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Asymmetry in primary health-care system and its effects on prevention and early detection of non-communicable diseases in rural India

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ABSTRACT

Background: Primary health care is a foundation of public health system, but it lacks efficiency in serving the huge population in India, consequently people prefer private health care over the public. Moreover, health services are unequally distributed among rural and urban area while former has more than twice population as compared to later. There is a shift from communicable diseases to non-communicable diseases (NCDs) which combined with increasing private health-care cost due to inadequacy pushes people into poverty. The present study analyzes the asymmetric status of primary health care and assesses its effectiveness in the prevention of NCDs which cause highest mortality and economic burden. **Materials and Methods:** The present study is a descriptive cross-sectional study conducted in 12 primary health centers (PHCs) in 6 blocks of district Rampur, Uttar Pradesh. Two-stage sampling was adopted. Data were collected from 874 patients through a pre-structured questionnaire with prior consent and analyzed using SPSS 20v. Since the majority of the variables were qualitative, a reliability test was done to ensure the quality of the data. **Results:** About 69.6% of respondents preferred private health care as the first choice. Reasons for not choosing government hospitals were dissatisfaction with services (35.6%), long distance (14.8%), and limited time of O.P.D (10.1%). More than 50% of respondents were unaware of NCDs and their risk factors. **Conclusion:** Primary health care is deficient resulting in a shift of patients to private health care and incautious attempts toward the management of NCDs at the level of PHC. It is imperative to strengthen primary health care to achieve universal health.

Key words: Asymmetry, inequality, non-communicable diseases, primary health care, public health care, private health care

INTRODUCTION

India has a vast public health system corresponding to its enormous and diverse population. In a country like India, it is always a challenge to supply health-care services to the doorstep of every household of 1.28 billion population with sociopolitical, geographical, and economic diversities. The first step to provide the comprehensive package of curative and preventive medicine at all levels was influenced by the recommendation of Bhore Committee Report in 1946. This committee suggested an integration of preventive, promotive, and curative health services to every individual irrespective of gender, caste, creed, color, financial, and geographical conditions. This was the inception of the network of primary health center (PHC) and the Sub Centers in India. In 1978, a new viewpoint to health care unfolded at Alma-Ata (USSR), known as "Primary Health Care.[1]" The primary health care is the cornerstone of the public health system of any nation. The declaration of Alma-Ata states that "Primary health care is essential health care based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination.[2]"

Challenges in the Health-care System

According to the 2011 census, India is having 17.5% of world's population.[3] According to the World Bank, India is currently having 20% of global disease burden, 27% of neonatal deaths, and 23% of TB deaths in the world.[4,5] According to the WHO non-communicable disease (NCD) progress monitor 2017, 61% of deaths are due to NCDs which include cardiovascular diseases (CVDs), diabetes, and cancer. 23% of population is at risk due to such diseases in India.[6]

India's public health infrastructure is grossly under-funded, under-staffed, poorly equipped to cater to health-care demands of the population of India. According to the report by the WHO, India's budget on health care is mere 1.2% which is far less than the global average which is 5.4%. Even the most populous country, China spends 3% of its GDP on health care. India is at 112 positions of 170 countries in terms of its health-care systems.[5,7,8]

According to the census of India 2011, the urban population is 31.16% while as rural population consists of 68.84% which

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is more than double of the urban population. The number of people lacking treatment because of "financial issues" and "lack of medical facility" is higher in rural areas than in urban areas. Allopathic physicians are more in numbers in urban areas compared to rural areas (13.3 and 3.3 per 10,000 populations, respectively). Similarly, nurses and midwives are more in urban areas as compared to rural areas (15.9 and 4.1 per 10,000 populations).[5]

As per the Government of India's National Rural Health Mission Document (2005), only 10% of the population has some kind of health insurance, and around 40% of the population is compelled to borrow money or sell their properties to bear the high cost of health care. Approximately 25% of Indian population is pushed to the poverty due to hospitalization due to a single episode of any illness.[5]

According to the 71st National Sample Survey (January–June 2014), 42% of patients selected government hospitals while as 58% of patients preferred private hospitals in rural areas. In urban, only 32% of patients took admission in public and 68% in private. NSS findings suggest that there is a remarkable decrease in the percentage of patients treated by the public hospitals. More patients across rural and urban India prefer private health care despite high out-of-pocket costs which creates an asymmetry and inequality across the health-care system. Due to this inequality, private health care plays a monopolistic role resulting in high health-care cost. Moreover, there are no proper checks for private health care by the states, to control the rising cost of health care. High health-care cost combined with low insurance availability caused greater out-of-pocket expenses for the population.[9]

This inequality and asymmetry in public health system are a hurdle to achieve universal health coverage, which is one of the United Nations Sustainable Development Goals and priority objectives of the WHO. An effective primary health-care system could be a gateway to achieve Universal health coverage.

Aim and Significance of the Study

The aim of this study is to analyze the asymmetric status of the primary health-care system and to assess the effectiveness of primary health-care services, especially in the prevention of NCDs. NCDs (CVDs, diabetes, and cancer) are responsible for 61% of deaths in India. CVDs are now the major cause of deaths in India. CVDs cause around 25% of total deaths. Among CVDs, ischemic heart disease and stroke are the predominant causes of deaths and are responsible for more than 80% of CVD deaths.[6,10]

According to the WHO and UN, in India, the economic burden of NCDs such as CVD, diabetes, and cancer may reach up to $6.2 trillion during 2012-2030.[11]

MATERIALS AND METHODS

A descriptive cross-sectional survey was conducted using pre-structured questionnaire to collect the primary information from 874 patients visiting 12 selected PHC in six (6) blocks of district Rampur, Uttar Pradesh. Two-stage sampling (first, we randomly selected two PHCs from each block using lottery method, and then from each PHC, we selected subjects as per the population ratio of each PHC using random table sampling without replacement comprising of 874 patients) and probability proportional to size sampling procedure has been adopted to meet the feasible acceptance of the results. Data were collected in three domains (utilization of government health services, knowledge attitude, and perception of patients and efficiency of the PHCs) with a focus on prevention and early detection of NCD at PHCs. All the questions which have been considered were adequately reliable with Cronbach's Alpha of 0.72. The data were collected in June and July 2017 under the guidance of the researcher who gave a brief introduction time to time regarding the objectives and relevance of the study. It was thus ensured that all respondents understood each and every question. The responses were collected and counted manually based on the options specified for each question framed. The results have been presented in the form of frequencies and percentages.

RESULTS AND DISCUSSION

A total of 874 patients from the selected PHCs participated in the study, of which (n = 509) 58.2% were males and (n = 365) 41.8% were females. The interval of the age of participants was 35 years (minimum) to 70 years (maximum). Results show that 69.6% patientspreferred private health facility as the first choice before visiting primary health centers (PHC) which is more than the percentage of patients admitted in private hospitals i.e. (58%) in rural and (68%) inurban areas according to the 71st National Sample Survey. This increase might be due to the fact that, in the present study, overall visits (OPD and IPD) were included. It was observed that 14.8% of patients visited government health facility for 6 or more times in the past 12 months, while as 60.8% of patients visited the private health facility for 6 or more times during the same period. It shows more people preferred the private healthcare facilities in comparison to government. as the first choice. The reasons for not choosing government. hospitals as a first choiceincluded dissatisfaction with services of government. hospitals in (51.1%) responses, followed by the long distance in (21.2%) and limited time (8AM-2PM) of OPD in (14.4%) responses.The percentage of mentioned reasonsisslightly higher than that of responses collected during the 60th round of national sample survey. The 60th NSSidentifieddifferentreasons for not preferring treatment from government. healthcare by the respondents, which included dissatisfaction with medical treatment by government. doctors (46.76%), long distance (20.81%), long waiting (11.92%) and unavailability of the required services (5.29%). These reasons clearly imply the lack of accessibility, human, and technical resources in government health-care facilities. A study conducted by IMS Institute for Healthcare Informatics, in over 14,000 households across 12 states (including urban and rural areas), found a regular increase in the patient share by private health-care facilities during the past 25 years for outpatient and inpatient services, across rural and urban areas. In 1986–1987, people were more inclined toward the public hospitals (60%) than private hospitals (40%) in both rural and urban area. In 2012, 61% in urban areas preferred the private health-care sector over the public, and nearly, 69% rural population had faith in the private sector which is similar to the present study. The first two reasons to opt private health care for IPD services were high waiting time (44%) and unavailability of diagnostic facilities (52%). Even 38% of respondents said that they get "better quality of treatment" in private facilities. For OPD services, 61% of respondents stated the availability of doctors as

the main reason for selecting a private health-care facility, while the second reason was to get quick response from the staff of private hospitals (56%). The study also shows that, in rural areas, 63% and 32% of people have to cover over 5 km to access IPD and OPD facilities, respectively [Table 1-4].[9,12,13]

Of total patients, maximum 20.1% of patients complained of difficulty in breathing which might be the symptom of the chronic obstructive pulmonary disease (COPD) or CVDs. COPD and CVDs are commonly related to each other in clinical practice. Both conditions cause significant morbidity and mortality. Physicians examining both conditions should apply a comprehensive approach to diagnose these diseases at the early stage to control them.[14] Of 176 patients with difficulty in breathing, only 11% of patients had BP record on prescription. It shows the lack of appropriate approach to diagnosing the COPD and CVDs among patients visiting OPD of PHC. Current study found only 13.4% respondents who were already aware of their hypertensive statuswhich was lesser than the study done in Tamil Nadu which found that 75/286 (25%) of those detected to be hypertensive knew their status prior to thestudy. It might be due to the low level of awareness in Uttar Pradesh than Tamil Nadu. The proportion of male patients with known hypertension was higher (n = 107) 12.24% than that of female (n = 10) 1.14%. There were 25% of known cases of hypertension whom BP was not monitored during their visits to OPD. 15.6% of patients had tachycardia. Tachycardia is a symptom of hypertension or any CVD, and if the patient has tachycardia, at least patients' BP should be monitored and he should be properly examined to rule out any CVD, but 93% of patients with tachycardia had not been monitored for blood pressure which specifies the lack of workforce and attentiveness at primary health care. The study done in Tamil Nadu also recommended using the community health workers to screen the patients at an early stage to reduce the burden on primary health.[15] A study on risk score to predict hypertension in primary-care settings has been done in the rural area of Thiruvananthapuram and also emphasized on the inclusion of primary health workers for screening and early detecting NCDs such as hypertension and encouraging the population to adopt healthy lifestyles and have their BP checked regularly.[16] Another study was conducted at four sites in the National Capital Region of Delhi, focusing on strengthening of primary health care by empowering community-based health workers (CHWs) in risk scoring of NCDs [Table 5].[17]

Scanty knowledge of life style diseases and associated risk factors were found in 45.8% and 46.9% of respondents, respectively. Only 21.75% and 21.21% respondents got the knowledge about life style diseases and their risk factors respectively from primary healthcare doctorswhile as 41.75% and 43.17% said they got referred information from private doctors which suggests the greater participation of private health sector in health education. The common perceptions among respondents about risk factors for lifestyle diseases were increase salt intake 26.4%, smoking 14.8%, and 5.7% fatty foods. While as more than half of respondents, 53.1% were not aware of lifestyle diseases at all. It shows the lack of required health education to control NCDs in the primary

Table 1: First choice of patients for their health problems

Health care facilities	Frequency (%)
Valid	
Government health facility	266 (30.4)
Private health facility	608 (69.6)
Total	874 (100.0)

Table 2: Visits to government health facilities in the past 12 months

Number of visits	Frequency (%)
Valid	
Never	80 (9.2)
1 or 2 times	325 (37.2)
3 to 5 times	340 (38.9)
6 or more	129 (14.8)
Total	874 (100.0)

Table 3: Visits to health facilities other than PHC in the past 12 months

Number of visits	Frequency (%)
Valid	
1 or 2 times	198 (22.7)
3 to 5 times	145 (16.6)
6 or more	531 (60.8)
Total	874 (100.0)

Table 4: Reasons for not choosing government health facilities as the first choice

Reasons	Frequency (%)
Valid	
Dissatisfaction with the health facilities of government hospital	311 (35.6)
Government health facilities are far from home	129 (14.8)
waiting for treatment for a long time	50 (5.7)
Lack of necessary facilities for treatment	30 (3.4)
Time limit for government health facilities (From 8 am to 2 pm only)	88 (10.1)
Total	608 (69.6)
Missing	
System	266 (30.4)
Total	874 (100.0)

Table 5: Complaints of patients

Complaints	Frequency (%)
Valid	
Known case of hypertension	117 (13.4)
Intermittent headache	86 (9.8)
Blurred vision	20 (2.3)
Chest pain	99 (11.3)
Tachycardia (fast heartbeat)	136 (15.6)
Irregular heartbeat	38 (4.3)
Problem in breathing	176 (20.1)
Nasal bleeding	10 (1.1)
Anxiety	48 (5.5)
Dizziness	144 (16.5)
Total	874 (100.0)

health-care setting. A study conducted to measure prevalence and awareness regarding diabetes mellitus in rural Tamaka, Kolar, found that 49.2% of respondents were unaware of the diabetes. A majority (75%) of the respondents were not aware of the long-term effects of diabetes.[18] A study conducted in Raichur, Karnataka, found only 0.03% of respondents had knowledge about the risk factors of NCDs. Moreover, majority of respondents (62.6%) had no idea about the prevention of NCDs [Tables 6-9].[19]

CONCLUSIONS

Nearly 70% of participants did not prefer public health service which infers that public health system in India grossly lacks substantial and skilled human resource to meet the need of health care of population. Accessibility is still unmet need in public health care which should also be resolved through proper planning. On the eve of epidemiological transition, primary health care must focus on the prevention and early detection of NCDs. Major shift to private health-care services with the scanty distribution of insurance resulted in pushing people into poverty. Due to the scarcity of adequate human resources, health education services are also not perceptible in public health-care services in comparison to private one. Primary health care must entail the CHWs to outspread the cognizance of NCDs and to screen and identify NCDs at an early stage, so the health-care cost at secondary and tertiary level could be minimized and the objective of Universal Health Coverage could be achieved.

Table 6: Knowledge of lifestyle diseases

Variables	Frequency (%)
Valid	
Yes	400 (45.8)
No	474 (54.2)
Total	874 (100.0)

Table 7: Source of Knowledge of lifestyle diseases

Source of knowledge	Frequency (%)
Valid	
PHC doctors	87 (10.0)
Private doctors	167 (19.1)
Government awareness programs	59 (6.8)
Other health personnel	87 (10.0)
Total	400 (45.8)
Missing	
System	474 (54.2)
Total	874 (100.0)

Table 8: Knowledge of risk factors for lifestyle diseases

Variables	Frequency (%)
Valid	
Increase intake of salt in the food	231 (26.4)
Fatty foods	50 (5.7)
Smoking	129 (14.8)
Do not know	464 (53.1)
Total	874 (100.0)

Table 9: Source of knowledge of risk factors for lifestyle diseases

Source of knowledge	Frequency (%)
Valid	
PHC doctors	87 (10.0)
Private doctors	177 (20.3)
Government awareness program	59 (6.8)
Other health personnel	87 (10.0)
Total	410 (46.9)
Missing	
System	464 (53.1)
Total	874 (100.0)

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