

A Cross-sectional Study on Awareness and Utilisation of Government Health Insurance Schemes among Patients at a Tertiary Level Hospital in Kolkata, India

POULOMI MUKHERJEE¹, ADWITIYA DAS², ADITYA BANERJEE³, KAUSHIK MITRA⁴, DEBASIS DAS⁵

ABSTRACT

Introduction: Despite the presence of multiple Government Health Insurance (GHI) schemes in West Bengal, the National Family Health Survey report (NFHS-5) has indicated that only 29.3% of households are covered by a health scheme. Awareness of health insurance schemes increases their utilisation. The absence of health insurance coverage results in increased out-of-pocket health expenditures, pushing families into debt. Therefore, there is a need to determine whether this lack of awareness among patients contributes to the issue.

Aim: To estimate the awareness level, enrollment in GHI schemes, experiences of their utilisation, and to determine the contributory factors of awareness and enrollment among patients attending the Outdoor Patient Departments (OPDs) at a tertiary care hospital in Kolkata.

Materials and Methods: An observational cross-sectional study was conducted from April 2023 to June 2023 at Medical College, Kolkata, West Bengal, India. A total of 390 respondents were chosen using a systematic random sampling technique and were interviewed using a predesigned, pretested, and semistructured questionnaire. Data were analysed using R Studio version 4.3.0. A p-value <0.05 was considered statistically significant.

Results: Awareness about Swasthya Sathi was found to be present in 318 (81.54%) patients, but only 109 (34.28%) of them were enrolled. Awareness of Sishu Saathi and Rashtriya Bal Swasthya Karyakram (RBSK) was 12 (3.08%) and 10 (2.57%), respectively, and none were enrolled. The major source of information (11.03%) regarding health insurance among respondents was informal sources such as friends, relatives, and neighbours. The age of the respondents, type of family, occupation, and economic status were found to have a significant association with the right awareness ($p=0.008$, 0.012 , 0.0005 , and 0.029 , respectively). The patient satisfaction level after utilising Swasthya Sathi was found to have a significant positive correlation with the right awareness (Spearman's $\rho=0.322$, p -value <0.01). The determinants of enrollment in Swasthya Sathi were female gender, rural residence, and right awareness ($p<0.001$). The commonest reason for not enrolling in any GHI among the non subscribers was a lack of awareness (82.56%).

Conclusion: Correct awareness was found to be a determinant of enrollment in GHI. In order to bridge the gap between awareness and utilisation of GHI, there is a need to focus on Information, Education, and Communication (IEC) activities involving mass media and frontline health workers.

Keywords: Health expenditures, Out-of-pocket, Patient satisfaction, Swasthya sathi

INTRODUCTION

Health insurance is defined as coverage that provides for the reimbursement of payments incurred because of sickness or injury. It includes insurance for losses from accidents, medical expenses, disability, or accidental death and dismemberment [1]. The benefit is administered by a central organisation, such as a government agency, private organisation, or non profit entity. Accident insurance was first offered in 1850 in the United States (US), which gradually evolved into the present-day concept of health insurance by the early 20th century [2]. In India, government-sponsored health insurance was first introduced as a part of the Employees' State Insurance (ESI) Act in the year 1948 [3]. Subsequently, many public GHI schemes were introduced in the country targeting several groups. However, with a population approaching 1.425 billion, health insurance penetration in India is one of the lowest, with only 41% of households reported to be covered by a health scheme according to the NFHS-5 report [2,4,5].

According to the World Bank, out-of-pocket health expenditures in India were 50.59% in 2020 [6]. This can have a disastrous effect on the country's economy, leading to an increased incidence of health expenditure-induced poverty. A survey conducted by the National Sample Survey Organisation in 1999 found that every year

an additional 37 million Indians were pushed below the poverty line due to healthcare expenses, amounting to an almost 12% increase in poverty [7]. A field research done in 2002 pointed out that health-related expenses were one of the top three reasons for the decline into poverty [8].

In view of the escalating cost of healthcare and high out-of-pocket health expenditures, the Government of India has initiated several GHI schemes in recent past. Notable among them are RBSK, launched in February 2013, and Pradhan Mantri Jan Arogya Yojana (PMJAY) under Ayushman Bharat, launched in September 2018 [9,10]. The West Bengal Government launched Sishu Saathi on 21st August 2013 to provide free cardiac surgery for children from birth to 18 years [11]. Swasthya Sathi was flagged off on 30th December 2016 to provide basic health cover for secondary and tertiary care up to five lakh rupees per annum per family [12]. However, according to the NFHS-5 report, the proportion of households covered by a health scheme has declined from 33.4% to 29.3% in the state [13]. The paucity of data in West Bengal warrants the identification of factors responsible for awareness of people about GHI and utilisation of its services. In this context, the present study was conducted with an aim to estimate the awareness and utilisation of GHI schemes among patients attending a tertiary care centre in Kolkata.

MATERIALS AND METHODS

An observational cross-sectional study was conducted from April 2023 to June 2023 at Medical College, Kolkata, West Bengal, India. The study was approved by the Institutional Ethics Committee (MCH/KOL/IEC/NON-SPON/1878/05/2023 dated 10/05/2023). The present study was conducted for purely academic interest. Participation was voluntary, anonymous, and without financial benefits for shared time. Informed written consent was taken from all participants before the interview. Confidentiality and anonymity were maintained. Patients unaware of the GHI benefits were made aware and guided for any query.

Sample size calculation: Considering an awareness level of 64% as reported in a previous community-based study among the South Indian population [14], α of 0.05%, and an absolute precision of 5%, the minimum sample size was calculated as 354 using the equation $4PQ/D^2$. Considering 10% non response, the sample size was corrected to 389 and then rounded off to 390, and the respondents were chosen by systematic random sampling method.

Inclusion criteria: Patients and parents accompanying minor patients aged between 18 to 80 years attending emergency, medicine, surgery, paediatrics, orthopaedics, gynaecology and obstetrics outpatient department of the hospital were included.

Exclusion criteria: Patients who were severely ill and unable to respond or were not willing to furnish personal information or consent were excluded from the study.

Study Procedure

A predesigned pretested and semistructured questionnaire was used pertaining to awareness and utilisation of GHI schemes among patients. The questionnaire was developed in English and later forward translation to Bengali and backward translation to English was done by two independent bilingual translators. The questionnaire was pilot tested on 40 patients for validation, and reliability was good (Cronbach alpha 0.68).

The questionnaire consisted of three sections: socio-demographic characteristics, awareness, and utilisation of GHI [Annexure-1]. Socio-demographic characteristics included age, gender, religion, caste, residence, type of family, educational status, occupation, and economic status of the respondents. Awareness regarding three GHI schemes, namely Swasthya Sathi, Sishu Sathi, and RBSK, had a total of 15 items, out of which nine questions were about Swasthya Sathi. The first question was whether they have heard about Swasthya Sathi, and the rest 8 questions were about the right awareness regarding the scheme. Six questions were about Sishu Sathi and RBSK schemes.

Total six items in the awareness section were in a three-point Likert scale as yes, no, and don't know. A 'yes' response received a score of 1, while a 'no' or 'do not know' response received a score of 0. Three items assessed their awareness in a true/false response, and six items assessed the respondent's awareness in verbatim. A correct response received a score of 1, and a wrong response received a score of 0. The sum of the awareness scores was used to compute the participant's right awareness. The maximum score for the awareness section was 15. The median value of the respondent's awareness was 5. A score less than 5 was considered poor awareness, while a score of 5 or higher indicated good awareness.

The utilisation section consisted of a total of 13 items. Eleven items were related to the status of enrollment in GHI, reasons for non subscription to GHI, the name of the scheme enrolled, source of awareness, experiences during utilising services like any guidance received within the hospital from the registration desk, any delay to complete preauthorisation request, admission, discharge, and out-of-pocket health expenditures incurred. Two items tested the satisfaction of the beneficiary after utilising GHI schemes on a 5-component Likert scale, namely 'Very satisfied', 'Satisfied',

'Neither satisfied nor dissatisfied', 'Dissatisfied', 'Very dissatisfied' and received the scores from 5 to 1.

Other parameters studied were the correlation of patient satisfaction with the right awareness about Swasthya Sathi and determinants of enrollment in Swasthya Sathi.

Outcome definitions:

- Awareness about GHI-knowledge of the respondent on the presence of GHI schemes, its principles, and significance [15].
- Enrollment in GHI-the process through which an approved applicant is signed up with the health insurance scheme, and coverage is made effective [16].
- Utilisation of GHI-utilisation of healthcare services in case of healthcare need in the past by any GHI schemes [17].

STATISTICAL ANALYSIS

Data were analysed using R studio version 4.3.0. Missing data were excluded from the analysis. Frequencies and percentages were calculated for categorical variables, and the median and Interquartile Range (IQR) were calculated for ordinal variables with a non parametric distribution like scores on awareness and satisfaction of the beneficiaries. The Chi-square (χ^2) test was used to find out the association between awareness and socio-demographic variables. Spearman's correlation test was done to find out the correlation between right awareness and satisfaction of the beneficiaries after the utilisation of Swasthya Sathi. Multivariate logistic regression was carried out to find out the determinants of GHI (Swasthya Sathi) possession. All statistical evaluations carried out were two-sided, and the cut-off for statistical significance was taken as $p < 0.05$.

RESULTS

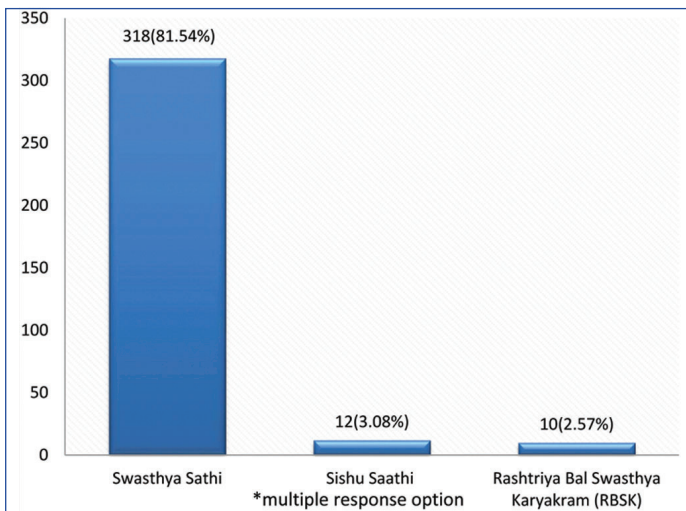
Of the total 390 respondents, the majority of them were in the age group of 30-39 years (34.62%), females (67.18%), residents of rural areas (73.33%), and stayed in nuclear families (55.64%). About 31.8% of respondents had completed their education until middle school, and 18.72% were illiterates. The majority of them were unemployed (61.03%) and were above the poverty line (75.38%) [Table/Fig-1].

The majority, 318 (81.54%), were aware of Swasthya Sathi, whereas very few had heard about Sishu Sathi 12 (3.08%) and RBSK 10 (2.57%) [Table/Fig-2].

Characteristics	Categories	Number	Percentage
Age (years)	20-29	107	27.44
	30-39	135	34.62
	40-49	68	17.44
	50-59	44	11.28
	≥60	36	9.23
Gender	Male	128	32.82
	Female	262	67.18
Religion	Hindu	200	51.28
	Muslim	190	48.72
Caste	General	174	44.62
	OBC	148	37.94
	SC	59	15.13
	ST	9	2.31
Residence	Rural	286	73.33
	Urban	104	26.67
Type of family	Nuclear	217	55.64
	Joint	173	44.36
Education	Illiterate	73	18.72
	Primary school	77	19.74
	Middle school	124	31.79

	High school	69	17.69
	Intermediate/diploma	3	0.77
	Graduate	32	8.21
	Professional/Honours	12	3.08
Occupation	Unemployed	238	61.03
	Unskilled worker	67	17.18
	Semiskilled worker	30	7.69
	Skilled worker	24	6.15
	Clerk/shop owner	12	3.08
	Semiprofessional	10	2.56
	Professional	9	2.31
Below poverty line card	Yes	96	24.62
	No	294	75.38

[Table/Fig-1]: Socio-demographic characteristic of respondents (N=390).



[Table/Fig-2]: Awareness of respondents regarding Government-sponsored health insurance scheme (N=390)*.

Regarding the awareness of the various key functionalities of Swasthya Sathi among respondents who had heard of it, the majority of them could respond correctly regarding the entire contribution of the premium by the state government, smart card-enabled transactions, cashless treatment facility, and coverage of expenses incurred for diagnostic tests and surgeries. However, only 1.26% of respondents could answer correctly regarding who the members in the family included in Swasthya Sathi are [Table/Fig-3].

Parameter of awareness	Number	Percentage
No cap on family size, parents for both spouse included	4	1.26
Monetary amount of basic health cover up to rupees 5 lac per annum per family	128	40.25
No beneficiary contribution of premium required	233	73.27
All transactions is smart card based	190	59.75
All pre-existing disease is covered under the scheme	125	39.31
Complete cashless treatment at secondary and tertiary care hospitals	239	75.16
Expenses incurred for consultation, diagnostic test are also provided to the beneficiary	220	69.18
Expenses incurred for surgery are also provided to the beneficiary	206	64.78

[Table/Fig-3]: Distribution of respondents according to right awareness regarding key features of Swasthya Sathi scheme (n1=318).

Characteristics	Categories	Awareness of the respondent about GHI schemes				χ^2 -value	df	p-values
		Good awareness (n2=206)		Poor awareness (n3=184)				
		Number	Percentage	Number	Percentage			
Age (years)	20-29	65	31.55	42	22.83	13.673	4	0.008*
	30-39	79	38.35	56	30.43			

Among the 12 respondents who had heard the name of the Sishu Sathi scheme, none could answer correctly regarding the age group covered under the scheme, and 8 persons (66.67%) could tell correctly that the scheme provides free treatment to children who need heart surgeries. Among the 10 respondents who had heard the name of RBSK, only 4 persons (40%) could correctly answer that the scheme covers children from birth to 18 years of age, but none were aware of the conditions, namely defects at birth, diseases, deficiencies, and development delays for which the scheme provides free treatment and management.

The majority of respondents, 206 {n2 (52.82%)}, had an awareness level equal to or above the median (5), and 184 {n3 (47.18%)} respondents had an awareness level below it [Table/Fig-4].

The age of the respondents, type of family, occupation, and economic status were found to have a significant association with the right awareness about GHI with $p=0.008$, 0.012 , 0.0005 , and 0.029 , respectively. Poor awareness was noted to be more among respondents belonging to the age group of 40-49 and 50-59 years, nuclear families, and unskilled workers [Table/Fig-4]. However, when these factors were put in the logistic regression model, the age and occupation of the respondents didn't show any significant difference between individual categories.

Of the 318 people (n1) aware of GHI schemes, 109 (34.28%) respondents had enrolled, and all of them had procured Swasthya Sathi. [Table/Fig-5] shows 11.03% of respondents had got the information regarding the scheme from friends, relatives, neighbors, locality, insurance agents. Mass media was noted to have contributed to awareness in only 1.54% of respondents.

The experiences of beneficiaries after utilising services under the Swasthya Sathi scheme are shown in [Table/Fig-6], which depicts that only 24.77% received any guidance from the registration desk of the hospital during treatment. Time delays in the approval of preauthorisation requests, admission, and discharge of patients from the hospital were reported only by a minority. A total of 33.03% of beneficiaries informed that they incurred out-of-pocket health expenditures for buying medicines, equipment, or diagnostic tests.

The majority of the beneficiaries were either satisfied (43.12%) or very satisfied (33.94%) with the Swasthya Sathi scheme. The median and IQR score of the patient satisfaction level regarding Swasthya Sathi was 4 (1).

[Table/Fig-7] shows that the patient satisfaction level after utilising healthcare services under Swasthya Sathi had a significant positive correlation with the right awareness regarding the scheme (Spearman's rho correlation coefficient=0.322, p -value <0.01).

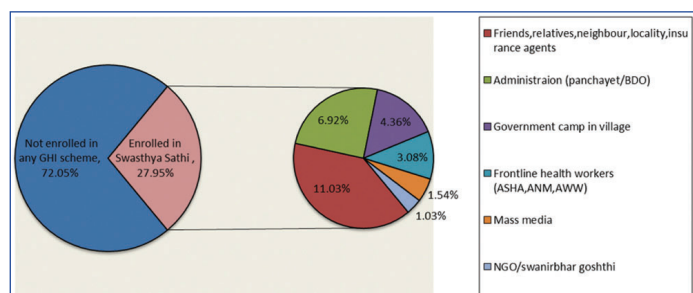
The commonest reason for not subscribing to any GHI was a lack of knowledge (82.56%) regarding the scheme or enrollment process [Table/Fig-8].

To determine the predictors of enrollment in the Swasthya Sathi scheme, a multivariate logistic regression was done. The Hosmer-Lemeshow test indicated that the data fitted the model well (χ^2 (8) 14.840, $p>0.05$); it explained 40.55% of the variance in subscription to GHI schemes (Nagelkerke R²) and correctly predicted 79.4% of cases. [Table/Fig-9] shows that enrollment in Swasthya Sathi had a significant association with female gender ($p<0.001$), rural residence ($p<0.001$), and increasing right awareness about the scheme ($p<0.001$). A significant difference was obtained when the age group of 20-29 years was compared to other age categories (up to 59 years); however, age was not significant as a whole ($p=0.1$).

	40-49	25	12.14	43	23.37			
	50-59	19	9.22	25	13.59			
	≥60	18	8.74	18	9.78			
Gender	Male	64	31.06	64	34.78	0.558	1	0.455
	Female	142	68.93	120	65.22			
Religion	Hindu	103	50.00	97	52.72	0.237	1	0.626
	Muslim	103	50.00	87	47.28			
Caste	General	88	42.72	86	46.74	0.570	1	0.450
	Others (SC/ST/OBC)	118	57.28	98	53.26			
Residence	Rural	157	76.21	129	70.11	2.089	1	0.148
	Urban	49	23.79	55	29.89			
Type of family	Nuclear	102	49.51	115	62.50	6.385	1	0.012*
	Joint	104	50.49	69	37.50			
Education	Illiterate	33	16.02	40	21.74	11.855	6	0.065
	Primary school	44	21.36	33	17.93			
	Middle school	71	34.47	53	28.80			
	High school	37	17.96	32	17.39			
	Intermediate/diploma	0	0.00%	3	1.63			
	Graduate	12	5.83	20	10.87			
	Professional/Honours	9	4.37	3	1.63			
Occupation	Unemployed	135	65.53	103	55.98	24.273	6	0.0005*
	Unskilled worker	20	9.71	47	25.54			
	Semiskilled worker	21	10.19	9	4.89			
	Skilled worker	12	5.83	12	6.52			
	Clerk/shop owner	9	4.37	3	1.63			
	Semi- professional	3	1.46	7	3.80			
	Professional	6	2.91	3	1.63			
Income	Below poverty line	60	29.13	36	19.57	4.776	2	0.029*
	APL	146	70.87	148	80.43			

[Table/Fig-4]: Association of awareness about GHI schemes and socio-demographic characteristics of the respondents.

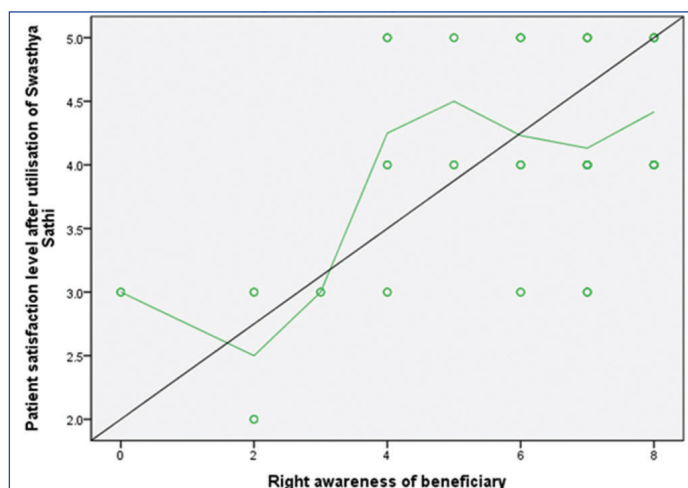
*p computed by Chi-square test, p<0.05 considered as statistically significant



[Table/Fig-5]: The source of information for Swasthya Sathi among respondents (N=390).

Parameters	Number	Percentage
Whether the beneficiary received any help with documents and computerised registration during enrollment of the scheme	46	42.20
Whether the beneficiary received any guidance from registration desk of the hospital during treatment	27	24.77
Whether the beneficiary experienced any delay to complete the preauthorisation request process	9	8.26
Whether the beneficiary experienced any delay during admission of patient to hospital	6	5.50
Whether the beneficiary experienced any delay during discharge of patient from hospital	3	2.75
Out-of-pocket payments for buying medicines or equipment's, diagnostic tests separate from the cashless payment of the scheme	36	33.03

[Table/Fig-6]: Beneficiaries' experience after utilisation of healthcare services under Swasthya Sathi scheme (n4=109).



[Table/Fig-7]: Correlation of patient satisfaction level with right awareness regarding Swasthya Sathi.

Lack of knowledge
232 (82.56%)

Didn't felt the need to procure GHI schemes
30(10.68%)

Cumbersome formalities causing procedural delay
19(6.76%)

[Table/Fig-8]: Reason for not having GHI schemes among non subscribers (n5=281).

Characteristics of the respondents	Categories	B	SEB	Wald χ^2	df	p-value	Adjusted Odds Ratio (AOR)	95% Confidence interval	
Age (years)	20-29			7.788	4	0.100			
	30-39	1.650	0.698	5.593	1	0.018	5.208	1.326	20.445
	40-49	1.671	0.671	6.194	1	0.013	5.318	1.426	19.826
	50-59	1.540	0.706	4.757	1	0.029	4.662	1.169	18.597
	≥60	0.763	0.915	0.696	1	0.404	2.145	0.357	12.888
Occupation	Unemployed			9.038	6	0.171			
	Unskilled worker	-0.434	0.860	0.254	1	0.614	0.648	0.120	3.500
	Semiskilled worker	1.015	0.929	1.192	1	0.275	2.758	0.446	17.051
	Skilled worker	-0.496	0.982	0.255	1	0.614	0.609	0.089	4.176
	Clerk/shop owner	-0.503	1.078	0.217	1	0.641	0.605	0.073	5.002
	Semi- professional	0.291	1.105	0.069	1	0.792	1.338	0.153	11.679
	Professional	-17.476	11365.900	0.0001	1	0.999	0.0001	0.0001	
Gender	Female	2.219	0.482	21.187	1	0.0001 [†]	9.199	3.576	23.664
	Male								
Religion	Hindu	-0.266	0.294	0.814	1	0.367	0.767	0.430	1.365
	Muslim								
Residence	Rural	1.501	0.378	15.782	1	0.0001 [†]	4.486	2.139	9.406
	Urban								
Right awareness		0.368	0.059	38.542	1	0.0001 [†]	1.445	1.286	1.623

[Table/Fig-9]: Determinants of enrollment to Swasthya Sathi among respondents (N=390).

[†]p computed by multivariate logistic regression analysis, p<0.05 considered as statistically significant

DISCUSSION

The present study attempted to assess individuals' awareness, enrollment, experiences of utilisation, and to know the determinants of awareness and enrollment in the area of GHI in West Bengal, especially in reference to Swasthya Sathi, Sishu Saathi, and RBSK. Though the majority of the study participants (81.54%) were aware of Swasthya Sathi, they had not heard about Sishu Sathi or RBSK. Among 318 respondents who were aware of Swasthya Sathi, only 34.28% had enrolled in it. The majority of the beneficiaries were satisfied with Swasthya Sathi after utilising the services; however, issues of out-of-pocket payments (33.03%) and inadequate support provided by helpdesks in hospitals (24.77%) were identified. Older age of the respondents, nuclear family, unskilled workers were found to have a significant association with poor awareness about GHI. The main barrier to enrollment in any GHI among the study population was a lack of awareness (82.56%), and the determinants of enrollment in GHI were female gender, rural residence, and right awareness.

Health insurance literacy enables individuals to find and evaluate information about health plans, select the best plan according to their financial and health circumstances, and subsequently use the plan once enrolled by their knowledge, ability, and confidence [18]. Knowledge about health insurance can boost individuals' confidence and self-efficacy; thus, it is an important priority factor that is required to get enrolled in a health insurance scheme [19]. In many low-income and middle-income countries, health insurance literacy is poor [15].

In the present study, 81.54% of the respondents were aware of Swasthya Sathi, which confirms the findings of a previous study conducted in the rural population of South India [20]. However, this was lesser compared to the study done by Luke S and Vincent J with an 89.7% awareness level in a tertiary care centre of South India [21], but better than the study done by Reshmi B et al., (64%), Indumathi K et al., (75.7%), Surender R et al., (53.8%) [14,22,23]. The majority of the respondents had the right awareness regarding the key functionalities and benefits of the Swasthya Sathi scheme, except for awareness of the fact that pre-existing diseases are covered (39.3%), monetary coverage per year per family (40.3%), and no cap on family size covered under the scheme (1.26%). However, awareness about Sishu Saathi and RBSK was poor

(3.08% and 2.57%, respectively). Right awareness regarding the age group covered under Sishu Saathi and the conditions for which RBSK offers screening was reported by none.

Previous studies conducted in other countries have shown that multiple factors like individual (age, gender, education, employment status, marital status) [24-26] and household characteristics (wealth, size of family) are responsible for awareness and enrollment in health insurance schemes [18,25,27]. In India, studies done in rural and urban populations have found religion, education, occupation, family income per month, socio-economic status, type of family as determinants of awareness of health insurance [14,22,23]. In the present study, the age of the respondents, type of family, occupation, and economic status were found to have a significant association with the right awareness about GHI. The probable explanation might be that aged people, those belonging to nuclear families, and unskilled workers had poor access to information regarding existing GHI schemes in the state.

Among 318 (81.54%) of respondents who were aware of GHI, only 34.28% had enrolled in the Swasthya Sathi scheme. However, this was less compared to the study done by Indumathi K et al., (66.9%) but better than the study done by Surender R et al., (17.5%) [22,23]. This gap between awareness and enrollment status could be due to the fact that the right awareness of respondents regarding existing GHI was average. Individuals usually enroll in health insurance because of their personal experiences or word-of-mouth advertisements [27]. Mass media such as newspapers, radio, and television play an important role in making people aware of health insurance schemes. Friends, community, and health workers contribute to increasing the health insurance awareness of the people [18]. In the present study, most of the subscribers (39.45%) had received information regarding the scheme from informal sources (friends, relatives, neighbours). Results of studies carried out elsewhere were also in agreement with this finding [14,22]. However, mass media was the major source of information, as reported by Choudhary ML et al., but it was noted to have contributed to awareness in only 5.50% of beneficiaries in this study [28]. The information regarding health insurance is spread in rural areas through Panchayat offices where the cards are issued to the people; we found awareness

through Panchayat/Block development office to be 24.77% among subscribers.

Capturing beneficiaries' experience of utilising healthcare services at the public and private hospitals empaneled in the Swasthya Sathi scheme is vital in providing insights into the responsiveness of Swasthya Sathi in terms of prompt service delivery, financial burden faced by the beneficiaries in terms of out-of-pocket payments, and patient satisfaction with the experience of hospitalisation. The time delay as experienced by the proportion of beneficiaries in the present study at different stages of hospitalisation was highest for preauthorisation approval (8.26%). After reaching a hospital, the insurance helpdesk is supposed to act as a major source of information about the scheme and provide support to the beneficiaries in the hospitalisation process and avoid unnecessary delays [29]. In terms of the information and support provided by the helpdesk, only 24.77% of beneficiaries reported to have received help. Moreover, 33.03% of beneficiaries informed that they had made out-of-pocket payments separate from the cashless payment of the scheme. In a previous study conducted in India exploring the experience of Pradhan Mantri Jan Aarogya Yojana (PM-JAY) beneficiaries, 52% reported receiving information about PM-JAY, help with documents and computerised registration, and guidance about treatment within the hospital. 26% of respondents reported that they made out-of-pocket health expenditures before, during, or after hospitalisation [29]. In the present study, the majority of the beneficiaries were satisfied with the Swasthya Sathi scheme, which is similar to that reported for PM-JAY in Gujarat (82%) and Madhya Pradesh (71%) [29].

The primary barrier to enrolling in any GHI among those who had not subscribed to any GHI was lack of awareness (82.56%) about the concept, availability of health insurance, or the formalities to subscribe. This is comparable to the findings of a previous study [21]. This implies that a high number of patients are receiving treatment without the cover of GHI and are making out-of-pocket health expenditures.

The determinants of enrollment in GHI were female gender, rural residence, and correct awareness. This could be due to the preponderance of females among the respondents and the wider popularity of GHI among the rural population compared to urban areas, where people can afford to pay for the premium of private health insurances. The present study confirms the findings of previous studies that awareness of health insurance schemes increases their utilisation and subsequently facilitates healthcare uptake [18,19,24].

Limitation(s)

As this was a tertiary healthcare institute-based study, patients attended OPDs from all districts of West Bengal, as well as neighbouring states and countries like Bihar, Odisha, and Bangladesh. GHI schemes unique to West Bengal, such as Swasthya Sathi and Sishu Saathi, might not be relevant to many respondents, which might have affected the results in terms of awareness level. Moreover, as all OPD services are free of cost at any government hospital in West Bengal, some patients might have been confused regarding responding to questions about utilisation. Also, there could be conscious falsification of responses to questions regarding enrollment or utilisation of various GHI, which may have introduced some bias. Despite sincere efforts, the crowded OPD setting might have made respondents feel a lack of privacy, which might have influenced their responses.

CONCLUSION(S)

The present study showed that even though the majority of the respondents had heard about the Swasthya Sathi scheme, they were not utilising it mainly due to a lack of correct awareness. Correct awareness had a significant association with enrollment and patient satisfaction after utilising Swasthya Sathi. Therefore, in order to

bridge the gap between awareness and utilisation of GHI, effective IEC activities are needed, focussing on the involvement of mass media, frontline healthcare workers, wide display of GHI schemes through appropriate use of signage in government health facilities, and strengthening the functioning of the helpdesk in hospitals to ensure prompt service delivery of GHI schemes.

REFERENCES

- Claxton G, Kaiser. How private insurance works: A primer. Washington, DC: Kaiser Commission On Medicaid And The Uninsured; 2002.
- Wikipedia Contributors. Health insurance [Internet]. Wikipedia. Wikimedia Foundation; 2019. Available from: https://en.wikipedia.org/wiki/Health_insurance.
- The Evolution of Health Insurance in India- ACCESS [Internet]. [cited 2023 Jun 1]. Available from: <https://accessh.org/evolution-health-insurance-india/>.
- Nations U. India to overtake China as world's most populous country in April 2023, United Nations projects [Internet]. United Nations. 2023. Available from: <https://www.un.org/en/desa/india-overtake-china-world-most-populous-country-april-2023-united-nations-projects#:~:text=24%20April%202023%20%2D%20China%20will.>
- Government of India. Ministry of Health and Family Welfare. National Family Health Survey (NFHS-5)2019-21. New Delhi: Ministry of Health and Family Welfare; 2021.
- World Bank Open Data [Internet]. World Bank Open Data. [cited 2023 Jun 1]. Available from: <https://data.worldbank.org/indicator/SH.XPD.OOPC.CH.ZS?en d=2020&locations=IN&start=2000&view=chart>.
- India National Sample Survey Organisation. Consumer expenditure survey, 55th round, 1999-2000. New Delhi: Ministry of Statistics, Government of India, 2001.
- Krishna A. Escaping poverty and becoming poor: Who gains, who loses, and why? World Development. 2004;32(1):121-36.
- Rashtriya Bal SwasthyaKaryakram [Internet]. pib.gov.in. [cited 2023 Jun 1]. Available from: [https://pib.gov.in/newsite/PrintRelease.aspx?relid=106931#:~:text=RashtriyaBalSwasthyaKaryakram%20\(RBSK\)%20was%20launched%20in.](https://pib.gov.in/newsite/PrintRelease.aspx?relid=106931#:~:text=RashtriyaBalSwasthyaKaryakram%20(RBSK)%20was%20launched%20in.)
- National health authority about Pradhan Mantri Jan Arogya Yojana (PM-JAY). Available from: <https://nha.gov.in/PM-JAY> [cited 2023 Jun 1].
- Sishusaathi- Egiye Bangla [Internet]. Wb.gov.in. 2013. Available from: <https://wb.gov.in/government-schemes-details-sishusaathi.aspx>.
- Swasthya Sathi.gov.in [Internet]. swasthyasathi.gov.in. Available from: <https://swasthyasathi.gov.in/AboutScheme>.
- Bengal W. Ministry of Health and Family Welfare State Fact Sheet [Internet]. [cited 2023 Jun 10]. Available from: <https://www.im4change.org/docs/West%20Bengal%20NFHS-5%20Factsheet.pdf>.
- Reshmi B, Nair S, Sabu K, Unnikrishnan B. Awareness of health insurance in a south Indian population-A community-based study. Health and Population; Perspectives and Issues. 2007;30(3):177-88.
- Reshmi B, Unnikrishnan B, Parsekar SS, Rajwar E, Vijayamma R, Venkatesh BT. Health insurance awareness and its uptake in India: A systematic review protocol. BMJ Open. 2021;11(4):e043122. Doi: 10.1136/bmjopen-2020-043122. PMID: 33858867.
- eHealth. Health Insurance Glossary. [Internet]. [cited 2023 Jun 20]. Available from: <https://www.ehealthinsurance.com/health-insurance-glossary/terms-e/#:~:text=Enrolment%3A,in%20a%20health%20insurance%20plan.>
- Kusuma YS, Pal M, Babu BV. Health insurance: Awareness, utilisation, and its determinants among the urban poor in Delhi, India. J Epidemiol Glob Health. 2018;8(1-2):69-76. Doi: 10.2991/j.jegh.2018.09.004. PMID: 30859791.
- Basaza R, Kyasiimire EP, Namyalo PK, Kawooya A, Nnamulondo P, Alier KP. Willingness to pay for Community Health Insurance among taxi drivers in Kampala City, Uganda: A contingent evaluation. Risk Manag Healthc Policy. 2019;12:133-43. Doi: 10.2147/RMHP.S184872. PMID: 31410075.
- Ghaddar S, Byun J, Krishnaswami J. Health insurance literacy and awareness of the affordable care act in a vulnerable hispanic population. Patient Educ Couns. patient ed. 2018;101(12):2233-40. Doi: 10.1016/j.pec.2018.08.033. PMID: 30220598.
- Gowda S, Manjunath C, Krishna D. Awareness about health insurance in rural population of South India. Int J Community Med Public Health. 2015;2:648-50. Doi: 10.18203/2394-6040.ijcmph20151064.
- Luke S, Vincent J. Awareness and utilisation of health insurance among patients of a tertiary care centre in South India. Int J Community Med Public Health. 2020;7(10):4033-36. Doi: 10.18203/2394-6040.ijcmph20204372.
- Indumathi K, Ishaq HS, Gopi A, Subramanian M. Awareness of health insurance in a rural population of Bangalore, India. Int J Med Sci Public Health. 2016;5(10):2162-67. Doi: 10.5455/ijmsph.2016.15042016476.
- Surendar R, Arthi M, Madhumadhi S, Saravanan R, Karrunya S, Srikanth S. Awareness on health insurance among a selected urban population in Puducherry. Nat J Res Community Med. 2019;8(2):176-79.
- Mirach TH, Demissie GD, Biks GA. Determinants of community-based health insurance implementation in West Gojjam zone, Northwest Ethiopia: A community based cross sectional study design. BMC Health Serv Res. 2019;19(1):544. Doi: 10.1186/s12913-019-4363-z. PMID: 31375108.
- Kanmiki EW, Bawah AA, Akazili J, Agorinyah I, Awoonor-Williams JK, Phillips JF, et al. Unawareness of health insurance expiration status among women of reproductive age in northern Ghana: Implications for achieving universal health coverage. J Health Popul Nutr. 2019;38(1):34. Doi: 10.1186/s41043-019-0190-4. PMID: 31775904.
- Seddoh A, Sataru F. Mundane? Demographic characteristics as predictors of enrolment onto the National health insurance scheme in two districts of Ghana. BMC Health Serv Res. 2018;18(1):330. Doi: 10.1186/s12913-018-3155-1. PMID: 29728110.

- [27] Michael GC, Aliyu I, Grema BA, Suleiman AK. Perception of factors influencing primary health-care facility choice among National health insurance enrollees of a northwest Nigerian Hospital. *J Patient Exp.* 2019;6(3):247-52. Doi: 10.1177/2374373518790072. PMID: 31535014.
- [28] Choudhary ML, Goswami KI, Khambati SN, Shah VR, Makwana NR, Yadav SB. Awareness of Health insurance and its related issues in rural areas of Jamnagar district. *Natl J Community Med.* 2013;4(2):267-71.
- [29] Trivedi M, Saxena A, Shroff Z, Sharma M. Experiences and challenges in accessing hospitalisation in a government-funded health insurance scheme: Evidence from early implementation of Pradhan Mantri Jan Arogya Yojana (PM-JAY) in India. *PLOS ONE.* 2022;17(5):e0266798. Doi: 10.1371/journal.pone.0266798. PMID: 35552557.

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Community Medicine, Medical College, Kolkata, West Bengal, India.
2. Assistant Professor, Department of Community Medicine, Medical College, Kolkata, West Bengal, India.
3. Student, Department of Community Medicine, Medical College, Kolkata, West Bengal, India.
4. Associate Professor, Department of Community Medicine, Burdwan Medical College, Burdwan, West Bengal, India.
5. Professor and Head, Department of Community Medicine, Medical College, Kolkata, West Bengal, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Kaushik Mitra,
Flat K-3, Cluster - Eight, Purbachal, Salt Lake, Kolkata-700097, West Bengal, India.
E-mail: drkmitra@gmail.com

PLAGIARISM CHECKING METHODS: [\[Lain H et al.\]](#)

- Plagiarism X-checker: Jul 01, 2023
- Manual Googling: Sep 21, 2023
- iThenticate Software: Dec 13, 2023 (14%)

ETYMOLOGY: Author Origin**EMENDATIONS:** 7**AUTHOR DECLARATION:**

- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **Jun 28, 2023**Date of Peer Review: **Sep 19, 2023**Date of Acceptance: **Dec 16, 2023**Date of Publishing: **Feb 01, 2024****[ANNEXURE-1]****Interview schedule- Patients****I. Socio-demographic characteristics and morbidity profile**

- Age:
- Sex: Male/Female/Others
- Religion: Hindu/Muslim/Christian/others (please specify)
- Category: General/SC/ST/OBC
- Residence: Rural/Urban
- Type of family: Nuclear/Joint
- Education: Illiterate/Primary school certificate/Middle school certificate/High school certificate/Intermediate or diploma/Graduate/Professional or Honours
- Occupation:
- Provisional diagnosis made by the attending physician in OPD (as mentioned in the outdoor ticket):

II. Awareness regarding Government Health Insurance (GHI) scheme

- Have you heard about the Swasthya Sathi scheme? Yes/No/Don't know
- Who is included under this scheme?
- What is the monetary amount of basic health coverage under Swasthya Sathi per year?.....
- Does it require any contribution of premium by the beneficiary? Yes/No/Don't know
- Do you know if it is cashless? Yes/No/Don't know
- Does it cover all pre-existing diseases? Yes/No/Don't know
- Is treatment in hospitals under this scheme free? True/False
- Are investigations in hospitals under this scheme free? True/False
- Are surgeries at the tertiary level under this scheme free? True/False
- Have you heard about the Sishu Sathi scheme? Yes/No/Don't know
- Which age group does this scheme cover?.....
- For which diseases does this scheme provide treatment?.....

m) Have you heard about the Rashtriya Bal SwasthyaKaryakram (RBSK)? Yes/No/Don't know

n) Which age group does the RBSK scheme cover?.....

o) For what conditions is screening offered under this scheme?.....

III. Utilisation of Government Health Insurance (GHI) scheme

- Have you subscribed to any GHI scheme to date? Yes/No (if no, skip to question g)
- Name the GHI schemes subscribed to date
1)..... 2).....
- From where did you hear about these schemes (name the sources)?
1)..... 2).....
- Did you have to pay out of your pocket for buying medicines or equipment, or separate from the cashless payment provided to hospitals despite having a Swasthya Sathi card? Yes/No
- What is your level of satisfaction regarding Swasthya Sathi services? Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied/Very dissatisfied
- Did you have to pay out of your pocket for buying medicines or equipment, or separate from the cashless payment provided to hospitals despite having a Sishu Sathi card? Yes/No
- What is your level of satisfaction regarding Sishu Sathi services? Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied/Very dissatisfied
- Did you receive any help with documents and computerised registration during the enrollment of the scheme? Yes/No
- Did you receive any guidance about treatment within the hospital from the registration desk? Yes/No
- Was there any delay in completing the preauthorisation request? Yes/No
- Was there any delay in completing the admission? Yes/No
- Was there any delay in completing the discharge processes? Yes/No
- What are the reasons for not subscribing to GHI schemes? (Please mention at least two)