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HEALTH SHOCKS AND SHORT-TERM CONSUMPTION GROWTH

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Abstract

Health shocks can affect the household economy through a substantial rise in out-of-pocket medical expenditure and/or loss of income. In such a situation, households use a range of coping mechanisms to protect nonmedical consumption. This study empirically investigates whether households are able to insure consumption in the short-term when one or more members face serious illness/death. We also analyse if health shocks have asymmetrical effects on household welfare depending on the members facing the shocks and if access to micro-credit and social capital improves the smoothing ability of the households.

Keywords: *health shocks, coping strategies, non-medical consumption, micro-credit, social capital*

JEL Codes: *I15, I31*

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Sowmya Dhanaraj

INTRODUCTION

Health shocks can cause adverse economic outcomes for households through substantial medical expenditure (direct costs) and/or loss of labour earnings (indirect costs). These costs depend on a number of factors such as type and severity of illness, whether household sought any treatment (outpatient or inpatient), type of service provider (public or private) used by the households, whether household members are covered by health insurance, employment status of the members facing health shocks and whether working members of the household have protection against loss in income due to absence from work. In order to cope with the economic consequences of health shocks, households use one or more strategies that include dissaving, borrowing from formal and informal sources, taking extra work and increasing labour force participation of children. Despite these coping mechanisms, households may experience welfare disruptions like decline in non-medical consumption expenditure and impoverishment in the short-term. Thus, understanding the welfare impact of health shocks and coping strategies is very important from policy perspectives of national growth and poverty reduction (Alam and Mahal, 2014).

This study focuses on the impact of health shocks on household welfare (change in non-medical consumption expenditure) for the southern state of Andhra Pradesh in India. We use the recent longitudinal data of *Young Lives* project that aims to study childhood poverty of two birth cohorts (younger and older) over a 15-year period across four countries. Using this data, we empirically investigate the following questions: (1) Are households able to smooth consumption against health shocks through different coping mechanisms? (2) Does access to microcredit through self-help groups (SHGs) and social capital through network of friends, relatives and neighbours etc. help to smooth consumption better? (3) Do health shocks have asymmetrical effects depending on the members facing these shocks? We find that in general

health shocks do not have significant negative effects on growth in real consumption expenditure of the households. However, health shock to main breadwinner of the household reduces the food expenditure and increases medical expenditure incurred by the households. We further find that access to credit through self-help groups (SHGs) helps these households to smooth consumption while social capital does not have a significant effect on consumption change.

In the following section we give a brief of review of literature on the effects of health shocks on household consumption. Following this, an illustration of the longitudinal data, variables and methodology is given. Results and conclusions are presented in the final section.

LITERATURE REVIEW

We illustrate the theoretical framework and the empirical evidence on how health shocks affect household welfare under the following sub-sections below[1].

Theory

There are two important theories that predict that idiosyncratic shocks like health shocks leave consumption unchanged. These are explained below.

Theory of Full Insurance

The theory of full insurance initiated by Arrow predicts that in the absence of formal insurance markets, near Pareto-efficient allocation of risk within a community is achieved through risk-sharing across households. Hence, households are protected against idiosyncratic shocks

[1] The empirical investigation has also been extended to explore effects of health shocks on labour supply (Gertler and Gruber, 2002), earned and unearned income (Lindelow and Wagstaff, 2005), household assets and debt levels (Kochar 1995; Mohanan, 2007), educational attainment of children (Sun and Yao, 2010), transfer payments (Dano, 2005), nutrition status (Dercon and Krishnan, 2000) etc.

and consumption depends only on aggregate income and not on individual household income. This is illustrated below:

Pareto-optimal consumption allocations are obtained by maximising weighted sum of individual household utilities discounted over time subject to the constraint that aggregate consumption must be less than aggregate endowment at each time and state.

$$max \sum_{i=1}^{N} \lambda_i \sum_{t=t}^{T} \beta_i^t \sum_{s=1}^{S} \pi_s u_i(c_{ist})$$

$$\sum_{i=1}^{N} c_{ist} \leq \sum_{i=1}^{N} c_{ist} \ \forall \ s.t \qquad (1)$$

where $u' > 0$ and $u'' < 0$, i is the index of household in the community, t indexes time, λ_i is the household i's Pareto weight satisfying $0 < \lambda_i < 1$ and $\sum \lambda_i = 1$, β_i^t is household i's time preference, s indexes state of nature and π_s is the probability that state s occurs, c_{ist} is household i's consumption in state s and time t, e_{ist} is household i's endowment in state s and time t.

The following identical utility function is assumed.

$$u_i(x) = \frac{-1}{\sigma} e^{-\sigma x} \qquad (2)$$

Using this utility function in the first order maximization condition and adding it across all households in the community at any point of time, the following equation is obtained.

$$c_{ist} = \bar{c}_{ist} + \frac{1}{\sigma}\left[\ln(\lambda_i) - \frac{1}{N}\sum_{j=1}^{N} \ln(\lambda_j)\right] \qquad (3)$$

From above equation, consumption of household i at time t in state s is equal to average consumption in the community plus time-invariant household fixed effect. Since $\Delta c_{ist} = \Delta \bar{c}_{ist}$, households are insured within the community against idiosyncratic shocks and only face aggregate community risk.

Permanent Income Hypothesis

Permanent income hypothesis predicts that households optimize their time path of consumption by forming an expectation of life-time income. Households adopt different inter-temporal strategies that enable them to spread the effect of income shocks on consumption over a period of time. These strategies include borrowing and saving in formal and informal markets, accumulating and selling assets etc. This is explained below:

Suppose households at time t maximize their inter-temporal utility given below.

$$max \sum_{\tau=t}^{T} (1+\delta)^{t-\tau} u(c_t) \qquad (4)$$

where $u' > 0$ and $u'' < 0$, δ is the rate of time preference and i indexes the household. Let $y_t(S_t)$ be the income of the household where S_t represents the shocks affecting the household. The value of assets at the beginning of the period $t+1$ is given by

$$A_{t+1} = (1+r)(A_t + y_t(S_t) - c_t) \qquad (5)$$

where r is the rate of return on savings. Maximising equation (4) subject to (5) using envelope condition, the following functional form is obtained:

$$u'(c_t) = \frac{1+r}{1+\delta} E_t\left[u'(c_{t+1})\right] \qquad (6)$$

Assuming constant relative risk aversion with instantaneous marginal utility as $c_t^{-\rho} e^{\theta_t}$ (where ρ is the relative risk aversion parameter

and θ_t is the parameter for change in preferences over time), following equation is obtained (taking logs on both sides):

$$ln\frac{c_{it+1}}{c_{it}} = \frac{1}{\rho}[\ln(1+r) + \ln(1+\delta) + (\theta_{it+1} - \theta_{it})] + u_{it+1} \quad (7)$$

Where i indexes the household and u_{it+1} is the expectation error which has mean zero and is orthogonal to all the variables known at time t given rational expectations. Thus the optimal time path to consumption is only affected by change in preferences provided the permanent income of households is unaffected by shocks under binding liquidity constraints and households have access to credit and insurance markets.

In practice, households adopt a combination of risk-reducing and risk-sharing strategies depending upon the benefits and the costs of each strategy (Alderman and Paxson, 1992). Gertler *et. al.*, (2009) argue that both the theories have similar empirical predictions and can be tested using equation (8).

$$\Delta \ln\left(\frac{c_{ij}}{n_{ij}}\right) = \alpha_j + \delta\Delta h_{ij} + \sum_k \eta_k X_{ij} + \varepsilon_{ij} \quad (8)$$

which is a regression of growth in log per capita (non medical care) consumption for household i in community j, against community fixed effects α_j, change in health Δh_{ij}, a series of demographic controls X_{ijk} and random error ε_{ij}. However, one cannot know the mechanism by which consumption smoothing is achieved in such an empirical test.

Evidence

Empirical studies have tested the effects of health shocks on consumption for developed and developing countries with the help of cross-section and short panel (1-3 years) household surveys (Table 1).

Table 1: Empirical Evidence on Impact of Health Shocks on Household Consumption

Study	Measures of health shocks used	Findings
Townsend (1994)	Percentage of days sick in the last year	No effect
Gertler and Gruber (2002)	Changes in ability to perform activities of daily living	Illnesses that limit physical function affect household consumption
Asfaw and von Braun (2004)	Self-perceived improvement or deterioration in health of household head	Food consumption is insured while non-food consumption is significantly affected
Wagstaff (2007)	Death of working household member Drop in Body Mass Index (BMI) Long in-patient spell	Food consumption is not insured against health shocks
Mohanan (2007)	Injury due to bus accidents	Food and housing consumption are unaffected while education expenditure is reduced
Beegle *et. al.* (2008)	Adult mortality due to HIV/AIDS	Negative effects of consumption in the short-term but no persistence in the long term

Source: Author's own compilation.

Very few studies have analysed the impact of health shocks in the long-term mainly due to data constraints (Beegle *et. al.*, 2008). Studies also differ in terms of investigation of welfare impact of either particular type of illnesses like malaria, tuberculosis and AIDS[2] or ill-health in general. In the latter case, different measures of health shocks are used in the literature, which have their own limitations. For instance, some studies use medical expenditure incurred or in-patient treatment experienced by household members as a measure of health shock. But

[2] Beegle *et. al.* (2008) and Somi *et. al.* (2009).

this measure does not consider those households that do not treat ailments due to their inability to pay for healthcare. Such households may experience greater welfare loss in the long-term through further deterioration of health (Kawabata *et. al.*, 2002). Similarly, measures of self-reported health status are subjective and it is possible that better educated and wealthy individuals are more likely to report poor health (Islam and Maitra, 2012)[3]. Measures of limitations to perform activities of daily living which are considered to be more reliable within the group of self-reported measures have the drawback of tending to be more relevant for older population (Genoni, 2012).

In general, applied studies that test the risk sharing or inter-temporal smoothing hypothesis find that the ability of the households to insure consumption against health shocks depends on (1) household resources like human and physical capital (Gertler and Gruber, 2002), (2) severity of health shocks (Cochrane, 1991), (3) work status of members facing health shocks (Wagstaff, 2007), (4) access to financial markets and liquidity constraints faced (Islam and Maitra, 2012), (5) social capital or networks of family, friends etc. (De Weerdt and Dercon, 2006) (6) consumption groups like food and non-food items (Asfaw and von Braun, 2004). There are a few issues that are not adequately dealt with in the literature while determining the impact of health shocks on household consumption. These include endogeneity of health shocks and consumption, role of transfers from extended family and friends, access to formal credit and insurance markets, impact of unobserved factors like other income shocks experienced by the households etc. We explain the biases in estimation that arise out of these issues and the strategies used to address these biases in the methodology section.

[3] However, contrary to the prevailing skepticism on self-reported measures of health, Subramanian *et. al.* (2009) find that persons from lower socio-economic status reported higher prevalence of self-reported morbidity. They use four nationally representative survey datasets from India. We also find similar evidence using Young Lives data in an earlier study (Dhanaraj, 2014). In this study, we use self-reported measures of health shocks since we do not have information on other measures.

DATA

We use the longitudinal dataset of *Young Lives* project that aims to study childhood poverty over a span of 15 years in four countries (Ethiopia, India, Peru and Vietnam) through household and child surveys. In India, the survey is conducted in the state of Andhra Pradesh and three rounds have been completed in 2002 (R1), 2006 (R2) and 2009 (R3). The sample consists of two age-groups of children: younger cohort of 2011 children born in 2001-02 and older cohort of 1008 children born in 1994-95. The attrition rate from Round 1 to Round 3 is 3.6per cent; it reduces to 2.2per cent if attrition due to child-deaths is excluded (Galab *et. al.*, 2011).

The sampling method used in the survey is as follows: Andhra Pradesh has three agro-climatic regions – Telangana, Rayalaseema and Coastal Andhra. One poor and one non-poor district were chosen from each region[4]. From these districts, twenty sentinel sites (*taluk*) were selected based on a set of socio-economic indicators. Those households with a child born in 2001-02 (numbering 100) and those with a child born in 1994-95 (numbering 50) were randomly selected from each sentinel site[5]. This longitudinal dataset gives a profile of households' assets, livelihoods, consumption, socio-economic characteristics, income shocks faced by households and type of responses to these shocks[6].

The study asked sample households if they faced any income shock that impacted the household economy[7]. Table 2 gives the percentage of households that were affected by income shocks during

[4] Poor and non-poor districts and mandals were selected based on a set of development indicators. In addition to the six districts, Hyderabad district, capital of Andhra Pradesh was also included. For details of the sampling method, refer to Galab *et. al.* (2011).

[5] These children will be referred to as *Young Lives* children in the rest of the paper. The survey gives more detailed information on *Young Lives* children compared to other children in the household.

[6] The study asked sample households if they faced any income shock that affected the economy of the household negatively or reduced the economic welfare and the type of household response to each shock.

[7] Refer Dhanaraj (2014) for details.

the few years preceding the three rounds of survey. Health shocks are the most important income shocks faced by households after crop loss and natural disasters like flood and drought.

Table 2: Income Shocks Faced By Households

Type of shocks	Between child birth and Round 1 (per cent)		Between Round 1 and Round 2 (per cent)		Between Round 2 and Round 3 (per cent)	
	Younger	Older	Younger	Older	Younger	Older
Serious illness / death	18.55	27.38	28.67	31.79	18.20	20.71
Theft / fire / eviction	5.87	5.65	9.44	7.95	6.00	4.26
Job loss / Education expenses	7.96	14.48	3.64	4.12	1.38	1.12
Livestock loss / disease	5.82	8.04	6.31	7.75	7.64	9.34
Crop loss / damage	28.19	32.74	18.15	21.63	21.32	22.34
Natural disasters	22.28	24.11	30.56	31.19	9.58	11.27
Price fluctuations			11.13	11.27	78.58	74.72
Others	0.10	0.14	2.92	4.23	8.82	9.54
Observations	2011	1008	1950	994	1951	985

Source: Dhanaraj (2014).

The coping strategies used by the households that faced health shocks are reported in Table 3. Borrowing (mostly from informal sources) is the most important strategy used by households. This is followed by transfers from social networks and dissaving. Around 5per cent of the households worked more to bear the costs of health shocks (by sending children or other members of the family to work) while 3per cent reduced their consumption expenditure.

Table 3: Households' Responses to Economic Costs of Health Shocks

Household response	Between Round 1 and Round 2		Between Round 2 and Round 3	
	Younger (per cent)	Older (per cent)	Younger (per cent)	Older (per cent)
Received help from the community/relatives/friends	22.6	22.6	22.4	28.7
Used credit	34.3	33.9	30.6	32.8
Used savings	10.4	7.8	16.5	15.6
Worked more	4.9	7.3	7.4	7.0
Others[8]	27.8	28.2	23.2	16.0

Source: Adapted from Dhanaraj (2014).

EMPIRICAL STRATEGY

In order to measure the effect of health shocks on consumption, we use information from Round 2 and Round 3 of Young Lives survey[9]. The outcome variable is growth in log per-capita non-medical (real) expenditure[10]. The explanatory variable of interest is self-reported health shocks (serious illness or death) faced by one or more members (father or mother of *Young Lives* child or others) of the household. Figure 1 below shows the box plot of growth in real expenditure (medical and non-medical) by households facing health shocks. While the median growth of per-capita medical expenditure of households experiencing health shocks is significantly higher than that of households that did not face health shocks, the medians of per-capita non-medical expenditure growth of the two groups are not very different. The latter points to

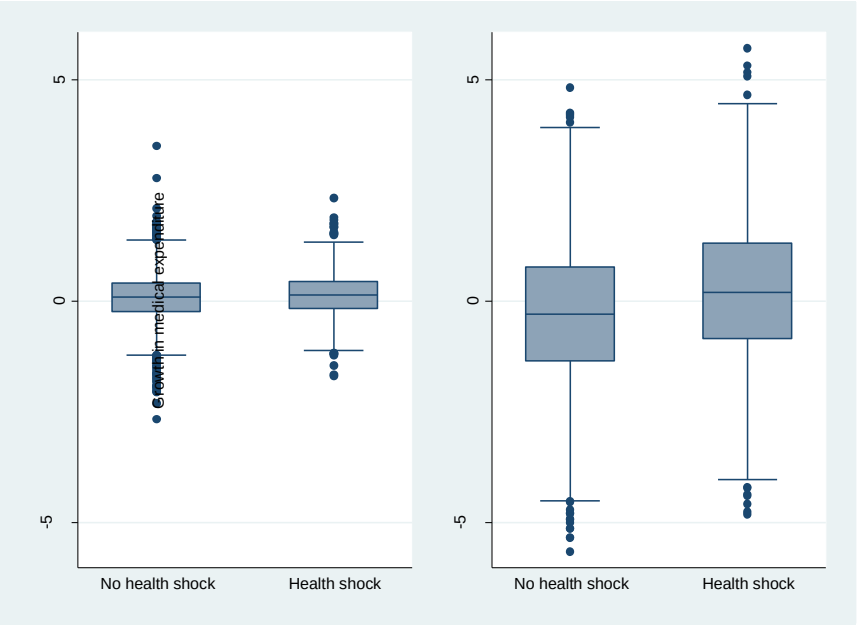
[8] Others include selling assets, withdrawing children from school, reducing expenditure etc.

[9] Round 1 does not have information on consumption expenditure of the households.

[10] This is based on household recall of expenditure which is different for different goods. In order to obtain real expenditure, we construct indices from the price data for various commodities available for each community. We then deflate the consumption expenditure data using these price indices.

households' ability to smooth consumption against health shocks which is further verified using regression analysis.

Figure 1: Consumption Growth Between R2 And R3



We use the regression specification in equation (9) to investigate the impact of health shocks on real consumption (non-medical) growth.

$$\Delta c_{ij} = \beta_1 h_{ij} + \beta_2 X_{ij} + \beta_3 \Delta X_{ij} + \delta_j + \varepsilon_{ij} \quad (9)$$

Where Δc_{ij} is the change in per-capita consumption of household i in community j between R2 and R3, h_{ij} is a dummy variable that takes value 1 if the household faced serious illness/death of one or more members between R2 and R3 and 0 otherwise, X_{ij} is a set of household characteristics as observed in R2 and ΔX_{ij} is a set of time-varying factors at the household level. We include community (village and urban ward) level fixed effects δ_j to allow for different economic growth rates across

different communities and also account for factors like access to health facilities. Initial household characteristics controlled for in the analysis are (1) characteristics of household head (age of the household head, dummy variables indicating whether the head was female, completed primary education and had a regular salaried job in R2) and (2) socio-economic characteristics (dummy variables indicating the wealth quintile groups and socially disadvantaged communities to which the household belongs). Time-varying explanatory factors comprise changes in household size and dependency ratios between R2 and R3.[11]

The above specification may not address the bias in estimation that arises out of the following situation. Reverse causality or feedback effects (illness reduces consumption which again feeds back into health through reduced intake) may affect the causality relation. Few studies have addressed this issue by analyzing the effect of exogenous health shocks like injury/death due to road accidents (Dano, 2005; Mohanan, 2013) or by instrumenting for health events (Genoni, 2012). When there are feedback effects, health events may become persistent. So we check whether health shocks are persistent, i.e., correlated over time using the following dynamic panel regression model (Islam and Maitra, 2012):

$$h_{ijt} = \lambda h_{ijt-1} + \eta X_{ijt} + \delta_j + \varepsilon_{ijt} \qquad (10)$$

Where h_{ijt} is health shocks reported by the household i in community j in round $t(t = 1,2,3)$ survey. If health shocks are not persistent, then λ will not be statistically significant. Another source of endogeneity bias can be due to unobserved factors and measurement errors. For instance, unobserved income shocks might affect both consumption and health status of households which in turn biases the estimates. We take this into account by controlling for other income shocks like job loss and crop loss experienced by households.

[11] The summary statistics of the variables used are reported in Appendix I.

FINDINGS

Before we determine the impact of health shocks on consumption, we empirically test for persistence of health shocks using equation (10); the estimates are presented in Appendix II. The coefficient on lagged term of health shocks is not statistically significant, which indicates that health shocks are transitory in nature (controlling for other household characteristics) and thus are exogenous source of variation. Model 1 in Table 4 presents the baseline regression results of equation (9). We find that health shocks to father, mother or other members in the household do not have a significant effect on consumption growth of the household. Consumption growth is found to be higher among households whose heads are female or have a regular salaried income. Increase in household size and dependency ratios reduces the growth in per-capita consumption. Growth is also the highest among the two lowest wealth quintile groups which may be partly due to low base effect. Exposure to other income shocks like crop shocks do not reduce the consumption growth significantly, mostly due to the absorption of impact of aggregate shocks in the community fixed effects.[12]

In model II, we take into account other factors mentioned in the literature that help households smooth consumption better. These include social capital (whether households reported that they can rely on social networks to raise money during difficult times), role of credit (whether they had access to formal credit/finance and SHG, in R2). We find that access to SHGs plays a significant role in consumption smoothing which is similar to the findings of Islam and Maitra (2012). We also carry out the analysis separately for rural and urban households, younger and older cohort and find that the results do not change across the sub-samples (Appendix III). The effect of health shocks are also evaluated for change in different consumption sub-groups, i.e., medical,

[12] Few households (1.4%) migrated during R2-R3 mostly in search of jobs. We find that consumption growth is significantly lesser (at 10% level) among the migrated households. We also restrict the sample to households that have not migrated and find that results are consistent.

food and non-food (non-medical) expenditure. We find that health shock to father of the *Young Lives* child negatively impacts the change in food consumption expenditure but has no significant impact on non-food items. There is a significant increase in real medical expenditure of households that faced health shocks.

Table 4: Health Shocks and Consumption Growth

	Model I		Model II	
Variables	Coefficient	Se	Coefficient	Se
Father (R2-R3)	-0.0247	0.0357	-0.0258	0.0356
Mother (R2-R3)	0.0370	0.0382	0.0399	0.0383
Other members (R2-R3)	0.0113	0.0473	0.0131	0.0473
Change in dependency	-0.0537***	0.0179	-0.0538***	0.0179
Change in HH size	-0.0414***	0.0112	-0.0402***	0.0112
Quintile group 2 (R2)	-0.0268	0.0333	-0.0278	0.0333
Quintile group 3 (R2)	-0.0642*	0.0342	-0.0656*	0.0343
Quintile group 4 (R2)	-0.1058***	0.0367	-0.1087***	0.0369
Quintile group 5 (R2)	-0.1848***	0.0448	-0.1880***	0.0449
Head age (R2)	-0.0133**	0.0061	-0.0132**	0.0061
Age squared (R2)	0.0001*	0.0001	0.0001*	0.0001
Female head (R2)	0.1263***	0.0409	0.1253***	0.0409
Education (R2)	0.0327	0.0252	0.0333	0.0252
Regular salaried (R2)	0.0691**	0.0319	0.0663**	0.0319
SC	-0.0457	0.0307	-0.0448	0.0307
ST	-0.0222	0.0486	-0.0238	0.0489)
Muslim	-0.0200	0.0474	-0.0122	0.0476
Old cohort	0.0272	0.0244	0.0268	0.0244
HH migrated (R2-R3)	-0.1491*	0.0899	-0.1491*	0.0900
SHG access (R2)	-	-	0.0822**	0.0347
Social capital (R2)	-	-	0.0219	0.0235
Constant	0.4328***	(0.1399)	0.3743***	0.1444
Observations	2,888		2,888	
Adj. R-squared	0.0926		0.0937	

Note: *,**, *** denote significance levels at 10per cent, 5per cent and 1per cent. Regressions includes community fixed effects and other income shocks faced by households during R2-R3.

CONCLUSIONS

This study determines the effect of health shocks on non-medical consumption growth of households in the short-term. We find that households are able to smooth consumption against health shocks, although serious illness/death of the major earning member of the household may negatively impact the consumption. Households with access to credit markets through SHGs are able to smooth consumption better compared to others. However, the conclusions of the study come with a few caveats. The data used in the analysis is not a representative sample of all households in the state of Andhra Pradesh since the survey included only those households with one year or eight year old children in 2002. Though this study finds that households are able to protect consumption from health shocks in the short run, it is important to understand their impact on the long-term welfare. This is because when households adopt costly coping strategies like borrowing from money lenders at usurious rates and withdrawing children from school to send them to work, they trade off "*short-term consumption needs against longer-term economic viability*" (Bird and Prowse, 2008). This in turn has implications for investments in future productivity, vulnerability to future shocks, inter-generation transmission of poverty and inequality etc.

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APPENDIX

Appendix I: Summary Statistics

Variable	Mean	Std. Dev.	Min	Max
Consumption growth	0.095	0.556	-2.667	3.499
Father	0.094	0.293	0	1
Mother	0.083	0.277	0	1
Other members	0.049	0.215	0	1
Change in dependency	-0.055	0.630	-3.75	6.227
Change in hh size	0.313	0.929	-1	15
Quintile group 2	0.199	0.399	0	1
Quintile group 3	0.198	0.398	0	1
Quintile group 4	0.202	0.401	0	1
Quintile group 5	0.198	0.398	0	1
Head age (R2)	39.84	11.28	8	94
Age squared (R2)	1714.34	1079.97	64	8836
Female head (R2)	0.071	0.257	0	1
Education (R2)	0.371	0.483	0	1
Regular salaried (r2)	0.147	0.354	0	1
SC	0.189	0.392	0	1
ST	0.119	0.324	0	1
Muslim	0.070	0.254	0	1
Older cohort	0.336	0.472	0	1
HH migrated	0.013	0.112	0	1
SHG access (R2)	0.857	0.350	0	1
Social capital (R2)	0.265	0.441	0	1
Job loss	0.013	0.114	0	1
Crop loss	0.220	0.414	0	1

Appendix II: Persistence of Health Shocks

Variables	Coefficient	Se
Lagged health shock	0.1013	0.0737
Head age	-0.0178	0.0190
Age squared	0.0002	0.0002
Female	0.8970***	0.1126
Primary education	-0.0640	0.0805
Regular salaried	-0.1274	0.1035
Wealth quartile II	0.0008	0.0902
Wealth quartile III	-0.0749	0.0983
Wealth quartile IV	-0.1306	0.1272
SC	0.2280**	0.0899
ST	0.1539	0.1360
Muslim	0.1973	0.1451
Dependency ratio	-0.0294	0.0602
Disability	0.3480***	0.1067
Elderly	0.6425***	0.0777
Old cohort	0.1518**	0.0733
Round 3	-0.7619***	0.0684
Observations	5,839	

Note: Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Appendix III: Health Shocks And Consumption Growth

	(1) Rural	(2) Urban	(3) Younger cohort	(4) Older Cohort	(5) Food expenditure	(6) Medical expenditure	(7) Non-food expenditure
Father	0.003	-0.108	-0.058	0.043	-0.079**	0.624***	0.044
	(0.042)	(0.069)	(0.045)	(0.063)	(0.037)	(0.112)	(0.046)
Mother	0.053	-0.079	0.041	0.042	0.040	0.586***	0.036
	(0.044)	(0.081)	(0.048)	(0.068)	(0.039)	(0.120)	(0.049)
Others	-0.002	0.058	0.026	0.016	-0.020	0.212	0.020
	(0.057)	(0.084)	(0.056)	(0.093)	(0.049)	(0.149)	(0.061)
Constant	0.333**	0.646**	0.351**	0.639**	0.147	-0.499	0.559***
	(0.169)	(0.270)	(0.165)	(0.324)	(0.144)	(0.444)	(0.181)
Observations	2,183	705	1,917	971	2,887	2,643	2,888
Adjusted R-squared	0.096	0.080	0.106	0.058	0.126	0.068	0.087

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