Original Article

Local Elected Leaders (*"Panchayat"*) can Play Key Role for Enrolment under National Health Protection Mission (NHPM) under 'Ayushman Bharat': lessons learnt from Rashtriya Swasth Bima Yojna (RSBY) implementation

Running Title: Factors Influencing Enrolment under RSBY

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Abstract

Background: National Health Protection Mission (NHPM) under Ayushman Bharat will subsume the on-going centrally sponsored scheme "Rashtriya Swasthya Bima Yojana" (RSBY) and Senior Citizen Health Insurance Scheme (SCHIS). We studied individual, household and community level factors influencing the enrolment under RSBY. Objectives: To assess individual, household and community level factors associated with enrolment under RSBY scheme. Methodology: A combined retrospective-prospective cohort study was conducted in three purposively selected villages of Haryana. A pretested structured questionnaire was used for collecting demographic details, household consumption expenditure and awareness about RSBY among enrolled and non-enrolled families. Findings: The study found out strong association between socioeconomic-status measured as mean per capita consumption expenditure quartile and awareness level about RSBY of head of family with RSBY enrolment. Individuals from higher age group, higher consumption expenditure quartile and with higher awareness about RSBY were more frequently enrolled under RSBY. When it came for exclusion due to limit for enrolment, children and unmarried members were more frequently excluded, however previously enrolled members and chronically ill members with positive health seeking behavior were preferred for enrolment. Conclusions: For improving enrolment timely update the BPL list and distribute the smart card is necessary. For improving awareness about active involvement of community leaders and distribution of list of empanelled hospitals to the enrolled household is necessary. Recommendation: Considering the enormous potential and costs involved with NHPM, an upgraded form of RSBY, it would be prudent to apply learning lesions previous experiences with RSBY.

Key Words: RSBY, Health Insurance, NHPM, Ayushman Bharat, Poverty

1. Introduction

Out of Pocket Expenditure (OOP) accounts for 80% of total health expenditures in India (National Health Account (2004-05). It is much higher compared to most developing and developed countries. Indeed, costs of health care are now a leading cause of poverty in India. Various studies have estimated that 3.3% of Indian population falls below the national poverty line due to out-of- pocket payments for health care every year. [1, 2, 3]

Rashtriya Swasthya Bima Yojna (RSBY), a flagship program of previous government, was launched in 2008 as a publically financed health insurance scheme for Below the Poverty Line (BPL) families in the unorganized sector; which constitute about 94% of the total work force in the country.[4] World Bank has appreciated the model of RSBY as "one of the most promising efforts in India". The scheme envisaged providing smart card-based cashless health insurance cover up to INR 30,000 (USD 667) annually for BPL family (unit of five), on a family floater basis for just INR 30 (USD 0.67) per annum as registration/ renewal fee. The policy covered hospitalization including day-care treatment, investigation, consultation, medicine and surgery, cost of transportation and food as well as pre- and post-hospitalization expenses. Barriers for very low level of enrolment and utilization of RSBY were as such a big issue of concern for the successful implementation of the scheme.

Current national government launched National Health Protection Mission (NHPM) under 'Ayushman Bharat' as a major step towards financial protection from OOP expenditure. It is projected that it will protect around 50 crore people (from about 10 crore families) from catastrophic healthcare spending. The coverage of Rs. 5 lakh for each family under NHPM has no restriction of family size and age.[5]

Although both the schemes, that is, RSBY and NHPM are different in scale, scope and coverage; there is a basic similarity. Both schemes are targeted towards economically weaker sections of the society, who need to be registered with the scheme and avail the services from the empaneled doctors.

In this paper, we describe our experiences with enrolment under RSBY. These may be useful for better enrolment design under NHPM.

The specific objective of current study was to assess individual, household and community level factors associated with enrolment under RSBY scheme.

2. Methodology

Study population: A combined retrospective-prospective cohort study was conducted to cover RSBY policy period between June 2011-July 2012 in three purposively selected villages 'Kheri', 'Kakrali' and 'Natwal' in Haryana.

Sample size: This study paper is part of larger study. Sample size was calculated based on the larger objective to see change in hospitalization after RSBY. By assuming an increase in hospitalization ratio among poor from 1.7% (NSS, 2004) to a level of 5.0%, sample size was calculated to be 419 and 1257 (in 1:3 ratio, 90% Confidence Interval and 80% power) in RSBY enrolled and non-enrolled members respectively. Household who

received RSBY smart card after enrolment was classified as "enrolled". Among total observed 363 BPL households, 104 were enrolled and 259 were non-enrolled under RSBY. We were able to recruit 450 RSBY enrolled members and 1400 RSBY non-enrolled members under the study.

Study tools and Method: A cross sectional survey (for initial 6 month of reference period), followed by two time prospective data collection was done in next 6 months, every three months.

Along with demographic details, Head of the household (HOH) was interviewed by a pretested structured questionnaire with non-weighted scoring system to assess the awareness about RSBY scheme. During each cross sectional survey, interview based recall method was used to get household expenditure for the reference period by using modified list of standardized NSS form.

Data Analysis: Based upon annual household consumption expenditure, households were categorised in four household consumption expenditure quartile (HCEQ). Square root equivalence scale (OECD, 2008) was used to estimate mean per-capita annual consumption expenditure [MPCE] by adjusting annual household consumption expenditure for the size of household.[6] All individuals were categorized in four mean per-capita consumption expenditure quartiles according to their expenditure

$$\text{MPCE} = \frac{\text{Annual consumption expenditure of family}}{\sqrt{\text{total number of family members}}}$$

Data was analyzed by using Microsoft Excel and SPSS software (Reg. v.16). Statistical significance of the association was assessed by chi square test at p value 0.05.

3. Findings

Household & Individual characteristics: A total 414 households were enlisted as BPL for year 2010-11, in the official records. Of these 363 could be observed during the study. About 55.1% had 'semi-pucca' (semi-concrete) houses, and 42.2% had 'pucca' (fully concrete) houses. Nearly 79% of families were of nuclear type. Average family size was 5.1 persons per household. The most common occupation of head of family was labourer (61.2%). Out of total 1850 members, 53.6 percent members were males. About half of the members (52%) were in 18-59 year age group and about 14% individuals were suffering from some type of chronic illness.

Factors associated with enrolment under RSBY scheme:

A. Household level factors:
Family's socioeconomic status as measured by either household consumption expenditure quartile or Udai Pareek scale [7] was associated significantly with enrolment ($p<0.01$). Majority of enrolled families (59.6%) were from middle socioeconomic class while most of non-enrolled families (58.3%) were from lower socioeconomic class. Maximum numbers of non-enrolled families (28.6%) were from poorest consumption quartile. Majority of enrolled families (62.5%) were in middle two consumption quartiles.

Mean years of education of head of family was 4.28 (3.44, 5.12 CI) among enrolled and 3.30 (2.80, 3.79 CI) among non-enrolled families. Mean

socio-economic score among enrolled and non-enrolled BPL families was 13.45 (12.59, 14.31 CI) for enrolled and 12.42 (11.88, 12.97 CI) for non-enrolled families.

*Awareness of RSBY***:** Awareness level among enrolled households was significantly higher than non-enrolled (p value <0.001) (Table 1). Mean awareness score (maximum score of 20) was 8.96 (± 6.12 SD) (7.77, 10.15 CI) in enrolled head of families and 4.67 (± 4.49 SD) (3.34, 4.43 CI) in non-enrolled heads of families.

Table 1: Level of awareness of head of the households about RSBY scheme among eligible families

S. N.	Level of awareness (Awareness score)	RSBY enrolment status		X^2	p- value
		Enrolled (N=104)	Non-enrolled (N=259)		
1	Low (score b/w 0-4)	33 (31.7%)	178 (68.7%)	50.2	<0.001
2	Average (score b/w 5-11)	38 (36.5%)	60 (23.2%)		
3	High (score b/w 12-20)	33 (31.7%)	21 (8.1%)		

For BPL families with reported awareness score of ≥ 1, 'Panchayat' Members (local elected village leaders) were the most common source of information about RSBY scheme among enrolled (79%) and non-enrolled (54%) and was significantly higher for enrolled head of households (p value <0.001).

B. Individual level factors:

Married (51.6%) and those previously enrolled under RSBY (60.2%) were higher among enrolled population in comparison to non-enrolled (p<0.05). Age distribution of populations in enrolled and non-enrolled groups was significantly different (p<0.01). While the population under-5 age (3.3%) and between 5-18 year (29.8%) were lesser among enrolled population, those between 18-59 years person (54.4%) and more than 60 years (12.4%) were higher.

Similarly there was significant difference in population distribution by education level (p<0.01) and socioeconomic status as measured by mean per capita consumption expenditure quartile (p<0.01). Those belonging to richest MPCEQ (34.4%) and with education more than primary grade (47.8%), were higher among the enrolled BPL population.

Presence of history of chronic illness was equally prevalent among enrolled (15.6%) and non-enrolled (14%). However chronically ill members on regular medication were significantly higher among enrolled (51%) as compared to non-enrolled population (39%) (p<0.01).

Table 2: Association of individual level variables* with RSBY enrolment

S. N.	Variables in the model		Adjusted odds ratio	95% C.I. for odds ratio	p- value
1	**Last year enrolment**	Non-enrolled (reference)	1.0		
		Enrolled	1.15	(0.903, 1.461)	0.258
2	**Marital status**	Unmarried/widow (reference)	1.0		
		Married	1.03	(0.736, 1.448)	0.854
4	**Age**	Under 5 year (reference)	1.0		
		5-18 year	2.06	(1.073, 3.967)	0.030
		18-59 year	2.49	(1.267, 4.881)	0.008
		60 and above	3.54	(1.747, 7.153)	<0.001
5	**Mean per capita consumption expenditure quartile**	Poorest quartile (reference)	1.0		
		Middle two quartile	3.55	(2.486, 5.078)	<0.001
		Richest quartile	5.56	(3.782, 8.182)	<0.001
6	**Educational level**	Illiterate (reference)	1.0		
		Up to primary education	0.91	(0.635, 1.316)	0.629
		Above primary education	1.18	(0.862, 1.622)	0.300
7	**Level of awareness of head of family**	Low (reference)	1.0		
		Average	3.11	(2.376, 4.072)	<0.001
		High	7.17	(5.247, 9.806)	<0.001

*Binary logistic regression controlled for various individual level factors

Intra-household exclusion from RSBY among enrolled families (Table 3):

Among 548 individuals from 104 enrolled families, 98 individuals remained non-enrolled, resulting in 82% effective coverage among enrolled families. Nearby 45% enrolled families (n=47) were having at least one member as non-enrolled under RSBY.

Table 3: Factors for intra-household exclusion from RSBY among enrolled household

Individual level factors	RSBY enrolment status				X^2	p-value
	Enrolled (N=215)	%	Non-enrolled (N=92)	%		
Enrolled in previous year						
Yes	98	45.6	0	0.0	61.59	<0.001
No	117	54.4	92	100.0		
Marital status						
Currently Married	116	54.0	26	28.3	17.11	<0.001
Currently not married	99	46.0	66	71.7		
Sex						
Male	115	53.5	45	48.9	0.54	0.462
Female	100	46.5	47	51.1		
Chronically illness						
Yes	30	14.0	6	6.5	3.44	0.064
No	185	86.0	86	93.5		
Chronically ill member * on regular medication						
Yes	20	66.7	0	0.0	9.00#	0.004@
No	10	33.3	92	100.0		
Age						
Under 5 year	7	3.3	18	19.6	31.94	<0.001
5-18 year	62	28.8	37	40.2		
18-59 year	120	55.8	30	32.6		
60 and above	26	12.1	7	7.6		
Education level						
Illiterate only	70	32.6	28	30.4	4.10	0.129
Up to primary level	41	19.1	27	29.3		
Above primary level	104	48.4	37	40.2		

* Percentage calculated taking total members will chronic illness as denominator
# with continuity correction @ Fischer exact test

4. Discussion

This paper describes the status of enrolment under RSBY scheme and the factors that influenced enrolment, so that lessons can be drawn for better enrolment under NHPM. There are many important findings in this study.

First, in the present study we found that among the total BPL population included in the study, only 24.3% were enrolled. In fact, overall enrolment as compared to previous year, decreased from 56% to 24%. A study recently done in a state of north India also found that about half of the households were enrolled in 2008 under RSBY scheme and subsequently enrolment came down to 25 percent in 2009 and 16 percent in 2010.[8]

Further, we found that not all the BPL families enlisted as per govt. records

were actually available onsite. Around 18% BPL households among the total listed by the state agency were found to be missing from the area. Moreover, around 2% households were identified during study, who had evidence of BPL status, but were not listed. These issues reflect the poor quality of BPL database available at state level agencies. Palacios et al also found problem in enrolment because of poor BPL database and suggested for up gradation of software so that individuals not listed in BPL database can be enrolled on other evidence such as BPL ration card etc.[9] Thus for any scheme that is targeted for poor and deprived, important challenge is correct identification and listing. Otherwise the funds allocated for poor gets diverted elsewhere.

Secondly, it was observed that even within the certified BPL families; enrolment was less among the poorest of the poor, as defined by mean per capita consumption quartile. This is irrespective of education and level of awareness. Individuals from richest mean per-capita consumption expenditure quartile (amongst the BPL families), were 5.9 times more likely to be enrolled as compared to individuals from poorest quartile. Thus, to make NHPM a success, better strategies need to be put in place to reach the poorest of the poor.

Thirdly, in present study non-distribution of smart cards accounted for 10% of non-enrolment. Effective enrolment occurs when enrolled family is given the smart card. Enrolment without smart card is ineffective and only leads to false high enrolment rate. Other studies have also shown that though families were entitled as enrolled in the official records; many of them were not being provided smart card "on the spot" and even remained "card-less" during the entire effective policy period.[10, 11, 12] Our study also revealed that only 9% beneficiaries got their smart card on the spot and panchyat members were the main source for disbursing the smart card among more than 30% of enrollee. Other studies in districts in Gujarat, Chhattisgarh and Haryana also revealed that between one quarter and one half of cards had not been distributed on the spot and 'panchayat' members were main contributor to deliver smart card to the beneficiaries. [10, 11, 12, 13]

Fourthly, lack of information and awareness emerged as important factor for non-enrolment. It was observed in this study that for enrolment, insurance agency had conducted camps in the villages, generally at short notice. We observed that single most common reason behind lower enrolment under RSBY was - no prior information about the enrolment camp (69%). Similar results were seen in state level evaluation of RSBY.[14,15]

Efforts to provide information about enrolment camp can improve the enrolment rate. We observed that in villages, where Local Elected Leaders ("Panchayat members") took initiative and informed the villagers, the enrolment was better. At other places, enrolment was poor. Panchayat members had informed 78% of enrollee during the enrolment process. Previous studies also estimated the coverage of panchayat members as information provider ranged from 34 to 54%.[10,11] An experimental study done by Palacios et al concluded that the IEC alone had no impact on enrolment. Combination of IEC and house-to-house contact plays a significant role in household decisions to enroll.[9]

Lastly, the present study found that capping limit of 5 members restricted around 17% of individuals for enrolment among enrolled households. This contributed to 7% of total non-enrolment. Due to limit for enrolment, children and unmarried members were more frequently excluded. Individual aged 60 year and above were 3.9 times more likely to be enrolled as compared to under-5 year children. Previously enrolled members and chronically ill members on regular treatment were preferred for enrolment. It seems that families considered this scheme useful for seeking medical care, as they tended to prefer elderly members for enrolment who usually need preference for health care. This also reflects the effect of 'adverse selection' at family level. In another study, capping limit of 5 members was not a major factor in reducing enrolment.[9] The interpretation possibly based on average household size (4.8) at national level according to NFHS-3.[16] In present study average household size of the enrolled household was 5.25, almost similar to average of Haryana state (5.3) according to NFHS-3. A study done in Gujarat state also found that 30% members of card-holding household were not registered on the card.[12]

Under NHPM, as there would be no enrolment capping limit, it is expected that there would be complete and efficient coverage in the enrolled families. It will also eliminate the probability of 'adverse selection' happing under RSBY.

Thus, in future when the enrolment for NHPM starts, it should follow well defined protocol. Date of enrolment should be announced well in advance. Future NHPM should develop protocol to issue smart card mandatorily. System should empower the enrolled family to verify receipt of the smart card. The study identified 'panchayat' members as potential facilitators who can reach the mass and mobilize BPL families to get enroll under RSBY. Thus, 'panchayat' members should be made accountable to spread the message through all possible communication modes available in the village.

Limitations: There are some limitations of the study. The study was conducted in small geographical area, care should be taken to generalize. However, finding of the study was quite similar to the recent studies done at national level. Because of resource constraints and feasibility issue, recall method was used for comparatively longer time period.

Recommendations: For efficient coverage under NHPM, Local Elected Leaders ("Panchayat") could play key Role. State co-ordinating agencies should timely update the BPL list, distribute the smart card and list of empanelled hospitals, organise special campaign and frequent awareness programmes to help BPL families avail the entitled service.

5. Ethical Approvals

We obtained approval from Institute Thesis Review Committee and Institute Ethical Committee, PGIMER, Chandigarh wide letter no. 8469/PG/2Trg/10/16551 dates 28.12.12.

Conflict of Interest : The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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References

1. Van Doorslaer E, O'Donnell O, Rannan-Eliya RP, Somanathan A, Adhikari SR, Garg CC, et al. Effect of payments for health care on poverty estimates in 11 countries in Asia: an analysis of household survey data. Lancet. 2006 Oct 14;368(9544):1357-64.
2. Bonu S, Bhushan I, Peters DH. Incidence, intensity and correlates of catastrophic out-of-pocket health payments in india. Asian development bank; 2007 October [cited 2011 June 17]; Available from: http://www.adb.org/publications/incidence-intensity-and-correlates-catastrophic-out-pocket-health-payments-india
3. Garg CC, Karan AK. Reducing out-of-pocket expenditures to reduce poverty: a disaggregated analysis at rural-urban and state level in India. Health Policy Plan. 2009 Mar;24(2):116-28.
4. Rashtriya Swasthya Bima Yojana : guidelines. [Internet] 2008 [cited 2011 June 17]; Available from: http://www.rsby.gov.in/Documents.aspx?id=2
5. Cabinet approves the largest government funded Health Program–Ayushman Bharat National Health Protection Mission (NHPM), Press Information Bureau, Government of India Ministry of Health and Family Welfare, 2018 March 22 [cited 2018 June 06]; Available from:http://www.pib.nic.in/newsite/PrintRelease.aspx?relid=177844
6. Growing unequal? income distribution and poverty in OECD countries. [Internet]: OECD; 2008 [cited 2012 July 10]; Available from: http://www.oecd-ilibrary.org/social-issues-migration-health/growing-unequal_9789264044197-en.
7. Udai P, Trivedi G. Manual of socio-economic status scale (rural). Manasayan,Delhi 1995.
8. Evaluation study of Rashtriya Swasthya Bima Yojana in Shimla & Kangra districts in Himachal Pradesh. [Internet]: Amicus Advisory Pvt. Ltd.; [cited 2011 June 17]; Available from: http://www.rsby.gov.in.
9. Palacios R, Das J, Sun C. India's health insurance scheme for the poor: evidence from the early experience of the Rashtriya Swasthya Bima Yojana. [Internet]: Centre for Policy Research; 2011 [cited 2011 June 17]; Available from: http://www.cprindia.org/publications/books/3348-indias-health-insurance-scheme-poor-evidence-early-experience-rashtriya-swas
10. Bhatt S. Impact assessment of RSBY in Haryana: draft report: Directorate, Employees' State Insurance Corporation, Haryana, Labour Department GoH;2009
11. Nandi S, Kanungo K, Khan MH, Soibam H, Mishra T, Garg S. A study of Rashtriya

Swasthya Bima Yojana in Chhattisgarh, India. BMC Proceedings. 2012;6(Suppl 1):O5.
12. Seshadri T, Trivedi M, Saxena D, Soors W, Criel B, Devadasan N. Impact of RSBY on enrolled households: lessons from Gujarat. BMC Proceedings 2012;6(Suppl 5):O9.
13. Goswami U. Pilot post-enrolment survey of the RSBY programme in Haryana. [Internet]: Ministry of Labour & Employment,Govornment of India; March, 2011 [cited 2011 June 17]; Available from: http://www.rsby.gov.in/Documents.aspx?ID=14
14. Rajasekhar D, Berg E, Ghatak M, Manjula R, Roy S. Implementing health insurance for the poor: the rollout of RSBY in Karnataka. [Internet]: Institute for Social and Economic Change (ISEC), Bangalore, the London School of Economics and the University of Oxford, UK; 2010 [cited 2012 December 13]; EOPP/2011/25]. Available from: http://sticerd.lse.ac.uk/dps/eopp/eopp25.pdf.
15. Rashtriya Swasthya Bima Yojana : studying Jaunpur (Uttar Pradesh). [Internet] 2010 [cited 2011 June 17]; Available from: http://www.rsby.gov.in/Documents.aspx?ID=14.
16. Household population and housing characteristics. National Family Health Survey-3 International Institute for Population Sciences; 2007 September. p. 21-51.