Patients' Satisfaction with Healthcare Services of a Government-Financed Health Protection Scheme in Bangladesh: A Cross-sectional Study

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Abstract

Background: The government of Bangladesh is piloting a health protection scheme called Shasthyo Surokhsha Karmasuchi (SSK) since 2016; targeting the most vulnerable below poverty-line households. The experience and opinions of the patients with the pilot SSK scheme are important to improve the quality of health care and scale up the scheme at the national level.

Objective: We aimed to evaluate the patient's satisfaction with the services provided by the Shasthyo Surokhsha Karmasuchi (SSK) scheme in Bangladesh.

Methods: A cross-sectional exit survey was conducted with SSK beneficiaries who were admitted at SSK facilities at least for two nights. Information on socioeconomic characteristics, experience, and satisfaction with the different aspects of services was collected through face-to-face interviews. We used a 5-point Likert scale ranging from very dissatisfied (1) to very satisfied (5) to measure the satisfaction level. Descriptive and multiple regression analyses were used to identify the factors associated with the satisfaction of patients.

Results: About 55% of SSK patients were either very satisfied or satisfied with the health care services of the SSK scheme. The most satisfactory indicators were related to privacy maintained during diagnostic tests (3.91±0.64), physicians' behaviour (3.86±0.77), services at the registration booth (3.86±0.62), confidentiality about diseases (3.78±0.72), and nurses' behaviour (3.6 ± 0.83). Poor satisfaction was reported with the interaction of service providers with patients regarding treatment and illness (2.14±1.4) and with some basic amenities, such as availability of drinking water (1.46±0.76), cleanliness of toilets (2.85±1.04) and waiting room (2.92±1.09). We found a significantly positive association between satisfaction level and lower waiting time for registration and services delivery, complete course of medicines supply, and diagnostic services.

Conclusions: To improve patient satisfaction, dimensions of health care service that focus on patient-specific circumstances and an efficient service delivery system should be ensured and maintained in SSK facilities. SSK scheme implementation authority should also give attention to improvement in registration time, waiting for time for getting service, availability of drugs and supplies, laboratory services, and basic amenities targeting different demographic groups of SSK patients.

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Abstract

Background Since 2016, the government of Bangladesh has been piloting a health protection scheme known as Shasthyo Surokhsha Karmasuchi (SSK), which specifically targets households living below the poverty line. This non-contributory scheme provides enrolled households access to inpatient healthcare services for 78 disease groups. Understanding the patients' experiences with healthcare utilization from the pilot SSK scheme is important for enhancing the quality of healthcare service delivery during the national-level scale-up of the scheme.

Objective Our aim was to evaluate the satisfaction of patients with the healthcare services provided under the pilot health protection scheme in Bangladesh.

Methods A cross-sectional survey was conducted with the service users of the SSK scheme. Patients who had spent a minimum of two nights at healthcare facilities were selected for a face-to-face exit interview. During these interviews, we collected information on socioeconomic characteristics, care-seeking experiences, and their level of satisfaction with various aspects of healthcare service delivery. To measure satisfaction level, we employed a 5-point Likert scale ranging from very satisfied (5) to satisfied (4), neither satisfied nor dissatisfied (3), dissatisfied (2), and very dissatisfied (1). Descriptive statistics, statistical inferential tests (i.e., t-test, one-way analysis of variance), and linear regression analyses were performed.

Results We found that 55.1% (n=241) of the service users were either very satisfied or satisfied with the healthcare services of the SSK scheme. The most satisfactory indicators were related to privacy maintained during diagnostic tests (3.91±0.64), physicians' behaviour (3.86±0.77), services provided at the registration booth (3.86±0.62), confidentiality maintained regarding diseases (3.78±0.72), and behaviour of nurses (3.60 ± 0.83). Poor satisfaction was identified in the interaction of patients with providers about patients' illness-related information (2.14±1.4), availability of drinking water

(1.46±0.76), cleanliness of toilet facilities (2.85±1.04) and waiting room (2.92±1.09). Patients' satisfaction significantly decreased by 0.20 units for registration times exceeding 15 minutes (for 16-30 minutes) and 0.32 units for registration times exceeding 30 minutes. Similarly, patients' satisfaction significantly decreased with an increase in waiting time to obtain services. However, the satisfaction of service users significantly increased if they received a complete course of medicines and all prescribed diagnostic services.

Conclusion More than half of the service users were satisfied with the services provided under the SSK scheme. However, there is scope for improving the satisfaction of health protection scheme users. To improve the satisfaction level, the SSK scheme implementation authority should also pay attention to reducing registration time and waiting time to obtain services and improving the availability of drugs and prescribed diagnostic services. The authorities should also ensure the supply of drinking water and enhance the cleanliness of the facility.

Background

Globally, more than half of the population encounter difficulties in accessing essential healthcare services with the majority residing in low- and middle-income countries (LMICs) [1]. These nations experience substantial challenges in financing healthcare [2–5]. Consequently, healthcare financing in these countries heavily relies on out-of-pocket (OOP) spending by households, leading to increased financial distress on families during their illness [2,3,6]. In many instances, the most affected are those in poverty, and they lack access to healthcare services when they are unwell [7]. Similar to other LMICs, OOP spending for healthcare in Bangladesh is notably high. Recent evidence indicates that 68.5% of the total healthcare expenditure is shouldered by households through OOP payments [8]. Another recent study reported that such higher OOP payments result in 24.6% of households experiencing catastrophic health expenditure when estimated using the 10% threshold of the budget share method. Furthermore, in 2016, over 8.5 million people were pushed into poverty due to healthcare expenses [9]. Moreover, the incidence of catastrophic health expenditure is more concentrated among the poorest households (16.5%) compared to the richest (9.2%) [10]. To reduce the burden of healthcare among the population and progress towards universal health coverage, the Government of Bangladesh has developed a Health Care Financing Strategy 2012–2032, intending to provide financial protection for healthcare to all citizens by 2032 [11]. As a component of this strategy, the Health Economics Unit of the Ministry of Health and Family Welfare of the Government of Bangladesh has been implementing a social health protection scheme known as “Shasthyo Surokhsha Karmasuchi (SSK)” since 2016. Although there is a comprehensive plan to cover the entire population of the country within the financing scheme, the current implementation is limited to a non-contributory scheme focusing on the below poverty line population. The scheme is being piloted in three subdistricts: Kalihati, Modhupur, and Ghatail under the Tangail District. The scheme has enrolled almost 1,00,000 households that has access to inpatient healthcare services from Upazila Health Complexes (UzHCs) of the respective Upazilas (subdistrict)

and district hospitals. Participation in the scheme is mandatory for households identified as being below the poverty line, and their enrolment is non-contributory, meaning that these enrolled households are not required to pay any fees for services. Notably, the scheme does not offer purchasing services to the above poverty line population. The government established a pool funds, allocating BDT 1,000 (USD 12[1]) per household per year as a premium. This measure ensures access to inpatient healthcare services for the enrolled below poverty line households, covering 78 different diseases groups. The annual coverage limit for each household is BDT 50,000 (USD 592). Under the scheme, inpatient healthcare is delivered through UzHCs, serving as the first access point for the insured beneficiaries to receive healthcare services. Through a structured referral system, the beneficiaries can also access services at the Tangail District Hospital. The scheme ensures that insured patients receive free diagnostic services and medicines through hospitals, contracted diagnostic centres, and pharmacies. The SSK management authority, Scheme Operator, hospitals, contracted diagnostics centres, and pharmacies play a crucial role in the implementation of the scheme [12].

Although the scheme provides free inpatient care services to the member households, the healthcare utilization under the SSK scheme is notably low. A study revealed that less than half of the beneficiary households utilized healthcare services under the SSK scheme[13]. Several factors may contribute to this lower utilization rate. For instance, quality of care might be a significant factor, among the various important determinants of health service utilization. Quality of service is recognized as one of the key components in achieving Universal Health Coverage by its definition [14]. Traditionally, the quality of healthcare services was primarily assessed based on professional practice standards. However, in the recent decades, patients' perceptions of healthcare have emerged as an important indicator for evaluating the quality of healthcare services. Various studies have demonstrated that health service utilization is closely linked with users' perception of the quality of

[1] BDT 84.5 = USD 1, August 2019, Bangladesh Bank.

healthcare provided [15–17]. Consequently, patient satisfaction is considered as an important aspect of performance improvement of the delivered healthcare services, alongside clinical effectiveness. It is a multidimensional aspect where patients' perceptions and attitudes shape their overall healthcare seeking experience [18,19]. Several factors, including registration time and process, waiting time to obtain healthcare services, interpersonal communication, and the availability of basic amenities within healthcare facilities, can influence patients' satisfaction with healthcare services [20–23]. Increased utilization and satisfaction of any insurance scheme are associated with improved quality of healthcare service. However, the literature provides mixed evidence. For example, a study in India found no significant difference in satisfaction levels between insured and uninsured hospitalized patients [24]. Conversely, a significant portion of insured patients reported higher satisfaction compared to the uninsured patients, with the overall quality of care provided under the National Health Insurance Scheme of Ghana [25]. Evidence from Nigeria indicated that most of the patients were satisfied with the service delivery of their national health insurance scheme [26–28]. In Ethiopia, one study revealed that approximately 55% of the enrolees were satisfied with the Community-Based Health Insurance scheme [29], whereas another study from the same country indicated that over 90% of the households were satisfied with the Community-Based Health Insurance scheme [30]. Different Vietnamese studies have reported poor satisfaction among beneficiaries regarding service coverage and quality of care under national health insurance [31,32]. A recent study conducted on a self-financed health insurance scheme in Bangladesh showed that, overall, members of the scheme were satisfied with the healthcare services; however, their satisfaction level could be improved in several aspects of healthcare service delivery[33].

Despite the pilot implementation of the SSK scheme since 2016 and its low utilization, no research has been conducted on the experiences and satisfaction levels of service users with the scheme. Gaining a better understanding of the beneficiaries' experience and satisfaction with the healthcare service provided under the pilot SSK scheme is crucial. This insight can help identify the gaps in the

quality of healthcare services provided. Such evidence will be useful for the key stakeholders of the health protection scheme, allowing them to make necessary changes in the service delivery process and related aspects to enhance the quality of healthcare services provided under the scheme. As a result, this study was conducted to address two central research questions: a) What was the level of satisfaction among the beneficiaries of the SSK scheme? and b) What were the factors influencing their satisfaction level? In addressing these research questions, this study aimed to assess the level of patients' satisfaction with the service offered by the SSK scheme in Bangladesh.

Methods

Study design

A cross-sectional exit patient survey was designed to gain insight into the experiences of insured patients with various aspects of the service delivery process and the quality of services provided under the pilot SSK scheme. Every second patient who had been admitted for at least two nights at the scheme-designated facility was selected and interviewed at the time of discharge.

Study setting and sample

The study was conducted in the UzHCs of Kalihati, Ghatail, Madhupur Upazila (subdistrict), and Tangail District Hospital of Tangail District. Insured inpatients were interviewed after discharge from the healthcare facilities. The survey of the respondents took place between July and November 2019 on working days, from Saturday to Thursday. Every second discharged inpatient from the male and female wards was interviewed. To ensure the quality of the data, a maximum of four patients were interviewed each day at an SSK hospital. A total of 438 discharged inpatients aged eighteen and above were interviewed from three UzHCs (Kalihati: 128, Modhupur: 176, and Ghtail:134) as well as Tangail District Hospital (88).

Data collection process

A semi-structured questionnaire was designed and pretested before data collection. Face-to-face interviews were conducted with the insured patients and, in certain cases, with attendants of patients at the time of discharge. An attendant was considered as a respondent when the patient was not involved with the various dimensions of the service delivery process during the inpatient episode due to his physical condition.

The questionnaire covered demographic and socioeconomic details of the respondents and households, healthcare utilization, and various dimensions of satisfaction-related to the SSK scheme. These dimensions included the registration process at SSK booth, the dignity of patients during treatment, clear communication with healthcare providers, privacy during treatment, the quality of basic amenities, availability of drugs and supplies, and availability of prescribed diagnostic services.

Four experienced research assistants were employed for patient recruitment and conducting the interviews. Prior to the interviews, informed written consent was obtained from all participants and their participation was entirely voluntary. Completed interviews were cross-checked among the interviewers and further reviewed by the supervisor to ensure data quality and to address any associated issues, if needed, during the data collection.

Study variables

We collected information on various background characteristics of the patients, including age, sex, education level, current employment status, current marital status, and family size. For measuring satisfaction levels, we considered several dimensions of healthcare delivery under the SSK scheme:

a) hospitalization-related factors included self-reported illness, and length of stay. Self-reported illnesses were categorized into three groups: communicable, noncommunicable, and Others (i.e., obstetrics and injury). Communicable diseases encompass illnesses caused by viruses or bacteria that

spread through contact, bodily fluids, blood products, insect bites, or the air. Noncommunicable diseases, on the other hand, are those that do not transmit between individuals and often necessitate long-term treatment.

b) Service utilization-related aspects included waiting time for registration, waiting time to obtain healthcare services, behaviour of healthcare providers (including physicians, nurses, and other staff such as word boys, cleaners), interaction of healthcare providers with patients, privacy during diagnostic services, confidentiality of healthcare provided.

c) Facility environment and basic amenities related factors included cleanliness of health facilities, waiting rooms, toilets, and availability of drinking water.

The satisfaction measurement items demonstrated a satisfactory level of internal consistency, as indicated by the overall Cronbach's alpha coefficient of 0.77 out of 1.0 [34].

Satisfaction measurements

Patient satisfaction was measured with a collective outcome of fourteen different items. The selection of items for the measurement were devised based on a literature review on patient satisfaction with the insurance scheme as well as previous systematic reviews [26,27,33,35–40]. The existing literature has examined various aspects of health service delivery from the patient' viewpoints, encompassing domains such as patient-provider interactions, the physical environment, and internal management processes. We selected items that revolved around these domains as they encompassed the most influential satisfaction constructs. The fourteen items included:

- How will you rate the behaviour of SSK's authority at registration booth?
- What is your opinion about the time taken for completing registration?
- What is your opinion about the waiting time before consultation with the service provider?
- How will you rate the behaviour of service provider during your treatment at this hospital?
- How will you rate the behaviour of Nurses during your treatment at this hospital?

- How will you rate the behaviour of Aya/ward boy during your treatment at this hospital?
- How will you rate the interaction with service provider about your illness and treatment?
- How will you rate the doctor's attitude towards listening to your problems?
- How will you rate the privacy maintained during diagnostic tests?
- What is your opinion about the privacy maintained during consultation?
- What is your opinion about the cleanliness of this hospital?
- How will you rate the cleanliness of waiting room of this hospital?
- How will you rate the cleanliness of toilets of this hospital?
- What is your opinion regarding the availability of drinking water in the hospital?

Each considered item was rated on a 5-point Likert scale, ranging from very satisfied (5) to satisfied (4), neither satisfied nor dissatisfied (3), dissatisfied (2), and very dissatisfied (1). The total satisfaction score of respondents for all items will range from a minimum of 14 to a maximum of 70. Furthermore, we included an item in the questionnaire to assess overall satisfaction level (in scale of five) with the services at the SSK facility.

Statistical analysis

We analysed the data using Stata version 16 [41]. We performed both descriptive analysis and statistical inferential tests to measure the association between dependent and independent variables. In the descriptive analysis, background characteristics of the study participants and healthcare facility utilization-related characteristics were presented in terms of frequency (n) and percentages (%) with a 95% confidence interval (CI). Besides, we performed the t-test for variables with two categories and the one-way analysis of variance test for variables with more than two categories to test the significant differences in average satisfaction level across the demographic, socioeconomic and characteristics related to the SSK scheme.

To identify factors associated with patients' average satisfaction score with the services under the SSK scheme, a linear regression analysis was performed. We estimated the satisfaction level for each

patient by taking the average of reported satisfaction level in fourteen items. In the univariate unadjusted regression model, the dependent variable was the mean satisfaction score, and the independent variables were age, gender, education, employment status, marital status, family size, self-reported illness, length of hospitalization, registration time, wait time to obtain services, status of receiving drugs and supplies, and status of receiving diagnostic services. However, in the multivariable regression model, we included the independent variables that had a significant association with the satisfaction scores, i.e., *P* values <= 0.05, in the univariable regression models. We considered *P* values of <0.05 as statistically significant in our analysis.

Ethics approval

This study was approved by the Research Review Committee and Ethical Review Committee of the icddr,b (Protocol# PR-17047). Participants in the study were recruited and interviewed after obtaining written informed consent, and their participation was voluntary.

Results

Descriptive statistics

A total of 438 adult patients aged between 18 and 100 were interviewed from August to November 2019 (Table 1). About 60.1% (n=263) of the patients were female. According to education level, 60.9% (n=267) had no education, whereas 24.2% (n=106) and 14.8% (n=65) had primary and secondary levels of education, respectively, 67.8% (n=297) of patients were not involved with income generation. In terms of marital status, 83.3% of the patients (n=365) were married, and 54.1% (237) were from a household consisting of more than four members.

According to self-reported diseases, 62.6% (n=274) of the patients reported the reason for hospitalization as noncommunicable disease, followed by communicable disease of 30.8% (n=135) and Others (i.e., obstetrics and injury) health problems of 7.0% (n=29). Regarding the length of

hospitalization, approximately 47.5% of patients were admitted for 3-4 days, 34.5% for two days, and 18.1% for more than four days. Among the respondents, 66.2% (n=290) mentioned that they had completed their registration process within 15 minutes, 58.9% (n=258) waited for 15 minutes or less to get services. The majority of the patients (79.2%) received all prescribed medicines and supplies free from the SSK pharmacy. Regarding laboratory services, 74.4% (n=326) of patients reported that they received diagnostic services as prescribed. More details of the descriptive statistics are shown in Table 1.

Table 1. Characteristics of participants and their hospital service utilization (n=438)

Variables	Frequency (n)	Percentage (%)
Participants related		
Age		
18-44	158	36.07
45-64	202	46.12
>64	78	17.81
Sex		
Male	175	39.95
Female	263	60.05
Education level		
No education	267	60.96
Primary	106	24.20
Secondary or higher	65	14.84
Employment status		
Employed	141	32.19
Unemployed	197	44.98
Retired and student	100	22.83
Marital status		
Unmarried	11	2.51
Married	365	83.33
Widowed/divorced/separated	62	14.16
Family size		
≤4 members	201	45.89
>4 members	237	54.11
Self-reported illness		
Communicable	135	30.82
Noncommunicable	274	62.56
Others (i.e., obstetrics and injury)	29	6.62
Hospital service utilization related		
Length of hospitalization (days)		
2	151	34.47
3-4	208	47.49

>4	79	18.04
Registration time (minutes)		
≤15	290	66.21
16-30	91	20.78
>30	57	13.01
Waiting time to get service (minutes)		
≤15	258	58.90
16-30	84	19.18
>30	96	21.92
Status of getting drugs and supplies		
Partially received	91	20.78
All received	347	79.22
Status of getting laboratory services		
Did not prescribed	74	16.89
Partial received	38	8.68
All received	326	74.43

Level of satisfaction by different items

Patients' satisfaction with the items considered while utilizing the SSK scheme is shown in Table 2. A total of 14 satisfaction items were used to examine patient satisfaction. The highest average score on satisfaction was related to 'privacy maintained during diagnostic tests' (mean: 3.91 ± 0.64 [standard deviation]), followed by 'physicians' behaviour' (3.86 ± 0.77), 'services at the SSK registration booth' (3.86 ± 0.62), 'confidentiality maintained about diseases' (3.78 ± 0.72), and services from nurses (3.6 ± 0.83). Among service-related items, a lower level of satisfaction was reported with the interaction of service providers with patients (2.14 ± 1.4). Among the items in the environment and basic amenities domain, comparatively higher satisfaction was found with the cleanliness of the health facility (3.43 ± 0.76), followed by the cleanliness of the waiting room (2.92 ± 1.09) and lavatories (2.85 ± 1.04). The lowest level of satisfaction was reported for the availability of drinking water (1.46 ± 0.76).

Table 2. Patients' satisfaction level with healthcare services at SSK facilities by different items

Items	Very satisfied	Satisfied n (%)	Neutral n (%)	Dissatisfied	Very dissatisfie	Overall Mean±

	n (%)			n (%)	d n (%)	SD
1. Services at SSK registration booth (reception)	30 (6.85)	338 (77.17)	51 (11.64)	15 (3.42)	4 (0.91)	3.86 ± 0.62
2. Registration time	53 (12.1)	191 (43.61)	93 (21.23)	48 (10.96)	53 (12.1)	3.33 ± 1.19
3. Waiting time to get healthcare services	74 (16.89)	146 (33.33)	78 (17.81)	61 (13.93)	79 (18.04)	3.17 ± 1.36
4. Physicians' behaviour	52 (11.87)	314 (71.69)	42 (9.59)	20 (4.57)	10 (2.28)	3.86 ± 0.77
5. Nurses' behaviour	29 (6.62)	265 (60.5)	94 (21.46)	40 (9.13)	10 (2.28)	3.6 ± 0.83
6. Other staff' behaviour	12 (2.74)	249 (56.85)	117 (26.71)	44 (10.05)	16 (3.65)	3.45 ± 0.85
7. Interaction of healthcare providers with patients on illness	30 (6.85)	83 (18.95)	32 (7.31)	65 (14.84)	228 (52.05)	2.14 ± 1.4
8. Empathy of healthcare providers	38 (8.68)	173 (39.5)	126 (28.77)	69 (15.75)	32 (7.31)	3.27 ± 1.06
9. Privacy during diagnostics	47 (12.91)	250 (68.68)	54 (14.84)	13 (3.57)		3.91 ± 0.64
10. Confidentiality of diseases	40 (9.13)	292 (66.67)	83 (18.95)	17 (3.88)	6 (1.37)	3.78 ± 0.72
11. Cleanliness of health facility	10 (2.28)	226 (51.6)	151 (34.47)	45 (10.27)	6 (1.37)	3.43 ± 0.76
12. Cleanliness waiting room	4 (0.91)	163 (37.21)	133 (30.37)	71 (16.21)	67 (15.3)	2.92 ± 1.09
13. Cleanliness of lavatories	8 (1.83)	132 (30.14)	134 (30.59)	113 (25.8)	51 (11.64)	2.85 ± 1.04
14. Availability of drinking water	2 (0.46)	16 (3.65)	11 (2.51)	125 (28.54)	284 (64.84)	1.46 ± 0.76

Overall patient satisfaction with healthcare services at SSK facilities

Overall patient satisfaction estimated using all the items is displayed in Figure 1. Among the respondents, 8.5% (n=37) of patients reported being very satisfied, while 46.6% (n=204) expressed satisfaction with the services received under the SSK scheme. Whereas, 31.28% (n=137) of patients reported feeling neither satisfied nor dissatisfied, 8.9% (n=39) were dissatisfied, and 4.8% (n=21) were very dissatisfied

(**Fig. 1 to be inserted here**)

Patient satisfaction by socioeconomic and hospital service utilization characteristics

Patients' satisfaction levels significantly varied across different groups of age, sex, marital status, illness type, registration time, waiting time, drug receiving status, and status of getting diagnostic tests (Table 3). Patients aged between 45 and 64 were comparatively more satisfied (mean: 3.28; CI: 3.21-3.34) with services under the SSK scheme, and the difference in satisfaction level across the age groups was statistically significant (P<0.001). Male patients were significantly (P=0 .013) more satisfied (mean: 3.24; CI: 3.17-3.31) than female respondents. Married and widowed/divorced/separated individuals were more satisfied than unmarried individuals, and the difference was statistically significant (P<0.001). However, there was no significant difference in satisfaction level by education level, employment status, or household size.

Patients with noncommunicable diseases had a higher satisfaction level (mean: 3.22; CI: 3.17-3.28) than patients with other illnesses, and the difference in satisfaction level was statistically significant (P=0.008). Satisfaction scores decreased with the increase in length of hospitalization stay, registration time, and waiting time. The satisfaction level was significantly (P=0.006) higher among the patients who received all prescribed drugs from the scheme (mean: 3.20; CI: 3.15-3.26). Similarly, satisfaction level was higher among the patients who received all prescribed diagnostic or laboratory services compared to other groups (mean score: 3.22; CI: 3.17-3.27), and the difference in satisfaction level across the groups was statistically significant (P<0.001).

Table 3: Average satisfaction score by patient and service characteristics

Variables	Mean	95% CI	*P* value
Age [a)]			
18-44	3.03	(2.95-3.1)	<0.001
45-64	3.28	(3.21-3.34)	

>64	3.18	(3.08-3.28)	
Sex [b]			
Male	3.24	(3.17-3.31)	0.013
Female	3.12	(3.06-3.18)	
Education level [a]			
No education	3.19	(3.13-3.24)	0.211
Primary	3.17	(3.07-3.28)	
Secondary or higher	3.08	(2.96-3.2)	
Employment status [a]			
Employed	3.22	(3.14-3.3)	0.474
Unemployed	3.16	(3.09-3.23)	
Retired and student	3.12	(3.03-3.21)	
Marital status [a]			
Unmarried	2.65	(2.42-2.88)	<0.001
Married	3.19	(3.14-3.24)	
Widowed/divorced/separated	3.12	(2.99-3.24)	
Family size [b]			
≤4	3.20	(3.14-3.26)	0.213
>4	3.14	(3.08-3.21)	
Self-reported illness [a]			
Communicable	3.07	(2.98-3.16)	0.008
Noncommunicable	3.22	(3.17-3.28)	
Others (i.e., obstetrics and injury)	3.10	(2.93-3.27)	
Length of hospitalization (days) [a]			
2	3.12	(3.03-3.21)	0.133
3-4	3.17	(3.11-3.23)	
>4	3.26	(3.16-3.35)	
Registration time (minutes) [a]			
≤15	3.25	(3.2-3.3)	<0.001
16-30	3.05	(2.95-3.16)	
>30	2.93	(2.8-3.07)	
Waiting time to get service (minutes) [a]			
≤15	3.31	(3.25-3.37)	<0.001
16-30	3.01	(2.91-3.12)	
>30	2.92	(2.83-3.01)	
Status of getting drugs and supplies [b]			
Partially received	3.04	(2.96-3.13)	0.006
All received	3.20	(3.15-3.26)	
Status of getting laboratory services [a]			
Did not prescribed	2.94	(2.81-3.06)	<0.001
Partial received	3.16	(3.02-3.3)	
All received	3.22	(3.17-3.27)	
Total	3.17	(3.12-3.21)	

[a] *One-way analysis of variance*

[b] *t-test*

Determinants of patients' satisfaction with services provided under the SSK scheme

Our analysis demonstrated noteworthy associations between satisfaction scores and various factor (Table 4). Patients aged between 45 and 64 years had significantly higher satisfaction score by 0.13 points than that of patients aged between 18 and 44 years old. Additionally, married patients exhibited significantly higher satisfaction scores by 0.34 points compared to unmarried patients. Patients seeking care for noncommunicable diseases had significantly higher satisfaction score by 0.15 points than patients who seeking care for communicable diseases. We found a significant negative association of satisfaction scores with the extended registration and waiting time for obtaining services. Conversely, a positive association was observed with the status of receiving all drugs, supplies, and diagnostic services. Compared to the patients with registration time of less than or equal to 15 minutes, patients who waited for 16-30 minutes reported a significantly lower by satisfaction score by 0.18 points, while those waited for more than 30 minutes exhibited an even greater decrease by 0.33 points. Similarly, patients who waited for 16-30 minutes and more than 30 minutes to obtain services reported significantly lower satisfaction score by 0.30 points and 0.36 points, respectively, than patients who waited for less than or equal to 15 minutes. Moreover, patients who received the complete course of prescribed medicine from the SSK pharmacy demonstrated a significantly higher satisfaction score by 0.13 points compared to the patients who received partial medicines and supplies. Likewise, compared to the patients who were not prescribed diagnostic services, patients who received partial diagnostic service services had significantly higher satisfaction by 0.26 points, and patients who received full diagnostic services had significantly higher satisfaction by 0.28 points.

Table 4: Determinants of patents' satisfaction with services under the SSK scheme

	Dependant variable = Average satisfaction score of 14 items					
Variables	**Unadjusted coefficients**	**95% CI**	***P* value**	**Adjusted coefficients**	**95% CI**	***P* value**
Age						

18-44	Ref.			Ref.		
45-64	0.25	(0.15-0.35)	<.001	0.13	(0.03-0.22)	0.009
>64	0.15	(0.02-0.28)	0.021	0.03	(-0.1-0.16)	0.611
Sex						
Female	Ref.			Ref.		
Male	0.12	(0.02-0.21)	0.014	0.09	(0-0.18)	0.043
Education level						
No education	Ref.					
Primary	-0.02	(-0.13-0.09)	0.744			
Secondary or higher	-0.10	(-0.24-02.)	0.110			
Employment status						
Employed	Ref.					
Unemployed	-0.06	(-0.17-0.05)	0.263			
Retired and student	-0.10	(-0.22-0.03)	0.126			
Marital status						
Unmarried	Ref.			Ref.		
Married	0.54	(0.25-0.83)	<.001	0.34	(0.08-0.61)	0.011
Widowed/divorced/separated	0.47	(0.16-0.78)	0.003	0.26	(-0.03-0.55)	0.082
Family size						
≤4	Ref.					
>4	0.06	(-0.03-0.15)	0.214			
Self-reported illness						
Communicable	Ref.			Ref.		
Noncommunicable	0.15	(0.05-0.25)	0.003	0.10	(0.01-0.19)	0.032
Others (i.e., obstetrics and injury)	0.03	(-0.16-0.23)	0.742	0.01	(-0.16-0.18)	0.909
Length of hospitalization (days)						
2	Ref.			Ref.		
3-4	0.05	(-0.05-0.15)	0.325	0.02	(-0.07-0.11)	0.626
>4	0.14	(0-0.27)	0.045	0.06	(-0.06-0.18)	0.324
Registration time (minutes)						
≤15	Ref.			Ref.		
16-30	-0.20	(-0.31--0.08)	<.001	-0.18	(-0.28- -0.09)	<.001
>30	-0.32	(-0.46--0.19)	<.001	-0.33	(-0.45--0.21)	<.001
Waiting time to get service (minutes)						
≤15	Ref.			Ref.		
16-30	-0.30	(-0.41--0.18)	<.001	-0.30	(-0.4--0.2)	<.001
>30	-0.39	(-0.49--0.28)	<.001	-0.36	(-0.46--0.26)	<.001
Status of getting drugs and supplies						
Partially received	Ref.			Ref.		
All received	0.16	(0.05-0.27)	0.010	0.13	(0.04-0.23)	0.008
Status of getting laboratory services						
Did not prescribed	Ref.			Ref.		
Partial received	0.22	(0.036-0.41)	0.019	0.26	(0.09-0.43)	0.002
All received	0.29	(0.166-0.41)	<.001	0.28	(0.17-0.39)	<.001
Observation (N)						438
R-square						0.319
Adj. R-squared						0.293

Discussion

Principal Results and Comparison with Prior Work

Our study showed that 55.1% (n=241) of the patients were either very satisfied or satisfied with the services provided by the SSK health protection scheme. The mean satisfaction score was 3.17 out of 5, which means that on average, the satisfaction level among the patients was slightly above the level of neither satisfied nor dissatisfied. Of the 14 considered items for measuring satisfaction, most of the patients were either very satisfied or satisfied with services at SSK both (84.0%), physicians' behaviour (83.6%), and privacy maintained during diagnostic services (81.6%). On the other hand, a majority of the patients were either very dissatisfied or dissatisfied with the status of availability of drinking water (93.4%) and interaction with healthcare providers (66.9%) regarding the patients' illness. In multiple regression analysis, we found that the status of receiving prescribed drugs and diagnostic services, waiting time for registration, and waiting time for getting treatment were the strongest predictors of patient satisfaction.

Health financing schemes are becoming popular to maintain and improve the health of the population in LMICs [2,6,42]. The SSK health protection scheme has been introduced to increase the access of the poor population to inpatient healthcare services and ensure financial protection against expenditure to alleviate poverty or extreme poverty induced by OOP payments for healthcare in Bangladesh. Although several studies have been conducted on patients' satisfaction with healthcare utilization in different settings in Bangladesh [33,43–46], patients' satisfaction with services under the SSK health protection scheme has not been studied thus far. The mean satisfaction score in our study was higher (3.17 vs 2.75) than that in a study conducted to assess satisfaction with the service quality of UzHCs among the uninsured population [44]. The SSK scheme provides healthcare to the members through selected UzHCs; however, compared to the nonmembers, insured patients were supposed to receive all prescribed medicines and diagnostics services from private providers contracted by the scheme. The situation is different for other UzHCs where the SSK scheme is not

being implemented. The availability of medicine and diagnostic services under the SSK scheme might have increased the satisfaction level among the insured patients.

Our study showed that patients' satisfaction was the highest with the privacy and confidentially maintained by providers during diagnostic tests and about the patients' disease. The finding was similar to a study conducted in Bangladesh [33] among the beneficiaries of a community-based health insurance scheme in Bangladesh. Another study conducted among adult patients at a general hospital in Ethiopia also reported that patients' privacy and confidentiality maintained by healthcare providers were significantly associated with higher satisfaction levels [47]. Our study found that patients were satisfied with the providers' behaviour, particularly physicians' and nurses' behaviour, which influenced the overall level of patient satisfaction. Although not directly comparable, however, the proportion of satisfied patients towards the behaviour of providers was higher (84% vs 69%) compared to a study conducted in rural Bangladesh [45]. Previous studies have also reported that the behaviour of healthcare providers towards patients is directly connected with patient satisfaction [33,43,48].

Regarding interactions with healthcare providers, our study found that two-thirds of the patients were not satisfied. This might be a result of the patients not knowing about their illness from the physician during their treatment episodes. It was evident in the literature that patients' satisfaction level was influenced by healthy interpersonal communication with healthcare providers, as this maintains a better physician–patient relationship [43]. A previous study conducted in Bangladesh showed that more than half of the surveyed patients could not ask questions to their providers [49]. However, as all patients in our study were inpatients and stayed at the facility for at least two days, it is unlikely that patients could not ask the providers about their illness.

The experience of beneficiaries with the cleanliness of health facilities and lavation and availability of drinking water were not positive. Previous studies revealed that the health facility environment and cleanliness were crucial aspects of patient satisfaction [33,50–52]. Moreover, the evidence

reported that since environmental contamination was directly connected with nosocomial infection, the physical environment led to the dissatisfaction level of patients at health facilities instead of increasing satisfaction [33,50–52].

We found that patients' age was significantly associated with their level of satisfaction. Another study conducted in Bangladesh [44] reported significant variation in the average satisfaction score across the age of the patients, which is similar to our findings. Two other studies conducted among beneficiaries of health insurance schemes also reported similar findings that age was significantly associated with the level of satisfaction [30,53]. Lower waiting times for registration and healthcare providers were significantly associated with patient satisfaction. The findings were consistent with the finding that prolonged waiting times for registration and services are associated with lower client satisfaction [54,55]. Patients who received care for noncommunicable diseases were significantly more satisfied than patients suffering from communicable diseases. This might be a result of people suffering from noncommunicable diseases requiring regular medication, which was common and available to get through the contracted pharmacy. Such availability of medicines might have increased the patients' satisfaction. Similarly, SSK beneficiaries who received all prescribed medicine and diagnostic services were significantly more satisfied. As per the benefits package of the SSK scheme, patients should receive all prescribed medicines and diagnostic services for 78 disease groups. However, approximately 21% of patients reported that they received partial medicine, and approximately 9% reported that they received partial diagnostic services. It might have happened that some of the prescribed medicines or diagnostic tests were not correlated with the 78 disease categories and therefore were not provided under the scheme. However, evidence has reported that medicine and diagnostic tests are associated with higher OOP expenditure and lead to falling into poverty [9,56,57]. While scheme beneficiaries are provided free essential medicine and free diagnostic services, they have a lower chance of incurring cost of treatment and experience a lower risk of CHE, impoverishment and further impoverishment and [9], thus increasing their satisfaction

with the services under the scheme. However, other variables, such as education level, employment status, family size, and length of hospitalization, were not significantly associated with satisfaction level. This might be because the SSK scheme targets the below poverty line population having relatively similar socioeconomic characteristics; thus, their perception of satisfaction does not vary across these factors. Such findings are consistent with other studies conducted in India [58] and Turkey [37].

This is the first study to explore patient satisfaction with the pilot SSK scheme in Bangladesh. Furthermore, we captured patients from all four facilities under the SSK scheme rather than selecting them purposively. The findings of the study will help the SSK implementing authorities to understand the experiences of patients with the service delivery process and quality of healthcare provided under the SSK scheme.

Limitations

The design of the study is observational in nature, which may not allow us to establish any causal inference with satisfaction and other characteristics under the SSK scheme without having a control group. The study only focused on the beneficiaries' point of view, and we have not explored the providers' view in this context. The survey collected self-reported satisfaction from the patients, which may be highly subjective to social desirability bias, as patients might have given responses that would please healthcare providers instead of a true reflection of their satisfaction. However, we interviewed the patients at hospital premises in the absence of any providers to minimize such bias.

Conclusions

Our findings demonstrated that more than half of the patients were overall satisfied with the services provided under the SSK scheme. However, there is room for improvement in several dimensions, such as the cleanliness of the waiting room, toilets, and the availability of drinking water.

Furthermore, attention should be given to minimizing the waiting time for registration, accessing healthcare services, and improving providers' skills on interaction with patients. The results of this study could help the stakeholders make necessary changes in the identified determinants related to health service delivery of the SSK scheme. Such changes will enhance the quality of services as well as increase utilization of the scheme among the target population.

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Authors' contributions

MZH, GR, and MEC contributed to conceptualizing, writing, revising, and finalizing the manuscript with the support of OA, SA, GGM, and MWA. All the authors have read, revised, and approved the final version of the manuscript.

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Competing interests

None declared.

Data availability statement

The data sets generated and/or analysed during this study are available from the corresponding author upon reasonable request.

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List of Figures

Supplementary Files

Figures

Overall satisfaction with the inpatient care services under the SSK scheme.