Health needs and health-care-seeking behaviour of street-dwellers in Dhaka, Bangladesh

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Accepted 2 March 2009

The study objective was to ascertain the extent to which the need for primary health care services among street-dwellers is being met through existing facilities.

This community-based cross-sectional study was conducted in Dhaka city over a 12-month period from June 2007 to May 2008. The study population included ever-married females and males aged 15–49 years. Data for the study were collected through a community survey and exit interviews. Both bivariate and multivariate analyses were done.

Seventy-two per cent of female and 48% of male street-dwellers interviewed were sick at the time of data collection. Twenty-one per cent of deliveries were conducted on the street. Eighty-nine per cent of the street-dwellers reported that their children aged less than 5 years had more than one symptom associated with acute respiratory infection during the last 2 weeks. Thirty-seven per cent of the females and 34% of the males interviewed reported that their accompanied children had diarrhoea. A few street-dwellers sought services for their health problems, and most went to the nearest pharmacy and to mobile clinics run by a non-governmental organization at night. Eighty-eight per cent of the female and 88% of the male street-dwellers used open space for their defecation.

The street-dwellers are extremely vulnerable in terms of their health needs and health-care-seeking behaviours. There is no health service delivery mechanism targeting this marginalized group of people. Although the health, nutrition and population sector programme of Bangladesh designed programmes to ensure equitable essential services to all, this marginalized group of people was not targeted. The Ministry of Health and Family Welfare and private sectors should, thus, should focus future programmes to meet the needs of this extremely vulnerable group. Mobile and static clinics at night for street-dwellers may be potential programmes. Action research to assess the effectiveness of programmes is essential before large-scale implementation.

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KEY MESSAGES

- The number of street dwellers has increased in urban Bangladesh in recent years.
- Street dwellers are extremely vulnerable in terms of their health needs and health-care-seeking behaviour, but are not explicitly targeted by current health service delivery.
- It is important that policy makers in Bangladesh focus future programmes to meet the health needs of this extremely vulnerable group.

Introduction

Bangladesh has experienced one of the highest urban population growth rates in the last 3 decades, at >6% per year, which compares with a national population growth rate of about 1.5% per year (Perry et al. 2007). Employment, shelter and basic services accessible to the growing number of urban poor have become a major socio-economic and policy issue in Bangladesh (Islam et al. 1997; Khanam et al. 2002). Street-dwellers are among the most deprived people in urban areas, in terms of living conditions, access to basic facilities, and health indicators (NIPORT 1994; Thwin and Jaha 1996; Alamgir et al. 2000; Ray et al. 2001; NIPORT 2004). The numbers of urban poor and street-dwellers increase at least in proportion to the overall population growth (Islam et al. 1997). There are almost an equal proportion of female (50.3) and male (49.7%) street-dwellers in Dhaka city (Kader 2008).

Street-dwellers are the people who sleep on streets, railway terminals and platforms, bus stations, parks and open spaces, religious centres, construction sites and around graveyards, and other public places (Islam et al. 1997; Bangladesh Bureau of Statistics 1999; Bangladesh Bureau of Statistics 2001). Regardless of the reasons for people living on the street, street-dwelling can create specific problems, such as crime, and other antisocial activities, including prostitution, begging and drug abuse (Anam et al. 1997). The city authorities may view street-dwellers in terms of social and environmental problems resulting from their activities, such as blocking footpaths and contributing to unhygienic conditions. This creates a public health hazard, as large numbers of poor people living in unsanitary conditions without access to proper health care can transmit diseases.

Previous studies have shown that about one-third of street-dwellers are afflicted by diseases (Islam et al. 1997; Ghani 2001), many of which are preventable and treatable, with free services available in some locations at government clinics or clinics run by non-governmental organizations (NGOs). However, there are barriers for street-dwellers to access services. Women in particular may find it difficult to attend a formal clinic for family-planning and reproductive health services if they have no fixed dwelling. In some countries, such as China and India, initiatives have been taken to address the primary health care needs of street-dwellers (Sulabh 2001; IPPF 2003).

The Ministry of Health and Family Welfare (MoHFW) of the Government of Bangladesh (GoB) adopted a sector-wide approach under the Health, Nutrition and Population Sector Programme (HNPSP). These sectoral programmes prioritize the health needs of the poor, particularly women and children, which are addressed through the essential services package (ESP). The ESP in the current programme consists of primary health care services, including reproductive health, maternal care and child health. To be effective, the ESP should be responsive to clients’ needs, especially those of the poor, women and children. However, the status of morbidity among street-dwellers and the use of health care services by them are not known. The present study was conducted to ascertain the extent to which the need for primary health care services among street-dwellers is being met through existing facilities. The study also aimed to identify the behaviours and barriers inhibiting improved access to formal primary health care services for street-dwellers, particularly the most vulnerable women and children.

Methods

This community-based cross-sectional study was conducted over a 12-month period during June 2007 to May 2008 in 11 selected areas of Dhaka city. The study areas included the six major entry-points for rural people moving into the city (Cantonment Railway Station, Kamalapur Railway Station, Saidabad Bus Station, Sadarghat Launch Terminal, Gabtoli and Mohakhali Bus Stations) and five locations with major concentrations of street-dwellers (High Court premises, Kawaran Bazar, Mirpur Mazar, Stadium area, and Gulshan market) (Figure 1). The study population included ever-married females and males (not spouses) aged 15–49 years. This group was selected to obtain information on their health needs and care-seeking behaviours, their accompanied children and other adults, as they mostly stay with other family members. Data were collected through a cross-sectional community survey and exit-interviews among users of ESP facilities.
Sampling

Two samples of adults (males and females) were drawn from street-dwellers who, in the previous week, slept within a 2-km radius of the six entry-point locations and of the five other locations in Dhaka city. To identify street-dwellers for inclusion as study subjects, enrolment was carried out at night when the street dwellers made preparations to sleep. A modified cluster-sampling method was used for selecting 32 clusters each of 14 females and 14 males, i.e. 448 ever-married females or mothers aged 15–49 years and 448 males aged 15–49 years. Based on a rough estimate of the population in each location, the number of clusters of females and males were proportional to the number of street-dwellers in each location. The interviewer went to the centre of the clusters and spun a bottle to randomly select a direction. Following this randomly chosen line, the interviewer then walked to the border of the cluster, counting the number of adults of each sex. The interviewer used a table of random numbers to select a number (n) between 1 and the number of adults along the line. Counting back along the line, the first interview was with the n th adult. Subsequent interviews were conducted with the nearest adult until the cluster was completed.

Figure 1 The study area, Dhaka City, Bangladesh
Sample size
For the questionnaire survey, a separate sample was required for ever-married females or mothers aged 15–49 years and men aged 15–49 years. The sample size was calculated using the following formula:

\[ n = \frac{Z_\alpha^2 \hat{p}(1-\hat{p})}{d^2} \]

\( Z_\alpha = 1.96 \) (for 95% confidence interval)
\( d = 0.05 \) (the maximum error required on estimates of proportions)
\( \hat{p} \) is an estimated prevalence of a response (assumed to be 18%)
\( q = 1 - \hat{p} \)

The sample size required, using simple random sampling, was 224. However, allowing for an unknown cluster-sampling design effect (estimated at 2), the sample required for each of the adult age/sex groups was 448 (in total, 896 structured interviews). As the prevalence of different components of health indicators, i.e. diarrhoea, acute respiratory infection (ARI) and antenatal care (ANC), in slum areas varied from 15 to 18%, we took into account the maximum prevalence in calculating the sample size.

Exit-interviews were conducted with users of essential services among street-dwellers to supplement the survey data, particularly relating to use of health care facilities for their health problems. An inventory of all the health care facilities within the 32 clusters was made and mapped (Figure 1) before conducting the exit interviews. There are 66 static health care facilities in the study areas, of which 18 are managed by the MoHFW, 33 by NGOs, 15 by the private sector and 7 are mobile clinics managed by the Marie Stopes Clinic Society (MSCS). The MSCS is an international NGO involved in providing health care services across the country. It provides limited primary health care services through its mobile clinics at night for street-dwellers in seven locations of Dhaka city. All other service providers operate during the day when the street-dwellers remain outside in search of food. In total, 224 female and 224 male street-dwellers were the sample for interview, proportionately, across the facilities. Our interviewers visited each selected facility three times and stayed there for its whole working day to conduct the interviews. Except in the mobile clinics of MSCS, not a single street-dweller was found in any other clinics during their three visits. Therefore, the entire sample was interviewed from the seven mobile clinics of the MSCS.

Experienced interviewers collected data using structured questionnaires under the supervision of the Research Investigators. Data were collected on: the number of street-dwellers currently sick and who were sick during the last 2 weeks; types of sickness; proportion of street-dwellers who sought health care; type of health care sought; reasons for not seeking care; barriers experienced and perceived to accessing health services; knowledge, attitudes and behaviours relating to health and use of health services; proportion of pregnant mothers who received ANC during current pregnancy (6+ months); sources of ANC; place of delivery (in the last 12 months); proportion of deliveries conducted by qualified persons; percentage of mothers who used family-planning methods; sources of family-planning services; sources of drinking water and water for other purposes; and places for defecation; and hand-washing habits. For children, data were collected on the immunization status of those aged 12–23 months; the prevalence of diarrhoeal disease and ARI among under-five children in the last 2 weeks; and care sought for episodes of diarrhoeal disease and ARI among under-five children in the last 2 weeks.

Exit interviews sought to obtain data on the purpose of visiting health facilities, satisfaction with the services provided, unmet needs, willingness to pay, and willingness to go to fixed-site clinics.

There was no refusal case in both community survey and exit interviews.

Analysis
Datasets for female and male groups were processed separately. The data were entered into visual BASICS/FoxPro and analysed using SPSS (version 11.5). The precision of estimates from the quantitative surveys was based on 95% confidence intervals. Both bivariate and multivariate analyses were carried out, with statistical significance based on 95% confidence intervals. Multiple logistic regression analysis was conducted to measure the association between socio-demographic characteristics of street-dwellers and different dependent variables. For multiple logistic regression analysis, the socio-demographic characteristics were grouped as: age: <30 years and 30+ years; marital status: currently married and others (abandoned, separated); education: no education and some education; occupation: unemployed, day labourer, and other (domestic helper, picker and seller, sex worker, rickshaw/van-puller); and number of family members living together: >3 and ≤3. Bivariate analysis was carried out for exit-interview data and used to supplement the survey data.

Results
Socio-demographic information
The survey data revealed that most (87%) female respondents were aged 20–39 years while the large majority (74%) of male respondents were aged 30–39 years. One-third of the females and 18% of the males were abandoned, separated, divorced or widowed. Eighty per cent of females and 57% of males interviewed had never attended school. The female street-dwellers were mainly domestic helpers, pickers and sellers, day labourers and sex workers, with 48% unemployed. The males were day labourers and rickshaw/van-pullers. Data from exit-interviews showed similar socio-demographic information of the respondents. Ninety-six per cent of the female and 86% of the male respondents were aged 20–49 years. Thirty per cent of the female and 14% of the male respondents were abandoned, divorced, widowed or separated. Eighty-eight per cent of the female and 14% of the male respondents never attended any school.

Figure 2 shows the length of time individuals had been living as street-dwellers. The findings reveal that most street-dwellers, both females and males, had been staying on the street for more than 1 year. Approximately half of both female and male street-dwellers had lived on the street for more than 3 years.
Nineteen per cent of the females and 15% of the males had been street-dwellers for over 10 years.

Knowledge of street-dwellers
The findings reveal that many of the street-dwellers interviewed lacked knowledge about places where vaccines are provided for children and women. In response to a question about such places, 94% of females and 87% of the males mentioned the mobile clinics of MSCS, although EPI services are not provided there.

Morbidity and use of health care services
Seventy-two per cent of females and 48% of males interviewed were sick at the time of data collection. The street-dwellers who were not currently sick were asked if they had any sickness during the preceding 15 days. Over one-fifth of them had been sick during this period.

Female street-dwellers were mostly affected by reproductive health problems, which included vaginal discharge, lower abdominal pain, genital itching/burning, and others, such as mass in the lower abdomen/irregular period/prolapses (Table 1). The common general health illnesses reported by both female and male street-dwellers included diseases of the respiratory system (cold/cough/fever/asthma), diseases of the digestive system (gastric, diarrhoea), severe pain (headache/chest), and scabies (Table 1).

According to the data in Table 2, females who were currently married were significantly more likely to be currently sick than females with any other marital status. No other factors were significantly associated with current morbidity status.

Findings from exit-interviews showed that most of the street-dwellers interviewed visited the health care facilities for general health services (females 61% and males 72%) and others for reproductive health care services.

The survey data showed that 45% of the females and 37% of males did not seek health care services during their sickness. Of those who sought treatment, 55% of females and 67% of males bought medicines from drug-sellers at the nearest pharmacy. Other respondents used the mobile clinics of the MSCS. Only 11% of females and 11% of males visited the government facility; and the only government facility the street-dwellers visited was the Dhaka Medical College Hospital.

Those street-dwellers who did not seek treatment for their illnesses were asked about reasons for not seeking treatment. Both males and females reported lack of money as the main reason for not seeking care, while the majority of males felt that treatment was not necessary. Other reasons mentioned included lack of knowledge about the location of the health care facilities, nobody advised them to seek treatment, and the neglect of service providers.

The regression analysis results show that the use of health care services among the currently-married female street-dwellers was significantly higher than among others (abandoned, divorced, or widowed) (Table 3). No significant difference was found among health-care-seeking behaviour with age.
occupation or family size among females. Use of health care services among males was significantly higher among those who were unemployed or day labourers.

Reproductive and maternal health

Pregnancy and pregnancy care

Fourteen per cent of the females were currently pregnant (6+ months). Twenty-eight per cent of the pregnant women had sought ANC only once. Eighty-two per cent of mothers who sought ANC visited mobile clinics of the MSCS. Only 13% of the pregnant women received tetanus toxoid (TT) vaccines during their current pregnancy and 67% of them received only one dose. For pregnant women who did not seek ANC, the reasons given were: it was not perceived as necessary; the location of a place where ANC services were available was unknown; they did not have money; nobody told them to seek ANC; and their husbands did not approve.

Childbirth

The women who were not currently pregnant were asked if they had given birth during the last 12 months preceding data collection. Twenty-one per cent had. The findings show that 21% of deliveries were conducted on the street, 73% were conducted by untrained personnel, such as neighbours and relatives, and 6% were self-conducted.

Sixty-three per cent of the mothers experienced problems during delivery, such as prolonged labour, excessive bleeding, swelling (hands, face, legs), severe weakness, severe abdominal pain, premature rupture of the membrane, blurred vision, and obstructed labour.

Postpartum morbidity and postnatal care

Fifty-eight per cent of the women experienced problems after delivery (42-day period), such as excessive bleeding, severe lower abdominal pain, swelling (hands, face, legs), fever with lower abdominal pain, and vaginal tear. Sixty-six per cent of the mothers sought postnatal care (PNC). Of those, 40% visited conveniently located pharmacies. Other places they visited were: Dhaka Medical College Hospital, the mobile clinic of the MSCS, private health facilities (private clinic/doctor’s chamber), and homeopathic doctors.

The regression analysis results also show that there was no significant difference by socio-demographic characteristics of the street-dwellers for use of ANC, experiencing problems during and after delivery, and use of PNC (Table 4).

Use of family planning methods among street-dwellers

Only 33% and 31% of currently-married women and men, respectively, reported that either they or their spouses were currently using any family planning method. Forty-six per cent of women and 68% of men used temporary methods, i.e. birth-control pills and condoms. Thirty-one per cent of women and 20% of men reported that they or their spouses used semi-permanent methods, including injectables, intrauterine device (IUD), and Norplant, whereas 12% of women and 9% of men used permanent methods (vasectomy and tubectomy). Eleven per cent of women and 3% of men used traditional methods, such as Azal and ayurvedic treatment. Those who currently used any type of family planning methods reported that the main sources of family planning products and services were local pharmacies, the mobile clinics of the MSCS, and government hospitals.

Child health

Childhood immunization

Respondents with children aged 12–23 months were asked about the vaccination status of those children. Eighty-seven per cent of females and 66% of males reported that their children

Table 2 Association of socio-demographic characteristics of street-dwellers with current sickness

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Currently sick</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>Females OR (95% CI)</td>
<td>Males OR (95% CI)</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>0.92 (0.59–1.41)</td>
<td>1.05 (0.69–1.58)</td>
<td></td>
</tr>
<tr>
<td>≥30 (RC)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>1.70 (1.10–2.63)*</td>
<td>0.64 (0.39–1.05)</td>
<td></td>
</tr>
<tr>
<td>Others (RC)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No education</td>
<td>1.02 (0.60–1.72)</td>
<td>1.03 (0.70–1.52)</td>
<td></td>
</tr>
<tr>
<td>Some education (RC)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>1.19 (0.72–1.94)</td>
<td>1.70 (0.87–3.32)</td>
<td></td>
</tr>
<tr>
<td>Day labourer</td>
<td>1.44 (0.80–2.58)</td>
<td>0.75 (0.49–1.14)</td>
<td></td>
</tr>
<tr>
<td>Other (RC)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Number of family members living together</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;3</td>
<td>1.16 (0.72–1.87)</td>
<td>1.32 (0.75–2.34)</td>
<td></td>
</tr>
<tr>
<td>≤3</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.005.

Table 3 Association of socio-demographic characteristics of street-dwellers with use of health care services

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Use of health care services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>Females OR (95% CI)</td>
<td>Males OR (95% CI)</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>0.71 (0.45–1.10)</td>
<td>1.01 (0.57–1.77)</td>
<td></td>
</tr>
<tr>
<td>≥30 (RC)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently married</td>
<td>1.61 (1.02–2.56)*</td>
<td>0.88 (0.46–1.68)</td>
<td></td>
</tr>
<tr>
<td>Others (RC)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No education</td>
<td>1.63 (0.95–2.79)</td>
<td>1.56 (0.91–2.66)</td>
<td></td>
</tr>
<tr>
<td>Some education (RC)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>1.01 (0.59–1.69)</td>
<td>3.09 (1.47–6.47)**</td>
<td></td>
</tr>
<tr>
<td>Day labourer</td>
<td>1.09 (0.60–1.98)</td>
<td>2.53 (1.14–5.62)*</td>
<td></td>
</tr>
<tr>
<td>Other (RC)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Number of family members living together</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;3</td>
<td>0.93 (0.58–1.49)</td>
<td>0.78 (0.36–1.68)</td>
<td></td>
</tr>
<tr>
<td>≤3</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.005; **p < 0.001.
had received any dose of vaccines. These data are not comparable with other reported data, as data validation was not possible since not a single EPI card was found with the respondents.

**ARI**

All the females and males who had children under five reported that their children had at least one of the symptoms of ARI during the last 2 weeks preceding data collection. Eighty-nine per cent of the street-dwellers, both females and males, reported that their children had more than one symptom associated with ARI during the last 2 weeks. The common symptoms mentioned were fever, cough, breathing difficulty, rapid breathing, and chest in-drawing. Seventy per cent of females and 67% of males interviewed reported that they sought treatment for their children. Of those who sought treatment, 67% of females and 71% of males visited a local pharmacy.

**Diarrhoea of under-five children**

Thirty-seven per cent of females and 34% of males interviewed reported that their accompanied under-five children had diarrhoea during the preceding 2 weeks. Fifty-eight per cent of females and 76% of males mainly gave packets of oral saline to their children as treatment. Seventy per cent of females and 67% of males reported that they sought treatment for their children. Of those who sought treatment, 67% of females and 71% of males visited a local pharmacy.

Findings from exit-interviews showed that 84% of females and 97% of males reported that service providers did not inquire about any unmet or additional needs (Table 5). Ninety-six per cent of females and all males interviewed paid money to receive services from the health care facilities. The study attempted to assess willingness to pay among the street-dwellers, and found that all the street-dwellers who participated in exit-interviews were willing to pay for services. When the respondents were asked if they would seek services from other health care facilities in the surrounding areas if those services were not available at that specific clinic, 94% of the female and 96% of the male respondents stated that they did not have any problem visiting other clinics for services.

**Environmental issues**

**Use of water**

Ninety-nine per cent of both female and male street dwellers interviewed used tap water for drinking purposes. They stated that tap water is safe for drinking. Seventy-seven per cent of females and 79% of males used tap water for washing their hands/face, and ditches or rivers were sources of water for bathing and washing clothes for about half of the street-dwellers.

**Practice of defecation**

The findings revealed that 88% of females and 88% of males used roadside/open space and drains for their defecation. A few street-dwellers used local public toilets by paying money to security guards of the toilets. Eighty-six per cent of the females and 96% of the males interviewed used plain water for handwashing after defecation. Some of them rubbed their hands in soil and used ash to clean hands after defecation.
Table 5 Status of unmet need and willingness to pay among street dwellers

<table>
<thead>
<tr>
<th>Status of unmet need and willingness to pay</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females (n = 200)</td>
<td>Males (n = 187)</td>
</tr>
<tr>
<td>Not assessed unmet needs</td>
<td>84</td>
</tr>
<tr>
<td>Required money to obtain services</td>
<td>96</td>
</tr>
<tr>
<td>Willingness to pay for services in future visits</td>
<td>100</td>
</tr>
<tr>
<td>Satisfied with services received</td>
<td>100</td>
</tr>
<tr>
<td>Agreed to go to nearer clinics if services are available</td>
<td>94</td>
</tr>
</tbody>
</table>

Discussion

The study findings reveal that the street-dwellers are extremely vulnerable in terms of their health needs and health-care-seeking behaviours. There is no health service delivery mechanism targeting this marginalized group of people, unlike other groups such as slum-dwellers and people living in hard-to-reach areas, the exception being a small-scale, mobile clinic service-delivery system by one NGO.

The findings of the study further reveal that the street-dwellers interviewed could not accurately identify a location where EPI services are available. One-third of the females and half of the males had no knowledge of facilities where EPI services are provided for women and children. Of the street-dwellers who reported knowing where EPI services were provided, most erroneously mentioned the mobile clinics of the MSCS. Therefore, a mechanism needs to be developed to enhance the awareness of street-dwellers about facilities where they can access health care services.

Morbidity was extremely high among the street-dwellers. They commonly reported both reproductive and general health morbidities. The females were mostly affected by reproductive health problems, such as vaginal discharge, lower abdominal pain, genital itching/burning, and mass in the lower abdomen and prolapses. The findings are consistent with those of other studies. A study of reproductive health needs among street-dwellers in Calcutta, India, found a high prevalence of symptoms of reproductive tract infections (RTI), menstrual problems, and back pain among women compared with slum women (Ray et al. 2001). The street-dwellers reported diseases of the respiratory system, diseases of the digestive system and scabies as common general health morbidities. Similar findings were reported by Islam, who showed that respiratory infections, scabies, diarrhoeal diseases, infective hepatitis, rheumatic arthritis and eye infection were the general health problems among street-dwellers (Islam 1997). Programmes need to be developed to provide health care services to street-dwellers with a special focus on these problems.

The survey data show that about half of the females and one-third of the males did not seek health care services during their episodes of illness. Of those who sought treatment, more than half of females and two-thirds of males visited the nearest pharmacy and bought medicines from drug-sellers who are not properly trained to diagnose problems, prescribe medicines, or provide services. The findings reveal that the pharmacies and drug-vendors are well-known to the street-dwellers. A mechanism is needed whereby the drug-sellers can inform street-dwellers about the availability of essential services at the health care facilities.

Results of the regression analysis show that the use of health care services by the currently-married females was significantly higher than among others (abandoned, divorced or widowed). No significant difference was found by health-care-seeking behaviour, age, occupation or family size among females. The use of health care services among males was significantly higher among those who were unemployed or day labourers. The availability of sufficient time among unemployed street-dwellers and of the required money for treatment among day labourers may explain the greater use of health care services among these groups compared with others.

Twenty-eight per cent of currently-pregnant (6+ months) women sought ANC only once, which is very low compared with slum and national data. Results of recent studies showed that 83% of slum women and 60% of women nationally received ANC at least once during their last (6+ months) pregnancy (Gazi et al. 2007; NIPORT 2007). The main reasons for not seeking ANC given by the women were: not perceived as necessary, location of ANC services was unknown, not told to seek ANC and husband’s disapproval. The findings clearly indicate the vulnerability among street women regarding care during pregnancy. Policymakers and programme managers need to find a way to eliminate the problems faced by street women and provide them with accessible pregnancy care.

Twenty-one per cent of deliveries were conducted on the street. Seventy-three per cent were conducted by untrained personnel, a figure much higher than in other studies. An earlier study in India showed that, among pavement deliveries, 51% were conducted by untrained persons (Ray et al. 2001). The findings of the present study showed that 63% of mothers experienced problems during delivery. Postpartum morbidity among street women was also high, showing that childbirth represents a very vulnerable time for them. Since very few of them visited health facilities, except pharmacies, for treatment due to unawareness and lack of money, they need to be made aware of the importance of seeking maternal health care, and policy makers need to establish a system to provide maternal health care services to them.

The contraceptive prevalence rate (CPR) among the street-dwellers was very low. Thirty-three per cent of married women and 31% of men reported that either they or their spouses were currently using any family planning method, which is about half of the CPR among slum-dwellers and at national level. Results of a study conducted by Gazi et al. (2007) in slums of Dhaka city showed that the CPR among slum-dwellers was 59%, whereas the national-level CPR is 56% according to the Demographic and Health Survey 2007 (NIPORT 2007). The reason for the increase in the number of urban street-dwellers is thus not only the migration of rural people but also the low rate of contraceptive use among street-dwellers. Therefore, policy makers should give special attention to increasing contraceptive use among street-dwellers.

The situation of childhood vaccination coverage among street children is quite alarming. Female and male street-dwellers...
reported, respectively, that 87% and 66% of their children aged 12–23 months had received any dose of vaccines. The status of complete immunization among street children is unknown, as not a single woman or man could show an EPI card. In contrast, at national level 71% of children aged 12–23 months old were fully immunized, and rate of retention of the EPI card among them was 65% (DGHS 2006). Our findings clearly indicate that street children are neglected in terms of vaccination coverage. Therefore, policymakers and programme managers should make more effort to bring street-children under the EPI.

The reported prevalence of ARI and diarrhoea among street-children aged under five was high. Eighty-nine per cent of the street-dwellers reported that their children had more than one symptom associated with ARI during the last 2 weeks. In comparison, data from the Bangladesh Demographic and Health Survey 2007 showed that 13% of under-five children had symptoms of ARI at some time in the 2 weeks preceding the survey. Thus the prevalence of ARI among street children is several times higher than that nationally. At the same time, 37% of female and 34% of male street-dwellers interviewed reported that their accompanied children had diarrhoea during the last 2 weeks, again considerably higher than the level nationally. According to the Bangladesh Demographic and Health Survey 2007, 10% of under-five children had diarrhoea in the 2-week period before the survey. In his study, Islam concluded that street-children were especially vulnerable in terms of their health problems (Islam 1997). Our findings show that there is no programme from the Government of Bangladesh or the private sector to provide services to these extremely vulnerable children, except small-scale provision of services by mobile clinics of the MSCS. Comprehensive provision of services for this group of children is needed.

The study found that defecation practices of the street-dwellers are responsible for environmental pollution and hazards to their own health. Most street-dwellers interviewed used road-side/open space and drains for their defecation. These findings are consistent with a study conducted by Anam and colleagues who showed that pavement dwellers were responsible for social and environmental problems through their activities, such as blocking footpaths, and contributing to unhygienic conditions (Anam et al. 1997). Action by city planners could protect cities from this type of pollution for the well-being of city-dwellers. The street-dwellers could perhaps be allowed to use the available public toilets without charge, or low-cost toilets could be built in the street-dwellers’ main localities. Further, the street-dwellers used water, rubbed their hands on the earth and/or used ash to clean their hands after defecation. An education programme is essential to make them aware of both the environmental issues and proper hand-washing practice. However, it may not be easy to change their behaviour considering the environment in which they live.

The findings of the regression analysis indicate that there was no significant difference in health problems and health-care-seeking among street-dwellers with different background characteristics, except in a few areas. This indicates that similar risks prevail among all groups of street-dwellers. Therefore, a comprehensive programme should be developed for all.

Besides the local pharmacies, the street-dwellers sought health care services from the mobile night clinics which provided limited primary health care services in seven locations of Dhaka city. This suggests that such clinics could be an effective mechanism to provide health care services to street-dwellers, and therefore the programme should be expanded and strengthened. However, the sustainability of the existing programme run by the MSCS needs to be reviewed. If it is high cost, a local, low-cost mobile clinic system may need to be developed and tested for provision of services to street-dwellers.

Previous discussions on the behaviour of street-dwellers and anecdotal evidence have considered street-dwellers to be highly mobile, but designing long-term mobile programmes for them may not be an effective practice. The findings of the present study revealed that half of the street-dwellers stayed in the same place for 3 years and more, and that a good percentage remained in the same place for 10 years or more. These findings suggest that policy-makers and programme managers may be better to consider the establishment of static clinics at night for service provision to semi-permanent street-dwellers.

The findings of exit-interviews showed that the practice of assessing unmet needs by providers was almost absent. The study, therefore, suggests developing a system to assess and address unmet needs of street-dwellers. However, these data should be interpreted cautiously because the exit interviews were conducted in the seven mobile clinics of the MSCS only, as no street-dwellers were found in any other health care facilities for interview.

In Bangladesh, there are no formal providers for providing small-scale services to street-dwellers except the mobile clinics of the MSCS at night. There is no strategic approach to include street-dwellers in the urban health care structure. The city corporations, government and NGO health service providers do not have any specific policy or strategy for providing health care services that are accessible to this population. Furthermore, street-dwellers (apart from sex workers) are not organized or empowered to lobby the authorities to address their health needs. Consequently, their health needs remain largely unmet through the ESP structures and facilities. Although Bangladesh’s Health, Nutrition and Population Sector Programme designed programmes to ensure equitable ESP services to all, this marginalized group of people is not targeted by these services. The MoHFW and private sectors would do well to ensure future programmes meet the needs of this extremely vulnerable group. As the study findings reveal, mobile and static clinics at night for street-dwellers may be potential mechanisms for service provision. Action research to assess the effectiveness of programmes will be essential before large-scale implementation.

Acknowledgements

This study was funded by the ICDDR,B and its donors who provide unrestricted support to the Centre for its operations and research. Current donors providing unrestricted support include: Australian Agency for International Development (AusAID), Government of the People’s Republic of Bangladesh, Canadian International Development Agency (CIDA), Embassy of the Kingdom of the Netherlands, Swedish International
Development Cooperation Agency (Sida), Swiss Agency for Development and Cooperation (SDC), and the UK Department for International Development (DFID). We gratefully acknowledge these donors for their support and commitment to the Centre’s research efforts.

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