Utilisation of and Satisfaction with Major Healthcare Services Amongst Slum Dwellers

A Cross-sectional Case Study in the Megacity of Dhaka

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1. Introduction

Although access to basic healthcare services is a fundamental right, many poor people, especially in developing countries, have limited access to such services. This problem is particularly acute in Bangladesh (Andaleeb 2000: 95), which is one of the most densely populated and poorest countries in the world (Vaughan et al. 2000: 5). About two-thirds of the population have reported no access to primary healthcare services (Andaleeb 2000: 95). An acute shortage in the healthcare workforce poses a major challenge to ensuring care for a population of over 150 million (Mahmood et al. 2010: 1). Moreover, the overall healthcare performance in Bangladesh is very poor, which can be attributed to various factors such as poor quality of service providers, absence of critical staff members, inadequate health facilities, unavailability of essential drugs and supplies, lack of supervision and job accountability (Andaleeb 2000: 95).

The healthcare system in Bangladesh is highly pluralistic with many care provider options (Vaughan et al. 2000). Ahmed et al. (2005) created five categories of treatments: (i) self-care/self-treatment: when patients seek no treatment other than rest and possibly seek care from a family member. This also includes home remedies (e.g. oral rehydration salts), over-the-counter drugs, or herbal preparations without consultation of any healthcare provider; (ii) drugstore salespeople: when patients seek diagnosis and treatment from a pharmacy salesperson and purchase a remedy other than an over-the-counter drugs. Individuals selling medicines at these retail pharmacies usually have no professional training in diagnosis and treatment

(only a few may have taken a 4–6 week certificate course on dispensing drugs) and these outlets are mostly unlicensed and unregulated; (iii) traditional treatment: when patients seek treatment from herbalists (*kabiraj*) or spiritual healers including homeopathic practitioners; (iv) paraprofessional: when patients seek treatment from various sources such as from village doctors (in local term *palli chikitsok*) who have had 3 months of training in diagnosing and treating common ailments mostly from private institutions, from medical assistants who have completed a 3-year training programme at a public institution, or from governmental and non-governmental community health workers who have had some basic training in preventive and curative medicine; and (v) qualified allopathic practitioner: when patients seek treatment from licensed practitioners who have had professional training. This group is locally known as MBBS (Bachelor of Medicine and Bachelor of Surgery) doctors.

In Bangladesh, public healthcare services are available at a local and a national level, and these facilities are supposed to provide most of the services free of charge. However, informal and unofficial charging is widely practised at all levels of the health system (Killingsworth et al. 1999: 156; Vaughan et al. 2000: 6; Osman 2008: 273–274). Moreover, public healthcare services are commonly perceived as providing poor quality services, and they often suffer from shortages of drug supplies and insufficient management (Vaughan et al. 2000: 6; Osman 2008: 280). Consequently, private healthcare services including pharmacies lead the entire healthcare system in Bangladesh (Vaughan et al. 2000: 7; Larson et al. 2006: 1438; Mahmood et al. 2010: 4). The number of private healthcare services is growing rapidly. Unfortunately, these services are also poorly regulated and rarely registered by the government. Moreover, drugs, including antibiotics, are easily available in all private pharmacies and shop outlets (Vaughan et al. 2000; Ahmed et al. 2009: 468).

Factors influencing the utilisation of healthcare services may represent predisposing, enabling and need characteristics (Chakraborty et al. 2003: 329). These characteristics may include sociodemographic and economic factors, cultural perceptions and practices, gender discrimination, geographical location, environmental conditions, severity of disease, political factors and the healthcare system (Shaikh & Hatcher 2005: 49; Taffa & Chepngeno 2005: 240).

Making basic healthcare services accessible to the poor is still a challenge in Bangladesh (Osman 2008: 264). Moreover, there is a lack of information regarding major healthcare providers to the poor (Ahmed et al. 2009: 467). This is particularly the case for the poor population living in megacities in developing countries. Dhaka, the capital of Bangladesh, is one

of the fastest growing megacities in the world. Between 300,000 and 400,000 new migrants move to Dhaka each year and most of them settle in slums (CUS et al. 2006: 13; World Bank 2007: xiii; Khan et al. 2009: 70). Because of rapid migration and unplanned urbanisation, slum dwellers in Dhaka increased from 20% in 1996 to 37% in 2005 (CUS et al. 2006: 12; Khan et al. 2008: 2). These people suffer most from limited accessibility to and poor quality of basic healthcare services because of poor socioeconomic conditions and other barriers. Slum dwellers further represent a higher burden of preventable diseases (e.g. communicable diseases) and poor quality of life as compared to non-slum, affluent populations (Taffa & Chepngeno, 2005: 240; Khan et al. 2008: 1, Khan et al. 2009: 79).

Health policy makers and other relevant stakeholders in particular need to understand people's health seeking behaviours, including determinants and differences between subpopulations, in order to formulate policies and implement targeted services and strategies that are responsive to needs and priorities (Shaikh & Hatcher 2005: 49; Ahmed et al. 2005: 110). Generally cities as compared to rural areas have more healthcare facilities (both public and private) (Kamat & Nichter 1998: 781), including medical colleges, and tertiary and specialised hospitals. Private healthcare facilities in big cities are also rapidly expanding because government facilities are simply not sufficient to serve the huge demands of the city population. This is also happening in Dhaka (Andaleeb 2000: 96–100). In this context, it is worthy to analyse the major healthcare services and their determinants focusing on slum dwellers in Dhaka. It is also important to assess customers' satisfaction with healthcare services for strategy formulation and improvement purposes (Andaleeb 2000: 96).

Considering the dearth of information for rapidly growing slum dwellers in Dhaka, this article is structured as follows. First, we reported four major types of healthcare services, namely pharmacy, government hospitals, private hospitals and clinics (PVHC), and MBBS doctors. Second, we reported self-reported satisfaction (whether the customers were satisfied), the perception of waiting time (whether the time was long) and the perception of treatment cost (whether the treatment was costly) regarding these services. Third, we briefly described the respondents' future preference regarding choice of healthcare facility for a minor sickness. We also performed detailed analyses (both bivariable and multivariable) for the most dominant source of healthcare, which is a pharmacy in our study. This article can be considered as a case study of slum dwellers living in Dhaka based on cross-sectional data.

2. Methods

2.1 Study design, study sites and respondents

A cross-sectional survey was conducted between September and December in 2007. A total of 2,222 adult respondents were selected from six study sites (four slums and one affluent area located in Dhaka and one rural village adjacent to Dhaka), which were broadly grouped as urban slums, urban affluent area and rural area. We included respondents from affluent and rural areas to investigate intra-urban and rural-urban health outcome differences. Some of the important comparative results, including detailed information about the methodology (e.g. selection of study sites, respondents, and questionnaire), have already been published elsewhere (Khan et al. 2009: 72–80).

As the major focus of the present study was to investigate the utilisation pattern of healthcare services by urban slum dwellers, we only outline the selection methodology for them here. Approximately 4,900 slums in Dhaka were listed in 2005 by the Centre for Urban Studies (CUS et al. 2006: 12). Before selecting our slums in Dhaka from this list, we used two important criteria related to the number of households and the area of land. Initially we selected only those slums that fulfilled a minimum threshold value of 500 households and a minimum area of six acres of land. From this short list, four slums were purposively selected which were geographically far away from each other. Then from the selected slums, we purposively interviewed a total of 1,444 slums dwellers, selecting one respondent from each household. We interviewed at least 250 adults from each slum, which was our minimum sample size defined by a statistical formula. Information was collected through a multidimensional, pre-tested questionnaire through face-to-face interviews. University graduates were trained to perform these interviews. Before starting the interview, the aims of the survey were explained and verbal consent from each respondent was obtained. We also used a global positioning system to record the location of each interviewed household.

2.2 Outcome variables

Our outcome variables were the various uses of different healthcare services. Each respondent was asked to answer (either yes or no) to the following question "During the last one month preceding the survey, did you visit any healthcare facility for healthcare?" Those respondents who reported 'yes' were asked to mention their visited HCSs. Although 20 different options of healthcare services were available in the questionnaire and

multiple answers were possible, in this study we only considered four major types of healthcare services, namely pharmacies, government hospitals, private hospitals and clinics (PVHC), and MBBS doctors for descriptive analyses. Other options mainly belonged to paraprofessional (e.g. family health welfare centre, community clinic, health and family planning worker) and traditional (ayurvedic/*unani*, homeopathic and *kabiraj*) groups were excluded from analysis due to small sample size. Variables reflecting self-reported satisfaction with healthcare services and perceptions regarding whether the waiting time was long and whether the treatment was costly were also considered.

2.3 Variables analysed

Although various types of information were collected, only some relevant variables were used in this study. These are age (10–30, 31–59, 60+ years), sex (male, female), education (0, 1–5, 6–8, 9+ years of education), marital status (unmarried, married, divorced/separated/widowed), number of earners in the family (1, 2, 3+ people), membership in any community organisation (yes, no), smoking cigarettes (yes, no), birth place (village, slum, city/town), and materials of the wall of the house (good-pucca i.e. made with brick and cement, medium-rudimentary tin/wood, low-raw/katcha materials). Some variables reflecting health problems (any, communicable diseases, non-communicable diseases, symptoms), body mass index (BMI) (underweight-BMI < 18.5, normal weight- $18.5 \leq$ BMI <25.0, overweight-BMI $\geq$ 25.0), and self-perceived health status (good, medium, poor) were also used.

2.4 Statistical analysis

All the analyses were performed using SPSS 17.0. First, we performed a simple analysis to describe four major types of healthcare services. Then we performed bivariable and multivariable analyses only for pharmacy (the most dominant type of healthcare service). Bivariable analysis was performed to study the association between outcome and predictor variables without adjusting the impact of other predictors/confounders. As any outcome variable can be influenced by multiple predictors, we need to perform multivariable analysis which includes two or more predictors into one model. Variables with p<0.20 in bivariable analyses were included into the multivariable logistic regression model. We reported estimated odds ratio (OR) and 95% confidence interval (CI) to show the summary results of multivariable analyses (Table 3). An OR is the odds of the event of interest (e.g. visiting a pharmacy for some sickness) in one group (e.g. males) divided by the odds in another group (e.g. females). Here an odds of the

event (e.g. visiting a pharmacy for some sickness) is defined as the ratio of the probability that the event occurs to the probability that it does not (Bland & Altman 2000: 1468; Grimes & Schulz 2008: 423). An OR is a measure of association and is widely used in health sciences. An OR=1 reveals no association between the exposure/independent variable and the condition of interest/outcome variable. An OR>1 implies a positive association between exposure (e.g. smoking) and the condition of interest (e.g. lung cancer), whereas an OR<1 indicates a negative association (Spitalnic 2006: 24). A CI is defined as a range of values for an outcome variable within which the analyst, with some specified probability, can declare that the true value of the outcome variable lies within this range. The specified probability is called the confidence level, and the end points of the CI are called the confidence limits. The CI is more preferable than a point estimate (Black 2004: 255). A narrower CI is an indication of a more precise estimate. The width of a CI can be influenced by three factors namely the sample size, the degree of confidence and the variability of measured variable (Abramson & Abramson 2001: 80). Next we adjusted the impact of age, sex, marital status, membership of any community organisation, smoking cigarettes, number of earning members in the family, birth place and the wall quality of house to estimate ORs and 95% CIs for health problems including BMI and self-perceived health status (Table 4).

3. Results

3.1 Basic characteristics of respondents

Descriptive information based on the background characteristics of the slum dwellers is briefly described (Table 1). Most of the respondents were female (65.6%), young (with average age of 32.7 years), married (85.6%), not educated (60.0%) and had migrated from rural areas (85.2%) as they were born in villages. Most of them were not a member of any community organisation (79.7%), non-smokers of cigarettes (81.6%), and living in poor to medium quality houses as indicated by the wall material (90.9%). About half of the respondents' family income was less than Tk. 5000 (49.3%) and had only one earning member (50.7%).

TABLE 1: Basic characteristics of respondents

Characteristics	Categories	Respondents	
		n	%
Age	≤29 years	718	49.7
	30-59 years	677	46.9
	60+ years	49	3.4
Sex	Female	947	65.6
	Male	497	34.4
Education	No	867	60.0
	1-5 years	350	24.2
	6-8 years	147	10.2
	9+ years	80	5.5
Marital status	Unmarried	113	7.8
	Married	1236	85.6
	Wid./div./sep.	91	6.3
No. of people in the family earning an income	1	732	50.7
	2	466	32.3
	3+	243	16.8
Member of any community organisation	Yes	252	17.5
	No	1151	79.7
Smoking cigarette	Yes	266	18.4
	No	1178	81.6
Birth place	Village	1231	85.2
	Slum	17	1.2
	City/district town	195	13.5
Family income	<5000 TK	712	49.3
	5000-10000 TK	629	43.6
	10001+ TK	103	7.1
Materials and quality of the wall of the house	Brick and cement-good	131	9.1
	Tin/wood-medium	965	66.8
	Raw/katcha-low	348	24.1

Note: Total sample is not always the same because of missing information.

3.2 Utilisation and major choices for healthcare services

About two-fifths (38.2%) of the slum dwellers visited at least one of the healthcare facilities during the last month preceding the survey, of which only one facility was visited by 35.6% of the respondents and two or more facilities were visited by 2.6% of the respondents. Among those who visited any healthcare facility (multiple answers were possible), the four major types of healthcare services were pharmacies (51.3%), government hospitals (21.4%), MBBS (8.2%) and PVHC (6.7%) (Fig. 1). We also asked all respondents to report which healthcare services they would prefer in future for a minor sickness (e.g. cold). As only one answer was considered for this question, the total percentage was 100. Over 70% of the respondents said

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that they would prefer to go to a pharmacy for a minor sickness (Fig. 2). Our results clearly indicated the unparalleled role of the pharmacy over other healthcare services in Dhaka.

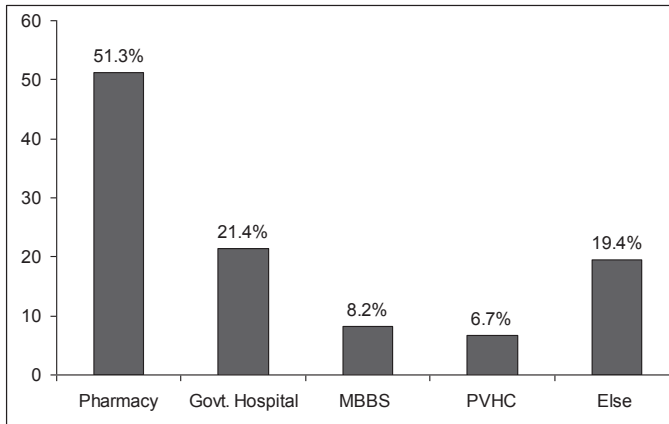FIGURE 1: Percentage of respondents who visited any health facility
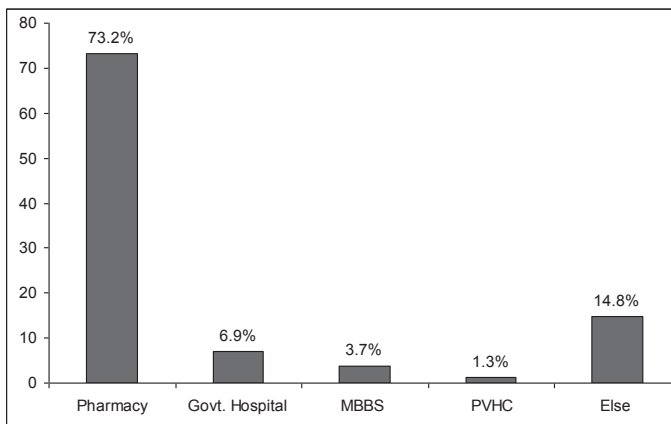(n=552)

FIGURE 2: Percentage of preferred healthcare facility in case of a minor
sickness (n=1,444)

3.3 Satisfaction, waiting time and cost by four major healthcare services

All respondents who visited any healthcare facility were asked to report their satisfaction regarding services (Fig. 3) including waiting time and cost of the treatment (Fig. 4). According to Fig. 3, the highest percentage of satisfaction was found amongst users of PVHC (75.7%), followed by users of MBBS doctors (71.1%), pharmacies (56.9%) and government hospitals (40.7%).

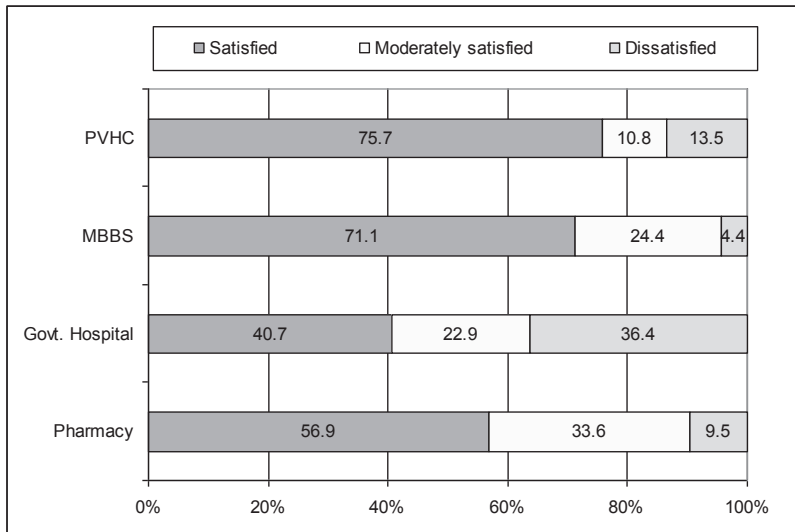FIGURE 3: Self-reported satisfaction of received healthcare services

Figure 4 shows whether the waiting time was long and whether the treatment was costly. The percentage of long waiting time was highest for those who visited government hospitals (62.7%), followed by MBBS doctors (62.2%), PVHC (54.1%), and pharmacies (14.1%) respectively. In contrast, the percentage of costly treatment was highest for those who received treatment services from PVHC (83.8%), MBBS doctors (77.8%), GVHS (31.4%) and pharmacies (29.0%) respectively.

FIGURE 4: Percentage of respondents who reported long waiting time
and costly treatment by healthcare facilities
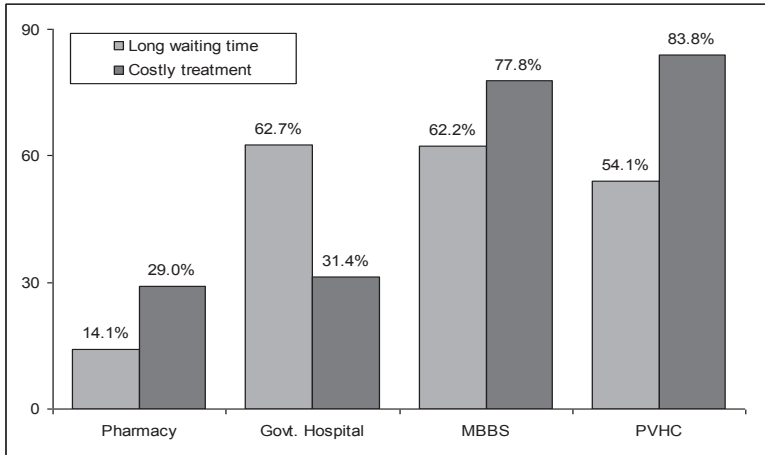
3.4 Health problems and utilisation of healthcare services

Respondents were asked to report the health problems they experienced
during the last three months preceding the survey. Utilisation of healthcare
services for different health problems are reported in Table 2. The pharmacy
was the dominant option for almost all health problems (e.g. fever, cold/
cough, pain, respiratory problem, diarrhoea, gastric, injury, jaundice and
conjunctivitis). Government hospitals were the second most important option
for slum dwellers after pharmacy. People with typhoid fever mostly visited
MBBS doctors, followed by government hospitals and pharmacies. It should
be noted that a large proportion of the respondents did not visit any health-
care facility, which can be attributed to the possibility that they were sick
and cured before one month or that they were sick within the previous
month but did not seek any treatment from other facilities because of widely
practiced self-care.

TABLE 2: Self-reported health problems and use of healthcare services

Health problems	Number of persons reported health problem	Number of persons visited any healthcare facility		Number of persons visited (yes)				
		Yes	No	Pharmacy	Govt. hospital	MBBS doctor	PVHC	Any other facility
Fever	489	278	211	156	55	26	14	54
Cold/cough	252	144	108	93	18	19	3	24
Pain	220	121	99	72	17	15	10	20
Respiratory problem	100	51	49	23	11	1	3	16
Diarrhoea	81	46	35	20	14	6	4	10
Jaundice	44	23	21	14	1	2	0	11
Gastric	35	23	12	12	4	2	1	4
STD	23	13	10	4	4	3	2	1
Blood dysentery	21	6	15	1	2	1	0	2
Heart disease	20	13	7	4	4	1	3	1
High blood pressure	19	8	11	4	2	1	0	2
Conjunc-tivitis	14	9	5	7	0	4	0	0
Typhoid	13	9	4	2	3	4	0	0
Tuberculosis	12	8	4	3	2	1	1	1
Accident	10	7	3	2	4	0	0	1
Injury	10	5	5	5	0	1	0	0
Diabetes	7	4	3	1	1	0		0
Others	69	33	36	15	6	6		5

Note: As one person may visit more than one healthcare facility for some health problems, the total number of persons visited any healthcare facility is not equal to the sum of numbers attached to different facilities.

3.5 Utilisation of pharmacies and determinants

We performed further analyses to investigate determinants of pharmacy use. According to bivariable analyses (Table 3), utilisation of a pharmacy was significantly higher for the oldest age group (60+ years) (p=0.008) and for

widowed/divorced respondents (p=0.008). Those who were born in slums (p=0.021), were cigarette smokers (p<0.001), and were living in a good to medium quality house (p=0.015) also revealed higher utilisation of a pharmacy (Table 3). According to multivariable logistic regression analysis, middle aged (30–59 years) people had a significantly lower likelihood of using a pharmacy (OR=0.65, 95% CI=0.47–0.89) as compared to younger age group (less than 30 years old). A higher likelihood of pharmacy utilisation was also found for widowed/divorced individuals (OR=2.33, 95% CI=1.08–5.01) as compared to unmarried persons. The likelihood of pharmacy utilisation was 2.6 times higher for cigarette smokers (OR=2.59, 95% CI= 1.65–4.07) than non-cigarette smokers. Similarly, a non-affiliation of people with any community organisation as compared to people with an affiliation showed a significantly lower odds ratio (OR=0.49, 95% CI=0.36–0.67) for pharmacy utilisation. People who were born in a town (town/district town) or a city (i.e. City Corporation) were also associated with significantly lower ORs as compared to people who were born in villages.

   Table 4 provides more information about self-reported health problems including BMI and self-perceived health status and their association with the utilisation of a pharmacy. With the exception of non-communicable diseases, all these variables were significantly associated with the use of a pharmacy in both bivariable and multivariable analyses. For instance, the underweight group (with BMI <18.5) reported a significantly higher use of a pharmacy as compared to the normal weight group. According to adjusted multivariable logistic regression analysis, underweight respondents revealed a higher likelihood of visiting a pharmacy (OR=1.45; 95% CI=1.09–1.94) as compared to respondents with a normal BMI. Similarly, utilisation of a pharmacy was significantly higher amongst those respondents who had experienced infectious diseases (OR=2.20; 95% CI=1.66–2.91), symptoms (OR=3.60; 95% CI=2.67–4.84) or fair/poor self-perceived health status (OR=1.93; 95% CI=1.41–2.66).

TABLE 3: Results of bivariable and multivariable (logistic regression) analyses

Characteristics	Categories	Use of a pharmacy within the last month (yes)				
		Bivariable analyses		Multivariable logistic regression		
		% yes	p	Odds ratio	95% confidence interval	p
Age	≤29	20.6	0.008	1.00		
	30-59	17.4		0.65	0.47-0.89	0.007
	60+	34.7		1.39	0.70-2.75	0.349
Sex	Female	18.5	0.139	1.00		
	Male	21.7		0.80	0.53-1.22	0.298
Education	No	18.6	0.291	-	-	-
	1-5 years	20.9				
	6-8 years	24.5				
	9+ years	16.3				
Marital status	Unmarried	21.2	0.008	1.00		
	Married	18.6		0.92	0.53-1.59	0.762
	Wid./div./sep.	31.9		2.33	1.08-5.01	0.031
No. of people earning an income	1	17.6	0.134	1.00		
	2	21.2		1.29	0.94-1.77	0.112
	3+	22.6		1.33	0.89-1.98	0.165
Member of any community organisation	Yes	31.3	p<0.001	1.00		
	No	17.0		0.49	0.36-0.67	p<0.001
Smoking cigarette	Yes	29.3	p<0.001	1.00		
	No	17.4		2.59	1.65-4.07	p<0.001
Birth place	Village	20.7	0.021	1.00		
	Slum	23.5		1.32	0.40-4.31	0.647
	City/ district town	12.3		0.51	0.32-0.82	0.005
Family income	<5000 TK	19.2	0.325	-	-	-
	5000-10000 TK	19.1				
	10001+ TK	25.2				
Materials and quality of the wall of the house	Brick and cement-good	19.1	0.015	1.00		
	Tin/wood-medium	21.6		1.43	0.82-2.51	0.206
	Raw/ katcha-low	14.4		1.49	1.04-2.12	0.029

Note: '-' variables are dropped from the multivariable logistic regression model because p value was > 0.20 in bivariable analysis.

TABLE 4: Health problems during the last three months and use of a pharmacy

Health-related variables	Categories	Sample		Use of a pharmacy within the last month (yes)			
				Bi-variable analyses	Multivariable logistic regression$^\gamma$		
		n	%	% yes	Odds ratio	95% confidence interval	p
Suffer from any health problem	No	447	31.0	4.5	1.00		
	Yes	997	69.0	26.4	7.17	4.44-11.59	< 0.001
				p<0.001			
Suffer from communic-able disease	No	947	65.6	15.9	1.00		
	Yes	470	32.5	28.9	2.20	2.20-2.91	< 0.001
				p<0.001			
Suffer from non-com-municable disease	No	1398	96.8	19.6	-	-	-
	Yes	46	3.2	19.6			
				p=0.995			
Suffer from symptoms	No	776	53.7	10.3	1.00		
	Yes	668	46.3	30.4	3.60	2.67-4.84	< 0.001
				p<0.001			
BMI	<18.5	447	31.0	24.2	1.45	1.09-1.94	0.012
	18.5-	920	63.7	18.0	1.00		
	24.99	68	4.7	10.3	0.44	0.18-1.05	
	25.0+			p=0.004			
Self-perceived health status	Good/excellent/soso	1139	78.9	17.3	1.00		
	Fair/poor	305	21.1	28.2	1.93	1.41-2.66	< 0.001
				p<0.001			

Note: Total sample is not always the same because of missing information; γ adjusted for age, sex, marital status, community membership, earning member, smoking cigarette, birth place and house quality; '-' not included in the multivariable logistic regression model because p was greater than 0.20 in bivariable analysis.

4. Discussion

Our findings reveal that not all healthcare services were used equally by slum dwellers. The pharmacy was the most dominant source of healthcare for slum dwellers in Dhaka, followed by government hospitals, MBBS doctors and PVHC. Pharmacies as compared to other healthcare services were widely used for most of the common health problems, including acute medical care. Our results are consistent with the findings of other studies in Bangladesh (Larson et al. 2006: 1432–1433; Ronsmans et al. 1996: 206) and developing countries (Butt et al. 2005: 307; Khan et al. 2006: 67; Basak et al. 2009: 614; Smith 2009: 351–352). Although more than 40% of the respondents were not satisfied with pharmacy services, they still prefer to visit a pharmacy for health problems, which is consistent with one other finding (Larson et al. 2006: 1432–1433). Some possible reasons for seeking healthcare from a pharmacy may include: close proximity and easy accessibility because of wide availability and reduced treatment cost (Kamat & Nichter 1998: 785; Butt et al. 2005: 307; Wazaify et al. 2008: 884; Ahmed et al. 2009: 468; Mahmood et al. 2010: 8). Generally, slums are a popular place for running pharmacies because of low investment and increased profit (Kamat & Nichter 1998: 782).

According to our study, slum dwellers normally consider cost of the services, performance of service providers and environmental aspects before going to any health facility (not shown). The most important aspect for choosing any healthcare facility was 'less expenses' (59.5%), followed by 'better performance of healthcare provider' (17.9%), 'less distance and time' (10.0%), 'better healthcare facility environment, good behaviour of the healthcare providers towards patients (5.9%), and early recovery from health problems (3.7%). Sometimes the severity of diseases also influences the utilisation of healthcare services. Wazaify et al. (2008: 884) reported that people seek treatment from a pharmacy when the health condition is not serious enough to visit a costly medical doctor.

Disseminating appropriate information to patients is particularly important in economically poor countries, where self-treatment of common illnesses is very common because of the limited accessibility to healthcare, economic barriers, and previous illness experiences (Shankar et al. 2003: 353). As pharmacies are often seen as a "first point of contact" for common symptoms and other health problems (Butt et al. 2005: 307, 312; Smith 2009: 351–352), they can interact more with patients to achieve better outcomes. They can also advise patients on improving lifestyles and quality of life (Basak et al. 2009: 616; Shankar et al. 2003; Smith 2009). Unfortunately, various studies have reported limitations of dispensaries in treating and diagnosing health problems (Ronsmans et al. 1996: 206; Chuc et al.

2002: 1148; Khan et al. 2006: 70–71; Smith 2009: 351–352). For instance, only 8% of the drug dispensers (working in pharmacies) correctly treated the patients with dysentery (a common disease in Dhaka), whereas this figure was 44% for doctors with postgraduate training (Ronsmans et al. 1996: 206). Poor referral systems and the irrational selling of drugs including antibiotics by drug sellers also limit the quality of healthcare services (Kamat & Nichter 1998: 785–786; Khan et al. 2006; 69–71; Wazaify et al. 2008: 886). Drug sellers in pharmacies of most developing countries are minimally educated with little professional training (Shankar et al. 2003: 354; Butt et al. 2005: 307–308; Smith 2009: 359). They sell drugs on the basis of a prescription as well as on demand without a prescription. Prescribing drugs by pharmacy staff is not only irrational and harmful, but also a waste of scarce resources (Chuc et al. 2002: 1148). It should be noted that the irrational use of drugs is common in Bangladesh and elsewhere (Ronsmans et al. 1996: 206; Smith 2009: 352), which varies according to staff education, customer demand, regulations, and economic incentives (Chuc et al. 2002: 1148).

Proper healthcare is expected from pharmacies because of their key role in dispensing medicines and treating patients with common illnesses. In particular, they can improve the healthcare of the population belonging to the disadvantaged section of the society that does not have enough resources to visit costly facilities, e.g. private clinics (Basak et al. 2009: 612). An holistic approach that will take into account the systems and organisation of care, regulations, education, processes and operation in the provision and delivery of care (Smith 2009: 359) is needed to improve the treatment quality for common illnesses, to meet the changing needs of modern medicines users and to reduce irrational drug dispensing (Basak et al. 2009: 617). Pharmacies must undergo some reforms to meet the changing needs of modern medicine users (Basak et al. 2009: 612). The knowledge and practice of drug dispensers regarding management and pathogenesis must be improved to improve the quality of common illnesses (Ronsmans et al. 1996: 206). Barriers to the provision of better quality care and ways to overcome them should be identified (Smith 2009: 359).

Basic training programmes should be made available to the full spectrum of healthcare providers who are of greatest importance to the poor. Managerial and regulatory measures should be enforced to control the use of potentially dangerous drugs (Butt et al. 2005: 312). The treatment quality of the major healthcare services should be thoroughly investigated through further studies aimed at revising policies and redefining their roles, growth and coverage and at developing appropriate interventions so that they become more quality-focused and user-friendly. Assessing expectations of

healthcare professionals as well as ensuring standards of ethical and pharmacy practice through regulation, enforcement mechanisms and monitoring are important (Basak et al. 2009: 617). In particular, proper motivation from higher authorities to apply retained knowledge of drug sellers in prescribing reasonable drugs for effective management is extremely necessary (Khan et al. 2006: 66, 70). The education of patients may also play an important role in reducing the use of potentially dangerous drugs by enhancing an individual's capacity to assess services on offer, to judge a provider's competence and to evaluate whether costs are justified and reasonable (Ahmed et al. 2005: 115). As the recipients of healthcare can provide valuable information to revise the health system, their opinions and expectations should also be studied thoroughly (Andaleeb 2000: 96; Basak et al. 2009: 617).

The limitations of this study include the cross-sectional nature of the study which precludes the assessment of cause-effect relationships. Although the sample size was 1,444 from four slums, when compared to the number of Dhaka's slums and the number of inhabitants, this number is small and hence offers limited generalisability. Self-reported information including recall bias may also limit our findings. Moreover, referring to drug sellers as "pharmacy" may be misleading as there are few pharmacies with qualified pharmacists who prescribe medications (Kamat & Nichter 1998: 783). However, because of unavailability of data it was not possible for us to distinguish the quality of pharmacies as measured by e.g. education and professional training of the people running the pharmacies.

In conclusion, the pharmacy is the most frequently used healthcare facility for slum dwellers in Dhaka. Although many other options including low-cost government services are widely available, these are underutilised. Since people running pharmacies often provide poor quality healthcare services, they need continuous professional training and back-up services to improve their performance and reduce the consequences of irrational drug dispensing. Continuous monitoring of pharmacies is also needed in Dhaka.

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