NGO clinic in the cluster				0.021
				(0.030)
				0.479
At least one CC*one private clinic in the cluster				-0.103*
				(0.058)
				0.077
At least one CC*one NGO clinic in the cluster				-0.005
				(0.031)
				0.875
Controlling women and household characteristics	Yes	Yes	Yes	Yes
Controlling lagged district characteristics	No	Yes	No	No
Controlling lagged division characteristics	No	No	Yes	No
No. of observations	16,804	11,631	16,804	16,809
R-squared	0.227	0.208	0.227	0.227

Results: LPM regression results; dependent variable: children had polio 1 vaccine.

VARIABLES	(1)	(2)	(3)	(4)
Having at least one CC in the cluster (yes=1)	-0.003	0.001	-0.003	0.190
	(0.010)	(0.011)	(0.010)	(0.126)
	0.727	0.924	0.739	0.133
At least one private clinic in the cluster				0.204
				(0.124)
				0.101
At least one NGO clinic in the cluster				-0.006
				(0.016)
				0.693
At least one CC*one private clinic in the cluster				-0.199
				(0.126)
				0.114
At least one CC*one NGO clinic in the cluster				0.011
				(0.016)
				0.487
Controlling women and household characteristics	Yes	Yes	Yes	Yes
Controlling lagged district characteristics	No	Yes	No	No
Controlling lagged division characteristics	No	No	Yes	No
No. of observations	18,663	13,597	18,663	18,673
R-squared	0.025	0.028	0.025	0.026

Results: LPM regression results; dependent variable: children had polio 2 vaccine.

VARIABLES	(1)	(2)	(3)	(4)
Having at least one CC in the cluster (yes=1)	0.013	0.021	0.012	0.154
	(0.013)	(0.014)	(0.012)	(0.113)
	0.309	0.116	0.320	0.171
At least one private clinic in the cluster				0.138
				(0.110)
				0.209
At least one NGO clinic in the cluster				-0.012
				(0.021)
				0.577
At least one CC*one private clinic in the cluster				-0.154
				(0.112)
				0.171
At least one CC*one NGO clinic in the cluster				0.022
				(0.022)
				0.331
Controlling women and household characteristics	Yes	Yes	Yes	Yes
Controlling lagged district characteristics	No	Yes	No	No
Controlling lagged division characteristics	No	No	Yes	No
No. of observations	18,652	13,588	18,652	18,662
R-squared	0.036	0.040	0.036	0.037

Results: LPM regression results; dependent variable: children had polio 3 vaccine.

VARIABLES	(1)	(2)	(3)	(4)
Having at least one CC in the cluster (yes=1)	0.023	0.044**	0.023	0.175*
	(0.015)	(0.017)	(0.015)	(0.099)
	0.139	0.011	0.128	0.079
At least one private clinic in the cluster				0.157*
				(0.095)
				0.097
At least one NGO clinic in the cluster				-0.003
				(0.026)
				0.905
At least one CC*one private clinic in the cluster				-0.163*
				(0.098)
				0.098
At least one CC*one NGO clinic in the cluster				0.017
				(0.027)
				0.534
Controlling women and household characteristics	Yes	Yes	Yes	Yes
Controlling lagged district characteristics	No	Yes	No	No
Controlling lagged division characteristics	No	No	Yes	No
No. of observations	18,652	13,588	18,652	18,662
R-squared	0.048	0.055	0.048	0.048

LPM regression results; dependent variables: women seeking treatment for children's diarrhoea.

VARIABLES	(1)	(2)	(3)	(4)
Having at least one CC in the cluster (yes=1)	-0.037	-0.065	-0.036	-0.199
	(0.051)	(0.071)	(0.051)	(0.144)
	0.464	0.364	0.478	0.168
At least one private clinic in the cluster				-0.144*
				(0.085)
				0.090
At least one NGO clinic in the cluster				0.084
				(0.087)
				0.339
At least one CC*one private clinic in the cluster				0.265**
				(0.127)
				0.038
At least one CC*one NGO clinic in the cluster				-0.129
				(0.091)
				0.154
Controlling women and household characteristics	Yes	Yes	Yes	Yes
Controlling lagged district characteristics	No	Yes	No	No
Controlling lagged division characteristics	No	No	Yes	No
No. of observations	1,075	613	1,075	1,075
R-squared	0.044	0.069	0.044	0.047

LPM regression results; dependent variables: women seeking treatment for children's fever/cough.

VARIABLES	(1)	(2)	(3)	(4)
Having at least one CC in the cluster (yes=1)	0.041*	0.034	0.042*	-0.129**
	(0.022)	(0.027)	(0.022)	(0.065)
	0.062	0.206	0.054	0.049
At least one private clinic in the cluster				-0.043
				(0.027)
				0.107
At least one NGO clinic in the cluster				-0.040
				(0.029)
				0.176
At least one CC*one private clinic in the cluster				0.123*
				(0.067)
				0.067
At least one CC*one NGO clinic in the cluster				0.058*
				(0.031)
				0.066
Controlling women and household characteristics	Yes	Yes	Yes	Yes
Controlling lagged district characteristics	No	Yes	No	No
Controlling lagged division characteristics	No	No	Yes	No
No. of observations	8,897	6,094	8,897	8,902
R-squared	0.028	0.026	0.029	0.029

Summary of findings

- CCs are positively associated with women's:
  - Adopting family planning method
  - Antenatal care visits
  - Children's Polio 3 vaccination
  - Seeking treatment for children's diarrhoea

- Women's healthcare-seeking behaviour have increased in 2014 and 2017-18 as compared to 2011.

- Women from rural areas are less likely to seek treatments.

- CCs are negatively associated with:
  - Seeking treatments for children's fever/cough when there is an availability of private clinics with CCs in a cluster.

Conclusion and policy implications

- Positive association between the availability of CCs in clusters and women's healthcare-seeking behaviour.

- Women's healthcare-seeking behaviour has increased over time, but there are urban-rural divides.

- Such a low-cost initiative may be scalable to other similar contexts.

- A further increment of healthcare providers in rural areas may be effective.

Thank you for listening!

Questions or feedback?

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