

Evaluation of utilization of health care services under employees state insurance scheme in district Rohtak, Haryana

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To evaluate the utilization of health care services provided under ESI scheme. Cross-sectional, descriptive. ESI dispensary, Shivaji colony Rohtak. Percentage, simple proportion, chi square test, linear regression model. 500 Insured Persons. Out of total 500 participants, 418(83.6%) subjects were utilizing and rest 82(16.4%) were not utilizing ESI health care services. Among utilizing 418 (83.5%) participants, 391 (93.5%) insured persons were males and 27(6.5%) were females while among non-utilizing, 82 (6.5%), 78 (95.1%) insured were males and 4(4.9%) were females. The R value is 0.804 and adjusted R square is 0.630 meaning thereby 63% utilization of health care services at ESI dispensary is due to variables age, caste, literacy status, income, marital status, family members of study participants, knowledge about location of ESI, duration of insurance under ESI scheme, contribution deducted under ESI scheme, OPD timings, health care facility at ESI, distance of ESI-HCF from their residence, behavior of doctor, waiting time for registration and getting treatment, average time spent in ESI dispensary during treatment, satisfied with doctor's treatment and overall satisfaction with ESI services. The value of Durbin-Watson test is <2 which proves that there is no co-linearity among independent variables. Utilization of health care services is determined to a large extent by their availability and accessibility. Distance from the health care facility plays significant role in service utilization. Patients' satisfaction is not necessarily the main criterion by which primary care services should be judged, but the attitudes of the consumers of health care play important role which must be considered in evaluating services.

Keywords: health care services, insurance scheme, employees

Health care service utilization is a concept of expressing the extent of interaction between the service and the people for whom it is intended (Kapil, 1989). Utilization of the health services is a complex phenomenon which, on one hand, is influenced by the belief about causation of diseases and thereby prompting a person to take a decision to utilize various available health agencies and on the other hand by the availability, accessibility and organizational aspects of health services system. Such information is important in planning and organizing health care services to the insured persons (Garg & Singh, 2010).

Employees' State Insurance Scheme of India is an integrated social security scheme tailored to provide social protection to workers in the organized sector and their dependents in contingencies, such as, sickness, maternity, disablement and death due to an employment injury or occupational disease. Towards this objective the scheme of health insurance provides full medical facilities to insured persons and their dependents, as well as, cash benefits to compensate for any loss of wages or earning capacity in times of physical distress (Kishore, 2009). As provided under the ESI Act (1948), the scheme is administered by a duly constituted corporate body called the Employees State Insurance Corporation (ESIC). Considering the huge number of beneficiaries about 3.44 crores (31.03.2010) the Corporation has set up a wide spread network of service outlets for prompt delivery of benefits in cash and kind that including full medical care (ESI, 2010). The ESIC has the largest team of medical and para-medical personnel in India and also has one of the largest medical infrastructures in the world. Medical facilities are provided in India, through a network of 1427 ESI

dispensaries, over 2100 panel clinics, 307 diagnostic centres, besides 144 Hospitals and 43 Hospital annexes with over 27000 beds. For providing super-specialty medical care the Corporation has tie up arrangements with advanced medical institutions in the country, both in public and private sector (Park, 2009). Employees of covered units and establishments drawing wages up to Rs.15,000/- per month w.e.f. 1.05.2010 come under the purview of the ESI Act, 1948 for multi-dimensional social security benefits (ESIC letter, 2010).

Since having employees state health insurance scheme cannot guarantee access to care among the insured persons, their actual health seeking behavior should be the evidence reflecting true access (WHO, 2000). Very limited studies related to evaluating the utilization of health insurance scheme especially Employees State Insurance Scheme have been reported in India. Such type of study was never conducted in Haryana that's why this study was carried out in district Rohtak, Haryana

Method

In Haryana state, ESI scheme is running in 15 out of 21 districts. The state has 57 ESI dispensaries and 5 ESI hospitals. Rohtak district has two ESI dispensaries; one is located in Sampla Town and another at Rohtak city. This study was carried out in ESI dispensary Rohtak city. ESI dispensary of Rohtak was established in the year 1968 and located approximately 4 km from Pt. B.D. Sharma PGIMS, Rohtak and 5km from General hospital Rohtak. The dispensary has approximately 400 establishments registered and 7485 insured persons enrolled under ESI scheme. For assessing the utilization of health services by insured persons, the investigator enlisted all

insured persons under ESI dispensary Rohtak from ESI office. A total of 5285 persons were insured and entitled under ESI scheme. The study subjects were 10% of total insured persons, i.e., 528 respondents, drawn through systematic random sampling. The participants were ensured that their identity will not be revealed in any form and the information gathered in this interview will be used only for research purposes. 500 insured persons were given the informed consent.

The investigator himself contacted the selected insured persons at their work place/ establishments/ residences to collect data using semi-structured pre-tested questionnaire after conducting pilot survey. The study was cross-sectional and descriptive in nature and duration was from 1st June, 2010 to 31st December, 2010. The data was collected and analyzed using appropriate statistic test using SPSS version 17.0 software.

Observations

Table I: Distribution of study subjects according to utilization of ESI health care services (n=500)

Category	Utilizing ESI HCF	Not utilizing ESI HCF
Insured Persons (Male)	391(93.5)	78(95.1)
Insured Persons (Female)	27(6.5)	4(4.9)
Total	418(83.6)	82(16.4)

Figures in parentheses indicate percentages

Out of total 500 participants, 418(83.6%) subjects were utilizing and rest 82(16.4%) were not utilizing ESI health care services. Among utilizing 418 (83.5%) participants, 391 (93.5%) insured persons were males and 27(6.5%) were females while among non-utilizing, 82 (6.5%), 78 (95.1%) insured were males and 4(4.9%) were females (Table-1).

Among utilizing subjects, maximum numbers of insured persons (43.8%) were in the age group of 30-39 years and only 8.1% belonged to > 50 years. The study also found caste wise and monthly family income wise distribution of participants utilizing ESI-HCF. Nearly half of insured persons (52.4%) belonged to general caste and the maximum number of participants (57.4%) had their monthly family income in slab of Rs. 5000-10000/-. As far as literacy status is concerned nearly half of study participants (51.2%) had secondary education and majority of subjects (84.2%) knew that dispensing of medicines available at ESI dispensary while maximum number of participants (59.1%) had their residence >4 Km away from ESI dispensary.

Table II: Medical seeking behaviour among insured persons (n=500)

Health care facility	Utilizing ESI HCF	Not utilizing ESI HCF
Other Government-HCF	151(36.1)	30(36.6)
Private	84(20.1)	28(34.1)
Other Government & Private	27(6.5)	16(19.5)
Chemist	31(7.4)	4(4.9)
Quacks	20(4.8)	4(4.9)
Utilizing only ESI-HCF	105(25.1)	0(0)
Total	418(100.0)	82(100.0)

Figures in parentheses indicate percentages

The study described the utilization of other health care facilities beside ESI dispensary. Among utilizing subjects, 36.1% were utilizing other government facilities followed by private (20.1%) while only one fourth subjects were utilizing ESI health services (Table-II).

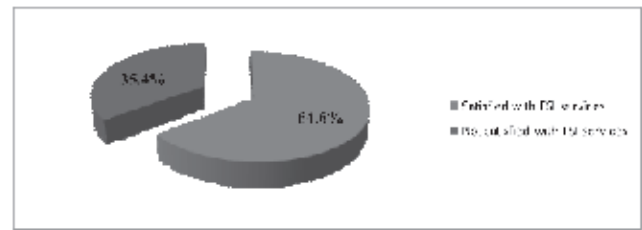


Figure-1: Satisfaction with ESI health care services

Majority of study participants (64.6%) were satisfied while rests were not satisfied with ESI health care services (Figure-1).

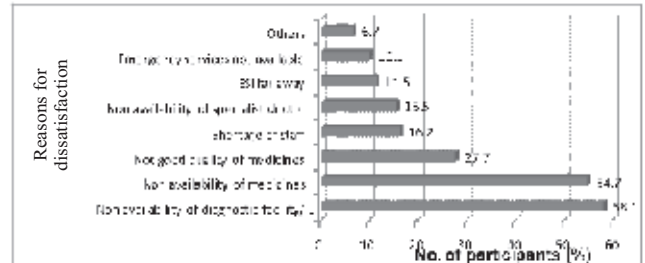


Figure 2: Reasons for dissatisfaction among utilizing beneficiaries

The study explored the reasons of dissatisfaction among utilizing beneficiaries and found that non-availability of diagnostic facility/lab tests (58.1%) being the most common reason for dissatisfaction followed by non-availability of complete medicine (54.7%) (Figure-2).

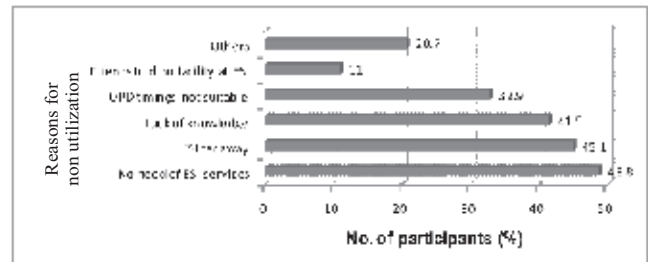


Figure 3: Reasons for non-utilization of ESI health care services

The study demonstrated that most common reason for non-utilization of ESI health care services was no need of ESI services i.e. 48.8% followed by 45.1% said that ESI far away from their residence while 41.5% subjects had lack of knowledge about ESI health care services. 32.9% participants said that OPD timings are not suitable. (Figure-3).

Predictors: (Constant), age, caste, literacy status, income, marital status, family members of study participants, knowledge about location of ESI, duration of insurance under ESI scheme, contribution deducted under ESI scheme, OPD timings, health care facility at ESI, distance of ESI-HCF from their residence, behavior of doctor, waiting time for registration & getting treatment, average time spent in ESI dispensary during treatment, satisfied with doctor's treatment and overall satisfaction with ESI services.

Dependent variable: Frequency of visits made for availing health care services at ESI dispensary

Table-III shows the association between dependent variable i.e. utilization of health care services at ESI dispensary in relation to independent variables age, caste, literacy status, income, marital status, family members of study participants, knowledge about location of ESI, duration of insurance under ESI scheme, contribution deducted under ESI scheme, OPD timings, health care

facility at ESI, distance of ESI-HCF from their residence, behavior of doctor, waiting time for registration and getting treatment, average time spent in ESI dispensary during treatment, satisfied with doctor's treatment and overall satisfaction with ESI services. For this predictor's linear model is used.

Table III: Antecedents of utilization of health care services at ESI dispensary by linear regression model.

Statistical Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Significance
	B	Std. Error			
(Constant)	5.876	1.033		5.691	0.000
Age	0.037	0.047	0.028	0.780	0.436
Literacy status	0.000	0.032	0.000	-0.020	0.984
Family members	-0.034	0.088	-0.012	-0.390	0.697
Income	0.131	0.073	0.070	1.790	0.074
Marital status	0.063	0.125	0.017	0.504	0.615
Location of ESI	-0.696	0.211	-0.101	-3.303	0.001
Caste	-0.105	0.047	-0.070	-2.230	0.026
Distance from ESI	-0.994	0.041	-0.775	-24.324	0.000

Insured under ESI scheme	-0.455	0.521	-0.027	-0.874	0.383
Duration of Insurance	0.065	0.039	0.059	1.641	0.102
OPD timing	0.072	0.098	0.023	0.736	0.462
Contribution under ESI	0.009	0.015	0.019	0.613	0.540
HCF at ESI	-0.011	0.052	-0.007	-0.210	0.834
Waiting time for registration	0.069	0.402	0.006	0.172	0.864
Waiting time for treatment	-0.556	0.724	-0.023	-0.767	0.443
Average time spent in ESI	0.044	0.079	0.018	0.555	0.579

Model	Unstandardized Coefficients		Standardized Coefficients	t	Significance
	B	Std. Error			
Satisfied with doctor treatment	0.002	0.016	0.004	0.113	0.910
Satisfied with Doctor behavior	-0.065	0.047	-0.049	-1.386	0.167
Satisfied with ESI services	-0.030	0.011	-0.099	-2.662	0.008

Model	R value	R square	Adjusted R square	Standard error of Estimate	Durbin-Watson	
1	0.804a	0.647	0.630	0.70723	1.841	
Model	Sum of Squares		df	Mean Square	F	Significance
Regression	364.539		19	19.186	38.359	0.000a
Residual	199.071		398	0.500		
Total	563.610		417			

The R value is 0.804 and adjusted R square is 0.630 meaning thereby 63% utilization of health care services at ESI dispensary is due to variables age, caste, literacy status, income, marital status, family members of study participants, knowledge about location of ESI, duration of insurance under ESI scheme, contribution deducted under ESI scheme, OPD timings, health care facility at ESI, distance of ESI-HCF from their residence, behavior of doctor, waiting time for registration and getting treatment, average time spent in ESI dispensary during treatment, satisfied with doctor's treatment and overall satisfaction with ESI services.

The value of Durbin-Watson test is <2 which proves that there is no co-linearity among independent variables. The fitness of model is tested with ANOVA which is significant even at 0.001% level of significance. The power of independent variable is measured by their corresponding beta value. Distance of ESI-HCF from their residence has highest beta value (0.775) followed by knowledge about location of ESI HCF (0.101). Income, caste, behavior of doctor and overall satisfaction with ESI services also impart significant role for utilization of health care services at ESI dispensary.

Discussion

World Health Report on Health Systems: Improving Performance published in year 2000 concurs that people were aware of their contributions in a social health insurance system, which allows them to make such decisions to avail the health care services under health insurance schemes.7 The present study also found that all the insured persons (n=500) were fully aware about their deduction of contribution under ESI scheme and corresponding health care facilities available under the scheme. Similar observation were made

by earlier study conducted by Bedi, Arya, Sharma, and Sharma titled "What it costs and what they get - a study of perceived costs and benefits among ESIS beneficiaries." They observed and found that all respondents were aware of their contribution being made under ESI scheme and majority of participants (70%) were aware of the actual amount of contribution under ESI scheme (Bedi et al., 2005).

Table-II described the medical seeking behaviour among insured persons beside ESI health care facility. Among utilizing subjects, 36.1% were utilizing other government facilities followed by private (20.1%) while only one fourth subjects were utilizing ESI health services. Those insured persons who were not utilizing ESI health care services could be due to the fact that distance from ESI dispensary is far away from their residences, OPD timings not suited to them, etc.

The study observed that the lowest income group of beneficiaries seeks maximally healthcare services from ESI-HCF. An international study conducted by Deolalikar and Martinsson on "Health insurance and treatment seeking behavior: evidence from a lowincome country in Vietnam." The authors observed and found that the lowest socio-economic strata of the beneficiaries seek maximally healthcare services among insured patients. Similar observations were also reported by other low-income countries as well (Deolalikar & Martinsson, 2004).

The study found a consistent relationship between utilization of health care facility and literacy status of participants, i.e., as the literacy increased; utilization of health care facility was also increased. Kapil (1989) in his study demonstrated that increased utilization by higher educated participants may be explained by the fact that they are more health conscious and more aware about health care services.

The study revealed that distance of health care facility from the place of residence of insured persons significantly affects the utilization of health care services. Similar observation made by Gish, Malik, and Sudharto (1988) on "Who gets what? Utilization of health services in Indonesia." The authors found that the persons living in the close vicinity of health care facility utilize the services most and vice versa. The study explored that major reason for seeking healthcare from ESI-HCF was economic consideration in one way or another. Similar observations were cited by Bedi et al. (2005). Further, in an international study carried out by Sirisinsuk et al. (2003) in Thailand and found that economic benefits lead them to avail services from the concerned health care facility.

On satisfaction on health care provisions, it was noted that 64.6% insured persons were satisfied with ESI services and rest were dissatisfied. The reasons for dissatisfaction were non-availability of medicines, low quality drugs, distance of ESI-HCF, lack of diagnostic facilities and specialist doctor. The study also revealed the reasons for non-utilization of ESI-HCF and the found the lack of knowledge regarding ESI services, not in need of ESI services, ESI far away and OPD timings not suited were the common reasons. An empirical study with special reference to social health insurance carried out by Hazra A, Lahiri S on "Potential role of health insurance in health care utilization in India." The authors recorded that 35% respondents were satisfied with ESI services and rest were dissatisfied (Hazra & Lahiri, 2009).¹² A report based survey was carried out by Shariff (1994) among ESI patients in Gujarat. The author found that over half of those covered did not seek care from ESI facilities and reasons were unsatisfactory nature of ESI services, low quality drugs, long waiting periods, impudent behaviour of personnel, lack of interest or low interest on part of employees and low awareness of ESI procedures (Agarwal, 2004).

The major antecedents of utilization of health care facilities include location and distance of ESI-HCF and other factors such as income, caste, education, behavior of doctor and overall satisfaction with ESI services such as lab and diagnostic facilities also impart significant role for promoting utilization of health care services at ESI dispensary.

Conclusion and Recommendations

Health care utilization behavior is complex and multifaceted. Understanding which factors are most important to health care utilization can assist in disease prevention and treatment through creation of effective health campaigns, policies, and promotion programs. Likewise, the study of utilization can further prepare health care organizations for the impending growth of heterogeneous populations. Whether or not a specific health care service is utilized and the frequency a service is utilized will have different determinants based on characteristics of the health services provided and the targeted population (Andersen, 1995; Andersen & Newman, 2005).

Keeping this in view the study came out with the following recommendations and suggestions regarding utilization of health care services in ESI dispensary:

There is a need for increase in OPD timings and facility of 24 hours emergency health care services for creating life support measures.

Specialist doctors should be appointed/ arranged to provide quality services at ESI dispensary.

Pathological/Laboratory services should be made available with

latest technology for diagnostic purposes.

Strengthening of IEC activities by arranging special camps in industrial areas regarding the proper usage of health services, prevention from occupational hazards, personal hygiene and consumption of safe drinking water and role of nutritious diet by the insured persons.

There should be provision of performance audit by the monitoring agencies at dispensary/ hospital level and continuous feedback from the beneficiaries.

Training should be given to health care service providers to build-up their capacity regarding sympathetic and positive attitude towards insured persons.

The present study strongly recommends that ESI dispensary must be in the industrial area so that ESI services are more accessible and acceptable to insured persons and their dependents.

In nutshell, it is imperative to state that utilization of health care services at ESI dispensary will definitely improve if along with the availability of doctors including specialists, good quality medicines, basic laboratory/diagnostic tests/radiological investigations and good infrastructure are made available at ESI health care centers. Further, the emergency services and the delivery services should be made available round the clock for satisfaction of the insured persons.

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