Convincing the Mummy-ji: Improving Mother-in-Law Approval of Family Planning in India

By S Anukriti, Catalina Herrera-Almanza, Mahesh Karra, and Rocío Valdebenito*

Family, as the most primitive social institution in the world, has been of longstanding interest to researchers and policymakers alike (Cox and Fafchamps, 2007; La Ferrara, 2008; Alesina and Giuliano, 2014). Studies of family structure in developed societies have predominantly examined kinship and intra-familial ties within nuclear family settings, with an extensive literature devoted to marital and parent-child relationships. In contrast, relationships within non-nuclear family structures have received considerably less attention, particularly in developing countries where strong extended family ties are prevalent. One such relationship is that between mothers-in-law (MILs) and daughters-in-law (DILs), which is of particular importance in South Asian settings where women move into their husbands' (often extended) households following marriage. In these patrilocal-patrilineal societies,[1] a woman's MIL, as the likely matriarch of the household, plays a crucial role in determining her mobility, access to services and resources outside the home, and overall well-being (see Gram et al. (2018) for a review). Indeed, Gupta, Ksoll and Maertens (2021) find that relationships between MILs and DILs in extended households in rural India are not always balanced, as young DILs often lack the power to assert their preferences within this household structure and resort to inefficient actions. Arguably, a woman's MIL may be an even stronger influence on a woman than her husband, especially during the early years of an arranged marriage. To this end, a growing body of literature has examined the influence of MILs on DIL outcomes (e.g., Allendorf, 2006; Varghese and Roy, 2019; Anukriti et al., 2020; Khanna and Pandey, 2020).

In this paper, we focus on interactions between MILs and DILs related to fertility and family planning (FP) in rural Uttar Pradesh (UP), India.[2] We first document the extent to which fertility preferences are misaligned between women and their MILs. We then evaluate the impact of a randomized intervention that provided women with vouchers for subsidized FP services on their ability to engage with their MILs on a sensitive and private topic like FP and on their MIL's approval of FP.

I. Experimental Design

We recruited 671 women from 28 villages in Jaunpur district, UP, who were 18 to 30 years old, married, neither pregnant nor within six months postpartum, and had at least one child at the time of recruitment. After conducting a baseline survey between July and August 2018,

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[1] Patrilocality refers to the practice of a married couple residing with or near the husband's parents. Patrilineality is a kinship system in which an individual's family membership derives from the father's lineage.

[2] UP is not only India's most populous state, it would be the world's fifth most populated country by itself.

321 women were randomly selected to receive a voucher worth INR 2,000 (USD 28) for subsidized FP services at our partner clinic in Jaunpur, the Arogyaneer Diagnostic Clinic (ADC), and the remaining women were assigned to a control group that did not receive a voucher.[3] Women assigned to the treatment group also received one free FP consultation and transportation reimbursements for up to three visits to ADC (at the rate of INR 40, or USD 0.50, per visit). The objective of this intervention was to improve women's access to FP services; additional details are available in Anukriti, Herrera-Almanza and Karra (2021).[4] We stratified randomization by a woman's village of residence, her use of FP, years of schooling, her desire for another child, and her number of peers at baseline.[5] All sample women received an information brochure about the benefits of FP. The intervention lasted ten months, after which we conducted an endline survey between July and October 2019. We administered the endline survey to 625 women, yielding an attrition rate of 6.8 percent.[6]

II. Data

In this paper, we restrict our sample to 420 women whose MILs were alive at endline, who were surveyed in person at endline, and for whom data is not missing for the variables of interest.[7]

Table 1—Baseline Characteristics

	Mean (1)	SD (2)
Age	25.75	2.68
Years of schooling	9.76	4.43
Worked last year	0.14	0.35
Allowed to visit healthcare facility alone	0.13	0.34
Has say in her own healthcare decisions	0.56	0.50
Wants another child	0.48	0.50
Using modern contraceptive method	0.20	0.40
Ever visited a clinic for FP	0.37	0.48
Living with MIL	0.78	0.41
MIL approves of FP	0.58	0.49
Husband approves of FP	0.89	0.31
Ever discussed FP with MIL	0.53	0.50
MIL wants more children than DIL†	0.72	0.45
Number of close peers	0.24	0.48
Observations	420	

Note: This table presents summary statistics for the estimation sample. † denotes a sample size of 309. Variable definitions are in Online Appendix.

Table 1 and Online Appendix Table T.1 describe the baseline characteristics of our analytic sample. Women in our sample have low levels of education, employment, freedom to access health facilities alone, and say in decision-making about healthcare for themselves.[8] They have a substantial unmet need for FP, as reflected in the fact that while almost half of our sample did not want to have another child, only one-fifth of women were using a modern method of FP and about a third had ever visited a clinic for FP. The majority of women (78 percent) live with their MIL, only 58 percent of whom approve of FP. Moreover, half of the sample women report never having discussed FP with their MILs. These findings underscore the misalignment in fertility preferences between a woman and her MIL at baseline. Figure 1 shows that, on average, a MIL wants her DIL to have 0.9 more children than what the DIL wants to have. This difference is even more promi-

[3] We chose ADC based on its relative proximity to our sample women and higher quality of service provision relative to other clinics in the study area.

[4] Note that 165 women from the treatment group were informed that if they are accompanied by peers to ADC, these peers, if eligible, would also be provided exactly the same voucher package for FP services at ADC during their first joint visit with her. In this study, we focus on the pooled treatment group; the differential effects of the two types of vouchers are examined in Anukriti, Herrera-Almanza and Karra (2021).

[5] Randomization was balanced across a range of woman- and household-level variables (Anukriti, Herrera-Almanza and Karra, 2021).

[6] As documented in Anukriti, Herrera-Almanza and Karra (2021), attritors and non-attritors are similar in terms of baseline socioeconomic characteristics. In addition, roughly 18 percent of endline surveys were conducted by phone because women could not be contacted in person at their recorded locations from baseline.

[7] We impose these sample-selection criteria because (a) the research question examined in this paper is only relevant for women whose MIL is alive and (b) we excluded questions related to the MIL from our phone survey to keep it short. Women who took phone surveys are similar in terms of their treatment status and socioeconomic characteristics to women who were surveyed in person (Anukriti, Herrera-Almanza and Karra, 2021). Online Appendix Table T.1 shows that randomization is also balanced for the sub-sample utilized in this paper.

[8] For a quarter of women, someone other than the woman herself or her husband, most likely the MIL, is the primary decision-maker about her healthcare.

nent when examining the discordance in preferences over the number of sons, with a MIL wanting her DIL to have 1.4 more sons than what the DIL wants, on average. In 72 percent of cases, a woman's MIL wants her to have more children than she wants to have. In comparison, spousal discordance between a woman and her husband is small, and 89 percent of women's husbands approve of FP at baseline.

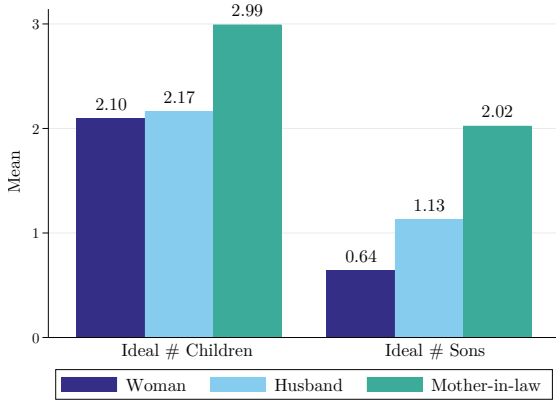

FIGURE 1. MISALIGNMENT IN FERTILITY PREFERENCES

Note: This figure shows the baseline average ideal number of children and sons for women, their husbands, and mothers-in-law, as reported by sample women.

Altogether, Table 1 suggests that a woman's MIL is likely to exert a strong influence over her use of FP and fertility outcomes, perhaps more so than her own husband. This influence is even more critical in our context, where women are relatively socially isolated; 36 percent of women have no peers other than their MIL and husband with whom they can talk about fertility and FP issues. Moreover, co-residence with MIL lowers a woman's ability to form and benefit from social connections outside the household (Anukriti et al., 2020).

III. Empirical Strategy

We analyze the effects of our voucher intervention using the following specification:

$$Y_{iv} = \alpha + \beta V_i + \gamma Y_{iv}^0 + \theta \mathbf{X}_i^0 + \phi \mathbf{Z}_i^0 + \delta_v + \varepsilon_{iv}, \quad (1)$$

where Y_{iv} is the outcome variable measured at endline for woman i who lived in village v at baseline. V_i is an indicator variable that equals one if woman i was assigned to the treatment group, and equals zero otherwise. We always control for the baseline value of the outcome variable, Y_{iv}^0. In addition, we include two sets of controls mainly to improve the precision of our estimates. First, $\mathbf{X}_i^0$ is a vector of baseline variables mentioned above that were used to stratify randomization. Second, $\mathbf{Z}_i^0$ is a vector of baseline variables that can influence a woman's reproductive health-seeking behavior and her bargaining power with respect to the MIL, comprising woman's age, marital duration, mobility score,[9] household asset index,[10] and indicator variables for having at least one son, belonging to a Scheduled Caste or Scheduled Tribe, belonging to an Other Backward Class, being Hindu, wearing *ghunghat*, working last year, having ever visited a FP clinic, bringing dowry at the time of marriage, and living with the MIL.[11] Finally, we add village fixed effects, δ_v, to control for village-level unobserved and time-invariant characteristics. We include robust standard errors in our regression tables, although our results also hold when clustering standard errors at the village level. We present intent-to-treat estimates; treatment-on-the-treated estimates are similar and are available upon request.

IV. Results

Table 2 presents our main findings. Our intervention significantly increased MIL approval of FP as perceived by the DIL. Relative to control women, women who received a voucher are 8 percentage points or 11 percent more likely to believe that their MIL approves of FP at endline. In comparison, there was no impact of the voucher on hus-

[9] This score is the sum of six indicator variables for whether a woman is allowed to visit alone the following places: 1) homes of relatives or friends, 2) health facilities, 3) grocery stores, 4) short distances by bus or train, 5) markets, and 6) outside their villages or communities.

[10] We constructed the household asset index using a principal component analysis with the following variables: source of drinking water, type of toilet facility, floor material, roof material, exterior wall material, type of fuel used for cooking, ownership of animals, number of rooms in the household used to sleep.

[11] Summary statistics for control variables are presented in Online Appendix Table 1.

Table 2—Intent-to-treat Effects of the Voucher on MIL approval

	MIL approves FP (1)	Husband approves FP (2)	Ever discussed FP with MIL (3)	Initiated FP discussion (4)	Visited clinic for FP (5)
Voucher	0.081	-0.012	0.044	0.085	0.153
	[0.044]	[0.033]	[0.050]	[0.042]	[0.048]
Observations	420	419	420	416	418
Control mean	0.72	0.89	0.49	0.19	0.20

Note: All columns control for baseline values of the outcome and balancing controls at baseline (see Section III). Other baseline controls comprise woman's age, marital duration, mobility score, household asset index, and indicator variables for having at least one son, being SC-ST, OBC, Hindu, wearing *ghunghat*, working last year, having ever visited a FP clinic, bringing dowry at the time of marriage, and living with the MIL. All columns include village fixed effects. Robust standard errors are presented in brackets.

band approval of FP. A potential mechanism for why our intervention altered the MIL's approval of FP is that the vouchers enabled treated women to discuss FP with their MILs. Although we observe positive but insignificant impact on the likelihood of such discussions taking place, there was a significant increase in the probability that treated women initiated discussions about FP with their MILs relative to control women. Moreover, our intervention significantly increased the likelihood of treated women visiting a clinic for FP services,[12] suggesting that the improvement in MIL approval is potentially a relevant mechanism for the impact of vouchers.[13] In Table 3, we explore heterogeneity in the impact on MIL approval by baseline characteristics of our sample women. The impact of the voucher on MIL approval is driven by women who did not have a son at baseline and whose MIL wanted them to have more children than what they wanted—this suggests that the voucher overcame resistance from MILs who, at baseline, were more likely to have imposed barriers on their DIL's FP use. Moreover, our results are driven by relatively poor women, as measured by our asset index, implying that the voucher was more effective for women who faced stronger financial constraints at baseline. Finally, MIL approval increased significantly only for women for whom ADC was the closest clinic, indicating that it might have been easier for women living closer to ADC to convince their MIL about FP use, as other constraints to visiting a clinic, such as safety, would be less of a concern.[14]

V. Conclusion

Our analysis presents three key results. First, we find evidence of greater misalignment in fertility preferences between a woman and her MIL as compared to her husband. Consistent with this finding, MILs are also less likely than husbands to approve of women's FP use. Second, an intervention that provided women with vouchers for subsidized FP services improved their MIL's approval of FP, especially for MILs who were more likely to have limited their DIL's access to FP, namely women who did not have a son, whose MILs wanted them to have more children than they themselves wanted, and who were from poorer households. Finally, the voucher enabled DILs to initiate discussions about FP with their MILs, potentially serving as a channel for the positive effect of voucher on MIL approval.

Given the central role of MILs in countries where extended households are common, our results suggest that interventions that aim to improve women's welfare would benefit from engaging MILs in addition to

[12]This result is consistent with those in Anukriti, Herrera-Almanza and Karra (2021).

[13]Consistent with the results in Anukriti, Herrera-Almanza and Karra (2021), we also observe a 37 percent increase in modern method use with respect to the control group, although the coefficient is insignificant at conventional levels.

[14]At endline, 48 percent of women in the control group mentioned that they prefer to visit a clinic with someone due to concerns about safety.

Table 3—Heterogeneity in impacts on MIL approval of FP

	At least one son		MIL wants more children than DIL		Asset index		ADC closest clinic	
	No (1)	Yes (2)	Yes (3)	No (4)	Low (5)	High (6)	Yes (7)	No (8)
Voucher	0.212	0.038	0.129	0.086	0.103	0.047	0.146	0.066
	[0.120]	[0.049]	[0.059]	[0.139]	[0.063]	[0.068]	[0.077]	[0.061]
Observations	109	311	221	88	260	160	160	238
Control mean	0.61	0.73	0.71	0.71	0.64	0.82	0.68	0.71

Note: All columns include the same set of controls and fixed effects as in Table 2, except for the variable being used to examine heterogeneity. Robust standard errors are presented in brackets.

husbands. MILs can act as gatekeepers and can prevent their DILs from using FP services due to discordant fertility preferences. To the best of our knowledge, this is the first study to provide experimental evidence on how the MIL's approval of FP can be improved. More broadly, our findings underline the importance of household structure and intra-household relationships that extend beyond the nuclear family framework when designing interventions to improve women's well-being.

REFERENCES

Alesina, Alberto, and Paola Giuliano. 2014. "Chapter 4 - Family Ties." In *Handbook of Economic Growth*. Vol. 2 of *Handbook of Economic Growth*, , ed. Philippe Aghion and Steven N. Durlauf, 177–215. Elsevier.

Allendorf, Keera. 2006. "Like Her Own: Ideals and Experiences of the Mother-in-law/Daughter-in-law Relationship." *Journal of family issues*, 55(5): 588–600.

Anukriti, S, Catalina Herrera-Almanza, and Mahesh Karra. 2021. "Bring a Friend: Strengthening Women's Social Networks and Reproductive Autonomy in India." *Working Paper*.

Anukriti, S., Catalina Herrera-Almanza, Praveen K. Pathak, and Mahesh Karra. 2020. "Curse of the Mummy-ji: The Influence of Mothers-in-Law on Women in India." *American Journal of Agricultural Economics*, 102(5): 1328–1351.

Cox, Donald, and Marcel Fafchamps. 2007. "Chapter 58: Extended Family and Kinship Networks: Economic Insights and Evolutionary Directions." In *Handbook of Development Economics*. Vol. 4. T.P. Schultz and J. Strauss ed., 3711–3784. Amsterdam:Elsevier.

Gram, Lu, Jolene Skordis-Worrall, Jenevieve Mannell, Dharma S. Manandhar, Naomi Saville, and Joanna Morrison. 2018. "Revisiting the patriarchal bargain: The intergenerational power dynamics of household money management in rural Nepal." *World Development*, 112: 193–204.

Gupta, Sweta, Christopher Ksoll, and Annemie Maertens. 2021. "Intra-household Efficiency in Extended Family Households: Evidence from Rural India." *The Journal of Development Studies*, 57(7): 1172–1197.

Khanna, Madhulika, and Divya Pandey. 2020. "Reinforcing Gender Norms or Easing Housework Burdens? The Role of Mothers-in-Law in Determining Women's Labor Force Participation." *Working Paper*.

La Ferrara, Eliana. 2008. "Family and Kinship Ties in Development: An Economist's Perspective." *Afrique Contemporaine*, 226(2): 61–84.

Varghese, Rekha, and Manan Roy. 2019. "Coresidence with mother-in-law and maternal anemia in rural India." *Social Science & Medicine*, 226: 37–46.

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Online Appendix

Table T.1—Balance Table

	All		Control		Treated		Difference	
	Mean (1)	SD (2)	Mean (3)	SD (4)	Mean (5)	SD (6)	Control–Treated (7)	t-test (8)
Age	25.75	2.68	25.65	2.68	25.86	2.68	-0.21	(-0.81)
Years of schooling	9.76	4.43	9.58	4.52	9.94	4.35	-0.36	(-0.83)
Allowed to visit healthcare facility alone	0.13	0.34	0.15	0.36	0.12	0.32	0.03	(0.96)
Has say in her own healthcare decisions	0.56	0.50	0.53	0.50	0.58	0.49	-0.05	(-0.94)
Hindu	0.94	0.25	0.96	0.19	0.91	0.29	0.06	(2.30)
Scheduled caste or tribe	0.42	0.49	0.43	0.50	0.40	0.49	0.03	(0.57)
Other backward class	0.45	0.50	0.46	0.50	0.43	0.50	0.03	(0.54)
Wears *ghunghat*	0.90	0.30	0.89	0.31	0.91	0.29	-0.01	(-0.49)
Worked last year	0.14	0.35	0.18	0.38	0.11	0.31	0.07	(2.05)
Marital duration	7.32	3.63	7.17	3.56	7.47	3.70	-0.30	(-0.84)
Has at least one son	0.74	0.44	0.77	0.42	0.71	0.46	0.06	(1.51)
Mobility score	0.81	1.58	0.88	1.64	0.73	1.51	0.15	(0.99)
Asset Index	0.16	1.62	0.03	1.56	0.30	1.67	-0.27	(-1.73)
Number of general peers	1.62	0.99	1.64	0.96	1.60	1.01	0.04	(0.43)
Number of close peers	0.24	0.48	0.26	0.48	0.22	0.48	0.03	(0.67)
Living with MIL	0.78	0.41	0.79	0.41	0.77	0.42	0.02	(0.49)
Using contraceptive method	0.48	0.50	0.48	0.50	0.48	0.50	0.00	(0.02)
Wants another child	0.48	0.50	0.49	0.50	0.47	0.50	0.02	(0.31)
Husband approves FP	0.89	0.31	0.88	0.33	0.90	0.30	-0.02	(-0.77)
MIL approves FP	0.58	0.49	0.56	0.50	0.61	0.49	-0.05	(-1.07)
MIL wants more children than DIL†	0.72	0.45	0.67	0.47	0.76	0.43	-0.09	(-1.70)
Ever discussed FP with MIL	0.53	0.50	0.52	0.50	0.53	0.50	-0.01	(-0.22)
Initiated FP discussion with MIL §	0.27	0.44	0.24	0.43	0.30	0.46	-0.05	(-1.18)
Ever visited a clinic for FP	0.37	0.48	0.38	0.49	0.36	0.48	0.02	(0.44)
DIL brought dowry	0.90	0.31	0.87	0.33	0.92	0.28	-0.04	(-1.43)
ADC is the closest clinic ¶	0.40	0.49	0.41	0.49	0.39	0.49	0.02	(0.49)
Observations	420		215		205		420	

Note: This table presents summary statistics for our estimation sample and shows that treatment assignment was balanced. SD denotes standard deviation. The value displayed for t-test is the difference in the means across the treatment and control groups. MIL, DIL, and FP denote mother-in-law, daughter-in-law, and family planning, respectively. † indicates that the number of observations equals 309. § indicates that the number of observations equals 416. ¶ indicates that the number of observations equals 398.

A1. Variable Definitions

1) Age: a woman's completed age in years.

2) Years of schooling: a woman's completed years of schooling.

3) Wants another child: an indicator variable that equals one if a woman wants another child, and zero otherwise.

4) Number of general peers: the number of individuals, besides a woman's husband and her MIL, with whom a woman discusses her personal affairs related to issues such as children's illness, schooling, health, work, and financial support.

5) Number of close peers: the number of individuals, besides a woman's husband and her MIL, with whom a woman discusses issues around family planning, fertility, and reproductive health.

6) Hindu: an indicator variable that equals one if a woman practices Hinduism, and zero otherwise.

7) Scheduled caste or tribe: an indicator variable that equals one if a woman belongs to a Scheduled caste or tribe, and zero otherwise.

8) Other backward class: an indicator variable that equals one if a woman belongs to an Other Backward Class, and zero otherwise.

9) Wears ghunghat: an indicator variable that equals one if a woman practices ghunghat or purdah, and zero otherwise.

10) Worked last year: an indicator variable that equals one if a woman worked last year, and zero otherwise.

11) Mobility Score: the sum of six indicator variables that measures if a woman is allowed to visit the following places alone: 1) homes of relatives or friends, 2) health facilities, 3) grocery stores, 4) short distances by bus or train, 5) markets, and 6) places outside her village or community.

12) Using modern contraceptive method: Indicator variable that equals one if the woman is using a modern contraceptive method.[15]

13) Using contraceptive method: an indicator variable that equals one if a woman is using either traditional or modern contraceptive method, and zero otherwise.[16]

14) Ever visited FP clinic: an indicator variable that equals one if a woman has ever visited a health clinic or facility for reproductive health, fertility, or family planning services at baseline, and zero otherwise.

15) Asset Index: household-level index constructed using principal component analysis using the following household variables: source of drinking water, type of toilet facility, floor material, roof material, exterior wall material, type of fuel used for cooking, ownership of animals, and the number of rooms in the household used to sleep.

[15]Modern methods include female sterilization, male sterilization, IUDs, injectables, implants, pills, condoms, female condoms, emergency contraception, diaphragm, foam/jelly, standard day method, or any other modern method.

[16]Traditional methods include lactational amenorrhea method, rhythm method, withdrawal, and any other traditional method.

16) Number of children: a woman's total number of living children.

17) At least one son: an indicator variable that equals one if a woman has at least one son, and zero otherwise.

18) Marital duration: the number of years that the woman is in the current marriage.

19) Lives with MIL: an indicator variable that equals one if a woman co-resides with her mother-in-law, and zero otherwise.

20) Ever discussed FP with MIL: an indicator variable that equals one if a woman have ever talked with her mother-in-law about family planning or birth spacing, and zero otherwise.

21) DIL initiated FP discussion: an indicator variable that equals one if a woman expressed she initiated the discussion with her mother-in-law about family planning or birth spacing, and zero otherwise.

22) DIL brought dowry: indicator variable that equals one if a woman brought dowry when she got married.

23) Ideal number of children: the total number of children a woman would like to have over her lifetime.

24) Ideal number of sons: the total number of sons a woman would like to have over her lifetime.

25) MIL wants more children than DIL: an indicator variable that equals one if the difference between a mother-in-law's ideal number and that of her DIL is strictly larger than zero, and zero otherwise.

26) ADC closest clinic: an indicator variable that equals one if the partner clinic (ADC) is the closest available clinic from a woman's household, and zero otherwise.

27) Voucher: indicator variable that equals one if a woman received a voucher for subsidized FP services at ADC, and zero otherwise.

28) Visited clinic for FP: an indicator variable that equals one if a woman visit any clinic for FP services, and zero otherwise.

29) Allowed to visit health facility alone: an indicator variable that equals one if a woman is allowed to visit a health facility by herself, and zero otherwise.

30) Has say in own healthcare decisions: an indicator variable that equals one if a woman decides about her own healthcare, and zero if her husband or someone else is in charge of taking that decision, and zero otherwise.

31) MIL approves of FP: an indicator variable that equals one if a woman's MIL approves of her FP use, and zero otherwise.

32) Husband approves of FP: an indicator variable that equals one if a woman's husband approves of her FP use, and zero otherwise.