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Health Microinsurance and Financial Protection for poor

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Abstract

Health microinsurance aims to provide financial protection to the poor by reducing their need to use the costlier risk management strategies. Present study is an impact assessment of a Government of India sponsored health coverage scheme (Rashtriya Swasthya Bima Yojana). The study has been conducted by including three north-Indian states. The scheme has been assessed in terms of financial protection. Overall the health coverage scheme has been successful in reducing the hospital expenditure of the poor households together with improving their fund mobilization and smoothing the household consumption at the time of health shock.

Key words: Financial protection, Fund mobilization, Health Microinsurance, Rashtria Swasthya Bima Yojana and.

INTRODUCTION

Microinsurance is the insurance for low income people, who generally because of poverty, unawareness and lower affordability do not have an access to insurance facilities. Microinsurance is having the potential to assist the poor people to cope up with shocks, such as health shocks, death, crop loss and natural hazards (Dercon, 2005; Dror and Jacquier, 1999; Barnet Barrett and Skees, 2007; Gine Townsend and Vickery, 2008). Risks which are uninsured have a welfare implication which go beyond consequences for short term consumptions and is a cause of persistent poverty (Dercon, 2004; Townsend, 1994). Microinsurance as having a protective mechanism has the potential to reduce these welfare costs. By offering a payout on happening of some unfavorable outcome, it reduces their need to adopt costlier strategies thus protecting their income earning opportunities.

Of all the risks facing poor households, health risks probably pose the greatest threat to their lives and livelihoods. Health shocks have a direct impact on human capital formation. It thrusts health expenditure on a poor household precisely at a time when they can ill-afford it due to income shortfall resulting from the shock. Moreover, the uncertainty of the timings of illness and unpredictability of its costs make financial provision for illness difficult for households receiving low and irregular income (Tenkorang, 2001). Furthermore, given the strong link between health and income at low-income levels, a health shock affects the poor the most. Why insurance? First, many health risks such as those relating to isolated illness, injury, disability, maternity and the like are considered to be eminently insurable as these risks are mostly independent or idiosyncratic, that is, not correlated among community members. Secondly, insurance separates time of payment from time of use of health services for each member, and thereby makes possible demand for such services by its members who would not have otherwise been able to afford the cost. Insurance is particularly beneficial to the poor who often bear high indirect costs of treatment due to their limited ability to mitigate risk on account of imperfect labour and credit markets. Also, community-based insurance is considered to be pro-poor as it strengthens the demand side and thereby helps the poor to articulate their own needs (Develtere and Fonteneau, 2001).

Health microinsurance (HMI) offers a promising way to mitigate risks of disease and ill health, which are disproportionately borne by the world's poorest citizens. In developing countries, illness is mentioned more frequently then job loss as the main cause of poverty (Dodd et al., 2002; Asfaw, 2003) and many low-income individuals cannot afford medical treatment. Health risks pose dangerous threats to the lives and livelihoods of the poor, and health security remains integral to accomplishing many of the Millennium Development Goals. HMI is one many potential healthcare financing options for the poor. Research indicates that 26 per cent of households in low- and middle-income countries resort to selling assets and borrowing to cover healthcare expenses (Kruk et al., 2009), suggesting that there is a huge gap in healthcare financing. Although health care is increasingly perceived as a human right and public good, in reality resource constraints slow the deployment and scale-up of national health care financing. In these cases, HMI can be a possible

alternative; hybrid strategies that combine private-sector-led HMI with the strengths of the public sector also promise to push the frontier in healthcare financing for the poor.

Private sector HMI programmes aim to fill this gap, but designing valuable, sustainable health products is inherently more complex than with other types of microinsurance. Most health products cover catastrophic risks, which occur with low frequency, are often unpredictable, and result in a need for high-cost services. These catastrophic events are more easily insured than routine healthcare needs, so insurers have focused on hem, often designing in-patient-only cover. However, HMI programmes struggle to reach sustainable membership for these in-patient policies, partly because the poor perceive more value in cover for high-frequency, predictable and often low-cost services.

Review of Literature

Impact encompasses the changes that microinsurance makes to the economic or social circumstances of insured people or their households, enterprises or communities. It can be positive or negative, affect both insured and uninsured populations, occur either before, ex-ante, or after, ex-post, insured events happen, and have micro-, mezzo- and macro-level implications, often in ways that are linked. Since microinsurance is a relatively new intervention. Few impact assessment studies have been performed, which is exacerbated by a lack of standard indicators and research protocols for evaluating programs. Many of the existing studies also faced methodological problems that make it difficult to determine whether the reported effects were caused by the policies under consideration.

Health-microinsurance and Financial Protection

Financial protection occurs when microinsurance safeguards low-income households form using inefficient coping mechanisms in response to shocks and stress these mechanisms can include depleting savings and additional supplies of goods like food land livestock, selling valuable and sometimes income-generating possessions, borrowing at typically high interest rates, adjusting labour supply, altering purchasing and consumption patterns, engaging in reciprocal mutual support practices, capitalizing on self-help group memberships and withdrawing children from school to generate the resources necessary to handle the shocks involved (Radermacher et al., 2012). Besides reducing reactive measures taken by households in crisis, the financial protection provided by microinsurance theoretically allows individuals to proactively make decisions that improve their incomes and standards of living. These include choices related to asset accumulation; individuals are believed to be more likely to purchase productive goods, such as ovens or tractors, when the financial repercussions of losing or breaking them are mitigated. Similarly, microinsurance is believed to encourage "households to allocate resources to more profitable ends (which were previously precluded for being too risky)" (Morduch, 1995). Therefore financial protection is a wider concept and in order to evaluate the impact of Health Microinsurance on financial protection, the due care should be taken to include all the above mentioned areas.

Financial Protection Indicators:

After reviewing the current literature on HMI, the major indicators of financial protection has been identified as:

- Health expenditure (which includes out-of-pocket expenditure and catastrophic expenditure).
- Fund mobilisation.
- Income and consumption smoothing

(Pamer et al. 2011; Naguyen et al., 2012; Wagstaff and Yu, 2007; Wagstaff and Lindelow, 2008; Wagstaff et al., 2009; King et al. 2009; Galarraga et al. 2010; Thornton et al. 2010; Jowert et al. 2004; Wagstaff and Pradhan, 2005; Aggarwall, 2010; Chanakova et al. 2008; Diop et al. 2006; Franco et al. 2008; Jutting, 2004; Ranson, 2001; Schneider and Diop, 2001; Sepehri et al. 2006; Smith and Sulzbach 2008).

Health Expenditure

The most important and direct impact of health insurance is on out-of-pocket (OOP) health expenditure. Studies from Vietnam like Jowertt et al. (2003) have observed that health insurance reduces average OOP expenditure by approximately 200%. In the same line Healthcare Fund for Poor (HCFP), not only reduces sharply the OOP expenditure, but was also successful in reducing the catastrophic payment following the health shock (Pham and Pham, 2012). A very popular health insurance scheme in Mexico known as Seguro Popular (SP) has been successful in reducing the OOP and catastrophic health expenditure (Galarraga et al., 2010). Another study conducted by Wirtz et al. (2012) has found that households covered under SP had a lower probability of incurring OOP expenditures for medicines than their comparison group. The same observation is true of a couple of studies from China where a positive impact of health insurance on OOP and catastrophic expenditures has been found (Wagstaff and Lindelow, 2008; Wagstaff et al., 2009). Evidence from Ghana (Naguyen et al., 2011) also indicate that the National Health Insurance Program running in the country has been able to achieve a reduction in OOP expenditure that ranges from 0.5 percentage points to 1 percentage point (which amounts to a reduction of 36% to 67% of the sample mean).

Reviewing the literature, the researcher has come across the number of studies which have shown a negative impact of health insurance on OOP expenditure i.e. the HMI has not been able to reduce the OOP health expenditures of insured persons (Jowert et al., 2003; Wagstaff et al., 2008; wagstaff et al., 2009; Galarraga et al., 2010; wirtz, 2012). There have been lots of reasons found to be responsible for negative impact of MHI on OOP expenditure. HMI is believed to make people more likely to use health care providers (wagstaff et al., 2008; wagstaff et al., 2009; Galarraga et al., 2010). The reason can be that low income individuals have worse health status at the time of purchasing the policy and use health

insurance to access otherwise unaffordable services (Jowert et al., 2003). Theoretically health insurance should prevent excessive OOP, but supply driven demand may restrict this object of HMI, as people who otherwise would not have availed the service to use several treatments and procedures, which may not be insured (Budi Aji et al. 2013). The researchers also observed that insurance makes people more likely to move up the provider ' ladder' i.e. preferring township health centers(THC) to village clinics, and hospital to THCs (wagstaff et al., 2008). So we can say that HMI does not always reduce OOP health expenditures. HMI should reduce the incidence of catastrophic health expenditure. Some studies have observed this dimension within health expenditure.

The lack of impact on OOP expenditure does not necessarily mean failure of a program, given that this result might be explained -at least partly- by a desirable effect (increased utilization). The same outcome (lack of impact on OOPE) might suggest a need for totally different approach (Giedion et al. 2013). Studies should be conducted to study the health expenditure while considering both direct and indirect costs associated with it. For example OOP or catastrophic expenditure variables, as constructed by most of the researchers usually do not include health-seeking related costs (such as transportation costs) not paid at the point of delivery. Ekman (2007) has observed this by evaluating the impact of different health insurance schemes in Zambia not only on OOP payment at the point of service, but on a wider concept of health related OOP expenditures. He finds that being exempted from paying for care and having access to private or employment-based health insurance significantly reduces the risk increasing a catastrophic OOP expenditures. However, when other costs related to health-care seeking were included-such as transportation, food, and other costs, the study finds that the probability of suffering from catastrophic health care related expenditures actually increases. Thus when examining only the OOP expenditures at the point of services, the effect of reduction in price dominates, and these seems to be greater financial protection. However, when the other costs related to health seeking are included, the conclusions are reversed (Giedion et al. 2013).

Fund Mobilization

There are number of strategies available to a household to support OOP health expenditure like using cash and existing savings, sale of assets, loans, income diversification, wage labour, etc. There are other time-coping strategies like intra-house labour substitution, changing the capital labour mix of production, hiring labour, free community labour etc (Sauerborn et al. 1996). Out of the above mentioned strategies depleting savings, selling productive assets (livestock etc) and taking loan at higher cost affects the household in longer run. Parmer et al. (2011) in their study mentioned that in the absence of adequate savings household resort to selling productive assets like live stock, which could have asserted the household in agricultural production (e.g. Ox or Donkeys). Moreover, loss of livestock leads to loss of their produce, e.g. milk that could have been used for self-consumption or sold in the market (e.g. cow, goat etc.) or people with inadequate amount of income face very hardships while repaying the borrowed amount, which result in reduction of essential consumption, which in turn have adverse impact on health.

There are hardly a couple of studies which have evaluated the impact of health insurance on Assets, borrowing etc. Parmer et al. (2011) in their study attempted to find out whether community based health insurance protect household assets in rural Burkina Faso, Africa. Within the Assets, durable goods and livestock were considered for evaluation. Finally impact has been evaluated by finding out the effect of insuring an additional member in the household on percapta household assets. All the models used in the study (OLS, 2OLS & FE) provide evidence that the community based health insurance scheme in the Nauna district protected household assets. Specifically the models predicted that Community Based Health Insurance (CBHI) significantly increased household assets. This is not surprising, given that the scheme is highly subsidized. Benefits of being insured out-weigh the cost of purchasing the insurance. The researchers themselves have realized the lack of other studies and stated that there is no other study that has analyzed the impact of CBHI on household assets, therefore becomes difficult for the researcher to bench mark these results with other studies. Aggarwal (2010) in her impact study also studied financial protection of insured and used borrowings/sale of assets resulting from medical payments as an indicator of financial protection. Results of the study revealed that health payments caused significantly less indebtness/sale of assets which have the most pronounced impoverishing effects. The results are more positive in case of surgical procedures. However result is not so significant for hospitalization a maternal case. In fact, inpatient treatments other then surgery resulted in increase of borrowing for the Yeshweni health group. Taking into account the availability of a few studies in this area, there is a need of further research as also realized by Parmer et al. (2011) and Radermacher et al. (2012).

Income and Consumption Smoothing

Severe adverse health event imposes the twin challenges of both coping with the expenses of the events in question and continuing to meet on-going household needs (Radernacher et al. 2012). Under such pressing circumstances, low-income people may pursue an undesirable action like eating less or less nutritious food. By reducing the financial burden of shocks, microinsurance aims to enable policyholders to maintain their incomes and standards of living in times of crises (Radermacher et al. 2012).

Objectives

- To study the impact of health microinsurance on inpatient healthcare expenditure.

- To assess the incidence of catastrophic expenditure among the policy holders as compared to non-policy holders
- To critically evaluate the source of finances availed by the households for supporting healthcare expenditure.

Hypotheses

1. There is no significant difference between Inpatient healthcare expenditures of policy holders as compared to non-policy holders.

RESEARCH METHODOLOGY

Data collection

Data collection was done using a pre-tested and structured interview schedule beneficiaries of RSBY which is Government of India sponsored health coverage scheme which was launched on 1st April 2008 by Ministry of Labour and Employment in two States to provide health insurance cover to BPL and other unorganized sector workers. A total of 450 respondents have been involved in the survey, consisting of 150 RSBY enrolled and 300 not-covered under RSBY.

Sampling Design

The impact of microinsurance is assessed by using a quasi-experimental survey design, which required comparison of a 'treatment' group, consisting of programme participants, to a 'control' group of non-participants. Participant group of respondents were selected after receiving list of insured households, where at least one hospitalization was occurred and where the household has received the treatment, from the state nodal agencies. Each non participant household for comparison was selected from the same locality where a participant household was located after taking the due care that the characteristics of participant and non-participant should be similar.

Participant group of respondents were selected through a multi-stage sampling method. In the first stage, three north-Indian states namely Himachal Pradesh, Punjab and Haryana were selected as being at the extreme of North- India. Jammu And Kashmir State was not selected as RSBY is not functional in the state.

In the second stage, one district from each state was selected after giving due consideration to performance of RSBY in all districts of a particular state. Kangra was selected from Himachal Pradesh. In Punjab Amritsar was selected, and Rohtak was selected from Haryana.

In the third stage of sampling 4 blocks showing more enrolment were selected from each district. After considering rural urban differences, out of 4 blocks two are rural and two from urban blocks.

In the fourth stage, data was collected from the treatment and control group respondents from each block, representing a district and ultimately a state.

Table 1.1 Sample composition

S.NO	State (District)	No. of Insured HH	No. of Uninsured HH	Total
1	Himachal Pradesh (Kangra)	50	100	150
2	Punjab (Amritsar)	50	100	150
3	Haryana (Rohtak)	50	100	150
Total Households				450

Period of the Study

The present study has collected the data from the respondents pertaining to the year 2013-14.

Implementation of Propensity Score Matching

Propensity score matching method is used for the impact evaluation of a programme. The basic idea is to find in a group of non-participants those individuals who are similar to the participants in all relevant observable characteristics X. That being done, differences in outcomes of the control (untreated) group and of participants (treated) can be attributed to the programme. This essentially means that the outcomes of members are compared with the potential outcomes of untreated households had they been members of the programme. More specifically, if P=1 for treated group and =0 for untreated group, then the average treatment effect on treated (ATT) on an outcome variable Y is

$$ATT= E (Y1-Y0|P=1),$$

which means,

$$ATT= E (Y1|P=1)-E(Y0|P=1)$$

While data on E (Y1|P=1) are available from the programme participants, estimation of the counterfactual E (Y0|P=1) is based on the assumption that after adjusting for observable differences, the mean of the potential outcome is the same for P = 1 and P = 0.
Application of PSM technique involves number of steps and these have been explained below.

- Estimating the Propensity Score

When estimating the propensity score, two choices have to be made. The first one concerns the model to be used for the estimation, and the second one the variables to be included in this model. Little advice is available regarding which functional form to use (see e.g. the discussion in Smith 1997)). For the binary treatment case, where we estimate the probability of participation vs. non-participation, logit and probit models usually yield similar results. Hence is not too critical, even though the logit distribution has more density mass in the bounds (Caliendo and Kopeinig, 2008). The present study has used logistic regression to calculate propensity score for matching. After reviewing the literature on the factors determining the demand for microinsurance and particularly health microinsurance, number of factors has been identified to be included in the model. Most studies focus on individual/household specific factors such as income, nature of their economic activity, demographic patterns, age structure, health patterns, social status, education, and personal preferences. However socio economic contexts within which households live cannot be ignored. The study therefore has explicitly taken into account area specific characteristics. They include health infrastructure, distance from the nearest health facility and transport facilities. The 'statistical significance approach' was adopted in the final selection of model. The study has started with few important variables and then added new variables to test their performance. Variables were kept if they were statistically significant and increased the prediction rates notably.

- Balancing Test

It is believed that imposing the common support restriction in the estimation of propensity scores improves the quality of the estimates. But there are also arguments against imposing this restriction. Lechner (2001) for instance, argues that besides reducing the sample considerably, imposing the restriction may lose high quality matches at the boundary of the common support region. However, following the standard practice to limit comparisons to a subset of cases lying on the common support of propensity scores, we also dropped households off the common support. We thus restricted our balancing test in the common support region with a trim value of 5%.

- Assessing the quality of matching

For assessing the quality of matching, the situation before and after matching needs to be compared to check if there remain any differences after conditioning on the propensity score. Various indicators of assessing the quality of matching are available in the literature (Caliendo and Copeinig 2008). The present study has used the mean absolute standardized bias (Rosenbaum and Rubin, 1985; Lechner, 1999; Sianesi, 2004 Caliendo et al., 2005) and pseudo R^2 (Sianesi, 2004; Aggarwal, 2010). The results here reveal that matching for the present study has been able to reduce the mean bias to the extent of 20.53% and pseudo-R^2 also shows a considerable fall, setting a sound base for using propensity score matching.

Table 1.2 Result of the mean absolute standardized bias and Pseudo R^2 tests

Measure		
Standardised Bias	Pre matching mean bias	22.4
	Post matching mean bias	17.8
	Absolute change in bias	4.6
	Change (%)	20.53
Pseudo R^2	Pre matching Pseudo R^2	0.338
	Pre matching Likelihood Ch2	193.46
	Chi sq	0.00
	Post matching Pseudo R^2	0.081
	Post matching Likelihood Ch2	32.84
	Chi sq	0.00
	Change (%)	76.03

- Assessing Common support Region

ATT (Average treatment effect on treated) and ATE (Average treatment effect) are defined only in the region of common support hence; an important step is to check the overlap and the region of common support between treatment and comparison group. The simple way is to visually analyze the density distribution of the propensity scores in both groups

(Lechner 2000). The present study has imposed common support restriction with a trim of 5%. The below figure shows the propensity score density distribution

Table 1.3 Showing Households under common support

Psmatch2: Treatment assignment	Psmatch2 common support		Total
	Off support	On support	
Untreated	0	300	300
Treated	3	147	150
Total	3	447	450

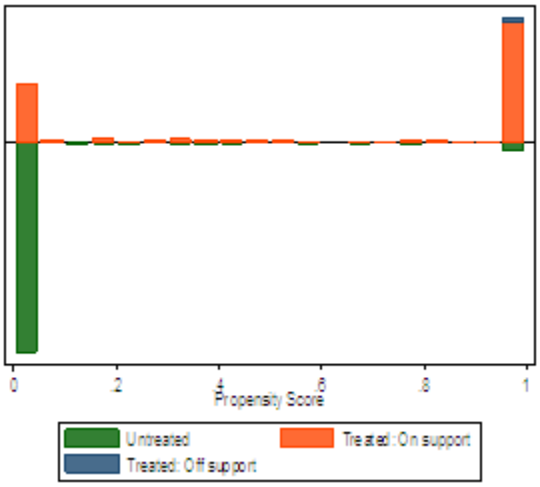

Figure 1 Propensity score Histogram

From the propensity score graph and table showing common support restriction results, it is clear that most of the households fall within the common support region, thus provides the sufficient reason for using ATT.

- Choosing a Matching Algorithm

There are different matching estimators in PSM like Nearest Neighbor (NN), Calipher and Radius, Stratification and Interval, Kernel and Local Linear and Weighting. The study has used Kernel matching, which is a non-parametric matching estimator that use weighted averages of all individuals in the control group to construct the counterfactual outcome. One drawback of this method is the use of observations that are bad matches. Hence the imposition of common support condition is of major importance and has overcome this limitation (Heckman et al., 1998), as earlier mentioned that the ATT and ATE are only defined in the region of common support (Caliendo and Kopeinig, 2005).

RESULTS AND DISCUSSION

Health expenditure

Reducing healthcare expenditure is one of the basic objectives of RSBY. Results reveal that it has been able to achieve it target to a greater extent as inpatient OOPE per hospitalization is significantly lower for the Treated group as compared to the control group. In case of inpatient treatment, expenditure difference shows a t value greater than 1.96; hence the null hypothesis in this case is rejected.

Table 1.4 Out-of-Pocket Expenditure

Variable	Sample	Treated	Control	Difference	S.E	T-stat
Inpatient OOPE per Hospitalization	Unmatched	1418.17	8005.75	-6587.58	853.85	-7.72
	ATT	1459.61	8025.95	-6566.33	2070.40	-3.17

Incidence of Catastrophic Expenditure (CE)

Out of pocket Expenditure (OOPE) becomes catastrophic when it absorbs a considerable amount of annual household income (often defined as 10 per cent) (Radermacher et al., 2012). Table 5 shows the incidence of catastrophic expenditure. Among the sampled RSBY households 4.67% of the households have incurred catastrophic Healthcare expenditure where as it is 53.67% is case of Households not covered under RSBY, which clearly highlights a protective shield.

Table 1.5 shows the incidence of catastrophic expenditure

Incidence of Inpatient CE	Status of Sampled Household		Total
	Control	Treated	
Not incurred CE	139 (46.33%)	143 (95.33%)	282 (62.67%)
Incurred CE	161 (53.67%)	7 (4.67%)	168 (37.33%)
Total	300 (100%)	150 (100%)	450 (100%)

Fund Mobilization

Poor households in case of health shocks use adverse strategies for mobilizing funds. Table 6 shows that the households not covered under RSBY have household savings and borrowings as their main source of finance to support inpatient health expenditure, but in case of Treated group major source is household savings to support out-of- pocket expenditure. Importantly there are 1.33% of households in case of control group who have sold household assets to support health expenditure, but such households are not found within the control group, hence shows a positive sign. Table 7 further elaborates the type of borrowings which households raise are not often without interest, and therefore adds to the worry. There are differences in case of treatment and control group but such cannot be attributed to program. Further more in rural areas people pay interest to money lenders on monthly basis and table 8 shows that it is around 2% to 3% per month, which is a point of concern. An attempt has been made to assess the households which have sold the household assets to support healthcare expenditure. Information has been acquired about the realized and market value of the asset. There were only 8 households where assets have been sold and these belong to the control group and 6 out of them have suffered loss on sale. Table 10 shows that all the assets sold were non income generating, which reveals no loss of source of income.

Table 1.6 shows the sources of Finance

Source of finance to support Inpatient treatment	Status of Sampled Household		Total
	Control	Treated	
RSBY	0 (0%)	1 (0.67%)	1 (0.22%)
HH Savings (A)	128 (42.67%)	144 (96%)	272 (60.44%)
Raised borrowings (B)	26 (8.67%)	1 (0.67%)	27 (6%)
Sold Household assets (C)	2 (0.67%)	0 (0%)	2 (0.44%)
D=A+B	138 (46%)	4 (2.67%)	142 (31.55%)
E=A+C	4 (1.33%)	0 (0%)	4 (0.88)
F=A+B+C	2 (0.67%)	0 (0%)	2 (0.44%)
Total	300 (100%)	150 (100%)	450 (100%)

Table 1.7 Shows type of Borrowings

Type of Borrowing (Inpatient)	Status of Sampled Household		Total
	Control	Treated	
Interest based	98 (59.76%)	2 (40%)	100 (59.17%)
Non-interest based	66 (40.24%)	3 (60%)	69 (40.83%)
Total	164 (100%)	5 (100%)	169 (100%)

Table 1.8 Average Rate of interest (monthly) at which borrowed

Rate interest	Status of Sampled Household	
	Control	Treated
	2.51%	2%

Table 1.9 Shows occurrence of Loss on the sale of Asset

Occurrence of Loss (Inpatient)	Status of Sampled Household		Total
	Control	Treated	
0	2 (25%)	0 (0%)	2 (25%)
1	6 (75%)	0 (0%)	6 (75%)
Total	8 (100%)	0 (0%)	8 (100%)

Table 1.10 Shows kind of Asset Sold

Asset sold	Status of Sampled Household		Total
	Control	Treated	
Income generating	0 (0%)	0 (0%)	0 (0%)
Non-income generating	8 (100%)	0 (0%)	8 (100%)
Total	8 (100%)	0(0%)	8(100%)

Consumption Protection

Table 1.11 clearly shows that health expenditure has disturbed the essential household consumption more in case of the control group (40.67%). 15.34% of households covered under RSBY have reported of reduction in household consumption which is a positive sign as compared to households not covered under RSBY.

Table 1.11 Shows Impact of illness on Essential household consumption

Household consumption	Status of Sampled Household		Total
	Control	Treated	
Reduced	122 (40.67%)	23 (15.34%)	145 (32.23%)
Remained same	178 (59.34%)	127 (84.67%)	305 (67.78%)
Total	300 (100%)	150 (100%)	450 (100%)

CONCLUSION

Health microinsurance provides a promising protective mechanism against adverse health shocks which often have pressing financial implications. Rashtriya Swasthya Bima Yojana (RSBY) being a government of India sponsored health coverage scheme has been successful in providing the financial protection by reducing health expenditures of policyholders significantly. It has restricted the poor households to use costlier sources of finances by providing the financial support. Poor households are less compelled to sell their household assets. It has helped in smoothing the essential household consumption in times of health shock.

REFERENCES

[1] Aggarwal, A. (2010), "Impact evaluation of India's Yeshasvini'community- based health insurance programme", in Health Economics, Vol. 19, Supplement No.1, pp. 5-35.
[2] Agha, Sohail. 2011. "Impact of a Maternal Health Voucher Scheme on Institutional Delivery among Low Income Women in Pakistan." Reproductive Health 8 (1): 10.
[3] Ahmed S., Mbaisi J., Moko D., Ngonzi A. (2005), "Health is wealth: How low-inxome people finance health care", in Jouranl of International Development, Vol. 17, No. 3, pp. 383-396.
[4] Asfaw, A. (2003), "Cost of illness, demand for medical care, and the prospect of community health insurance programms in the rural areas of Ethiopia (Frankfurt).
[5] Bhardwaj, A., Tung, N. S., Shukla, V. K., & Kamboj, V. K. (2012). The important impacts of unit commitment constraints in power system planning. International Journal of Emerging Trends in Engineering and Development, 5(2), 301-306.
[6] NS Tung, V Kamboj, A Bhardwaj, "Unit commitment dynamics-an introduction", International Journal of Computer Science & Information Technology Research Excellence, Volume 2, Issue 1, Pages 70-74, 2012.
[7] Bane, Mary Jo and David T. Ellwood (1983). "Slipping Into and Out of Poverty: The Dynamics of Spells." National Bureau of Economic Research Working Paper No. 1199 (November).
[8] Banerjee, Abhijit, Esther Duflo, Rachel Glennerster, and Cynthia Kinnan. 2013. The Miracle of Microfinance? Evidence from a Randomized Evaluation. NBER Working Paper 18950.
[9] Bauhoff, Sebastian, David Hotchkiss, and Owen Smith. 2010. "The Impact of Medical Insurance for the Poor in Georgia: A Regression Discontinuity Approach." Health Economics, October 2010.

[10] Bonnevay S., Dror D., Duru G., Lamure M.(2002), "A model of microinsurance and reinsurance", in D. Dror, D. and A. Preker (eds): A new approach to sustainable community health financing (Washington, D.C. and Geneva, World Bank and ILO),pp.153-186.
[11] Brown, W., & Churchill, C. F. (1999). Providing insurance to low income households—part I: A Primer on insurance principles and products, microenterprise best practices. Bethesda: Development Alternatives Inc.
[12] Brown, W., Green, C., & Lindquist, G. (2000). A cautionary note for microfinance institutions and donors considering developing microinsurance products, microenterprise best practices. Bethesda: Development Alternatives Inc.
[13] Chankova, S.; Sulzbach, s.; Diop, S. (2008), "Impact of mutual health organizations: Evidence from West Africa", in Health Policy and Planning, Vol. 23, No. 4, pp. 264-276.
[14] Churchill, C. (2006), "What is insurance for the poor", in Churchill, c. (edited), Protecting the poor A microinsurance compendium, International labour Organisation P.12-24.
[15] Churchill, C. (2006), "What is insurance for the poor", in Churchill, c. (edited), Protecting the poor A microinsurance compendium, International labour Organisation P.12-24.
[16] Bhardwaj, A., Kamboj, V. K., Shukla, V. K., Singh, B., & Khurana, P. (2012, June). Unit commitment in electrical power system-a literature review. In Power Engineering and Optimization Conference (PEDCO) Melaka, Malaysia, 2012 IEEE International (pp. 275-280). IEEE.
[17] Churchill, C. (2006). What is insurance for the poor?. In C. Churchill (Ed.), Protecting the poor. A microinsurance compendium. Munich: ILO, Geneva and Munich Re Foundation.
[18] Churchill, C., (2007), "Insuring te low-income market: Challenges and solutions for commercial insurers", in Geneva Papers on Risk and Insurance – Issues and Practice, Vol. 32, No. 3, pp. 401-412.
[19] Churchill, C., Liber, D., McCord, M. J., & Roth, J. (2003). Making insurance work for microfinance institutions—a technical guide to developing and delivering microinsurance. Geneva: ILO.
[20] Cuevas, Facundo, and Susan W. Parker. 2011. "The Impact of Health Insurance on Use, Spending, and Health in Indonesia." In The Impact of Health Insurance on Low- and Middle-Income Countries, ed. Maria-Luisa Escobar, Charles C. Griffin, and R. Paul Shaw. Washington, DC: The Brookings Institution Press.
[21] Dekker M., Wilma A. (2009), "Can health insurance be the magic bullet? The case of Microcare in Uganda (Netherlands, African Studies Center Info Sheet).
[22] Derriennic, Y., Wolf K., Kiwanuka-Mukiibi P. (2005), "An assessment of community-based health financing activities in Uganda, The Partners for Health Reformplus Project (Bethesda, MD, Abt Associates).
[23] Develtere, P. and B. Fonteneau (2001), "Member-Based Organisations for Social Protection in Health in Developing Countries", Katholieke Universiteit Leuven, mimeo.
[24] Diop, F.P.; Sulzbach, S.; Chankova, S. (2006), "The impact of mutual health organizations on social inclusion, addess to health care and household income protection: Evidence from Ghana, Senegal and Mali, Partners for Health Reformplus project (Bethesda, MD, Abt Associates).
[25] Dodd, R., Munck L. (2002), "Dying for change: Poor people's experience of health and ill health (Geneva, World Health Organization, World Bank, voices of the poor).
[26] Dror (2007), "Why 'one size fits all' health insurance products are unsuitable for low-income persons in the informal economy in India", in Asian Economic review, Vol. 49, No 1, pp. 1-11.
[27] Dror (2008), "Community-based micro health insurance as an enabler of solidarity and self-help amongst poor communities", in Microfinance Focus, Vol. 2, No. 8.
[28] Dror D. (2001), "Reinsurance of health insurance for the informal sector", in Bulletin of the World Health Organization, Vol. 79, No. 7, pp. 672-678.
[29] Dror D. Jacquier C., (1999), "Micro-insurance: Extending health insurance to the excluded", in International 'Social Security Review 52, No. 1, pp. 71.
[30] Bhardwaj, A., Tung, N. S., & Kamboj, V. (2012). Unit commitment in power system: A review. International Journal of Electrical and Power Engineering, 6(1), 51-57.
[31] Fields, Gary S. (1993). "Poverty and Income Distribution: Data for Measuring Poverty and Inequality Changes in the Developing Countries." Journal of Development Economics,44.
[32] Fischer, K., & Qureschi, Z. (2006). Cooperatives and insurance: The mutual advantage. In: C. Churchill (Ed.), Protecting the poor. A microinsurance compendium. Munich: ILO, Geneva and Munich Re Foundation.
[33] Fonteneau, B., & Galland, B. (2006). The community-based model: Mutual health organizations in Africa. In C. Churchill (Ed.), Protecting the poor. A microinsurance compendium. Munich: ILO, Geneva and Munich Re Foundation.
[34] Franco, L.M.; Diop, F.P.; Burgert, C.; Kelly, A.g.; Makinen, M,; Siampara, C.H.T (2008), "Effects of mutual health organizations on use of priority health care services in urban and rural Mali: A case-control study", in Bulletin of the World Health Organisation, Vol. 86, No. 11, pp. 830-838.
[35] Galarraga, O., S. G. Sosa-Rubi, A. Salinas-Rodriguez, and S. Sesma-Vazquez. 2010. "Health Insurance for the Poor: Impact on Catastrophic and Out-of-pocket Health Expenditures in Mexico." Eur J Health Econ 11 (5): 437–447.
[36] Gertler, P and Gruber, J. (2002), "Insuring Consumption against illness", American Economic Review, 92(1), 51-70.
[37] Gertler, P., Levine, D. I. and Moretti, E. (2009), "Do Microfinance Programs Help Families Insure Consumption against illness", Health Economics, 18, 257-273.
[38] Gertler, Paul J., Sebastian Martinez, and Pablo Celhay. 2011. "Impact Evaluation of Maternal Child Provincial Health Investment Project in Argentina – Plan Nacer."
[39] Giedion, U.; Alfonso, E. A; and Díaz, Y. (2013), "The Impact of Universal Coverage Schemes in the Developing World: A Review of the Existing Evidence", Universal Health Coverage Studies Series (UNICO), The World Bank, UNICO Studies Series No. 25.

[40] Giedion, Ursula, Beatriz Yadira Díaz, and Eduardo Andrés Alfonso. 2007. "The Impact of Subsidized Health Insurance on Access, Utilization and Health Status: The Case of Colombia." World Bank, Washington, DC.
[41] Hamid, Syed Abdul, Jennifer Roberts, and Paul Mosley. 2011. "Evaluating the Health Effects of Micro Health Insurance Placement: Evidence from Bangladesh." World Development 39 (3): 399–411.
[42] Harris, J. E, and S. G. Sosa-Rubi. 2009. "Impact of 'Seguro Popular' on Prenatal Visits in Mexico, 2002–2005: Latent Class Model of Count Data with a Discrete Endogenous Variable."
[43] Jalan, Jyotsna and Martin Ravallion (1999). "Are the Poor Less Well Insured? Evidence on Vulnerability to Income Risk in Rural China." Journal of Development Economics, 58, pp. 61-81.
[44] Jalan, Jyotsna and Martin Ravallion. 1999. Are the poor less well insured? Evidence on vulnerability to income risk in rural China? Journal of Development Economics, 58: 61 – 81.
[45] Jowert, M.; Contoyannis, P.; Vinh, N.D. (2003), "The impact of public voluntary health insurance on private health expenditures in Vietnam", Social Science & Medicine, Vol, No. 56, pp 333-342.
[46] Jowert, M.; Deolalikar, A.; Martinsson, P. (2004), "Health insurance and treatment seeking behaviour: evidence from a low-income country", in Health economics, vol. 13, pp. 845-857.
[47] Jutting, J. (2004), "Do community-based health insurance schemes improve poor people's access to health care? Evidence from Rural Senegal", in World Development, Vol. 32, No. 2, pp. 273-288.
[48] Khan, Abdullah A., and Surinder M. Bhardwaj. 1994. "Access to Health Care." Evaluation and the Health Professions 17 (1): 60–76.
[49] King, Gary, Emmanuela Gakidou, Kosuke Imai, Jason Lakin, Ryan T. Moore, Clayton Nall et al. 2009. "Public Policy for the Poor? A Randomised Assessment of the Mexican Universal Health Insurance Programme." The Lancet 373 (9673): 1447–1454.
[50] Kiwara A. (2007), "Group premiums in micro health insurance experiences from Tanzania", in East African journal of Public Health, Vol. 4, No. I, pp. 28-32.
[51] Navpreet Singh Tung, Gurpreet Kaur, Gaganpreet Kaur, Amit Bhardwaj, Optimization Techniques in Unit Commitment A Review, International Journal of Engineering Science and Technology (IJEST), Volume 4, Issue, 04, Pages 1623-1627.
[52] Leatherman S., Christensen L. J., Holtz J. (2012). Innovations and barriers in health microinsurance. In C. Churchill and Matul M. (Ed.), Protecting the poor. a microinsurance compendium, Vol 2. Munich: ILO, Geneva and Munich Re Foundation.
[53] Lei, Xiaoyan, and Wanchuan Lin. 2009. "The New Cooperative Medical Scheme in rural China: Does more Coverage mean more Service and Better Health?" Health Economics 18 (S2): S25–S46.
[54] Marek T., O'Farrell C., Yamamoto C., Zable, I. (2005), "Trends and opportunities in public-private partnerships to improve health service delivery in Africa, Africa Region Human Development Working Paper 33646 (Washington, D.C., World Bank).
[55] Marek T., Yamamoto C., Ruster J. (2003), "Private health: Policy and regulatory options for private participation, Public Policy for the Private Sector Note Number 265 (Washington, D.C., World Bank).
[56] McCord M.J. (2007b), "Supplying health microinsurance: Lessons from East Africa", in International Journal of Public Administration, Vol. 30, No. 8, pp. 737-764.
[57] McCord M.J. and Osinde S. (2005), "Reducing vulnerability: The supply of health microinsurance in East Africa", in Journal of International Development, Vol. 17, No.3, pp. 327-381.
[58] McCord, M. J. (2006). The partner-agent model: Challenges and opportunities. In C. Churchill (Ed.), Protecting the poor. A microinsurance compendium. Munich: ILO, Geneva and Munich Re Foundation.
[59] McLaughlin, Catherine G., and Leon Wyszewianski. 2002. "Access to Care: Remembering Old Lessons." Health Services Research 37 (6): 1441–1443.
[60] Morduch, Jonathan (1994). "Poverty and Vulnerability." American Economic Review, Vol. 84(2), pp. 221- 25.
[61] Morduch, Jonathan. 1999. Between the State and the Market: Can Informal Insurance Patch the Safety Net? World Bank Research Observer, 14(2): 187 – 207.
[62] Roth K., McCord, M.J., Liber, D. (2007), "The Landscape of microinsurance in the world's 100 poorest countries (Micro-insurance Centre).
[63] Roth K., Radermacher R. and Pradeep Panda (2014), "Core outcomes, impacts, and indicators for microinsurance", in Radermacher R. and Roth K. (Ed.), Practical Guide to Impact Assessments in Microinsurance, Microinsurance Network.
[64] Sabri B. (2003), "Healthcare financing in the African countries of the Eastern Mediterranean. Telephone interview, May 2011.
[65] Schneider, P.; diop, F. (2001), "Synopsis of results on the impact of community-based health insurance on financial accessibility to health care in Rwanda", Health, Nutrition and Population Discussion Paper No. 28903 (Washington, D.C., Wold Bank).
[66] Sepehri, A.; Sarma, S.; Simpson, W. (2006), "Does non-profit health insurance reduce financial burden? Evidence from the Vietnam Living Standards survey panel", in Health Economics, Vol. 15, No. 6, pp. 603-616.
[67] Simith, K.; Sulzbach, S. (2008), "Community-based health insurance and access to maternal health services: Evidence from three West African countries", in Social Science and Medicine, Vol. 66, pp. 2460-2473.
[68] Suryahadi, Asep and Sudarno Sumarto (2001). "The Chronic Poor, The Transient Poor, and the Vulnerable in Indonesia Before and After the Crisis." SMERU Working Paper, May.
[69] Thornton, Rebecca L., Laurel E. Hatt, Erica M. Field, Mursaleena Islam, Freddy Solís Diaz, and Martha Azucena González. 2010. "Social Security Health Insurance for the Informal Sector in Nicaragua: A Randomized Evaluation." Health Economics 19 (S1): 181–206.
[70] Townsend, Robert M. 1994. Risk and insurance in village India. Econometrica 62, (3) (May): 539-91.
[71] Wagstaff, Adam, and Magnus Lindelow. 2008. "Can Insurance Increase Financial Risk? The Curious Case of Health Insurance in China." Journal of Health Economics 27 (4): 990–1005.
[72] Wagstaff, Adam, and Menno Pradhan. 2005. "Health Insurance Impacts on Health and Nonmedical Consumption in a Developing Country." Working Paper Series.

[73] Wagstaff, Adam, and Shengchao Yu. 2007. "Do Health Sector Reforms have their Intended Impacts? The World Bank's Health VIII Project in Gansu Province, China." Journal of Health Economics 26 (3): 505–535.
[74] Wagstaff, Adam, Magnus Lindelow, Gao Jun, Xu Ling, and Qian Juncheng. 2009. "Extending Health Insurance to the Rural Population: An Impact Evaluation of China's New Cooperative Medical Scheme." Journal of Health Economics 28 (1): 1–19.
[75] Wang, Hong, Yip, Winnie, Zhang, Licheng, and Hsiao, William C. 2009. "The impact of rural mutual health care on health status: evaluation of a social experiment in rural China." Health Economics 18 (S2): S65–S82.
[76] Wirtz V.J. et al. (2012), "Heterogeneous Effects of Health Insurance on Out-of-Pocket Expenditure on Medicines in Mexico", Value In Health, Vol. no. 15, pp. 593-603. Available online at www.sciencedirect.com.
[77] World Bank (2001). World Development Report 2000/2001: Attacking Poverty. Washington, D.C.
[78] Yip, Winnie, Hong Wang, and William Hsiao. 2008. "The Impact of Rural Mutual Health Care on Access to Care: Evaluation of a Social Experiment in Rural China."