

Unveiling the Impact of Wage Compensation Scheme on Healthcare Utilization among Pregnant Women in the Tea Garden Areas of Assam

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Background

- Maternal and child health (MCH) remains a high-priority area globally and is one of the most critical concerns of Sustainable Development Goals (SDGs).
- In 2017, about **2.9** lakh women dies across world during pregnancy and childbirth (WHO, 2019).
- Most of these deaths can be attributed to low level of utilization of maternal health care including preventive health care for both mother and child.
- So, increasing the uptake of MCH is one of the crucial measures to prevent the maternal death.
- Conditional Cash Transfers play an important role to provide incentive to resort preventive health practices
- The CCT programmes primarily aim to provide financial support for compliance with health service utilization to smoothen the consumption behaviour of the targeted population.

Background

- Assam has the highest MMR (213 per 100000 live births) and third highest IMR (41 per 1000 live births) across all the states.
- Moreover, there is substantial regional heterogeneity in the state, MMR is even highest in upper Assam Region (Dibrugarh, Jorhat, Sibsagar, Golaghat, and Tinsukia) which comprises of maximum numbers of tea gardens in Assam.
- MMR were was even higher in tea garden areas which reflects non-acceptance or poor utilization of MCH services
- Assam has been implementing a Wage Compensation Scheme (WCS) for the pregnant women in the tea garden areas of Assam to incentivize the uptake of various reproductive, maternal, and child health care services.

Objectives of the study

- The present study aims to evaluate the impact of WCS program on the up taking of various improved maternal health-care services in terms **ANC visits, institutional delivery, SBA and PNC visits** of the lactating mothers.

Data and Methodology

- This paper is based on a primary survey conducted between September 2021 to December 2022 using multistage sampling method.
- Two districts namely Jorhat and Dibrugarh were selected based on the concentration of tea gardens.
- 6 tea gardens from Jorhat and 9 tea gardens from Dibrugarh are chosen purposively based on concentration of WCS beneficiaries, and a list of WCS beneficiaries at the tea garden level was prepared with the help of the frontline health workers.
- To generate a counterfactual for the WCS beneficiaries, another list of non-beneficiaries (LMs who are eligible but had not received WCS benefits) were prepared.
- 501 LMs were interviewed using a semi-structured questionnaire schedule which took on an average 60 minutes per respondent.

Data and Methodology

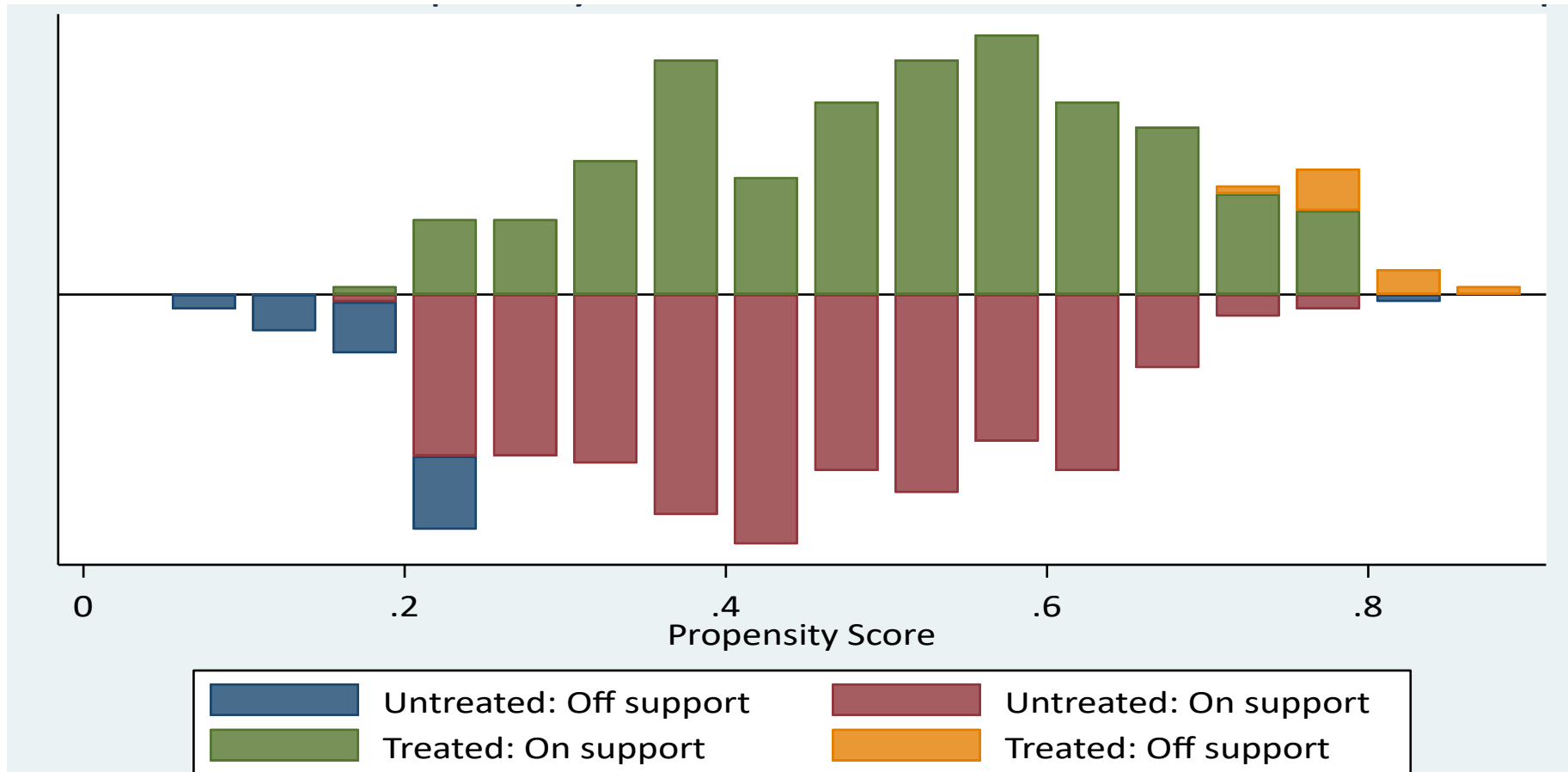
- The study uses propensity score matching (PSM) method for evaluating the impact of WCS scheme on maternal health.
- The aim of PSM is to find a comparison group of non-beneficiaries which is similar to the treatment group based on the observed characteristics.
- This study uses nearest neighbour (NN 1:5) matching as the basic matching algorithm which is one of the most commonly used methods for matching.
- IPW, PSM and NN matching (1:1) are documented for the robustness of the results.

Data and Methodology

Outcome	Definition
ANC in first trimester	Mothers' who had antenatal check-ups in the first trimester (binary): 1 if yes, 0 otherwise
Four ANC visits	Mothers' who had at least four antenatal care visits (binary): 1 if yes, 0 otherwise
ANC visits	Total number of ANC visits
Full ANC	Full antenatal care i.e., at least four antenatal visits, at least one tetanus toxoid (TT) injection and iron folic acid tablets or syrup taken for 100 or more days (binary): 1 if yes, 0 otherwise
Institutional delivery	Delivery in a govt. facility/govt. approved facility/private facility (Categorical): 0 if no facility delivery, 1 if govt./govt. approved facility, 2 if private facility
Skilled Birth Attendance	Birth attended by skilled medical professionals (binary): 1 if yes, 0 otherwise
PNC	Mothers who had attended check-up within 6 weeks of delivery (binary): 1 if yes, 0 otherwise

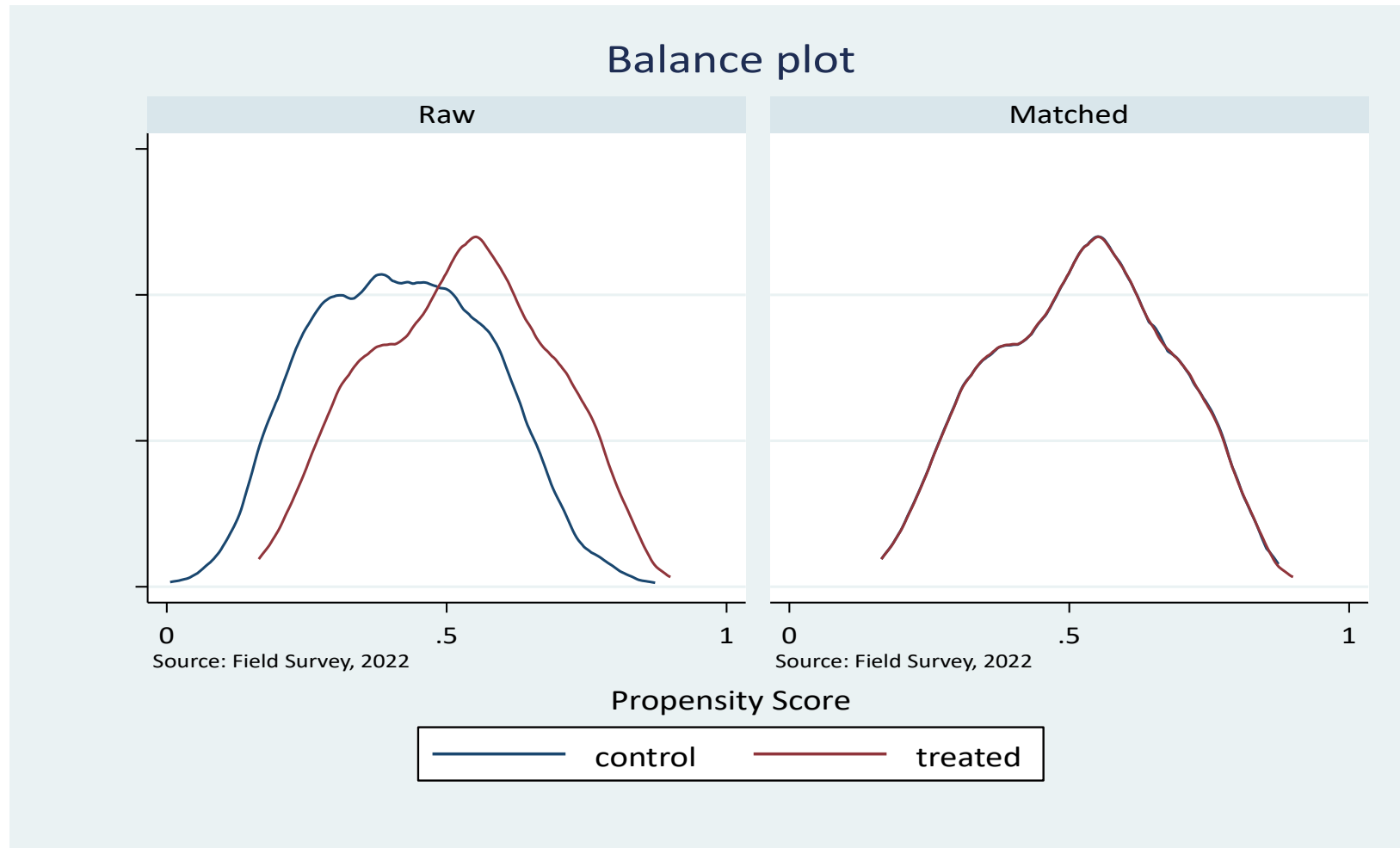
Variable Name	Definition and measurement
Beneficiary	WCS beneficiary: 1 if yes, 0 otherwise
Age at Marriage	Age at marriage of the LM (in years); Binary; 1 if ≥ 18 and 0 otherwise
Age of the LM in 2018	Binary; 1 if ≥ 18 and 0 otherwise
Maternal Occupation	Categorical; 1 if housewife, 2 if permanent plantation worker, 3 if temporary plantation worker
Maternal Education Level	Categorical; 0: illiterate, 1: primary; 2: up to high school, 3: secondary and above
LM Health Insurance	Binary: 1 if Government HI otherwise 0
Spouse Education	Categorical: 1: illiterate, 2: primary; 3: up to high school, 4: secondary and above
Spouse Occupation	Categorical: 1: daily wage labour, 2: others, 3: permanent plantation worker, 4: temporary plantation worker
Household Size	Number of family member in 2018(in Numbers)
Household Asset	State of economic status measure in terms of wealth index (categorical) 1: Poorest, 2: Poorer, 3: Middle, 4: Richer, 5: Richest
Housing status	Binary: 1 if owned; 0 otherwise
Floor type	Binary: 1 if Pakka; 0 otherwise
Cooking fuel	Binary: 1 if LPG; 0 otherwise
Access to electricity	Binary: 1 if yes; 0 otherwise
Birth order	Continuous
Religion	Binary: 1 Hinduism; 0 otherwise
Migrant	Binary; 0: No, 1: Yes
Asha activity	Binary; 1 if yes; 0 otherwise
Distance to the facility	Binary; 1 if less than 3 km; 0 otherwise
Pregnancy help	Binary; 1 if received help during pregnancy; 0 otherwise
Chronic disease	Binary; 1 if LM suffer from any chronic disease; 0 otherwise

Results: Distribution of P-Scores across Treatment and Control Groups



Source: Field Survey, 2022

Distribution of P-Scores across Treatment and Control Groups



Descriptive statistics of outcome variables across group of women

Outcome variables	All	%	Non-Beneficiary	%	Beneficiary	%	Chi2	p-value
First ANC within 1st Trimester	347	(69.26)	147	(55.06)	200	(85.47)	54.183	0.001
Uptake of 4 or more ANC visits during pregnancy	335	(66.87)	133	(49.81)	202	(86.32)	75.039	0.001
Total number of ANC visits during pregnancy*	4.23	(1.03)	3.85	(1.10)	4.66	(0.73)	9.612	0.001
Uptake of full ANC	249	(49.70)	83	(31.09)	166	(70.94)	79.234	0.001
Uptake Institutional Delivery	490	(97.80)	256	(95.88)	234	(100.00)	9.857	0.002
Access to skilled birth attendants	486	(97.01)	252	(94.38)	234	(100.00)	13.552	0.001
PNC	378	(76.40)	166	(62.20)	212	(90.60)	54.4	0.001

ATT Estimates of WCS benefits: ANC

ATT of Receiving WCS benefits	ATT	Std. Err.	z-value	p-value	95% confidence interval	
					Lower limit	Upper limit
At least one ANC within first trimester	0.321	0.046	6.920	0.000	0.230	0.411
At least four ANC	0.355	0.045	7.930	0.000	0.267	0.442
Total number of ANC	0.830	0.090	9.270	0.000	0.655	1.006
Full ANC	0.350	0.049	7.140	0.000	0.254	0.446

ATT Estimates of WCS benefits: Institutional Delivery and PNC

ATT of Receiving WCS benefits	ATT	Std. Err.	z-value	p-value	95% confidence interval	
					Lower limit	Upper limit
Institutional Delivery	0.018	0.006	3.130	0.002	0.007	0.029
Access to skilled birth attendant	0.025	0.009	2.710	0.007	0.007	0.043
Uptake of PNC Visits	0.260	0.040	6.570	0.000	0.182	0.337

Discussion

- The findings suggest positive and significant impacts for all the outcome variables under consideration e.g., ANC, institutional delivery, SBA and PNC due to the introduction of the WCS.
- A significant and positive impact was found for ANC in the first trimester of pregnancy, at least four ANC visits, total number of ANC visits and full ANC which includes at least four antenatal visits, at least one tetanus toxoid (TT) injection and iron folic acid tablets (or syrup) taken for 100 or more days.
- As the scheme conditionality asks for one ANC preferably in the first trimester of pregnancy and one ANC preferable by medical officer in the third trimester, these conditions might also help increasing the number of ANC and receiving full ANC services.
- A few studies have also revealed similar results in the context of several other countries (Kandpal et al., 2016; Edmond et al., 2019; Chakrabarti et al., 2021; Vanhuysse et al., 2022; Nurkhalim et al., 2022
- The impact of the WCS on institutional delivery is also found to be positive and the present study supports the findings of earlier studies (Powell-Jackson et al., 2009; Randive et al., 2013; Edmond et al., 2019; Brauw and Peterman, 2020, Okeke and Abubakar, 2020).

Discussion

- The findings of our study suggest a significant and positive impact by 1.8 percentage points among the WCS beneficiaries as compared to the non-beneficiaries in terms of institutional delivery.
- The low extent of ATT can be explained by the existence of JSY scheme in the tea garden areas which might significantly bring women for institutional delivery.
- Although not strictly comparable, the program effect of WCS on accessing SBA in the present analysis is smaller than estimates of Lim et al. (2010) who evaluating the JSY.
- The lower program impact of WCS may be because of the fact that Lim et al. (2010) included the birth that occurred outside a facility in the presence of a skill birth attendant.
- Our study found a 26 pp increase in the uptake of PNC services by the beneficiaries of the WCS in line with some previous literature (Carvalho et al., 2014; Edmond et al., 2019; Sen et al., 2020; Vansuye et al., 2022).
- The higher effect on PNC may reveals the conditionality on the child immunization is also able to push the PNC services utilization by the LMs.

Conclusion

- The findings of the present study suggests significant and positive impacts of WCS on all the outcome indicators including ANC, Institutional delivery, SBA and PNC.
- This suggest that the conditionalities for scheme benefits may be working well for pushing the beneficiaries to uptake the various maternal health seeking behaviour.
- Other state governments may also introduce this kind of specific CCTs to improve maternal and child health outcome of the vulnerable section of the society.

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Thank You