



A Demographic Study On The Prevalence Of Diseases In The District Of Faridabad In Haryana

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ABSTRACT

Background & objectives:

Epidemiological information and disease prevalence studies have always been vital for planning control strategies and also help monitor the impact of interventions to control such diseases. The present study estimates the nature of illnesses found amongst underprivileged sectors in Faridabad to understand the cultural and demographic aspects that may be linked to such common illnesses.

Methods:

Charitable medical services are free or discounted medical services provided by charitable hospitals or clinics, which are non-profit organisations to people who can't afford treatment. In this cross-sectional study, residents of Faridabad district were clinically assessed and treated for free. Seven rural and 19 urban clusters where nearly 750 people with underprivileged backgrounds came forward for the study. People with ongoing ailments were assessed alongside healthy individuals who required regular health checkups with utmost precaution to prevent community transmission. The treatment protocol revolved around palliative and curative treatment for symptomatic cases and preventative care only, when necessary, for asymptomatic cases.

Results:

The study was undertaken to identify the prevalence of different diseases. For this, a total of 744 subjects were enumerated in various clusters of the Faridabad district. There were 345(47.58%) females and 390 (52.42%) males examined by the study group. The overall prevalence of malnutrition was found to be quite high (75%) in children below the age of 13 and the same was (57.8%) among females between the age of 13-65. Subjects in the age group 13-65 years were found to have a high prevalence of DM-2 (51.02%), Gastritis (79.6%) and hypertension (30.8%), whereas, elderlies (above the age of 65) were found to have a large number of patients suffering from hypertension (82.1%) and with the history of ICH (60%).

Interpretation & conclusions:

The present results showed that the prevalence of biliary diseases, like acute hepatitis, was quite high in children, which can be attributed to the low percentage of vaccinated individuals (3.3%) with 13% of children partially vaccinated. Women and children were more susceptible to malnutrition and anaemia, while men and women below 65 years were seen to have a higher prevalence of DM-2, Hypertension and gastritis. Many elderlies were found to have a history of ICH and persistently high blood pressure. It is suggested that medical counsellors visit families to increase awareness among them about hygienic, healthy living habits & care for the elders, initiate action for free medicines, free health care and free food for the destitute from govt. and non-governmental agencies.

KEYWORDS: Disease Prevalence, Epidemiology, Chronic diseases, Slum outreach, Demographic Study

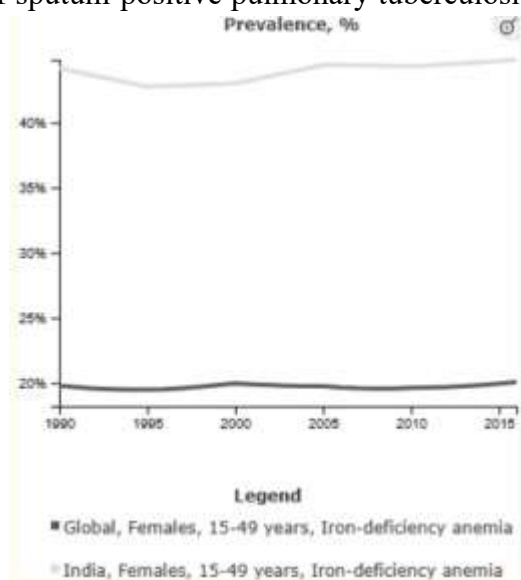
INTRODUCTION

Epidemiological information and disease prevalence studies have always been vital for planning control strategies and also help in monitoring the impact of interventions to control such diseases. Despite economic growth and modernization, India continues to face significant challenges of unavailability and unaffordability in healthcare services due to lower Bed Density than the rest of the world. In addition, existing hospital beds and hospitalization services are largely available in urban areas only which in turn makes them inaccessible and unaffordable. According to a study undertaken by NITI Ayog, Non-profit hospitals account for only 1.1% of treated ailments as of June 2018. (NITI-Aayog, 2021). The findings of the aforementioned study also elaborate that the cost, which is approximately 20% lower, the doctor's or surgeon's charges, which are approximately 36% lower and the bed charges, which are approximately 44% lower than the for-profit hospitals (NITI-Aayog, 2021). While the aforementioned study considered the underprivileged classes.

Keeping in view the status and role of NGOs, not for profit Hospitals and social work institutions, an attempt is made in this study to estimate the nature of illnesses found amongst underprivileged sectors in Faridabad, to understand the cultural and demographical aspects that may be linked to such common illnesses, so that, the Charitable medical services, free preventive medicines & assistance provided by charitable hospitals or clinics and health professionals can be upgraded and their capabilities can be appropriately sharpened up to meet the ever-growing challenges of the locality.

REVIEW OF RESEARCH

There exists a plethora of research in the field of research that deals with the prevalence of different diseases in India and their treatment, but studies particularly in Faridabad district of Haryana are rare. For example, P Malhotra et al in 2004, conducted a study on the prevalence of anaemia in Faridabad and reported a higher prevalence of anaemia in adult males and suggested the need for further investigation and corroboration in his studies (P Malhotra, 2004). S.K. Sharma et al have studied the Prevalence of tuberculosis in Faridabad district, Haryana State, India and have found that the prevalence of sputum-positive pulmonary tuberculosis was higher in Faridabad district than the notification rates recorded by the World Health Organization for the contemporary period (S.K. Sharma A. G., 2015). One of the most prominent studies that comes from the PMC online publications is "Prevalence and potential determinants of chronic disease among elderly in India: Rural-urban perspectives" written by Arup Jana and Aparajita Chattopadhyay, which exposes the prevalence of chronic diseases like Cardiovascular disease (CVD), diabetes, hypertension, cancer etc. in India (Arup Jana, 2022). Hypertension alongside diabetes were the most common diseases and accounted for about 68% of all chronic diseases and their incidence is highest in Andhra Pradesh and lowest in Arunachal Pradesh, while Haryana shows only 9.77 % (6.14, Rural and 15% Urban) (Arup Jana, 2022). Cardiovascular disease (CVD), diabetes, hypertension, cancer, and



chronic respiratory diseases together formed around 60% of all the factors responsible for deaths in India (WHO, 2005). Although chronic diseases are common in the elderly and affected by the surrounding environment and lifestyle, the rural elderly are mostly affected due to lower socioeconomic status (SES) and are highly dependent on others. (Arup Jana, 2022) On the contrary, the urban elderly experience social exclusion, crime, and mental stress (Omran, 2005). Iron deficiency anaemia was studied by Rimpay Tandon et al in 2018 (Rimpay Tandon, 2018). Their work titled, "Management of Iron Deficiency Anaemia in Pregnancy in India" estimated the global prevalence of anaemia in pregnancy as 43% in 1995 and 38% in 2011 with the range varying from 17% in developed and 56.4% in developing countries (Rimpay Tandon, 2018). In a population-based study from rural Haryana in 1994–1995, Malhotra et al found a 50% prevalence of anaemia among non-pregnant women in the age group of 16–70 years (Malhotra P, 2004). Their other findings were: the prevalence of anaemia was higher among females (50%) than males (44.3%); the prevalence of anaemia was highest in the age group of more than 45 years among males; Younger females (<30 years) had also higher prevalence; factors associated with anaemia are, Socioeconomic status, Illiteracy, Low body mass index, and Males doing heavy occupational work. Anaemia is very common in all age groups and genders in India (P Malhotra, 2004). The Anaemia Mukht Bharat (AMB) program was launched in 2018 to particularly to reduce anaemia throughout the country (P Malhotra, 2004).

As per the Global Nutrition Report 2016, India ranked miserably at 170th in terms of anaemia prevalence in women (Haddad L Hawkes C, 2016). Figure 1 showing the global prevalence of anaemia in pregnancy as 43% in 1995 and India showing a meagre, 20% (the range varying from 17% in developed and 56.4% in developing countries) (Rimpay Tandon, 2018). They observed that Widespread implementation of preventive and therapeutic strategies is still lacking in our country. Organising awareness camps and the use of social media can spread awareness of this public health issue and they strongly advocated and suggested adopting the "National Anaemia Awareness and Treatment Day" with countrywide participation of health care personnel to target the vulnerable groups especially the pregnant women and teenagers of the country. The reason for iron deficiency as observed in Haryana is the high intake of rice and wheat and ignorance of the iron-rich foods. The average iron density in an average Indian diet is 8.5 mg/1000 KCal and the average iron absorption from a rice-based and wheat-based Indian diet in pregnancy is 13.3 and 5.3% respectively (Bothwell, 2000). Thus, elaborate recommendations were made on increasing iron intake in diet during pregnancy; specifically, Iron-rich foods in India like mushroom, cauliflower leaves, beetroot, potatoes, broccoli, spinach, soybeans, watermelon, pomegranate, apples, strawberries, vitamin C-rich fruits are recommended.

METHODOLOGY

The subjects under study were taken from dementia care homes, orphanages, private practitioner clinics, local hospitals (Sunrise Hospital, B.K. Hospital, Wadhwa Hospital, Sarvodaya Hospital etc.), old age homes and slum outreach programs extended to 25+ sectors of Faridabad.

The methodology is based on participant observation, administering direct medical care as a medical volunteer under the supervision of a team of skilled physicians and counselling the patients in the aforementioned settings. The collection of data is purely from primary and often, reliance on secondary sources like books, journals, and periodicals is made to supplement our findings so that the value of our findings is not attenuated.

For assessing the impact of demographic factors affecting the prevalence of the diseases among the populace under study, the subjects were divided into 4 classes based on 1. **Age** (covering 3 groups i.e. Children below the age of 13, adults and adolescents between 13-65 and seniors above 65), 2. **Gender** (male/female), 3. **Habitat** (urban, semi-urban and slum), 4. **Education** (literate/illiterates-where those who studied up to class 4 are considered as illiterates).

FINDINGS

As exhibited in Table-1 a total of 744 subjects were enumerated in various clusters of the Faridabad district. There were 345(47.58%) females and 390 (52.42%) males examined by the study group. The overall prevalence of malnutrition was quite high in children (75%) and the same was (57.8%) among females below the age of 65. Subjects in the age group 13-65 years were found to have a high prevalence of DM-2 (51.02%), Gastritis (79.6%) and hypertension (30.8%), whereas, elderlies (above the age of 65) showed a large number

table no. 1 shows the prevalence of diseases in relation to age groups						
Age groups→	<13 years (212)		13-65 years (437)			65 above (95)
Diseases↓		Diseases	Male (228)	Female (209)	Diseases	
Biliary	16.9 (36)	DM2	63.1%(144)	37.7% (79)	CA	43.1% (41)
PUO	53.3%(113)	Hypertension	47.3%(108)	11% (23)	ICH	60% (57)
Pneumonia	23.1%(49)	Anaemia	2.1%(5)	86.6%(181)	TB	35.7%(34)
Malnutrition	75%(159)	Calcium deficiency	3%(7)	55.9% (117)	Hypertension	82.1% (78)
Vaccinated	3.3%(7)	Malnutrition	35.9%(82)	57.8% (121)	DM2	66.3% (63)
		Skin-disorders	21.9%(50)	0% (0)	Arthritis	71.5% (68)
Partially vaccinated	13.2%(28)	Gastritis	85.9%(196)	72.7% (152)	COPD	11.5% (11)
					CAD	42.1% (40)

Source: Direct participation, Medical camp survey results of the present study

of patients suffering from hypertension (82.1%) and with the history of ICH (60%). In old age homes diseases like TB, cancer, hypertension and dementia are prominent.

Impact of Demographic Factors (Distribution of Subjects i.e. Age, Gender, Habitat and Education) on the prevalence of different diseases: -

Table 2 given below shows the prevalence of different diseases based on the demographic distribution of the population under study. One of the major findings of this study, as evident from Table 2, shows that the demographic distribution of the subjects has an impact on the prevalence of different diseases in Faridabad. These demographic factors are age, gender, education and habitat (i.e. urban, rural and semi-urban).

i. Impact of Age on prevalence of diseases:

The distribution of age shows a high prevalence of Biliary diseases, Pyrexia of unknown origin (PUO), Pneumonia and malnutrition in subjects below 13 yrs of age; DM2, hypertension, anaemia, calcium deficiency, malnutrition, skin disorder and gastritis among subjects between 13-65 yrs of age and carcinomas, intracranial haemorrhage, arthritis, COPD, CAD and tuberculosis in subjects aged above 65. The primary cause for illness in individuals aged below 13 can be attributed to disorganised vaccination protocols in early years where only 3.3 % of children were vaccinated and 13% were found to be partially vaccinated. Male subjects in the age group 13-65 were seen to have a high prevalence of Diabetes mellitus type 2 alongside gastritis and hypertension while females in the corresponding ages were found to have a high prevalence of anaemia, calcium deficiency and gastritis; indicative of poor dietetic habits with higher consumption of carbohydrates in meals. The subjects above 65 years of age were found to be chronically hypertension with a vast majority having a history of intracranial haemorrhage due to unmaintained blood pressure and blood sugar.

There were also 64% (61) of elderlies in the clinic who were smokers and used tobacco frequently which can be a reason why 67.2% (41) of these smokers were patients with carcinomas (CA).

ii. Impact of gender on the prevalence of diseases:

While there wasn't much disparity observed in the paediatrics and elderly age groups, a huge disparity was

TABLE 2: Impact of Demographic Variables on Prevalence of Diseases in Faridabad

Demographic variables,			TOTAL-744
Age	No of patients	%	Prevalence of disease
≤13	212	28.4	Biliary, PUO, Pneumonia & malnutrition
13–65 years	437	58.7	DM2, Hypertension, Anaemia, Calcium Deficiency, Malnutrition, Skin Disorder, Gastritis
≥65 years	95	12.9	CA, ICH, TB, Arthritis, COPD, CAD
Sex			
Male	228	52.1	Gastro, DM2, hypertension
Female	209	47.9	Malnutrition, Gastritis, Anaemia
Education			
Illiterate	721	96.9	-
Literate	23	3.1	-
Habitat			
Urban	440	60	DM2, Hypertension, Gastritis, Anaemia, Calcium deficiency, B12 deficiency, CAD
Semi-Urban	171	23	Gastritis, Anaemia, Calcium deficiency, B12 deficiency,
Rural/slum	126	17	Gastritis, Tuberculosis, Hypertension, Polio etc

observed in the age category of 13-65 years. Female subjects were found to have a disturbingly high prevalence of nutrition deficiency, illnesses like calcium deficiency, anaemia, B-12 deficiency etc. indicating neglected diets of most homemakers while males were found to have a good percentage of diabetic patients alongside hypertension. The only disease prevalent in both genders of this category was gastritis which, as mentioned earlier, is indicative of poor dietic habits with higher consumption of simpler carbohydrates in meals.

iii. Impact of education on the prevalence of diseases:

With a vast majority of 96.9% (721) of subjects coming under the illiterate category, it is evident that the educational background of the subjects did play a very important role in these diseases. Their disbelief in medical practices and inability to comprehend evident health issues were a major key to their delayed treatment. It is suggested that they must be educated on healthcare issues like smoking hazards, tuberculosis, cancer treatments, immunisation etc to help improve community health.

iv. **Impact of habitat on the prevalence of diseases:**

Notable observations of this study showed high frequencies of DM2, Hypertension, Gastritis, anaemia, Calcium deficiency, B12 deficiency and CAD which can be attributed to poor lifestyles in urban localities. Semi-rural areas had a higher prevalence of nutrition deficiency diseases indicating poor dietic habits while diseases prevalent in rural areas were mostly eradicable through proper education and immunisation.

CONCLUSION

The present results showed that the prevalence of biliary diseases, like acute hepatitis, was quite prevalent in children, which can be attributed to the low percentage of vaccinated individuals (3.3%) with 13% of children partially vaccinated. Women and children were more susceptible to malnutrition and anaemia, while men and women below 65 years were seen to have a higher prevalence of DM-2, Hypertension and gastritis. Many elderlies were found to have a history of ICH and persistently high blood pressure.

SUGGESTIONS

1. It is thus suggested that widespread implementation of preventive and therapeutic strategies should be adopted by healthcare professionals through the arrangement of awareness camps, patient group meetings and the use of social media. this can help eradicate chronic cases of heart disease, tuberculosis, diabetic mellitus, cancer, and malnutrition. Widespread awareness of these public health issues greatly influences preventive consciousness among the people.
2. Celebrating the “National Anaemia Awareness and Treatment Day” with countrywide participation of health care personnel to target the vulnerable groups especially the pregnant women and teenagers of the country would assist them to consciously select their dietic habits.
3. The basic reason for iron deficiency as observed in Haryana is due to the lack of awareness & high intake of simple carbohydrates in their diet, ignoring iron-rich foods in their meal. Since, recommended daily intake for iron is higher in pregnant women, it is recommended that they consume fruits and vegetables such as mushroom, cauliflower leaves, beetroot, potatoes, broccoli, spinach, soybeans, watermelon, pomegranate and vitamin C-rich fruits like apples, strawberries, lemon, oranges etc. as it enhances absorption of iron. Iron supplements can also be taken by such individuals.
4. It is also suggested that medical counsellors visit families to increase awareness among them, tell them about hygienic, healthy living styles, and habits; love and care for the elders; educate parents and assist children to take full-term vaccination at birth and subsequent buster dose at the appropriate gap for children.

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