Title: Looking at Conditional Cash Transfers as Solutions to Early Marriage: An Analysis from Evaluation Survey in North India

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Abstract:

Multiple programs are underway in India to delay age of marriage of girls. A conditional cash transfer (CCTs) program in Haryana, Apni *Beti Apna Dhan* (ABAD), initiated in 1994, was first to develop a financial incentive to increase value and delay marriage of girls. The first cohort of girls turned 18 in 2012-13 making it opportune to study its impact. With a quasi-experimental design to compare the data from 1500 beneficiary and 1500 non-beneficiary households for two age cohorts of girls between 16-18 years and 14-15 years, we assessed the effect of participation on the age of marriage of girls and their educational attainment. The bivariate analysis shows significant association ($p<0.001$) between beneficiary status and marital status of the girls. Using a two stage instrument variable approach, controlling for all demographic variables, we find a significantly higher percentage of non-beneficiary girls married compared to beneficiary girls in 14-18 years.

Background:

Child marriage or marriage under the age of 18[1] is a global phenomenon that affects more than 60 million women and children worldwide (UNICEF 2009).[2] India has the largest proportion (46%) of all the girls in the world married under age 18 (ibid). An ICRW analysis of three rounds of India's National Family Health Survey shows that the proportion of girls in India marrying before age 18 declined only modestly between 1992 and 2006, from 54% to 47% (Dasgupta et al 2009).[3] The prevalence of child marriage continues to remain high in specific states like Bihar and Rajasthan, Jharkhand ranging from 64% to 58% of all 20-24 year old women married before the age of 18 (NFHS 2005-2006).

Child marriage is violation of one's human rights; the adverse impacts of child marriage on the, developmental potential of child is now well documented (Bott and Jejeebhoy 2003; Mathur et. al 2003; UNICEF 2001, 2005, 2009, 2011; Jain and Kurtz 2007; ICRW 2005). [4] Other than contributing high increase child mortality and morbidity, it arrests an individual's educational attainment and

[1] This definition of child marriage is based on UN Convention on Rights of Child, 2000

[2] UNICEF. 2009. "State of the World's Children, 2009." New York: UNICEF.

[3] Das Gupta, S. et al. 2009. "Knot Ready: Lessons from India on Delaying Marriage for Girls." Washington, DC: ICRW.

[4] S. Bott and S. Jejeebhoy, 2003, Non-consensual sexual experiences of young people: A review of the evidence from developing countries, A regional Working Paper Series, Population Council, New Delhi; Jain, S. and K. Kurz. 2007, New insights on preventing Child Marriage: A global analysis of factors and programs. International Center for Research on Women (ICRW): Washington D.C; Mathur, S., M. Greene, and A. Malhotra, 2003, "Too young to wed: the lives, rights, and health of young married girls." International Center for Research on Women (ICRW): Washington, D.C.; UNICEF. 2001. *Early Marriage: Child spouses.* Florence: Innocenti Research Centre.; UNICEF 2009, 2011 State of World Children, New York

economic opportunities (Raj et al 2009). Poor levels of educational attainment for girls are both a cause and a consequence of child marriage. According to the NFHS 3 (2005-2006), the median age at first marriage among women of age 25-29 is at 15.5 years for women with no education.

On the positive side, India has also been at the forefront of exploring systematic solutions to early marriage (Dasgupta et al. 2009). Over the past 15 years there have been multiple national and state sponsored Conditional Cash Transfers (CCTs) programs initiated with this goal (Sekher 2010).[5] First implemented in Latin America in the 1990s, CCTs are a growing phenomenon across the developing world, attracting much policy, donor, and public attention as a potential large-scale solution to poverty and related problems in low and middle income countries.[6] Most evaluated CCTs target health and nutrition outcomes through direct cash transfers to families, conditional on visits to health facilities, immunization, and/or school enrollment (Kuenning and Amin 2004; Baird et al 2009; Lim et al 2010; Lichand 2010; Adato et al 2010; Bobonis 2011)[7] and have shown mixed results in terms of their effectiveness. CCT experience in India presents a golden opportunity for assessing whether this form of strategic resource deployment by governments can be a successful strategy for delaying marriage on a large scale throughout India, and potentially in other settings as well.

The first of the CCTs aimed at delaying the age of marriage for girls was the scheme *Apni Beti Apna Dhan* (ABAD) - meaning 'our daughter, our wealth.' Initiated by the Government of Haryana as early as 1994, ABAD was aimed at enhancing the value of the girl child, with the implicit goal of delaying age of marriage at least to the legal threshold of 18 years. The scheme involved the government investing in a bond of Rs 2,500 in the name of a girl child born among the first three children in an eligible household. If the girl remained unmarried until she turned 18, the bond value of Rs 25,000 could be en-cashed by the family of the beneficiary. In 2012 the first cohort of girls enrolled in the ABAD scheme turned 18.

To date, there has been limited evaluation of the ABAD program, focusing entirely on immediate outcomes such as girls survival at birth (e.g. improved sex ratios), short term benefits in health (e.g. immunizations), or post-launch implementation and effectiveness (Mathur 1999; MODE 2000; Holla et al 2007; Sinha and Yoong 2009)[8]. There have been no evaluations of longer-term benefits and outcomes related to delayed marriage or improved educational attainments. In addressing this gap,

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[5] Sekher T.V. 2010, Special Financial Incentives for the Girl Child in India: A Review of Select Schemes, International Institute for Population Sciences, Mumbai. This report was for the Planning Commission of India and was supported by UNFPA.

[6] *The Economist* July 29, 2010, "Give the poor money: Conditional-cash transfers are good. They could be even better."

[7] Lichand, Guilherme (2010) "Decomposing the Effects of CCTs on Entrepreneurship" http://siteresources.worldbank.org/EXTPREMNET/Resources/EP41.pdf; Gustavo J. Bobonis (2011) The Impact of CCTs on Marriage and Divorce. http://ejournals.ebsco.com/Article.asp?ContributionID=22857190; Adato, Michelle et al (2010) Understanding use of health services in conditional cash transfer programs: Insights from qualitative research in Latin America and Turkey, *Social Science & Medicine*; Baird, Sarah et al (2009) the short term impacts of a schooling conditional cash transfer on the sexual behaviour of young women. *Health Economics*; Lim SS et al (2010) India's Janani Suraksha Yojana, a conditional cash transfer programme to increase births in health facilities: an impact evaluation. Lancet; Kuenning, Mary- Arends and D Sajeda Amin (2004) School Incentive Programs and Children's Activities: The Case of Bangladesh, Comparative Education Review. World Bank;

[8] Mathur, N. 1999 "Our Daughters, Our Wealth: Investing in Young Girls" South & East Asia Regional Office: Population Council; MODE Research 2000 "Study on evaluation of Apni Beti Apna Dhan scheme in Haryana," MODE Research Pvt Ltd, New Delhi; Sinha N. and Yoong J. 2009 "Long-Term Financial Incentives and Investment in Daughters Evidence from Conditional Cash Transfers in North India," Policy Research Working Paper# 4860, The World Bank; Holla, A. et al., 2007 "Daughters As Wealth? The Effect of Cash Incentives on Sex Ratios," Brown University Working Paper.

ICRW, in a study titled , ' Impact on Delayed Marriage: Program Assessment of Conditional Cash Transfers (IMPACCT) is undertaking an impact evaluation of ABAD program with a specific aim to answer the following key research questions:

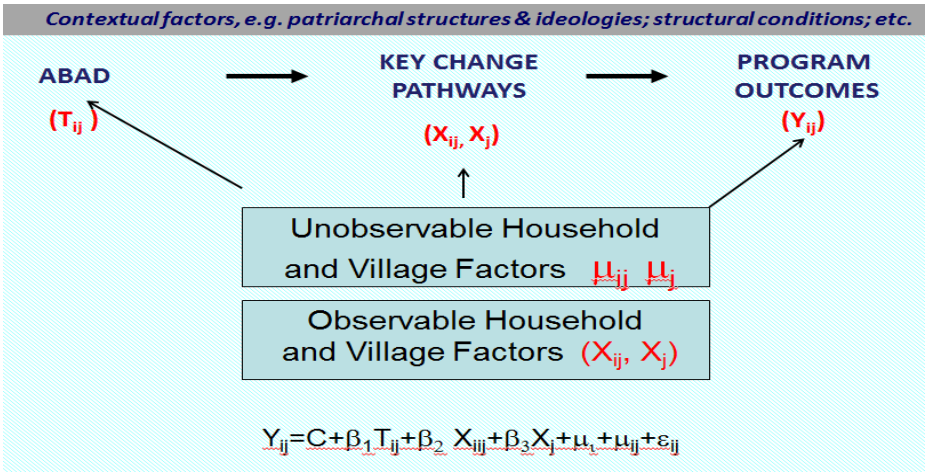
- Does the ABAD program succeed in delaying age at marriage: are girls enrolled in the long-term cash benefit less likely to marry before 18 than similar eligible girls who are not enrolled in the program?
- Are girls enrolled in the ABAD program more likely to stay in school beyond middle school, and is this a contributing factor to delayed marriage?

The IMPACCT study is first of its kind of evaluation, offering key insight and lessons not only for the Indian government and policymakers, but many others across the world The primary aim of the impact evaluation of ABAD is to provide reproductive health and development stakeholders with tangible evidence on the effectiveness of CCT programs and specifically to understand their role in delaying marriage in regions where early marriage rates continue to be high.

Method:

A quasi-experimental evaluation design was used for the impact evaluation. Two rounds of surveys will be used to collect data from samples of beneficiary and non-beneficiary households. The first round which has been completed in 2012-13 includes the households of beneficiaries and non-beneficiaries born during 1994-98. In the second round, we will follow only those beneficiaries and non-beneficiaries who were born during 1994-96.

The data for this paper comes from the quantitative survey undertaken for the evaluation of this scheme. This study uses multi-stage sampling design. At the first stage, we selected districts using stratification and PPS techniques. In the second stage, we selected PSUs from the total list of villages in the selected districts. Using PPS, four districts were selected from the 19 districts as per census 2001. We needed to select 300 villages in total, which will form the Primary Sampling Unit (PSU). These PSUs were selected using the village lists of the four selected districts obtained from the Census 2001 (most recent data for village lists). First, the villages from the selected districts were stratified according to their population size and within each stratum they were arranged in ascending order by the proportion of their SC population. Then using PPS, 300 PSUs were selected. The dataset used for analysis consisted of merged village, household, girls and mothers data. Beneficiary status is the treatment variable. The recoded key variables were age, schooling, mother's education, decision making, self-efficacy, childhood inequity, rights knowledge, asset quintile, GEMS score).



Results and discussion:

Based on preliminary analysis, the results emerging out of the IMPACCT evaluation survey shows that about 1.5 percent of the girls in the sample were married. A greater percentage of girls were found to be married among the non-beneficiary households compared to beneficiary households in 14-18 year age group of girls (table 1). This bivariate table shows significant association ($p<0.001$) between beneficiary status and marital status of the girl.

Marriage is the response variable in the Poisson regression. The predictor variables are being a beneficiary girl, percentage of mother attended school, girl currently in school , type of school, age, asset quintile dummy, caste, efficacy score, knowledge about girl rights, gender equitable measurement score (GEMS Score), highest standard completed in school of mother, age at marriage of mother and interaction term of mother school with beneficiary status of girl.

Table 2 shows in Poisson model, five predictor variables were found to be significant predictors in the marriage model. These variables are beneficiary status of girl and current schooling of girl were negatively associated while age of girl was positively associated with outcome. With regard to mother's characteristic, highest standard of schooling and age at marriage were negatively associated with outcome marriage of girl.

We also developed a two-stage instrumental variables model approach by modeling the variable - average number of beneficiary girls in village and using it as instrument that has two properties - variable uncorrelated with outcome but correlated with predictor variables. Table 3 shows the asset quintile, caste, rights knowledge, efficacy score, GEMS score are significant predictors of beneficiary status of girl in the first stage of model. The second stage of model shows that after controlling for other variables, beneficiary status of girl reduces the probability of her being married.

While the proportion of girls married is low in both groups, there is still a significant and positive effect of beneficiary status on probability of marriage before age 18. These effects are strong for the two stage IV method. Further analysis will explore the difference between values endowed to girls dependent on their beneficiary status. If the method of marriage is strong then there would also be a likelihood of higher value of girls who benefited from the ABAD scheme.

This is a unique first in a kind study of the impact of a CCT on early marriage in India. With sophisticated data and methodology, despite lack of a baseline data in 1994, the study shows that the potential of a cash transfer does have an effect in delaying marriage for girls.

RESULTS TABLES:

Table 1: Girl marital status			
MARRIAGE	Non Beneficiary	Beneficiary	Total
Not married	5,519	4,444	9,963
%	97.91	99.26	98.51
Married	118	33	151
%	2.09	0.74	1.49
Total	5,637	4,477	10,114
%	100	100	100
Pearson chi2(1) = 31.2065 P<0.000			

Table 2: POISSON – Marriage					
		Robust			
Marriage	Coef.	Std. Err.	P>z	[95% Conf.	Interval]
Beneficiary girl	-0.6778	0.280424	0.016	-1.22742	-0.12818
Proportion of mother attended school	-.7999425	.6982393	0.252	-2.168466	.5685814
Girl currently in school	-1.18668	0.562385	0.035	-2.28893	-0.08442
School type - Government	0.027208	0.486764	0.955	-0.92683	0.981248
Girl age	0.434821	0.090836	0.000	0.256786	0.612856
Asset – quintile dummy2	-0.28051	0.253472	0.268	-0.77731	0.216288
Asset – quintile dummy3	-0.03171	0.241084	0.895	-0.50422	0.440808
Asset – quintile dummy4	-0.06489	0.223541	0.772	-0.50302	0.373245
Asset – quintile dummy5	-0.49757	0.304013	0.102	-1.09342	0.098288
SC	0.365025	0.420975	0.386	-0.46007	1.190121
OBC	0.239094	0.442746	0.589	-0.62867	1.106859
Efficacy score	-0.01004	0.015629	0.521	-0.04067	0.020592
Rights knowledge	0.004746	0.007101	0.504	-0.00917	0.018664
GEMS Score	-0.00845	0.013806	0.54	-0.03551	0.018605
Highest standard completed in school by mother	-0.10985	0.056016	0.05	-0.21964	-6.3E-05
Age at marriage of mother	-0.07823	0.022519	0.001	-0.12237	-0.0341
MomSchoolXben	-0.07099	0.103768	0.494	-0.27437	0.132389
_cons	-8.370811	1.966966	0.000	-12.22599	-4.515629
# based on un-weighted cases					

TABLE 3: Two-stage instrumental variable method	Beneficiary Girl	Marriage	Athrho
Proportion of mother attended school	0.231	0.430	
	[1.576]	[1.418]	
Girl currently in school	0.0199	-0.495**	
	[0.265]	[-2.268]	
School type – Government	-0.0963*	0.00413	
	[-1.910]	[0.0224]	
Girl age	-0.0887***	0.185***	
	[-4.499]	[4.977]	
2nd poorest asset quintile	-0.171***	-0.130	
	[-3.224]	[-1.196]	
3rd poorest asset quintile	-0.150***	-0.00173	
	[-2.728]	[-0.0161]	
4th poorest asset quintile	-0.378***	-0.0303	
	[-6.456]	[-0.300]	
Richest asset quintile	-0.488***	-0.185	
	[-7.810]	[-1.471]	
SC	0.482***	0.155	
	[6.082]	[0.897]	
ST	0.116	0.0993	
	[1.482]	[0.548]	
Efficacy score	0.168***	-0.00429	
	[34.86]	[-0.504]	
Rights knowledge	0.0172***	0.00189	
	[7.260]	[0.581]	
GEMS Score	-0.0159***	-0.00411	
	[-4.770]	[-0.718]	
Highest standard completed in school by mother	0.0230***	-0.0511***	
	[3.759]	[-2.822]	
Age at marriage of mother	0.0243***	-0.0351***	
	[4.175]	[-3.340]	
Mean number of beneficiary girl in village	2.074***		
	[19.97]		
Beneficiary status		-0.351**	
		[-1.969]	
Constant	-3.713***	-4.667***	0.0231
	[-7.566]	[-5.275]	[0.218]
Observations	8,879	8,879	8,879
Robust z-statistics in brackets			
*** p<0.01, ** p<0.05, * p<0.1			

# based on un-weighted cases			