Survey on Access to Health Service in Rural Area in Sri Lanka*

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1. Introduction

The successes of Sri Lanka's health care system have been widely reported given the country's relatively low income and health-care expenditure[1]. Its public health care system is free at any place in the country. Although many developing countries privatized the health care system in 1980s and 90s, Sri Lanka has kept the public care system since the independence in 1948. This contributes to the equity in accessing to the health service to some extent. As of 2006, the average life time is 72 year-old and the mortality rate of infant is 13 per 1000 infants. However, the inequity is still observed among different income groups and among different regions in Sri Lanka. Recently, the noncommunicable diseases, such as diabetes are rapidly increasing and this impacts the equity in accessibility of the patients[2]. Although the patients need frequent visits to clinics with appropriate facilities for diagnosis and management of diseases, these clinics are often located far from rural communities. This compels the patients to suffer with longer travel times and higher travel costs[3]. However, the research on the accessibility of low income people in rural areas of developing countries particularly to health service has been limited. This paper surveys the patients' accesses to the hospitals through the household interviews in the rural area of Sri Lanka.

2. Health system in Sri Lanka

Sri Lanka is an island with a total land area of 65,610 km^2 and it is significant to note that it includes 1,156 km^2 of inland waters. The economy is predominantly agricultural and 70% of the population lives in rural areas. Sri Lanka holds a unique position in South Asia as one of the first of the less developed nations to provide universal health and free education. The health services are offered free for more than 5 decades by public sector (from 1951). The health system in Sri Lanka is enriched by a mix of Western, Ayurvedic, Unani, Homeopathy systems of medicine and several other systems. Heath sector consists of Private and Public sector. The public sector comprises of western and Ayurvedic systems while the private sector consists of practitioners of all types of medicine.

3. Household survey in rural area in Sri Lanka

3.1 Survey area

We survey the patients' experience of accesses to hospitals in the rural area, Sri Lanka. The survey used in this paper was designed and conducted by a study team from the University of Tokyo that we were part of. The households in Beliatta D. S. Division are randomly selected based on the map of the district. The locations of Hambantota District and Beliatta D. S. Division is shown in Figure 1. Figure 2 shows the details of survey area. This area includes the seven grama niladari (GN) Divisions: Maligatenna, Pallatara, Nihiluwa, Dammula, Kambussawela, Godawela and Waharalgoda. The basis for selection of these areas is mainly due to the locations of these areas with respect to the existing local hospitals. And also the bus stops for public transportation are not easily accessible and also in some routes the frequency of operation is very low as only two trips per whole day or not available at all. On such days people solely have to depend on the three wheelers which are very expensive relative to the public transportation. The unavailability of public transportation is mainly due to the unprofitability for operators.

Main source of income for the local people in this area is dependent on agriculture. Therefore, their attitude is to own as much land as possible as it will make them earn higher income. And also they are not willing to giving up their origin places easily. Consequently, people reside for apart from each other, leading to very low population densities. This makes it difficult to provide infrastructure facilities, such as roads, water and electricity. Further, this terrain is very difficult, so the maintaining roads are quite expensive. When it comes to public transport, it is even not available in many properly constructed roads due to low profit potential for the operators. Therefore, main means of commuting is walking long time till the public transit is reached. This leaves this community in a situation of isolation in terms of transportation. This situation is quite different when

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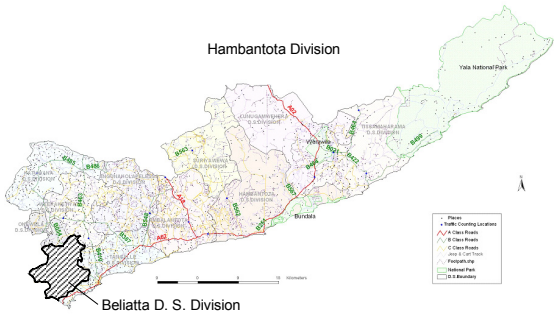

Figure 1 Location of Beliatta D.S. Division.

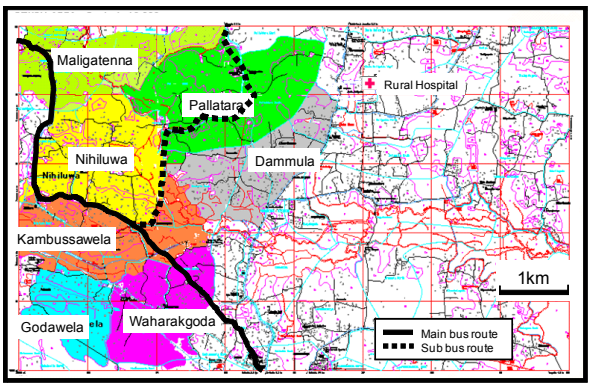

Figure 2 Map of Survey Area.

compared to other countries where people tend to move into more convenient areas. But such tendencies are almost unobserved as they are quite financially poor, they cannot move to such areas. The current economic situation in Sri Lanka makes it even tougher as the incomes are not seeping to rural communities smoothly. Apart from whom are engaged in proper occupation it is a tough situation for most of the other casual workers.

3.2 Health service in the survey area

Residents in this D. S. division depending on their diseases, attitude or expectations are accessing following hospitals: TH Karapitiya; GH Matara; BH Tangalle; DH Beliatta; RH Gangodagama; and Ayurvedic hospital.

Facilities in different levels of hospitals can be highlighted as follows;

1. TH Karapitiya - 1465 beds, 400 doctors, 850 nursing staff
2. GH Matara- 943 beds, 246 doctors, 500 nursing staff
3. BH Tangalle - 152beds, 32 Doctors
4. DH Beliatta - 90 beds, 10 Doctors
5. RH Gangodagama - 60 beds, 4 Doctors
6. Ayurvedic hospital - 90 beds, 10 traditional care doctors

TH Karapitiya and GH Matara are quite comprehensive hospitals when compared to other four hospitals. It is consisted of all the laboratory facilities and emergency facilities. Out of this TH Karapitiya is more superior as this hospital is equipped with high-tech scanners and also with specialist doctors. Therefore, these two hospitals have more regard from the people especially owing to their capacity, facilities and specialized staff. As a result these two hospitals have very high attraction as most of the diseases could be handled properly in these hospitals with the facilities available. People have more faith on these two hospitals even though they are highly congested. At the same time referrals made by doctors from other hospitals make it even more congested. Local hospitals such as rural hospitals and central dispensaries suffer with severe shortage of essential drugs. It is also one of the reasons that people are compelled to access higher level of hospitals.

3.3 Transportation in the area

The distances from the survey area to the six nearest hospitals are: TH Karapitiya - 125km; GH Matara - 36km; BH Tangalle - 16km; DH Beliatta - 5km; RH Gangodagama - 3km; and Ayurvedic hospital - 6km.

Transportation modal choice for people in this area would be either bus or three-wheeler. When it comes to busses it is not available in many roads as the some rural routes are not profitable to the bus operators with low density of people and also due to road width and quality they are reluctant to operate as well. Most of the times especially in case of emergency patients have to be dependent on quite expensive three-wheelers. The cost of using it is about 50 Rupees /km. Accessing higher levels of hospitals using them will make them pay almost unaffordable amounts even though medical facilities are given free of charge. And it is also time consuming with the road condition and quality. Although health services are given free which is very helpful in terms of poor people, the current conditions keeps most of the rural poor citizens away from these free services due to the cost of transportation. Ultimately they are left with sufferings of low health service levels.

There is no direct bus service to access DH Beliatta and Ayurvedic hospital. From the last stop it is about 1 km away. Therefore, everyone has to either walk to the hospital or else take a three-wheeler. As the road in front of DH Beliatta and Ayurvedic hospital is narrow, barely 3.0m, it is difficult even for the ambulances and any other private vehicles to access these two hospitals. The public transit operating hours are from 5am to 9pm. Therefore, public transit services are not available at all in the night. People are forced to depend on

three-wheeler even though it is relatively expensive.

3.4 Survey implementation

We designed an interview sheet for the survey which requests the interviewees to answer their socio-demographic data, the number of household members and the experience of visiting the clinics or pharmacies in a past year including the type of diseases, the hospitals they visited, the transportation modes they used. The interview survey was done in March to May, 2008. 322 individuals in 75 households were interviewed.

The profile of the interviewed households and their members by G. N. Division is shown in Table 1. First, the average number of household members is 4.4 and the female members are a little more than the male members. Second, the average age of household members are 36.5 years old for male and 31.1 years old for female. The age ranges from 1 year-old child to 88 year-old male. Third, the average monthly household income is 7,890 Rupee. 24.0% of them have a monthly income less than the poverty line. Note that the poverty line in Sri Lanka is 1,423 Rupee per capita as of 2002. Note also that the poverty rate of households in Hambantota District is 27.8 %. These mean that the observed households represent the typical household in this district. Fourth, about a half of the observed households can access to the protected well whereas the remaining households use the low-quality water. According to the local medical doctors, there are many clients who have the health problem including diarrhea from this area. This is mainly because of the poor quality of drinking water. Fifth, the unimproved sanitary facilities are used in many households. This also causes the health problems in this area. Sixth, over one-third households hold the mobile phone although the fixed telephone network is not supplied in this area. Seventh, only two households have the automobiles. Note that the automobile of the two households are the three

Table 1 Profile of observed households and their members

		Nihiluwa	Dammulla	Waharakgoda	Godawela
Number of households		12	11	10	11
Average household members	Male	2.3	2.0	2.0	2.0
	Female	2.1	2.4	2.3	2.4
Average age of household	Male	29.0	29.8	26.7	36.5
	Female	36.0	34.0	29.8	31.1
Monthly household income (Rupee)		7000	7591	9100	8000
Water supply	Tap water in	0	0	3	0
	Protected well in	6	6	2	3
	Others	6	5	5	8
Sanitary facilities	Water seal	0	0	3	0
	Pour flash	5	5	4	7
	Pit	7	6	3	4
Telephone availability	Available	2	3	7	5
	Unavailable	10	8	3	6
Available transportation mode	Automobile	0	0	1	0
	Motorcycle	2	1	3	1
	No	10	10	6	10

		Maligatenna	Kambussawela	Pallattara	Total
Number of households		10	9	12	75
Household members	Male	2.1	2.0	1.8	2.0
	Female	1.8	2.2	2.6	2.3
Age of household memebers	Male	32.6	32.1	35.7	31.8
	Female	39.8	31.6	40.8	34.9
Monthly household income (Rupee)		7225	8722	7875	7770
Water supply	Tap water in	0	1	1	5
	Protected well in	5	5	7	34
	Others	5	3	4	36
Sanitary facilities	Water seal	1	1	0	5
	Pour flash	3	7	8	39
	Pit	6	1	4	31
Telephone availability	Available	3	4	3	27
	Unavailable	7	5	9	48
Available transportation mode	Automobile	0	1	0	2
	Motorcycle	1	1	2	11
	No	9	7	10	62

Table 2 The choice results of health service and its access of respondents

		Nihiluwa	Dammulla	Waharakgoda	Godawela
Chosen health service	TH Karapitiya	5	6	0	10
	GH Matara	11	18	6	11
	BH Tangalle	37	37	27	21
	DH Beliatta	25	30	46	44
	RH Gangodagama	21	25	2	10
	Ayurvedic	8	14	3	4
	Pharmacy	14	24	19	15
Access travel time	Average	61.9	61.2	45	78.6
to health service (minutes)	Minimum	10	10	15	15
	Maximum	250	225	160	255
Access travel cost	Average	62.6	127.1	82.8	121.7
to health service (Rupee)	Minimum	6	10	6	10
	Maximum	560	2050	800	2300
		Maligatenna	Kambussawela	Pallattara	Total (%)
Chosen health service	TH Karapitiya	0	0	11	32 (3.8)
	GH Matara	27	15	17	105 (12.4)
	BH Tangalle	18	25	30	195 (22.9)
	DH Beliatta	31	32	25	233 (27.4)
	RH Gangodagama	8	3	20	89 (10.5)
	Ayurvedic	15	3	18	65 (7.6)
	Pharmacy	18	21	20	131 (15.4)
Access travel time	Average	117.1	74.2	96.2	76.7
to health service (minutes)	Minimum	30	25	20	10
	Maximum	245	180	320	320
Access travel cost	Average	158.7	107.1	125.1	113.5
to health service (Rupee)	Minimum	8	8	6	6
	Maximum	1500	810	2700	2700

wheelers which are used mainly for business. Although 11 households own the motorbike, the most of households have no private transportation mode.

822 visits to the health services are observed.

Table 2 shows the choice of health service and its access of the respondents. The health service chosen by the respondents are categorized into the seven services: including the ayurvedic hospital, rural hospital, district hospital, provincial hospital, base hospital, teaching hospital and the pharmacy. It shows that 10.5% of visits are accessed to the nearest rural hospital whereas 27.4% of visits are accessed to the district hospital and 22.9% are accessed to the base hospital. It is noted that 15.4 % are visited to the pharmacy. This reflects that many people do not access to the hospital but access to the pharmacy. It should be also noted that the medicine is also free for charge in Sri Lanka. The average access travel time to the health service varies among the G. N. Divisions. This is mainly because the difference of location of these G. N. Divisions. The average travel time to health service in all G. N. Divisions is 76.7 minutes. The access travel time from Maligatenna is almost two hours. This means that the local people are forced to travel to the health service for a long time. The average travel cost ranges from 62.6 to 158.7 Rupees. The average travel cost of all respondents is 113.5 Rupees. Note that the average income is some 7,770 Rupees.

4. Conclusion

This paper examined the patients' choice of health service facilities with the empirical data collected in the survey conducted in the rural area of Sri Lanka. The preference of local people should be analyzed with the data further in details.

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