Factors Influencing Physicians’ Clinical Decision-making at Upazila Health Complexes in Bangladesh

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Source of support: None. Conflict of interest: None.

Received: Mar 15, 2020; Accepted: Sept 28, 2020

Islam MA, Awal MA. Factors influencing physicians’ clinical decision-making at Upazila Health Complexes in Bangladesh. Glob J Qual Saf Healthc. 2020; 3:125–133. DOI: 10.36401/JQSH-20-7.

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ABSTRACT

Introduction: Selecting the most appropriate treatment for each patient is the key activity in patient-physician encounters and providing healthcare services. Achieving desirable clinical goals mostly depends on making the right decision at the right time in any healthcare setting. But little is known about physicians’ clinical decision-making in the primary care setting in Bangladesh. Therefore, this study explored the factors that influence decisions about prescribing medications, ordering pathologic tests, counseling patients, average length of patient visits in a consultation session, and referral of patients to other physicians or hospitals by physicians at Upazila Health Complexes (UHCs) in the country. It also explored the structure of physicians’ social networks and their association with the decision-making process. Methods: This was a cross-sectional descriptive study that used primary data collected from 85 physicians. The respondents, who work at UHCs in the Rajshahi Division, were selected purposively. The collected data were analyzed with descriptive statistics including frequency, percentage, one-way analysis of variance, and linear regression to understand relationships among the variables. Results: The results of the study reveal that multiple factors influence physicians’ decisions about prescribing medications, ordering pathologic tests, length of visits, counseling patients, and referring patients to other physicians or hospitals at the UHCs. Most physicians prescribe drugs to their patients, keeping in mind their purchasing capacity. Risk of violence by patients’ relatives and better management are the two key factors that influence physicians’ referral decisions. The physicians’ professional and personal social networks also play an influential role in the decision-making process. It was found that physicians dedicate on average 16.17 minutes to a patient in a consultation session. The length of visits is influenced by various factors including the distance between the physicians’ residence and their workplace, their level of education, and the number of colleagues with whom they have regular contact and from whom they can seek help. Conclusion: The results of the study have yielded some novel insights about the complexity of physicians’ everyday tasks at the UHCs in Bangladesh. The results would be of interest to public health researchers and policy makers. Keywords: decision-making, healthcare, physicians, Bangladesh, cognitive reasoning

INTRODUCTION

Physicians are an important part of the healthcare system. They play a pivotal role in bridging the gap between science and society¹ by the application of their scientific knowledge to human health and healing.² But selecting the most appropriate treatment options for their patients is more than just the sum of their skills and knowledge about medicine and diseases. Rather, they must also deal with the human experience of physical and emotional vulnerability and moments of fear, anxiety, and doubt. Therefore, every professional decision at their workplace must be made with the best possible care and empathy. The Upazila Health Complexes (UHCs), the primary public healthcare facilities located in Upazila, which function as administrative subunits of districts in Bangladesh, are dynamic places where poor and underprivileged people with low economic capacity and lack of health literacy seek healthcare services. Critical observations and personal interactions with physicians at the UHCs indicate that various clinical and nonclinical factors influence their
decisions concerning the selection of medicine, ordering of pathologic tests, and length of visits for patients in consultation sessions. But little is known about these phenomena in the context of the country. Empiric research on decision-making had begun between the 1940s and 50s in developed countries. In the past few decades, research on physicians’ clinical decision-making has attracted the attention of scholars in the fields of communication, psychology, philosophy, neuroscience, decision science, public health, health communication, and medical informatics. Research has shown that the quality of healthcare services, health outcomes, and patient satisfaction are strongly associated with improved decision-making by the physicians and healthcare providers, while poorly devised decisions may result in adverse consequences for the patients.

Conceptually, decision-making is a process of choosing between options as to a course of action. It can range from fast, intuitive, or heuristic judgment to well-reasoned, analytical, and evidence-based decisions. But clinical decision-making is a process of making an informed judgment about the best possible treatment necessary for patients. Ofstad et al developed a taxonomy of clinical decisions—the Decision Identification and Classification Taxonomy for Use in Medicine (DICTUM). The taxonomy consists of 10 categories of crucial activities in the selection of appropriate treatment for patients. The activities are as follows: gathering additional information, evaluating test results, defining the problem, drug-related, therapeutic procedure-related, legally and insurance-related, contact-related, advice and precaution, treatment goal, and deferment.

Most research on clinical decision-making focuses on understanding the process whereby doctors arrive at diagnoses and management plans: how physicians, other healthcare professionals, and patients make decisions in the real-world setting of their professional practice. Generally, any decision related to healthcare issues should only be made on the basis of clinical criteria. But in reality, it is a multifaceted process that should be understood from diverse perspectives. The decision-making process of physicians can be understood from a sociologic point of view. The factors influencing physicians’ clinical decision-making can be divided into two categories: patient and physician factors. The patient-related factors include the patient’s socioeconomic status, age, gender, adherence to treatment, inappropriate behavior, chaotic lifestyle, frequent nonattendance for follow-up appointments, wishes and preferences, attitude and behavior, concerns and worries, influences of the patient’s family members and friends, faith, culture, and quality of life, and the patient’s wishes and values. McKinlay et al argued that patient characteristics do not influence physicians’ decisions regarding diagnosis, level of certainty, and test ordering. Physician-related factors include physician characteristics such as age, gender, time constraints, work overload, and professional interactions such as the relationship with colleagues, hospital staff, and the pharmaceutical industry; length of experience, use of educational materials for continuous updating of medical knowledge; enhanced levels of continuing medical education and willingness to involve patients in decision-making; medical specialty, race, age, gender and years of clinical experience, and personality. Studies have shown that factors related to practice can influence clinical decision-making, including the type of practice (such as private versus public), size of the practice, practice organization, geographic location and availability of health resources, management policies/implication of treatment cost, and features of the healthcare system such as payment arrangement and hospital library at the place where physicians provide treatment to their patients.

Primary care physicians often need to make critical decisions about the choice of drugs for their patients. Generally, decisions regarding the prescription of medications should only be governed by the patients’ clinical condition such as signs and symptoms, comorbid conditions, and uncertain diagnoses. But prescribing behavior is not merely associated with the clinical condition; rather, it is a complex process involving several factors that influence prescribing decisions. For example, Murshed et al identified 13 factors that influence physicians’ prescribing behavior. They divided the factors into four categories: marketing efforts (information on a drug, sales promotion, the effectiveness of medical representatives); patient characteristics (patients’ request, patients’ expectation); pharmacist-related factors (pharmacist-physician collaboration, pharmacists exerting power, trustworthiness); and contextual factors (drug characteristics, cost benefit of drug, physician habit persistence). In a systematic review, Davari et al identified 31 factors that influence the prescribing decisions of physicians. The factors include personal attributes, cost of treatment, patient preference, pharmaceutical industries, patients’ or families’ expectation, patients’ clinical condition, patient sociodemographics, time constraints, political and administrative influences, patients’ ability to take the drug, clinicians’ professional ethos, number of doctor(s) per patient, and physicians’ general attitude toward the health system. Ferdoush et al investigated the factors that influence the choice of drug and the prescribing attitudes adopted by junior doctors in two tertiary care hospitals in Chittagong City, Bangladesh. They found that supervising senior doctors, the cost of drugs, and pharmaceutical promotional offers play an influential role in drug-prescribing decisions.

Achieving clinical goals does not merely consist of prescribing medications and ordering clinical tests. Rather, healing is a multidimensional phenomenon that involves satisfying the patients and meeting their expectations. Patients at public healthcare facilities in Bangladesh often come with high expectations of getting
medicines free of cost and quality services. Moreover, patient satisfaction is an important indicator of the quality of healthcare services. Andalee et al. found that patients’ satisfaction is highly influenced by the quality of doctors’ services in hospitals throughout the country. Several studies indicate that patients’ experiences and satisfaction with healthcare services are associated with the length of time physicians spend with them during consultation sessions. Elmore et al. argued that longer consultations are correlated with quality of care and better health outcomes. In a systematic review, FitriSurbakti and Sari found that general physicians spend an average of 6.9–12.4 minutes with a patient in a consultation session. According to the recommendations of the Royal College of General Practitioners, the length of primary care consultation should be at least 15 minutes. However, no study was found on the issue of consultation length and associated factors in the context of Bangladesh.

Primary care physicians frequently have to make choices about whether treating or referring their patients to other specialists or hospitals. Multiple factors contribute to the referral decision. For example, Chan and Austin argued that both physician and patient factors contribute to the referral decision. They found that factors such as physicians’ age, gender, and patients’ severity of illness and socioeconomic status are associated with this decision.

The health service delivery system in Bangladesh consists of public, private, and non-governmental organization (NGO) facilities. Meanwhile, the public healthcare system is built upon extensive networks of infrastructures such as teaching and research institutions, hospitals, health centers, dispensaries, and training centers at the national and the local level in the country. Primary healthcare services are provided at Upazila, Union, and Ward levels through UHCs, Union Health, and Family Welfare Centers and Union Sub-Centers; and Community Clinics. There are 424 UHCs with a capacity of 18,993 beds in the country.

UHCs play a significant role in providing quality healthcare services to poor people in the country. Ahmed et al. found that the common causes for hospitalization at UHCs are diarrheal diseases (watery diarrhea, dysentery), injury (assault, road traffic accident), diseases of the gastrointestinal tract (peptic ulcers, abdominal pain), obstetric and gynecologic causes, febrile illnesses (fever without a definite diagnosis, enteric fever, and malaria), and nutritional deficiency.

Dissatisfaction is often expressed over the availability and quality of healthcare services at public hospitals in the country. Adhikary et al. found that patients attending primary care facilities are less satisfied with healthcare services than those who attend private facilities. The dissatisfaction with public healthcare facilities often leads people to seek healthcare services at private facilities; and in some cases, people with higher economic status go abroad. But poor people cannot avail themselves of either private or foreign healthcare services. Various factors contribute to the poor healthcare services at the UHCs. Observations indicate that a lack of job satisfaction among physicians and low retention of qualified workforce are among the top contributing factors to the poor quality of services. Rashid et al. found that the level of job satisfaction among physicians at the UHCs is very low. They identified multiple factors that contribute to this dissatisfaction, which include low salary, limited scope for promotion, poor service allowances, mandatory night shift duty, long working hours, and lack of accommodation and transportation facility. Poor supplies and infrastructure, bad patient behavior, and administrative problems also often frustrate the physicians, lowering their job satisfaction. For example, Darkwa et al. found that healthcare professionals do not want to work in rural areas owing to lack of quality housing facilities, lack of opportunities for career and skill development, insufficient salary, inadequate opportunities for private practice, and overwhelming workload.

Regarding the quality of healthcare services at UHCs, most of the previous studies looked at access to healthcare, patients’ satisfaction, physicians’ job satisfaction, and retention of the healthcare workforce. Although it is well established that good patient outcomes are strongly correlated with physicians’ good clinical judgment, little is known about physicians’ decision-making and influencing factors in the context of Bangladesh. An understanding of the factors that influence physicians’ decision-making at the field level, such as UHCs, could help teach future healthcare professionals, improve the quality of healthcare services, increase access to healthcare for poor people, improve patients’ satisfaction and their involvement in the healing process, and disentangle the complexity of physicians’ everyday tasks. Against this backdrop, this study explores physicians’ decisions about prescribing medications, ordering pathologic tests, counseling patients, the average length of patient visits in a consultation session, and referral of patients to other physicians or hospitals. It also explores the structure of physicians’ social networks and their association with the decision-making process.

METHODS

Study Design and Procedure

Ethical approval was not required for this research as it was conducted only among physicians, not patients. No clinical procedure was performed among the participants. No identifiable data were collected, and informed consent was obtained from the participants at the time of data collection.

This was a cross-sectional descriptive study with a duration of 12 months from September 2019 to August 2020. We collected data from the physicians by using a
semistructured questionnaire. The questionnaire was duly pretested before collecting data from the respondents. The questionnaire contained questions about the respondents’ demographic characteristics, social relationships, features of daily tasks, medication prescribing behavior, and experiences with patients.

**Study Participants and Sampling**

The populations of the study were physicians working at UHCs in Rajshahi, a northern division of Bangladesh. There are 424 UHCs in the country. Physicians working at 28 UHCs in Rajshahi, Natore, Naogaon, and Chapainawabganj districts were purposively selected as the study sample. Of the sample health complexes, nine are in Rajshahi district, 10 are in Naogaon district, five are in Natore, and four are in Chapainawabganj. Depending on availability, respondents with various specialties were included in the sample. We used a nonprobability purposive and snowball sampling technique to reach the study participants. Primarily we sent the questionnaires to the physicians with whom we had an acquaintance. We requested that the primary respondents reach other potential participants in this study. In this process, a total of 280 questionnaires were distributed among the participants. Responses from only 100 respondents were returned on the scheduled date. Owing to inconsistencies, 15 questionnaires were excluded from the final analysis.

**Data Analysis**

The collected data were analyzed by using descriptive statistics including frequency and percentage, mean standard deviation, one-way analysis of variance (ANOVA), and linear regression. The analysis was done by using a Statistical Package for Social Science (SPSS) program [version 23].

**RESULTS**

**Demographic Features of the Physicians**

A total of 85 physicians took part in the study. Data in Table 1 show that more than two-thirds of the participants (66 [77.6%]) were male. Most participants (58 [68.2%]) were junior consultants and 11 (12.9%) were resident medical officers. Among the participants, 26 physicians (30.6%) had an MBBS/BDS degree. Meanwhile, the rest of the participants either completed their postgraduation or enrolled for a specialized postgraduate degree. Most participants (35 [41.2%]) specialized in medicine, followed by 12 (14.1%) in gynecology and obstetrics and 12 (14.1%) in surgery. Not surprisingly, almost half of the participants live in districts or divisional cities that are further than 25 kilometers from the workplaces of the physicians.

### Table 1.

| Feature                             | No. (%) |
|-------------------------------------|---------|
| **Sex**                             |         |
| Male                                | 66 (77.6) |
| Female                              | 19 (22.4) |
| **Position**                        |         |
| Upazila Health & Family Planning Officer | 8 (9.4) |
| Junior Consultant                   | 58 (68.2) |
| Medical Officer                     | 8 (9.4) |
| Resident Medical Officer            | 11 (12.9) |
| **Level of education**              |         |
| MBBS/BDS                            | 26 (30.6) |
| Postgraduate                        | 59 (69.4) |
| **Area of specialization**          |         |
| Anesthesia                          | 2 (2.4) |
| Dental surgeon                      | 7 (8.2) |
| ENT                                 | 1 (1.2) |
| Gynecology and Obstetrics           | 12 (14.1) |
| Medicine                            | 35 (41.2) |
| Ophthalmology                       | 2 (2.4) |
| Orthopedics                         | 10 (11.8) |
| Pediatrics                          | 4 (4.7) |
| Surgery                             | 12 (14.1) |
| **Residence (kilometers from the health complex)** | |
| 0–5                                 | 7 (8.2) |
| 5–10                                | 10 (11.8) |
| 10–15                               | 6 (7.1) |
| 15–20                               | 12 (14.1) |
| 20–25                               | 12 (14.1) |
| >25                                 | 38 (44.7) |

**Professional Work Features of the Physicians**

Data in Table 2 show that the physicians spend on average 16 minutes with a patient per consultation sessions. They work on average 9.5 hours per day and attend to an average of 40 patients a day. Meanwhile, they attend on average to 13 promotional officers of pharmaceutical companies a week.

### Table 2.

| Feature                             | Minimum | Maximum | Mean | SD   |
|-------------------------------------|---------|---------|------|------|
| Age of the respondents              | 27.00   | 43.00   | 31.47 | 3.49 |
| Length of visit for a patient in minutes | 10.00   | 20.00   | 16.18 | 4.27 |
| Length of working hours per day     | 8.00    | 12.00   | 9.41  | 1.45 |
| Number of patients attended to per day | 20.00   | 70.00   | 40.14 | 14.76 |
| Number of representatives of pharmaceutical companies attended to per week | 8.00    | 25.00   | 13.29 | 4.15 |

**Structure of Physicians’ Social Networks**

Physicians do not work beyond the fabric of society. Apart from their knowledge and expertise, they are human beings working in society. Their relationships...
and interactions with coworkers and friends play a significant role in their well-being, quality of life, and healthcare decisions. The structure of the workplace network is very small. Data in Table 3 show that physicians have on average two colleagues from whom they can seek professional help at the workplace. Most have only 1 colleague with whom they have frequent contact outside of the workplace and only 2 colleagues on average who frequently seek professional help from them. Meanwhile, most have only 1 friend from whom they can seek professional-related help outside the workplace.

Factors Associated With Ordering Pathologic Tests, Counseling Patients, and Referring Patients

Most physicians (45.9%) stated that they consider their patients’ economic condition when ordering pathologic tests (Table 4). Meanwhile, they take various issues into account in deciding whether to counsel or not to counsel their patients. The issues include the patients’ patience (3.5%), workload (31.8%), work environment (10.6%), behavior (25.9%), and health literacy (28.2%). On the other hand, the risk of violence (9.4%), patients’ demands (31.8%), and lack of treatment facilities (58.8%) are the dominant issues that physicians take into consideration when referring patients to other physicians or hospital. Details are shown in Table 4.

Factors Associated With Prescribing Decisions

More than half of the physicians (46 [54.1%]) stated that the generic or brand name of a drug does not determine what medication they prescribe to their patients (Table 5). Interestingly, 22 (25.9%) stated that the generic or brand name of drugs influences their decision to prescribe medications to their patients. Most physicians prescribe drugs to their patients on the basis mainly of their purchasing power (the patient’s ability to pay for the drug). Regarding the marketing efforts of pharmaceutical companies, most physicians emphasize availability of information about the drug (35 [41.2%]), followed by brand of the drug (28 [32.9%]) and effectiveness of medical representatives (15 [17.6%]). In prescribing medications, the physicians also take into consideration the requests from the patients (63 [74.1%]) and patients’ expectations (22 [25.9%]). Physician-related factors, such as the relationship with pharmacists (55 [41.2%]) and their trustworthiness (50 [58.8%]), also play an influential role in physicians’ prescription of medications. Contextual factors such as drug character-

### Table 3.—Structure of physicians’ social networks

|                         | Minimum | Maximum | Mean  | SD    |
|-------------------------|---------|---------|-------|-------|
| Number of colleagues from whom I seek professional help at the workplace | 1.00    | 5.00    | 2.71  | 1.23  |
| Number of colleagues with whom I have frequent contact outside of the workplace | 0.00    | 4.00    | 1.92  | 1.08  |
| Number of colleagues who seek professional help from me frequently | 1.00    | 7.00    | 2.69  | 1.46  |
| Number of friends from whom I can seek professional-related help outside of the workplace | 0.00    | 5.00    | 1.88  | 1.11  |

### Table 4.—Factors associated with ordering pathologic tests, counseling patient, and referring patients

| Most important issue I consider when ordering pathologic tests | No. (%) |
|-------------------------------------------------------------|---------|
| Patients’ economic condition                                | 39 (45.9) |
| Patients’ clinical condition                                | 28 (32.9) |
| Sociopolitical status                                       | 18 (21.2) |

| Most important issue I consider when counseling patients | No. (%) |
|----------------------------------------------------------|---------|
| Workload                                                 | 27 (31.8) |
| Patients’ health literacy                                 | 24 (28.2) |
| Patients’ behavior                                        | 22 (25.9) |
| Work environment                                          | 9 (10.6)  |
| Patients’ patience                                        | 3 (3.5)   |

| Most important issue I consider when referring patients to another physician or hospital | No. (%) |
|----------------------------------------------------------------------------------------|---------|
| Lack of treatment facility at my hospital                                               | 50 (58.8) |
| Patients’ demand                                                                       | 27 (31.8) |
| Risk of violence                                                                        | 8 (9.4)   |

### Table 5.—Factors associated with prescribing decisions

| The type of a drug (generic, brand) determines what medication I prescribe to my patient | No. (%) |
|---------------------------------------------------------------------------------------|---------|
| Disagree                                                                               | 46 (54.1) |
| Neutral                                                                                | 17 (20.0) |
| Agree                                                                                  | 22 (25.9) |

| I prescribe a drug to a patient on the basis mainly of his/her purchasing power (the patient’s ability to pay for the drug) | No. (%) |
|-------------------------------------------------------------------------------------------------------------------|---------|
| Disagree                                                                           | 15 (17.6) |
| Agree                                                                               | 47 (55.3) |
| Strongly agree                                                                      | 23 (27.1) |

| I follow treatment guidelines every time I prescribe drugs to my patient | No. (%) |
|------------------------------------------------------------------------|---------|
| Disagree                                                               | 22 (25.9) |
| Neutral                                                                | 29 (34.1) |
| Agree                                                                   | 27 (31.8) |
| Strongly agree                                                          | 7 (8.2)  |

| Most important marketing factor | No. (%) |
|---------------------------------|---------|
| The information available on the drug                                    | 35 (41.2) |
| Brand of drug                                                             | 28 (32.9) |
| Sales promotion                                                           | 7 (8.2)  |
| Effectiveness of medical representative                                   | 15 (17.6) |

| Most important patients’ characteristic | No. (%) |
|----------------------------------------|---------|
| Patients’ request                       | 63 (74.1) |
| Patients’ expectations                  | 22 (25.9) |

| Most important pharmacist factor | No. (%) |
|----------------------------------|---------|
| Relationship with pharmacist      | 35 (41.2) |
| Trustworthiness                   | 50 (58.8) |

| Contextual factors | No. (%) |
|--------------------|---------|
| Drug characteristics | 55 (64.7) |
| The cost-benefit ratio of drug | 30 (35.3) |
Factors Influencing Physicians’ Decision to Refer Patients, Length of Visits, Ordering of Pathologic Tests, Prescribing of Medications, and Counseling

Linear regression analysis shows that multiple factors influence physicians’ clinical decisions regarding referral of their patients to other physicians or hospitals, length of visits for a patient seeking consultation at the health complex, ordering necessary pathologic tests, prescribing medications, and counseling their patients. Data in Table 6 show that patients’ wishes and preferences ($p = 0.035$), availability of necessary resources at the hospital ($p = 0.052$), time constraints ($p = 0.001$), and patients’ financial abilities ($p = 0.033$) influence the decision to refer a patient to other physicians or hospitals. Meanwhile, the length of visit for a patient is associated with physicians’ residence ($p = 0.001$), their level of education ($p = 0.069$), and the number of colleagues with whom they have regular contact and from whom they can seek help ($p = 0.083$). Physicians who live near their workplace dedicate more time to their patients than those whose residence is located far from the health complex. Positive interactions with colleagues with whom they have regular contact and from whom they can seek help also influence the length of patient visits at the health complexes. With an increase in the number of such colleagues, the length of the visits increases.

On the other hand, the decision to order pathologic tests is influenced by the physicians’ residence ($p = 0.067$), number of working hours ($p = 0.004$), availability of resources and facilities ($p = 0.049$), time constraints ($p = 0.030$), and patients’ political influence ($p = 0.011$). As shown in Table 6, the decision to prescribe medications is influenced by the number of working hours ($p = 0.005$), the level of education ($p = 0.096$), and time constraints ($p = 0.057$).

**DISCUSSION**

Selecting the most appropriate treatment for each patient is the key activity in patient-physician encounters and in providing services in healthcare settings. In any healthcare setting, achieving desirable clinical goals is mostly dependent on physicians, nurses, and patients’ relatives making the right decision at the right time. However, decision-making is a multidimensional process influenced by a person’s cognitive, psychological, educational, social, cultural, and economic status. The cognitive aspects are associated with education, academic training, attending professional seminars or conferences, and accessing the latest body of knowledge in the professional field through academic journals. Physician cognition and metacognition may have an impact on the quality of clinical reasoning.

The findings of the study reveal that multiple factors influence physicians’ decisions regarding prescribing medications, ordering pathologic tests, length of visits, counseling patients, and referring patients to other
physicians or hospitals. The findings are similar to previous studies in many ways.

The results of the study show that most of the physicians prescribe drugs mainly on the basis of patients' purchasing capacity or the ability to pay for the drugs. Regarding the marketing efforts of pharmaceutical companies, most of the physicians emphasize availability of information about a drug, followed by the brand of the drug and effectiveness of the medical officers of pharmaceutical companies. In prescribing medications, the physicians also take into consideration factors such as patients' requests and expectations. Meanwhile, pharmacist-related factors, such as the relationship with pharmacists and their trustworthiness, also play an influential role in physicians' prescription of medications.

The decision to order pathologic tests is influenced by patients' clinical condition, patients' socioeconomic condition and political status, distance between the physicians' residence and workplace, number of working hours, time constraints, and availability of resources and facilities at the hospital. Physicians' socioeconomic condition plays an influential role in the decision to order pathologic tests, as some physicians stated that they consider patients' economic condition when prescribing any clinical test. For patients with lower economic status, the physicians rely on their insight and medicine. The patient's clinical profile is also an important factor influencing clinical decision-making, as physicians stated that they make clinical test decisions solely on the basis of this factor. If patients have a higher sociopolitical status, physicians prefer additional clinical tests and further investigation (M.A.I. and M.A.A., personal observations).

Physicians spend on average 16.17 minutes with a patient in a consultation session, in keeping with the recommendations of the Royal College of General Practitioners. The length of visits is influenced by various factors including the distance between the physicians' residence and workplace, their level of education, and the number of colleagues with whom they have regular contact and from whom they can seek help. The physicians who live near their workplace dedicate more time to their patients than those whose residence is located far from the health complex.

The decision of whether or hospital is influenced by several factors including risk of violence, patients' wishes and preferences, availability of necessary resources at the hospital, time constraints, and patients' financial abilities. In most cases, physicians refer their patients to the hospitals at the district or divisional level because their workplace lacks treatment facilities. Meanwhile, patients with high social and economic abilities and political influence put pressure on physicians to provide them with a referral certificate to receive better treatment. Many of the physicians stated that they sometimes refer patients soon after giving primary treatment for fear of violence by the relatives or supporters of the patients at the health complex. And sometimes they do not refer their patients because of their limited financial abilities. If a patient does not have sufficient financial resources to receive better treatment at the hospital at the district or divisional level or private healthcare services, the physicians try to provide the best possible healthcare at the health complexes.

The physicians' professional and personal social networks play an influential role in decision-making processes. Social networks include friends and colleagues for seeking and giving personal and professional help. Consultation with peer physicians is an important factor influencing the respondents' clinical decisions related to drug prescriptions, referring patients to other hospitals, or regarding clinical investigations. The findings support the arguments by Eisenberg, who argued that four types of sociologic factors influence the clinician's judgment: the characteristics of the patient; the characteristics of the clinician; the clinician's interaction with his profession and the healthcare system; and the clinician's relationship with the patient. Positive interactions with colleagues—with whom they have regular contact and from whom they can seek help—also influence the length of patient visits at the health complexes. With an increase in the number of such colleagues, the length of patient visits increases. On the other hand, patient-related factors associated with the length of visit and ordering of pathologic tests include age, ability to communicate with the physician in clear language, gender, social and economic status, and political influence.

CONCLUSION

The results of the study have yielded some novel insights about the complexity of physicians' everyday tasks at the UHCs in Bangladesh. Several factors influence the decision-making process of physicians' in their professional work at UHCs within the country.
factors are both clinical and nonclinical. The results of the study show that most of the physicians prescribe drugs to their patients mainly on the basis of purchasing power or the ability to pay for the drugs. Sometimes, the marketing efforts of pharmaceutical companies also influence the decision. A patient's economic condition plays an influential role in the decision to order pathologic tests. Meanwhile, patients' patience, physicians' workload, work environment, patients' behavior, and patients' health literacy are some of the factors that influence the decisions regarding advice about preventive care and food supplements. The results show that the risk of violence by patients' relatives and better management are the two key factors that influence physicians' referral decisions. The physicians' professional and personal social networks also play an influential role in the decision-making process.

Further research is needed to produce clearer insight and better understanding of this issue, as there are some limitations to the present study. The limitations are as follows: this was a cross-sectional study conducted via surveys; it was done only within the UHC system and not within other healthcare systems in the country; moreover, this research was conducted in a limited geographic area and among a limited number of physicians owing to multiple constraints of resources and materials. However, the authors believe that the results of this research serve as a threshold model for future research on the topic in the context of a developing country like Bangladesh. It is expected that the results would be of interest to public health researchers and policymakers.

Acknowledgments

The authors acknowledge the participants of the study for their cordial support during data collection.

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