

Analysis of Health Management Practices in Pakistan between 1998 to 2008

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Abstract- This study analyses the health management practices of Pakistan during the years 1998-2008. The objective of the study is to provide business analysis for the improvement of health structure in Pakistan. Various variables such as number of hospitals, maternity & child Health centers, Rural Health Centers, TB Centers, number of Beds available, number of persons per bed, number of registered doctors and dentists, population per doctor and dentist, expenditure on development and non-development areas, and the average consulting fee of doctors are analyzed. The study is descriptive in nature and depends upon the historical data which is mined from the economy survey of Pakistan website. Different charts such as Pivot chart, Scatter plot and Times series are used to provide better analysis for the study. The findings denote that in general, the health structure of Pakistan is poor and rural areas are poorer to have health facilities, although there has been an improvement in the health structure as the ratio of dentist/doctor to patient has improved during this period.

I. INTRODUCTION

Pakistan health facilities and health indicators are generally poor especially in the rural areas. Out of 1000 infants 76.6 persons of them die and the mortality rate under age 5 is 10.1 %. Malaria incidence is 0.75 per 1000 persons, whereas, TB incidence is 181 persons per 100,000. The health expenditure has been very low and not sufficient to provide good health to people. For instance the development expenditure was Rs. 14.272 billion for the year 2007-08, and the current expenditure was. Rs. 3.791 billion [1] Better health contributes to the productivity of the labor force, to the economic better-off and ultimately leads to better human life. To attain better, skilful, efficient and productive human capital resources, governments subsidize the health care facilities. Besides the nature of the existing circumstances of the human resource, any marginal change in public sector spending on health services may have positive impact on the human capital and economic growth. [2]

Marginalization, illiteracy, class or caste status, and gender factors are the indicators of urban poverty. Cities also have "relative inequality," where poverty is not absolute but rather is measured by the opportunity and resource difference between "haves" and "have-nots" living close to each other. Social and economic heterogeneity weakens urban poor communities. A majority of urban poor households are headed by women who must earn a living. This situation affects the health and development of small children who are often among the workforce. [3]

The private health centers exist in the urban areas which are of much importance. These centers are available even in the medium sized cities one can find all types of health centers ranging from traditional healers to the sellers of drugs in the streets to well trained surgeons. As developing countries engage in health-sector reforms and continue to decentralize their political and health systems, they need to provide allowances for the thinner resources and weaker capabilities of the urban areas. [4]

According to the research on district health system and experiences and prospects in Africa the health related-initiatives such as traditional birth attendance, health committees, and traditional healings need the support of the nearest health centers and dispensaries. This approach may be useful to continue in the rural areas which are without health facilities. [5]

Population aging is determined almost entirely by the decline of birth rates and mortality rates. A population begins to age when there are fewer children and adults longer life for adults, resulting smaller number of children and youth and progressively larger cohorts of older people. At the early stages of demographic transition, a decrease in infant and childhood mortality results in more children and a younger population. [6]

The health services need to be improved for the rural elders. Health problem of the elders are complicated since they may be the result of physical, psychological and social problems in their past life. The type of the service they need may not be specialized in a hospital. It may be less costly and effective to build community health centers which deal the problems associated with aging. [7]

Urban in comparison to rural residence is a vital health determinant over time and across countries. This difference by type of residence may depend on in urban and rural communities, or a combination of both individual and community factor. [8]

II. RESEARCH METHODOLOGY

This study analyses the health structure of Pakistan in last 10 years starting from 1998 to 2008. For this purpose various variables are selected for analysis. The data for these variables is mined from the economic survey of Pakistan website. For the better analysis some statistical techniques such as Pivot chart, Scatter plot and Time series are used. The findings and conclusions are the result of the various inferences of variables in different years.

III. HOSPITALS AND RURAL HEALTH CENTERS

A cursory glance at the distribution of health facilities in Pakistan gives a startling picture: despite the fact that half of Pakistan’s population lives in rural areas, most of the medical personnel and health facilities are found in the cities. For example maximum number of the hospitals in the country is located in rural areas and in 2007 only 8,574 beds are available to a population of 80 million. 85 per cent of all practicing doctors work in the cities, which come to a favorable doctor-population ratio of 1:1801 for the urban areas of Pakistan. Clearly, high priority is given to hospitals, medical colleges and curative services in urban areas, while primary healthcare and rural health service are ignored which has led to a high rural-urban disparity in health care resulting in rapidly increasing poverty level in rural areas during the last decade.

The sum of hospitals in urban and sum of rural health centers are graphically displayed in the figure: 1.

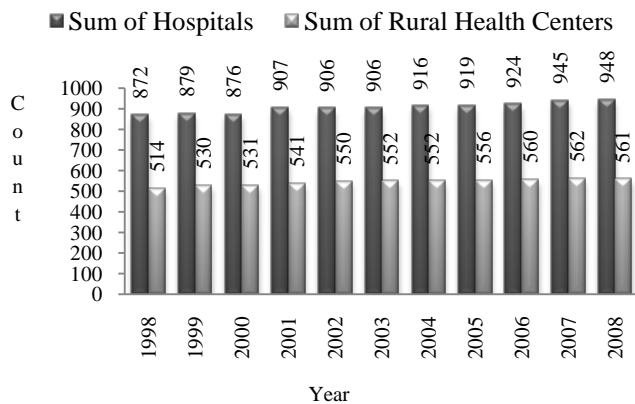


Figure: 1 Hospitals and RHCs

The figure: 1 shows that:

- a) In the last 10 years the RHC has increased 47 units which are lesser than 76 units of hospitals increased in the urban areas. Although half populations of Pakistan live in rural areas, they are less facilitated than the urban inhabitants. This is because of the government units, official employees and rich people who enjoy more health facility than 80 million poor people living in the rural areas.
- b) Population growth according to ministry of health Pakistan was 1.9% in 2007-08, whereas, the growth of hospitals was nominally positive 0.316% which is no compare to population growth. Ironically, the RHC had a fall of 0.178 % in the same period which means the number of RHC decreased in 2008 and rural inhabitants had lesser access to hospitals as their population increased.
- c) In 2002 and 2003 the number of hospitals, in 2003 and 2004 the number of RHC has not changed which is due to no further expenditure in this regard or construction of hospitals and RHC were in process but not finished in these years.

- d) The figure shows that the half population of Pakistan in urban had enjoyed more access to hospitals than rural inhabitants who still remain very poor in health comparatively.

IV. EXPENDITURE ON DEVELOPMENT AND NON-DEVELOPMENT AREA

Being a developing country, Pakistan spends very little on the provision of health services. Although public health expenditure increased by 430 percent during 1970-78, the rate of change declined after that. How changes in health spending affect the health status of a nation is an important issue. Developing countries, where 78 percent of the world population lives, spend only 10 percent of the total world health expenditure. The shares of health expenditure in gross national product are also significantly different across regions. In 1991, developing countries spent only 4.7 percent of their GNP on health, whereas the ratio was 9.2 percent for established market economies. Furthermore, per capita health expenditure in Pakistan is only 1/10 of the health expenditure in Sub-Saharan Africa, the poorest region in the world. Pakistan health indicators are poorer than the low-income countries such as India, Bangladesh, China and Sri Lanka. The poor outcome in health sector is mainly due to the ineffective delivery of services as well as the low spending on the health sector in Pakistan, which remained very low relative to other developing countries. Figure: 2 portrays the spending on health i.e. expenditure on development and non-development purpose.

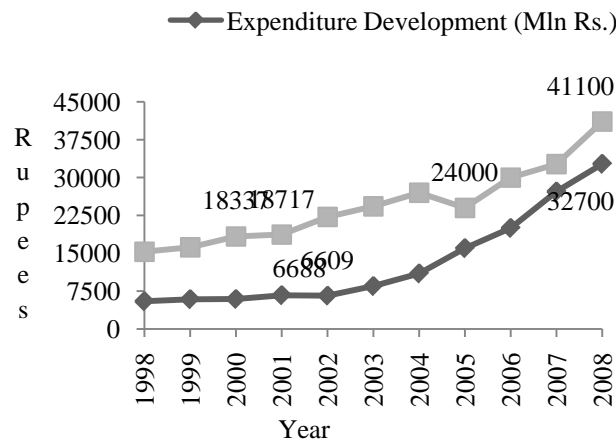


Figure: 2 Exp. on dev. and non-dev.

According to the above figure:

- a) The non development health expenditure has gradually increased during 1998 to 2008 and stood 41,100 million rupees in 2008. The only years the non development expenditure decreased were 2001 and 2005 which was due to government less spending in this area and allocating more fund to other health structures such as hospitals and RHC (figure: 1), number of beds (table:1), number of doctors and dentists registered (table:2).
- b) Government has constantly spent more on the health development area which stood 32,700 million rupees in

2008. The health expenditure slightly fell 79 million rupees which was due to overall decrease of health expenditure by Government as % of GDP which fell from 0.58% to 0.57%.

- c) The government spent more on non-development sector as compared to development sector. But overall expenditure on health has been very poor as compared to the other developing countries that spent 4.7 % of their GDP. We can say that there is no increase in expenditure on the health if we consider the time value of money.

V. MCH AND TB CENTERS

Although Pakistan health indicators improved over time but its pace has been very slow. Maternal mortality rate is also high at 350-435 per hundred thousand births, largely because 78 percent of births take place at home, under the care of traditional birth attendants. The child mortality rate was 90 per thousand in 2007, and proportion of under-5 malnourished children is 39; about 10 million children under five years are malnourished resulting in 61 percent being stunted, 39 percent being under weight and 9 percent being wasted. [10]

The country's health indicators depict a dismal picture when compared with other countries at the same level of development. Tuberculosis (TB) is highly prevalent in Pakistan. The estimated incidence of TB is around 250,000 per year in Pakistan: In fact, Pakistan ranks 6th among the 22 high burden countries of TB in the world. The Pakistan government has therefore given high priority to TB control. It has declared TB as national emergency in 2001.

The TB epidemic could become much worse in the earthquake affected areas. The appalling living situations are unfortunately favorable conditions for the development and spread of TB. Interruption of TB care could result in the increase of TB cases, particularly in an incurable form of multi-drug resistant TB. When the earthquake occurred, around 7,000 people were receiving TB treatment in the affected areas. [9]

To suppress the above problems the maternity & child health centers and TB centers are created that provide services to their concerned patients.

The Figure: 3 display the number of MCH and TB centers progression in the last decade (1998-2008) in Pakistan.

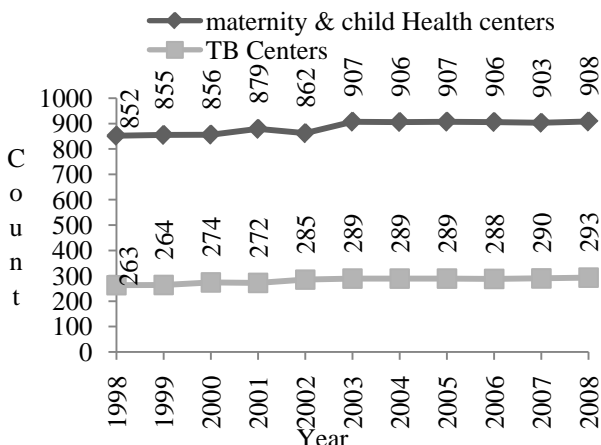


Figure: 3 MCH and TB centers

The following inferences are drawn from the above figure:

- a) During the 10 years (1998-2008) 30 TB centers were constructed. The TB center creation has been progressive with slight variation in different years. For example, despite the decrease in total health expenditure by the Government, in 2002 the number of TB centers raised 13 units which were due to earthquakes in the year 2002, the increased number of people infected by TB and the construction of some TB centers which were finished in this year. In 2006, the number of TB center decreased by one unit as result of decrease in health expenditure from 0.57% to 0.51% of GDP.
- b) The number TB center has been insufficient. On average the number of TB center has increased 3 units each year whereas, the number of incidence to TB is around 250,000 each year (WHO) that's 83,333 patients per TB center. It's far difficult for one TB center to provide service to that huge number of patients.
- c) Similarly, the number of MCH has increased 56 units in 10 years (1998-2008) which is 5.6 centers per year. In 2002 and 2006 MCH has decreased as the overall health expenditure fell.
- d) The number of MCH has been quite less and unable to provide service to all patients who refer to these centers because the number of births each year has been very large. For example, 'in 2008 the population growth was 1.8 %. Of total 159060000, 2512456 births took place in 2008, on contrary, on average, 5.6 MCH were constructed in 2008 which is very nominal and can't suffice the new births. One reason that has lightened the load on MCH is that more than 70% of the births take place at homes. But still the MCH service production is poor enough.

VI. TOTAL BED AND POPULATION PER BED

The status of health in Pakistan is characterized by the high population growth rate, high maternal and infant mortality which was 72 in 2007 per thousand live births.

Although Pakistan is one of poor countries in terms of health among the developing countries, as a young country it has been trying to provide health facilities. The health structure has increased since 1960. For example, since 1995 the number of hospitals' beds has increased more than fourfold. Similarly, the number of population using one bed has fallen a quarter. The number of hospital beds and population per bed is shown in table: 1. Figure: 4 portray their co-relation.

Table: 1 Total bed and population per bed (1998-08)

Year	Total Bed	Population per bed
1998	90659	1440
1999	92174	1448
2000	93907	1456
2001	97945	1427
2002	98264	1454
2003	98684	1479
2004	99908	1492
2005	101490	1483
2006	102073	1508
2007	103285	1544
2008	103037	1575

Source: Pakistan Economic Survey

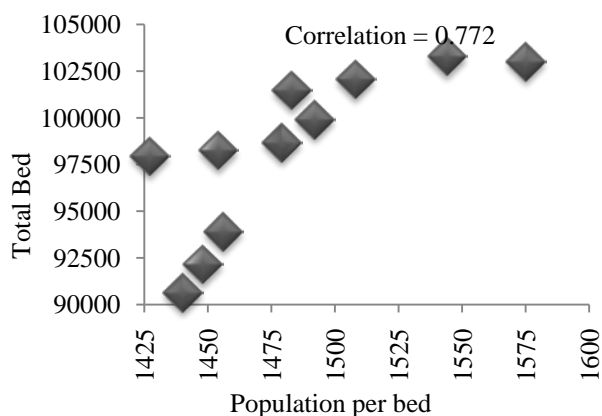


Figure: 4 Total bed and population/bed

From the above figure and table we can draw the following inferences:

- Both populations per bed and number of bed have increased. The increase in the number of population using each bed, decreases access to beds for patients that's why more beds are required to facilitate the patients conveniently.
- As listed in table: 1 and figure: 4 in the last decade (1998-2008), the number of population using one bed has increased from 1440 to 1575. The access to beds has decreased for patients, though the number of beds has increased. Unlike some health facilities, in 2001 and 2005 the number of population per bed has decreased which resulted from higher number of beds in those years and lower population growth.
- On average, each year 1238 beds have been added to total number of beds. This was to facilitate the additional people added to population each year.
- Unfortunately, the health has not improved in this regard as the population growth for example in 2008 was 1.8% and the growth in the number of beds was 1.7% in 2007 and - 0.24 % in 2008.
- In 2008 the number of beds has decreased due to dispose off and breakage of some beds.

VII. REGISTERED DOCTORS AND DENTISTS

The health conditions in British India, prior to the partition of subcontinent tell a grim story of neglect. Later, from the partition What Pakistan inherited was worse than India. At Independence Pakistan only had 1,200 doctors each meant for as many as 60,000 people. It was a vast landscape of filth, disease, malnutrition and mortality under-lined by virtual absence of resources for relief or remedy. The current situation shows very poor performance of Pakistan in health sector, although, the health structure has significantly improved compared to the time of independence. As of 2008 statistics there were 133,956 doctors which are 111 times more than the time of independence. 9012 dentists were registered in 2008 which is 4506 times more than the only 2 registered dentists in 1962. The number of registered doctors and dentists are shown in the table: 2 from 1998-2008 and similarly, their co-relation is drawn in figure: 5.

Table: 2 registered doctors and dentists (1998-2008)

Year	Registered Doctors	Registered Dentists
1998	83661	3434
1999	88082	3857
2000	92804	4165
2001	97226	4612
2002	102611	5058
2003	108130	5531
2004	113273	6128
2005	118062	6734
2006	123169	7438
2007	128076	8215
2008	133956	9012

Source: Economic survey of Pakistan.

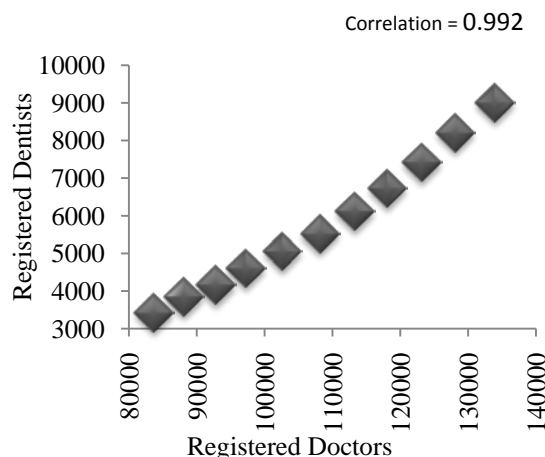


Figure: 5 Registered doctors and dentists

The following results are drawn from table: 2 and figure. 5:

- a) Registered doctors and dentists have increased every next year during 1998-2008. The doctors in 2008 have increased 1.6 times. This change has been significant for the registered dentists that have increased more than 2.6 times during the same period.
- b) As of 2008 statistics, the number of doctors was approximately 15 times more as the registered dentists in the country. This means that large number of patients needs medical services other than dentistry. The medical colleges produce doctors 15 times more than dentists and more budgets are allocated for this to happen.
- c) The increase in the number of dentists and doctors help the patients to meet doctors and dentists more personally and have easier and more access to dentists and doctors to help themselves at the time of emergency.

VIII. DOCTOR'S CONSULTING FEE

Pakistan as a developing country has a low per capita income. In fiscal year 2006-2007 the per capita income in Pakistan was \$ 878 which rose to \$1,027 in fiscal 2007-08, On the other hand poverty rate is high in Pakistan which leads to ill health. About 20% of population lives below the international poverty line. A recent health survey shows that 55 percent of the poor and 65 percent of the extremely poor were ill in Pakistan. Thus, to provide the access to the health and doctors, the fees for consulting doctor has not been good enough for poor people. In last four decades (1973-2003) the average doctor consulting fee was 37.1 rupees which has increased to average 56.6 rupees in the 5 years of 2004-2008.

The progress of doctors' consulting average fee for the years 1998 to 2008 is depicted in figure: 6 below.

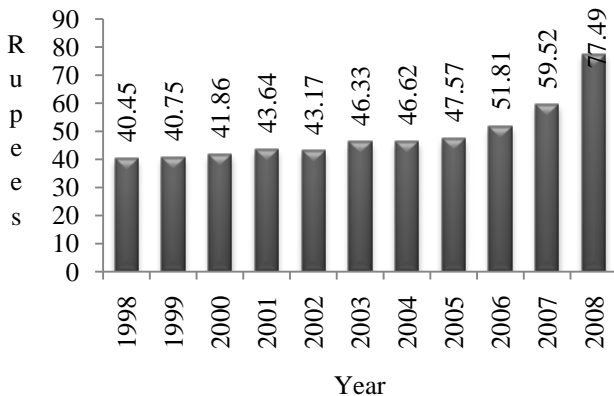


Figure: 6 Average doctor's consulting fee

In reference to above figure, the following interpretations are drawn:

- a) The doctors' consulting fee has approximately doubled during the last decade (1998-2008), increasing from 40 rupees to 77 rupees.
- b) The highest variance in consulting fee was in 2008 when it rose from 59 rupees to 77 rupees which was due to higher inflation rate and economic turmoil.
- c) The average fee for 10 years was round about 54Rs. Although it was affordable for richer class of society, the 20% population who were under poverty line could hardly afford this amount. And these are the people who more than half were infected to some type of diseases.

IX. POPULATION PER DOCTOR AND PER DENTIST

The population growth rate in Pakistan is high. As of 2010 it's the sixth populous country in the world having 169,477,000 populations behind Brazil and ahead of Russia. The number of doctors and dentist in 2004 were 113,273 and 6,128 respectively. This number is quite less compared to Russia who had 3,190,000 dentists in 2004. In the fiscal year 2007-2008 the population growth rate was 1.9 percent whereas, in 2008 the growth rate of doctors and dentists were 4.38 % and 8.088 % respectively. [1]

There were 1,212 persons for each doctor and 18,010 persons per dentists. In the last 5 decades (1960-2008) the number of doctors and dentist produced by the medical colleges has dramatically increased which has surpassed the population growth rate and decreased the number of persons treated by each doctor and dentist. The population per doctor and dentist is displayed in the in figure: 7.

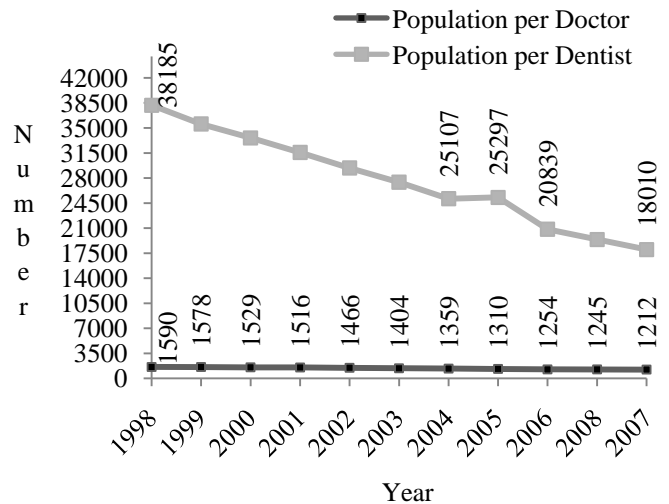


Figure: 7 Population per doctor and per dentist

The above figure shows that:

- a) The number of patients entertained by one doctor has gradually decreased within the years 1998 to 2008. This fact shows that each year more number of doctors were produced and the growth in the number of doctors were more than population growth.

- b) The decrease in population per doctor helps people consult doctors more conveniently within lesser time. For example; in 1998, 1590 patients had to meet only one doctor whereas, in 2008, 1212 patients could have one doctor to meet.
- c) Similarly, the number of population treated by each dentist has continually decreased within the period of 1998 to 2008, with only exception in the year 2005 when population per doctor increased by 190 persons, even though, the number of doctors increased by 4,789 personnel (see table: 2). The sole reason for this was the higher growth of population which rose from 1.98% in 2004 to 2.03% in 2005 (CIA world fact book).
- d) On average, within the last decade (1998-2008), each year, the number of people per doctor was 1,546 whereas, the people per dentist was 30,443 which was approximately 20 times more than population per doctor. This means that patients have more access to doctors rather than dentists and the number of dentists is not sufficient enough to meet the requirement of large population.

X. FINDINGS

- 1) The rural inhabitants who made half population of Pakistan had very poor health conditions and had far lesser access to health centers in comparison to urban residents.
- 2) Though the health expenditure on development and non-development sector has continually increased, it has been quite lesser than other developing countries.
- 3) Despite the increase of TB centers during 1998-2008, they have not been sufficient enough for the 250,000 incidence yearly.
- 4) The increase of MCH was not sufficient for the large number of births or high population growth.
- 5) The increase in population growth has been larger than increase in the number of beds which resulted increase in the number of population per bed. This means that larger number of population should use only one bed. The health performance has declined in this regard.
- 6) Although the increase in the number of dentists in the period 1998-2008 was 2.6 times and more than the increase in the number of doctors which was 1.6 times, the number of doctors has been dramatically more than the dentists operating in the country. Which means patients could more conveniently meet doctors.
- 7) There has been an improvement in the health structure because the patients per doctor and per dentists have decreased in number. The number of patients treated by a doctor was 20 times lesser than patients treated by a dentist which means that dentists in compare to doctors were insufficient in the country.

XI. CONCLUSION

The health facilities in Pakistan has improved and increased in number each year but this was surpassed by the population growth. Thus, the facilities have not been enough to meet the requirement of large population. People especially in rural areas faced more problems of poor health than urban inhabitants. Similarly, there has been increase in expenditure on health structure but remained insufficient for the population who grew faster than the increase in the expenditure. Furthermore, doctors each year has increased in larger number than the dentists. The increase in doctors and dentists number was more than the growth of population which decreased the population throng for each doctor and dentist for treatment.

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