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Original Article

Disease Pattern and Health Seeking Behavior in Rural Bangladesh

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Abstract

Knowledge about the existing disease pattern and health seeking behavior is essential to provide need based health care delivery to any population and to make the health care system more pro-poor. A community based cross sectional study was conducted among 493 systematically selected households in the Modhukhali Upazilla of Faridpur District to determine the prevailing disease pattern and health seeking behavior in rural Bangladesh. Data were collected through face-to-face interview of the selected respondents. More than half of the respondents gave history of illness of her or her family members during the preceding 15 days. Fever (33.2%), gastrointestinal diseases (24.9%) and respiratory diseases (17.8%) were the most reported complaints. Overall, there were no discernible differences in the likelihood of seeking traditional or any kind of care considering socio-demographic variables and prevailing disease types. Occupation of household head as day labor or in agriculture and suffering from gastrointestinal diseases positively predicted use of para-professionals. Use of un-qualified allopths was negatively predicted by the male gender or literacy of the household head and presence of gastrointestinal, respiratory and other types of diseases and positively predicted by occupation of the household head in agricultural field or as day labor. Use of qualified allopaths was positively predicted by respiratory, skin/eye/ENT and other types of diseases and also by standard of living and relationship of the respondents with household head and negatively predicted by agricultural or day labor work of the household head. Existence of several distinct therapeutic systems in a single cultural setting was found to be an important feature of health care system in the study area. This study concluded that it is important to develop a need based health care delivery system and actions should be taken to improve the overall scenario of health system of rural Bangladesh.

Key words: Disease pattern, health seeking behavior, rural area, Bangladesh

Introduction

Information on the existing disease pattern and health seeking behavior is essential to provide need based health care delivery to any population. This information is rarely available. Mainly hospital data are available for disease pattern. Community based study can only reflect the true picture of disease pattern in a given community and what are their preferences in seeking health care services.

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The prevalence of period specific sickness and economic condition predictably hold an inverse relationship in rural area. Episodes of illnesses are reported to be higher for poor people due to their living conditions and nutritional status. The high incidence of morbidity cuts their household budget both ways i.e. not only they have to spend large amount of resources on medical care but are also unable to earn during this period. One possible consequences of this could be pushing these families into a zone of permanent poverty[1].

Health seeking behavior refers to the sequence of remedial actions that individuals undertake to rectify perceived ill health[2]. It is initiated with symptom definition, whereupon a strategy for treatment action is devised. Treatment choice involves a myriad of factors related to illness type and severity, pre-existing lay beliefs about illness causation, the range and accessibility of therapeutic options available, and their perceived efficacy, convenience, opportunity costs, quality of service, staff attitudes as well as the age, gender and social circumstances of the sick individual[3]. As for health care system, in almost all the developing countries, the public and the private health sector co-exit, complementing or conflicting with each other. Yet,

in health planning, least consideration is given to harmonize this co-existence in the larger benefit of the users[4]. Number of studies show that trends in utilization of a health care system, public or private, formal or non-formal, by and large, vary depending on factors such as age, gender, women's autonomy, urban or rural habitat, economic status, severity of illness, availability of physical infrastructure, type and cadre of health provider, etc[5].

Like much of the developing world, medical pluralism, or the existence of several distinct therapeutic systems in a single cultural setting, is an important feature of health care in Bangladesh. Indeed, a wide range of therapeutic choices is available, ranging from self-care to folk and western medicine, although both illness incidence and treatment options are importantly determined by poverty and gender[6]. The type of symptoms experienced for the illness and the number of days of illness are major determinants of health seeking behavior and choice of care provider. In case of a mild single symptom such as fever, home remedies or folk prescriptions are used, whereas with multiple symptoms and longer period of illness, biomedical health provider is more likely to be consulted[7]. Traditional beliefs tend to be intertwined with peculiarities of the illness itself and a variety of circumstantial and social factors. This complexity is reflected in the health seeking behavior, including the use of home-prescriptions. The attitude of the health provider and patient satisfaction with the treatment play a role in health seeking behavior[8].

The overall situation of health care system is poor in developing countries like Bangladesh due to inadequate access to modern health services and poor utilization. One of the public health challenges in Bangladesh is, therefore, to identify vulnerable groups and to provide them with needed preventive and curative health services[9]. The poor in Bangladesh are specially disadvantaged in accessing quality health care due to their marginalized position in society. In order to make the existing health-care delivery system more pro-poor, knowledge of their health seeking behavior is needed[10]. Identification of individual factors that may facilitate or impede the effective use of health care services may help us to identify those who may be particularlyvulnerable, and provide information that policy makers can use to target services to those in greatest need. Therefore, this study has been designed with expectation to determine the disease pattern and health seeking behavior in rural Bangladesh.

Materials and Methods

A community based cross sectional study was conducted from March to May 2010 in different unions of the Madhukhali Upazilla of Faridpur District to determine disease pattern and health seeking behavior in rural Bangladesh. Four hundred and ninety three households having at least one child up to 1 year of age were selected using systematic sampling technique. Spouses of the household heads or any married women member of the family aged 15-49 years who could give information about the household were considered as the respondents. Verbal informed consent was received from each individual prior to inclusion. Assurance had been given that the confidentiality concerning their information would be maintained strictly. A semi-structured pre-tested questionnaire was developed to collect data from face-to-face interview.

The questionnaire solicited information on household illness and related health seeking behavior of the family. All illness episodes occurring among household members during the preceding two weeks were elicited. Illness categories were deduced from the lay reporting of symptoms by survey respondents. Symptoms were then classified into categories or ``types'' of illnesses. When more than one episode of illness was reported, data were collected with reference to the major illness, i.e. the illness with the longest duration.

Data on types of health care sought were obtained by asking the respondent about the nature and order of treatment measures undertaken at home or elsewhere. These treatments were subsequently grouped into five categories. The category `home remedies' comprise traditional and modern forms of self-treatment such as analgesic and anti-pyretic tablets, oral rehydration solutions (ORS), antacids, etc., which are commonly available in rural households, and taken without prescription. `Traditional' methods include treatment seeking within faith healing and traditional systems of medicine including kabiraji/hakimi and homeopathy. The `Para-professional' category of treatment seeking consists of consultations with: palli chikitsoks (village practitioners who receive a year-long training in diagnosing and treating common rural ailments); medical assistants (who undertake a comprehensive three year medical training); and government and non-government community health workers who obtain a very basic preventive and curative health training and treat mainly with allopathic drugs. The category `unqualified allopaths' refers to itinerant and untrained pharmacists, market sellers, and road-side ``quacks'' who

practice allopathic medicine with little or no professional training. `Qualified allopaths' are individuals who have undergone professional medical training practicing either in public or private facilities[6].

Results

Among the household heads most were male (98.8%) and were husbands of the respondents (87.8%). Most of the respondents were housewives (95.3%) and 29.2% were illiterate. When asked about history of her or family members' illness during the preceding 15 days, 51.3% of the respondents gave positive response. (Table I)

Table I. Self reported illness during the preceding 15 days (n=493)

History of illness	Frequency	Percentage
No	240	28.7
Yes	253	51.3

Fever of all types and duration was the highest complaint self-reported illness of the household members during the preceding 15 days (33.2%). It was followed by gastrointestinal diseases including diarrhea and dysentery (24.9%) and respiratory diseases (17.8%) (Table II). For treatment of fever of all types although every four of ten respondents (42.9%) took services from qualified allopaths, one-third (32.1%) of them also went to the unqualified allopaths. In case of gastrointestinal disorders almost two-third of the respondents went to the qualified allopaths (57.1%), which were followed by para-professionals (15.9%). Two-third of the individuals took treatment of pain/aches from qualified allopaths, while 16.0% of them went to the unqualified allopaths. For respiratory problems 70.5% of the respondents took treatment from qualified allopaths, while 13.6% took the service from unqualified allopaths. For skin/eye/ENT problems more than three-fourth seek services from qualified allopaths and none took treatment from para-professional or unqualified allopaths. In total almost three-fifth of the respondents took treatment services from qualified allopaths (57.9%), but one-third of them (17.1%) also took services from unqualified allopaths. (Table III)

Table II. Types of self-reported illness during the preceding 15 days (n=253)

Type of illness	Frequency	Percentage
Fever of all types	84	33.2
Gastrointestinal diseases	63	24.9
Pain/Aches	25	9.9
Respiratory diseases	45	17.8
Skin/Eye/ENT diseases	13	5.1
Others	23	9.1

Health seeking behavior was examined against some selected socio-demographic variables. In the Model 1, no significant differences could be found in the likelihood of seeking any type of health care. Again no significant predictable variable could be identified in Model 2 for use of 'traditional' health care. In Model 3, seeking care from para-professionals was positively predicted by the occupation of the household head as day labor or agriculture (OR=3.62; $p<0.05$). In Model 4, presence of a literate household head and male gender of the household head negatively and agricultural or day labor occupation of the head positively predicted the use of un-qualified allopths. Households with literate head 3.5 times ($p<0.001$), male head 20.0 times ($p<0.005$) less likely and day labor or agricultural worker 3.17 times ($p<0.01$) more likely to use un-qualified allopaths. In Model 5, standard of living and relationship of the respondents with household head positively and labor selling occupation of the household head negatively predict the use of qualified allopaths. Households with medium

Table III. Type of illness and health care seeking behavior (n=253)

Illness	Nothing	Home remedies	Traditional	Para-professional	Unqualified allopaths	Qualified allopaths: Qualified doctor's private chamber	Qualified allopaths: Private health care facility	Qualified allopaths: Public healthcare ficility
Fever of all types	11.8	6.0	4.8	2.4	32.1	15.5	9.5	17.9
Gastrointestinal diseases	4.8	7.9	6.3	15.9	7.9	27.0	7.9	22.2
Pain/aches	4.0	8.0	4.0	8.0	16.0	16.0	16.0	28.0
Respiratory disease	4.5	2.3	2.3	6.8	13.6	31.8	11.4	27.3
Skin/Eye/ENT	7.7	7.7	7.7	0.0	0.0	30.8	15.4	30.8
Others	8.7	0.0	8.7	0.0	4.3	17.4	13.0	47.8
Total	7.5	5.6	5.2	6.7	17.1	22.2	10.7	25.0

(Values in percentages)

Table IV. Socio-demographic characteristics and types of health care sought for illness during preceding 15 days (n=253)

Participants' demographic variable (n)	Model 1 any type % - OR (CI)	Model 2 Traditional % - OR (CI)	Model 3 Para-professional % - OR (CI)	Model 4 Unqualified allopaths % - OR (CI)	Model 5 Qualified allopaths % - OR (CI)
Gender of the household head (HH)				*** (Fisher's Exact test)	
Female (5)	100.0	0.0	0.0	80.0 1.0	20.0
Male (248)	86.7	5.3	6.9	15.8 0.05 (0.01-0.43)***	58.7
Literacy of HH				****	
Illiterate (85)	87.1	4.7	3.5	29.4 1.0	49.4
Literate (168)	86.9	5.4	8.4	10.8 0.29 (0.15-0.57)****	62.3
Occupation of HH			*	*	*
Service/business (97)	85.6	6.2	3.1 1.0	8.3 1.0	67.7 1.0
Agriculture/day labour (134)	87.3	4.5	10.4 3.62 (1.01-12.96)*	22.2 3.17 (1.38-7.28)**	50.0 0.48 (0.28-0.82)**
Other (22)	90.9	4.5	0.0	22.7	63.6
Relationship of respondents with HH					*
Husband (219)	85.8	5.5	7.3	17.0	56.0 1.0
Father-in-law (23)	95.7	4.3	0.0	8.7	82.6 3.74 (1.23-11.35)*
Other (11)	90.9	0.0	9.1	36.4	45.5
Family size					
<3 (37)	86.5	2.7	10.8	21.6	51.4
4-6 (173)	86.7	4.7	6.4	16.3	59.3
>7 (43)	88.4	9.3	4.7	16.3	58.1
Average monthly family income					
<3000 taka(63)	85.7	3.2	4.8	22.2	55.6
3001-6000 taka (111)	87.4	7.2	8.1	19.8	52.3
6001-9000 taka(24)	83.3	12.5	0.0	12.5	58.3
9001-12000 taka(29)	86.2	0.0	10.7	10.7	64.3
>12000 taka (26)	92.3	0.0	7.7	3.8	80.8
Standard of living					*** (Fisher's Exact Test)
Low (141)	85.8	5.0	9.2	22.0	49.6 1.0
Medium (106)	87.7	5.7	3.8	11.4	66.7 2.03 (1.20-3.42)***
High (6)	100.0	0.0	0.0	0.0	100.0

OR=Odds Ratio; CI=Confidence Interval. The contrast category is denoted with OR=1.0. *p<0.05, **p<0.01, ***p<0.005, ****p<0.001

standard of living were 2.03 times more likely to use qualified allopaths than households with low standard of living (p<0.005). Again households where father-in-law of the respondents were the head of the households were 3.74 times more likely (p<0.05) and 2.08 times less likely (p<0.01) to use qualified allopaths. (Table IV)

When category of illness type during preceding 15 days was considered to examine the type of health care sought for that illness no significant differences could be found among the illness type and use of any type of care or traditional care in Model 1 and Model 2 respectively. In Model 3, suffering from gastrointestinal diseases positively predicted use of para-professional

Table V. Association of categories of illness with types of health care sought for that illness during preceding 15 days (n=253)

Characteristics (n)	Model 1 any type % - OR (CI)	Model 2 Traditional % - OR (CI)	Model 3 Para-professional % - OR (CI)	Model 4 Unqualified allopaths % - OR (CI)	Model 5 Qualified allopaths % - OR (CI)
Categories of illness			* (Fisher's Exact Test)	****	**
Fever of all types (84)	82.1	4.8	2.4 1.0	32.1 1.0	42.9 1.0
Gastrointestinal diseases (63)	87.3	6.3	15.9 7.36 (1.63-36.70)*	7.9 0.18 (0.07-0.51)***	57.1
Pain/Aches (25)	88.0	4.0	8.0	16.0	60.0
Respiratory diseases (45)	93.3	2.3	6.8	13.6 0.33 (0.13-0.88)*	70.5 3.18 (1.46-6.93)***
Skin/Eye/ENT diseases (13)	84.6	7.7	0.0	0.0	76.9 4.44 (1.14-17.33)*
Others (23)	91.3	8.7	0.0	4.3 0.10 (0.01-0.75)*	78.3 4.80 (1.63-14.15)***

OR=Odds Ratio; CI=Confidence Interval. The contrast category is denoted with OR=1.0. *p<0.05, **p<0.01, ***p<0.005, ***p<0.001

(OR=7.36; p<0.05). In Model 4, use of un-qualified allopaths was negatively predicted respectively by presence of gastrointestinal diseases (OR=0.18; p<0.005), respiratory diseases (OR=0.33; p<0.05) and other types of diseases (OR=0.10; p<0.05). In Model 5, use of qualified allopaths was positively predicted by respiratory diseases (OR=3.18; p<0.005), other types of diseases (OR=4.80; p<0.005) and skin/eye/ENT category of diseases (OR=4.44; p<0.05). (Table V)

Discussion

The study was aimed to determine the disease pattern and health seeking behavior in rural Bangladesh. A total of 493 households having at least one child up to 1 year of age were selected systematically to conduct the study. As expected from Bangladesh context (89.3% of the households at the national level were headed by men in 2008)[11], most of the household heads were male (98.8%). The mean ± SD of age of the household heads were calculated as 38.57 ± 10.89 years. Only 68.6% of the household heads were literate, which correspondent to the adult literacy rate of Bangladesh[11.] The main occupation of people of rural Bangladesh is agriculture, current study also found that highest percentage (31.2%) of the household heads were agricultural workers. Average monthly family incomes for 41.9% of the households were between Tk.3001 to Tk.6000 and the mean ± SD of monthly family income was Tk.6662.60 ± Tk.5862.38. This was quite low even in relation to per capita income of Bangladesh[12]. More than half of the respondents were included in the age group of 21 to 30 years (59.6%). The mean ± SD of age of the respondents were calculated as 27.51 + 6.69 years. Age distribution of the respondents correspondent with the other studies conducted among the same population[13]. More than 70% of the husbands had some form of formal education, which was more than the 2008 National survey for rural area (56.55%), but lower than the urban area (75.19%)[11]. Thirty percent of the respondents reported agricultural work as their husbands' occupation.

Respondents were asked about history of illness of her or her family members during the preceding 15 days. More than half of the respondents gave positive answers (51.3%). This morbidity pattern was similar with the study conducted in rural population of Tamil Nadu[14-17]. The three most frequently reported illnesses were fever of various types and duration, gastrointestinal diseases including diarrhea anddysentery, and respiratory diseases. Ahmed et al. found the same disease pattern in their study, except respiratory disease was superseded by complains of pain/aches[6], which was also found in the study by Hussain et al[14]. Another study found that cold/fever accounted for 58% and rest categories with much lower rate[15]. Inclusion of many disease group might be the reason. Although fever was the most reported illness only 42.3% took service from qualified medical personnel or health facility and highest percentage of patients went to quacks for the treatment of fever, whereas 11.8% seek no treatment at all. For treatment of gastrointestinal diseases a higher portion of respondents took services from qualified allopathic doctors (58.1%), although 8.1% went for self medication. For treatment of respiratory disease highest portion of respondents went to qualified doctors' private chamber (31.8%). Surprisingly for Skin/Eye/ENT none of the respondents went for self treatment or service from medical assistants or quacks. Highest percentage of respondents took services from public health facility (37.5%), but its depressing that still 12.5% took treatment from kabiraj/hakims and 12.5% took no treatment at all. Overall utilization of public health facility is not satisfactory (only 24.8%) and a significant portion seek services from unqualified parishioners (28.7%). This picture was similar with the study findings in Pakistan16 and still far better than the health seeking behavior in Chakaria seen by ICDDR,B[15].

There is no major variation in the utilization of various sources of health care across different age groups in rural area, which similar to the findings of Begum[1] and Ahmed et al[18]. Among the rural people the dependence of the poorer ones is more on the quacks and better-off people rely more on the qualified private practitioners, which was consistent with other studies[1,18]. Ahmed et al. identified sex, literacy of the household head and disease types (aches/pain and skin/eye/ENT related illness) as the significant predictors for taking any type of formal health care[6,10]. But we could not find any significant predictors, probably due to the small sample size and due to some selection bias. No significant differentials could be found for use of 'traditional'. Ahmed et al. found that all illness types negatively predict use of para-professionals[6], whereas we found the opposite scenario in case of gastrointestinal diseases which positively predicted use of para-professionals. The reason of this was not clear; it might reflect some selection bias and some confusion to categorize the health care services. Gender, occupation and literacy of the household head and types of illness were important predictors of not using unqualified allopaths. The findings reflected role of socioeconomic status to keep away from using un-qualified allopaths. Results also pointed to a large and growing sector of non-qualified allo- pathic providers engaged in the traffic of modern pharmaceuticals, yet lacking formal medical training. Policy makers and planners should seriously think to make use of them or the way to keep them away. Supporting other similar studies better socioeconomic

status and presence of respiratory, skin/eye/ENT or other diseases predict the use of qualified allopaths[6,10].

A considerable literature discusses the limitations of self-perceived morbidity reporting. Among these concerns is its extreme sensitivity to diverse factors including inaccurate recall and the particularities of an individual's knowledge and illness experience[19,20]. By limiting recall period of illness to the past 15 days, and focusing on the major morbid experience, attempts were made to minimize it. Second limitation was that the treatment choice relates with the possible effect of the illness stage. The more advanced illness may be treated differently than early stage disease, where home and folk remedies may initially suffice[21]. The cross-sectional nature of the study, and the inclusion of all reported illness occurring in the previous two weeks irrespective of severity, helps obviate the potential confounding influence of illness stage in analysis. Another limitation was that as the study was conducted in a particular season, influence of environmental and seasonal risk factors for disease in that particular setting could confound the prevailing illness pattern and treatment seeking behavior. So the study should be replicated during different seasons and different settings of health care system

Conclusion

Existence of several distinct therapeutic systems in a single cultural setting was found to be an important feature of health care system in the study area. In this respect, efforts to increase health-related knowledge and skills to facilitate decisions to seek appropriate health care service should be emphasized as a key component of primary health care. Finally, in an increasingly pluralistic health care system, it is essential that health sector reform takes into account the full range of health providers, both private and public, and qualified and unqualified. It is essential that basic pharmaceutical training be made available to the full spectrum of health care providers, including lay practitioners and drug peddlers, and that managerial and regulatory measures be enforced to control the misuse of potentially dangerous therapeutic options. Investing in health necessitates an in-depth research to visualize the real picture of the need and habits and practices of the people towards health. Further in depth research should be conducted and findings of the current study should be replicated to formulate policy measure to improve the overall scenario of health system of rural Bangladesh. measure to improve the overall scenario of health system of rural Bangladesh.

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