



A Study on Awareness, Coverage and Willingness to Avail Health Insurance among the Residents of a Rural Area in Central Karnataka

Netra G¹, BA Varadaraja Rao²

Financial Support: None declared

Conflict of Interest: None declared

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How to cite this article:

Netra G, Rao BAV. A Study on Awareness, Coverage and Willingness to Avail Health Insurance among the Residents of A Rural Area in Central Karnataka. Natl J Community Med 2019; 10(4):190-196

Author's Affiliation:

¹Assistant professor, Dept. of Community & Medicine, East Point College of Medical Sciences & Research Centre, Bengaluru; ²Professor, Dept. of Community & Medicine, SSIMS & RC, Davangere

Correspondence

Dr. Netra G
netragoudar90@gmail.com

Date of Submission: 24-12-18

Date of Acceptance: 19-03-19

Date of Publication: 30-04-19

ABSTRACT

Introduction: Health insurance is defined as “an individual or group purchasing health care coverage in advance by paying a fee called premium”, which helps to defer, delay, reduce or avoid payment for health care incurred by individuals and households. As similar studies were lacking in this area the present study was undertaken to know the awareness, subscription in rural area.

Objectives: To assess the awareness, coverage and willingness to avail health insurance by the residents of rural practice area of SSIMSRC, Davangere.

Methods: The present cross sectional study was conducted in the RHTC of SSIMSRC, Davangere from May-July 2016. A sample of 600 families was visited by systematic random sampling and data was collected from the head of the family with informed consent using a predesigned, pretested questionnaire by house to house interview. Analysis was done using SPSS v10 and Chi-square, regression analysis tests were applied for association.

Results: The awareness, coverage and willingness to avail health insurance were 65.7%, 45.5% and 77.1% among the total families (600) studied respectively.

Conclusion: Enrolment centres should be set up in each village for easy accessibility and the premiums should be customized to individual levels to benefit the poorer section of the community.

Keywords: Health insurance, awareness, coverage, willingness, rural area.

INTRODUCTION

Health is a human right. Its accessibility and affordability has to be insured to all sections of the community. Man is exposed to risks from the time of conception. Risks are inevitable which have to be met by minimizing their effects or by decreasing the risks. Hence, the concept of health insurance came in to existence.¹ To endeavour and accelerate the universal health coverage (UHC), World Bank & World Health Organisation (WHO), have developed a framework which includes financial risk protection, as one of the component.¹

Health insurance is a method to finance healthcare. The ILO defines health insurance as “the reduction

or elimination of the uncertain risk of loss for the individual or household by combining a larger number of similarly exposed individuals or households who are included in a common fund that makes good the loss caused to any one member”.² To put it more simply, in a health insurance program, people who have the risk of a certain event contribute a small amount (premium) toward a health insurance fund. This fund is then used to treat patients who experience that particular event (e.g., hospitalization). It is a form of risk management which is used primarily to hedge against the risk of a contingent, uncertain loss. Insurance may be described as a social device to reduce or eliminate risk of life and property.³

The health expenditure around the world is as below:⁴

	Total health expenditure	Public	OOP
Worldwide	9.94% of GDP	60.1	18.2
South-east Asia	4.4% of GDP	31.2	61.5
India	4.7%	30.0	62.2
USA	17% of GDP		

In India, currently any form of insurance including the Central Government health scheme, Employee state insurance scheme, Government Sponsored Schemes and Private Health Insurance together covers approximately 25% of India's population.⁵

According to NFHS4 data the households with any usual member covered by a health scheme is 28.2% among urban, 29.0% among rural area and overall coverage is 28.7%.⁶

The level of awareness of the health insurance in India is quite low since only 54% of the households have heard about it. In the urban area 56% of the households are aware of the health insurance compared with 51% in rural households.⁷The data on the willingness to pay (WTP) for health insurance among the Indian population is lacking.

OBJECTIVES

The study was conducted to assess the awareness, coverage and willingness to avail health insurance by the residents of rural practice area of SSIMSRC, Davanagere.

METHODS AND MATERIALS

The present cross-sectional analytical study was conducted in the rural health training centre (RHTC) of SSIMS and RC, Davanagere during May 2016 - July 2016. The RHTC consists of 12 villages with 3,365 households composing a total population of 17,495.

Study population: All permanent residents of villages under RHTC were defined as study subjects to assess the awareness and coverage of health insurance. For assessment of awareness levels and factors influencing subscription of health insurance, head of the families or any responsible member of the family (>18years) were interviewed, considering better comprehension to the oral questionnaire after informed consent.

Sample size: The sample size of for the present study was calculated based on the prevalence of National Sample Survey 2014, 71st round which estimated the prevalence of 14% coverage of health insurance in rural areas.⁸

Sample size was calculated as below $n = \frac{Z^2 pq}{d^2}$

Where, Z is level of significance, which is 1.96 at 95% CI, p= Prevalence=14% and q=1-p, d = Relative precision=20% of the prevalence = 20% of 14%=2.8%.

The estimated sample size was 590 families which was rounded off to 600. The sampling unit was the family/household and unit of study was head of the family from each selected family.

Sampling method: The list of households of each village was obtained from the village survey report of the Primary Health Centre (PHC, Lokikere) and the sub centres, of SSIMS and RC. The sample interval (K) was calculated by using the sample size as below

$$K = \frac{\text{Total number of households of 12 villages}}{\text{sample size}} = \frac{3365}{600} = 5.60 \approx 6$$

By using the household numbers documented in the village survey book, households were selected by **systematic random sampling method**.

By using the sample interval K=6, a household between 1st household to 6th household was selected randomly i.e, known as the 'Random start household' by lottery method without replacement as the first household and followed by that household, every 6th household was selected after the previous household.

After following the inclusion and the exclusion criteria's the interview was done after obtaining the informed consent from the participating head of the family.

During home visit, the purpose of the study was explained to the head of the family and/or to the members of the household and then the head of the family was interviewed with the pre-designed, pre-structured and validated questionnaire consisting variables on socio-demographic characteristics, awareness, coverage and willingness to avail the health insurance. From each house only one member was interviewed.

The data collection was continued in the selected households of the RHTC unless the required sample size of 600 families was met.

The selected households which were locked during the study even after three consecutive visits during the study period were excluded and the interview was conducted for the next available household.

Operational definitions: Families were considered insured if they had subscribed to any of the available health insurance schemes and paying the requisite premium amount regularly with respect to the particular insurance scheme.

The families were considered to be completely covered if all the members of the household have the health insurance and considered incompletely

covered when not all the members of the household have health insurance though other members of the same family have any kind of health insurance.

Statistical analysis: Data was entered in MS EXCEL and statistical analysis was done using SPSS version 10 and results were expressed in terms of percentages and proportions. Analysis was carried out by chi-square test and logistic regression method to find the association between the awareness of health insurance and the subscription, and various socio-demographic characteristics influencing the awareness, subscription and willingness to avail the health insurance. A statistical significance of 0.05 was considered.

RESULTS

Table 1 represents that majority (52.8%) of the respondents were in the middle age followed by the adults i.e. 29.5%. Males constituted about 92.5%. More than 3/4th of respondents i.e. 89.3% of the families belonged to Hindu religion and the rest belonged to Muslim religion.

Table 1: Socio-demographic profile of the participants (n=600)

Variables	Frequency (%)
Age group	
Young adults 19-25	10 (1.7)
Adults 26-40	177 (29.5)
Middle age 41-60	317 (52.8)
Elderly >60	96 (16)
Gender	
Male	555 (92.5)
Female	45 (7.5)
Religion	
Hindu	536 (89.3)
Muslim	64 (10.7)
Education	
Illiterate	274 (45.7)
Primary school	98 (16.3)
High school	136 (22.7)
Intermediate/diploma	51 (8.5)
Graduate/post graduate	41 (6.8)
Occupation	
Unemployed	49 (8.2)
Unskilled worker	119 (19.8)
Semi-skilled worker	27 (4.5)
Skilled worker	42 (7)
Shop keepers/ Farmer	338 (56.3)
Semi-profession/ profession	25 (4.2)
Socio-economic class (SEC)	
Class I (>6254)	11 (1.8)
Class II (3127-6253)	21 (3.5)
Class III (1876-3126)	69 (11.5)
Class IV (938-1875)	168 (28)
Class V (<937)	331 (55.2)

Table 2: Awareness, subscription and type of health insurance

Variables	Frequency (%)
Awareness (n=600)	
Yes	394 (65.7)
No	206 (34.3)
Subscription among the aware (n=394)	
Yes	273 (69.3)
No	121 (30.7)
Type of Health Insurance (n=273)	
Government	247 (90.5)
Private	26 (9.5)

Table 3: Awareness and sources of information about the health insurance (n=394)

Indicators	Frequency (%)
Awareness about the health insurance	
Small amount of money paid/year helps get medical treatment	384 (97.5)
Can be for individuals and families	378 (95.9)
Can get admitted even in corporate hospitals throughout India	378 (95.9)
Have to renew every year	368 (93.4)
Name any health insurance scheme	365 (92.6)
All age groups can be insured	362 (91.9)
Cashless payment	325 (82.5)
Sources of information	
Village cooperative society	311 (79)
Family	245 (62.2)
Friends	96 (24.4)
Mass media	121 (30.7)
Insurance Agents	48 (12.2)
Doctors/Tax consultants	15 (3.8)

Nearly half of the respondents i.e. 45.7% were illiterates and 22.7% of the respondents had finished their high school and only 6.8% were graduates/postgraduates. More than half i.e. 56.3% of the respondents were farmers/shopkeepers by occupation followed by the unskilled workers (i.e. labourers and construction workers) and 8.2% were unemployed (Homemakers/elderly people). According to modified BG Prasad’s classification 55.2% of the families belonged to class V socio-economic class followed by 28.0% to class IV and only 1.8% and 3.5% belonged to class I and II respectively.²¹ Nuclear families constituted 66% of the total families followed by joint (17.2) and 3-generation families (16.8).

It is seen from the table 2 that only 394 respondents out of the total participants i.e. 65.7% were aware of the health insurance and the rest were unaware of the health insurance.

Out of the 394 families who were aware of health insurance, 69.3% families had subscribed health insurance and the rest 30.7% of the families did not have health insurance in spite of having awareness about the health insurance and

Table 4: Association of socio-demographic and economic characteristics with subscription of health insurance

Variables	Health insurance		Total n (%)	X ² Value	df	P Value
	Yes n (%)	No n (%)				
Age (years)						
18-25	5 (50.0)	5 (50.0)	10 (100)	1.88	3	0.59
26-40	76 (42.9)	101 (57.1)	177 (100)			
41-60	152 (47.9)	165 (52.1)	317 (100)			
>60	40 (41.7)	56 (58.3)	96 (100)			
Sex						
Male	250 (45.0)	305(55.0)	555 (100)	0.62	1	0.43
Female	23 (51.1)	22(48.9)	45 (100)			
Type of family						
Nuclear	177 (44.7)	219 (55.3)	396 (100)	0.32	2	0.85
Joint	48 (46.6)	55 (53.4)	103 (100)			
3-generation	48 (47.5)	53 (52.5)	101(100)			
Education						
Illiterate	115 (42.0)	159 (58.0)	274(100)	24.77	4	0.00*
Primary	34 (34.7)	64 (65.3)	98(100)			
High school	62 (45.6)	74 (54.4)	136(100)			
PUC /diploma	32 (62.7)	19 (37.3)	51(100)			
Degree	30 (73.2)	11 (26.8)	41(100)			
Occupation						
Unemployed	31 (63.3)	18 (36.7)	49 (100)	13.18	5	0.02*
Unskilled	44 (37.0)	75 (63.0)	119 (100)			
Semi-skilled	13 (48.1)	14 (51.9)	27 (100)			
Skilled	20 (47.6)	22 (52.4)	42 (100)			
Clerical/ shop/ farmers	158(46.7)	180(53.3)	338 (100)			
Semi/ profession	7(28.0)	18(72.0)	25 (100)			
Socio-economic status						
Class I	6 (54.5)	5 (45.5)	11(100)	11.98	4	0.04*
Class II	15 (71.4)	6 (28.6)	21(100)			
Class III	36 (52.2)	33 (47.8)	69(100)			
Class IV	79 (47.0)	89 (53.0)	168(100)			
Class V	137 (41.4)	194 (58.6)	331(100)			
Total	273 (45.5)	327 (54.5)	600 (100)			

*Significant at 5% level of significance

Table 5: Association of health insurance with education, occupation and socio economic class

Variables	P value	Odds Ratio	95% CI
Education			
Illiterate		1	
Primary	0.472	1.198	0.732 - 1.962
High school	0.161	0.735	0.478 - 1.130
Diploma/PUC	0.001*	0.320	0.168 - 0.609
Graduate	0.000*	0.231	0.108 - 0.494
Occupation			
Unemployed	0.004*	0.223	0.080 - 0.619
Unskilled	0.704	0.843	0.348 - 2.039
Semiskilled		1	
Skilled	0.498	1.430	0.508 - 4.029
Clerical/ shop/farmer	0.533	0.770	0.338 - 1.754
Profession	0.322	0.567	0.184 - 1.744
Socio- economic class			
Class I	0.311	3.780	0.289 - 49.503
Class II	0.029*	0.370	0.151 - 0.902
Class III	0.144	0.654	0.370 - 1.157
Class IV	0.173	0.757	0.507 - 1.130
Class V		1	

*Significant at 5% level of significance

Majority of the families i.e. 90.5% subscribed government health insurance schemes such as Yeshasvini co-operative farmers' health scheme, RSBY, Vajpayee Arogya Bhagya and ESI whereas 9.5% had subscribed private health insurance schemes such as ICICI Lombard and Star health.

Coverage of the health insurance: About 45.5% (273 out of 600 families) were covered by some form of the health insurance in which all the members of the household may or may not have insurance and the rest 54.5% (327 out of 600 families) do not have any form health insurance i.e. none of the family members have health insurance.

Table 3 depicts that out of the 394 respondents who were aware, more than 90% had knowledge about the various components of the health insurance as shown in the figure and 82.5% knew that health insurance may be cashless payment. The table also represents that the source of information regarding the health insurance was mainly through the village co-operative society i.e. 78.9%, followed by friends and family, i.e. 62.2% and

24.4% respectively. The other minor sources were mass media (television, newspaper), insurance agents and doctors/tax consultants.

Table 4 depicts that though the association between various variables and subscription of health insurance is not statistically significant, more than 40% of the respondents in each age group have health insurance, and likewise more than 45% of males and females have health insurance. Similarly nearly 50% of the respondents possess health insurance with respect to religion and the type of family. And as the level of education is increasing the subscription of health insurance is also high as seen in the degree holders and those completed PUC. There is variable subscription of health insurance among different occupations and the majority of upper class families (71.4% of class II and 54.5% of class I) have subscribed for health insurance compared to lower class. Therefore education, occupation as well as economic status are significantly associated with subscription of insurance. Similarly for awareness about the health insurance also, education ($\chi^2=34.11$, p value=0.00) and socio-economic status ($\chi^2=11.96$, p value=0.01) are significantly associated.

On regression analysis (Table 5) it was found that the subscription of health insurance was 1.1 times more among those who have studied up to primary level than illiterates with OR=1.1, CI= 0.7-1.9. But, there was significant association with the health insurance and those who have studied up to diploma and graduate level. Likewise the subscription was 1.4 times among the skilled workers than the others and it was low among the unemployed persons which was significant with OR=1.430 and CI=0.080 - 0.619. Similarly the subscription of health insurance was found to be 3.7 times more among the class I families (OR=3.7, CI=0.289-49.503) when compared to families belonging to class V but it is not statistically significant.

Factors Influencing Non-subscription: About 76% of the non-subscribers said that they cannot afford to pay for insurance, difficulty in availing services in the hospitals(56%), lack of comprehensive coverage(40%), would like to invest in some other areas, and other 42.7% did not want to buy as they felt no need of it.

Willingness to participate in health insurance schemes: Out of the 327 families who did not have any insurance 77% of them were willing to subscribe any of the existing health insurance schemes.

DISCUSSION

This study is an effort in the area of health insurance to assess the awareness, coverage, and will-

ingness of health insurance among the selected families of the rural field practice area. Discussion part is divided into four main sections: socio-demographic characteristics of the participants, awareness, coverage, willingness to avail health insurance.

Socio-demographic characteristics

In the present study males constituted the majority of the respondents (92.5%) which was similar to other studies conducted by Indumathi et al., Chethana et al and Holyachi et al.^{3,9-10} The proportions of females was less compared to males; as the head of the family and the financial decision maker was observed to be males in our study area. Contrary to it in the study of Reshmi B, this ratio was reverse and male constituted 38.4% and females were 61.6%.¹¹

In our study over half i.e. 54% were literates and 46% of the respondents were illiterates and according to modified BG Prasad's classification 55.2% of the families belonged to class V (poor) socio economic class followed by 28.0% belonging to class IV (lower middle), similar to studies done by SK Bawa et al., and Madhukumar et al.¹³⁻¹⁴ In the present study majority of the study population were farmers (56.3%) and unskilled workers (labourers = 19.8%) similar to study done by Choudary et al.¹⁵

Awareness

In the present study the awareness about the health insurance was 65.7%, which is almost in par with study conducted by Reshmi B, Nair NS et al. (64%), and higher than Reshmi Raghu et al., (38%).^{11-12,16} Similar findings were noticed in the studies carried out by Choudary et al., (57.3%) and Kumar Set al., (43.4%).^{15,17} The high awareness in our study may be attributed to the high literacy rate (54.3%) among the respondents. Whereas the awareness in our study was less compared to the studies conducted by Indumathi et al., and Holyachi et al., which were 75.7% and 75.0% respectively which may be because of the different settings in which the studies carried out.^{3,10}

Source of Information

In the present study, the source of information regarding the health insurance was mainly through the village cooperative society i.e. 78.9%, followed by friends and family, i.e. 62.2% and 24.4% respectively and also through television (17%) and mass media (12.4%). This shows that the village cooperative societies and associated health providers are fulfilling their responsibilities in creating awareness among the people and have made the process of availing health insurance easier and accessible at the village cooperative societies. The information regarding health insurance is spread from one per-

son to the other living in the rural area and also through Panchayat offices where the cards were issued to the people. This finding was similar to studies of Indumati et al., Choudary et al.^{3,15} In a study carried out by Reshmi Nair et al., insurance agents (9%), doctors (9%) and from the internet (2.6%) was the source of information.¹¹

Education and socioeconomic determinants of awareness

In the present study a significant association is found between education and socio-economic status with the awareness of the health insurance which is similar to studies of SK Bawa et al., Choudary et al.^{13,15} In our study, awareness was found to be more in class V (52.5%) and class IV (27.4%) which may be attributed to the fact that a good awareness was created among the lower socioeconomic classes by the village cooperative societies and health care providers of the respective area. These were similar to the study done by Madhukumar S et al., whereas in studies of Choudary et al., Reshmi Nair et al., awareness level increased with the increase in education and the socioeconomic class.^{11,14-15} Hence it can be stated that the socioeconomic status and education do play an important role in awareness on health insurance.

Coverage

The coverage of health insurance in the present study is 45.5% i.e. 273 families out of 600 families were covered by some form of health insurance. But based on awareness, out of the 394 (65.7%) families who were aware, only 273 families (69.3%) have subscribed for health insurance and the rest 171 families (30.7%) did not have health insurance though they were aware of the health insurance. This can be attributed to the lower socio-economic condition of the participants. These findings were higher compared to studies conducted by Indumati et al., Reshmi Nair et al., Madhukumar et al and Choudary et al.^{3,11,14-15} According to NFHS4 data the households with any usual member covered by a health scheme or health insurance is as follows.

NFHS4	Rural(%)	Urban(%)	Overall(%)
India	28.2	29.0	28.7
Karnataka Factsheet	31.8	23.4	28.1
DLHS4 Davangere	39.9	34.9	38.0

Source:^{6,19}

The coverage in the present study is higher to others which can be attributed to the good awareness and accessibility provided to the people by the healthcare providers.

Reasons for subscription

In the present study awareness of the benefits about health insurance among majority (87.5%),

advice from family and friends (71.4%) and society mandatory (59%) were reasons for subscription. Our findings were higher compared another study conducted by Holyachi et al.¹⁰

Where as in a study conducted by Indumati et al, majority of the respondents 96.2% had taken health insurance to cover their medical expenses and others for employer compulsion 3.4%, when asked about the benefits of health insurance, 86.6% of them reported that for reducing healthcare expenditure, 18% reported that they have subscribed because of better coverage of the entire family, 2.5% for the emergency health care, and 0.9% said they knew about better utilization of medical facilities and other benefits.³

Willingness to pay for health insurance

In the present study, 21.2% (58 families) of the insured families which were incompletely covered expressed their interest to avail health insurance for other members of their family too i.e. 100% willingness from the incompletely covered families. This is by seeing the efficiency of the health insurance schemes in reducing the health expenditure among the other family members. Whereas among the families (327 families) who did not had any health insurance 77.1% of them expressed their willingness to avail health insurance. Our findings were higher compared to studies conducted by SK Bawa et al., Sayem Ahmed et al., whereas willingness to pay for health insurance in a study conducted by Holyachi et al (87%) by Mathiyazhagan et al., (91.8%) was higher which is because the majority of families belonged to class V were unable to afford to pay the premium.^{10,13,16,18}

CONCLUSION

The awareness of health insurance in the present study was found to be 65.7% out of which 69.3% of the families have subscribed various health insurance schemes.

The coverage of health insurance was nearly 50% but not all the members of the family were covered. The awareness and coverage of the health insurance was significantly associated with the educational level, occupation of the head of the family and the socio-economic status of the families.

Majority (90.5%) of the families had opted for government health insurance schemes out of which about 84% of the families have subscribed Yeshasvini co-operative farmers' health scheme.

Willingness to subscribe was seen in all the incompletely covered families and 77.1% of the non-subscribers.

RECOMMENDATIONS

Awareness campaigns and advertisements by the insurance companies should be held to enrol the rest of the families who are uninsured in spite of the good awareness.

More enrolment and registration centres should be set up in each villages for easier accessibility and feasibility in enrolling for health insurance.

The amount of premium should be customized to individual level by the government and private health insurance companies as majority of the families belonged to lower socio-economic classes.

As lack of comprehensive coverage is one of the reason it should be brought to notice of insurance companies and dealt with it.

Acknowledgements:

We extend our heartfelt thanks to teaching and non-teaching staff of Department of Community Medicine, postgraduates and interns, supportive staff of Primary Health Centre, Lokikere, and our institution, SS Institute of Medical Sciences, Davangere for their logistical support. We also sincerely thank the study participants for their extreme support and involvement in the study.

Ethical approval: The study was approved by the Institutional Ethical review Board.

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