

Collaboration Patterns among SAARC countries in the area of Medicine: Status and Issues

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Abstract:

The South Asian Association for Regional Cooperation (SAARC) was established when its Charter was formally adopted on December 8, 1985 by the Heads of State or Government of Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. SAARC thus provided a platform for the peoples of South Asia to work together in a spirit of friendship, trust and understanding. Since 12 years of SAARC establishment in 1985 an attempt has been made to study the present status of collaboration and cooperation among these countries in Health sector. The following issues are discussed in the study: The pattern of publication of SAARC countries in area of medicine and Collaboration among SAARC countries. The purpose of the study is to show that studies reported from these countries are focused more towards the issues being discussed in developed countries. The SAARC countries in spite of having common health problems and often affected by same kind of natural calamities and epidemics do not attempt for a common minimum program to overcome the same. SAARC countries continue to be guinea pigs for the MNC's. First it was the tropical diseases and now it is in cases such as Cancer, HIV/AIDS, diseases relating to pollution, etc.

1. Introduction: SAARC its origin

The South Asian Association for Regional Cooperation (SAARC) [1] was established when its Charter was formally adopted on December 8, 1985 by the Heads of State or Government of Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. SAARC thus provided a platform for the people of South Asia to work together in a spirit of friendship, trust and understanding. These countries comprise an area of 5,127,500 km² and a fifth of the world's population. Afghanistan has recently joined. The aim was to accelerate the process of economic and social development in Member States.

At the inception of the Association, the Integrated Program of Action (IPA) consisting of a number of Technical Committees (TC's) was identified as the core areas of cooperation. Over the period, number of TC's were changed as per the requirement. The current areas of cooperation under the reconstituted Regional Integrated Programme of Action which is pursued through the Technical Committees covered are:

1. Agriculture and Rural Development;

2. Health and Population Activities;
3. Women, Youth and Children;
4. Environment and Forestry;
5. Science and Technology and Meteorology;
6. Human Resources Development;
7. Transport.

2. *Aims and Objective*

India's strength among the SAARC countries lies in the establishment of large number of R & D institutions and their research output in which it competes not only with SAARC nations but also with many developing countries. Health and population problems being one of the major areas of commonality, needs strong cooperation. This paper discusses the present status of cooperation and collaboration among the SAARC countries after 12 years of its inception. Papers published during 1997 & 2002 from these countries and Indexed in PubMed database have been used for the study and the following issues are discussed:

1. The pattern of publication of SAARC countries in areas of medicine.
2. Total contribution of SAARC countries in different areas of medicine.

This is a pilot study and analysis for only two years (1997) & (2002) was carried out. The authors propose to carry out a more extensive study of the SAARC countries for a longer period. The purpose of the study is to highlight that these countries are focused more towards the areas being covered by developed countries. The SAARC countries having common health problems and often affected by same natural calamities and epidemics do not attempt for a common minimum program to overcome the same. SAARC countries continue to be guinea pigs for the MNC's first it was in the case of tropical diseases and now it is in cases such as Cancer, HIV/AIDS, Metabolic Diseases, Tuberculosis and Diseases relating to pollution, etc. Apart from these, attempts have been made to reflect the collaboration pattern of the authors and the areas in medicine reported by them through publication pattern of these countries.

Table 1: Health Indicators of SAARC Countries

Health Indicators	Year	India	Pakistan	Bangladesh	Bhutan	Nepal	Maldives	Sri Lanka
Total population (000), 2003	2002	1,065,462,000	153,578,000	1,46,736,000	2,257,000	25,164,000	318,000	19,065,000
Annual population growth rate (%), 1993 - 2003	2002	1.7	2.6	2.2	2.5	2.3	3.0	0.9
Dependency ratio (per 100), 2003	2002	61	82	70	84	78	85	46
Percentage of population aged 60+ years, 2003	2002	7.8	5.7	5.1	6.5	5.9	5.2	10.3
Child mortality m/f	2002	85/90	98/108	68/70	85/85	80/85	67/77	17/13

(per 1000)

Adult mortality m/f (per 1000)	2002	283/213	225/198	251/258	261/202	290/284	165/146	235/120
GDP per capita (Intl.\$ 2002)	2002	1,568	1920	1734	1700	1219	5301	3540
Total health expenditure per capita (Intl \$, 2002)	2002	96	62	54	76	64	307	131
Total health expenditure as % of GDP (2002)	1997	5.3	3.8	2.9	3.6	5.4	6.5	3.2
	2002	6.1	3.2	3.1	4.5	5.2	5.8	3.7
General Government expenditure on health as % of total expenditure on health, 2002	1997	15.7	27.2	33.7	90.4	31.3	81.9	49.5
	2002	21.3	34.9	25.2	92.2	27.2	87.7	48.7
General Government expenditure on health as % of total general government expenditure, 2002	1997	3.2	3.8	5.6	10.1	9.3	10.9	6.0
	2002	4.4	3.2	4.4	12.0	7.5	13.3	6.0
Private expenditure on health as % of total expenditure on health, 2002	1997	84.3	72.8	66.3	9.6	68.7	18.1	50.5
	2002	78.7	65.1	74.8	7.8	72.8	12.3	51.3
External resources for health as % of total expenditure on health	1997	2.3	2.7	10.0	32.1	10.6	4.2	3.2
	2002	1.0	1.8	13.5	18.7	9.0	3.4	1.9
Social security expenditure on health as % of general government expenditure on health, 2002	1997	NA	43.9	0.0	0.0	0.0	0.0	0.0
	2002	4.6	42.9	0.0	0.0	0.0	23.8	0.0
Papers published (Pubmed)	1997	2895	150	86	0	34	0	59
	2002	5914	252	107	0	59	0	85

Health and Population Activities (the theme of this paper) is one of the key issues figuring in the cooperation among the SAARC countries. The health indicators (Table 1) reflect lot of commonality among these countries in terms of population growth, mortality rate and in, input to health sector in terms of expenditure especially among nations bordering India. Maldives and Sri Lanka are few exceptional cases reflecting different social and health indicators among the SAARC countries.

South Asia region [3] is one of the most populated area and has about 22% of world's population, with 33% births annually, about 37% of annual global child mortality (CM), and the second highest maternal mortality ratio (MMR). Among the SAARC countries India has

the highest proportion of births .Where as Sri Lanka has the highest female literacy of 87%, followed by India with 38%. Female literacy for the whole region together is only 36%.

Pakistan

Pakistan is a country with a population growth rate of 2.6 , the highest among the SAARC countries and has a quite closed health policy system. Most of the R&D on health issues are reported from medical educational institutions and five research institutes namely: Central Drugs Laboratory; Pak Medical & Research Council, under Ministry of Health Islamabad; Pakistan Medical & Dental Council, Islamabad; Pakistan Nursing Council (NIH) Islamabad; Pharmacy Council of Pakistan, Islamabad; and PIMS Islamabad.

India

The health sector in India is characterized by: a government sector that provides publicly financed and managed curative and preventive health services from primary to tertiary level, throughout the country and free of cost services to the consumers (these account for about 18% of the overall health spending and 0.9% of the GDP), and (ii) a fee-levying private sector that plays a dominant role in the provision of individual curative care through ambulatory services and accounts for about 82% of the overall health expenditure and 4.2% of the GDP. India has a long history of biomedical research including health systems research. In several instances research results have directly influenced programme policies or led to modifications in programme strategies. These areas include emerging health problems like HIV/AIDS, other important communicable diseases like tuberculosis, leprosy, filarial & diarrhoeal diseases, malaria, , japanese encephalitis, non-communicable diseases like cancer, cardiovascular diseases, metabolic disorders, contraception, MCH and nutrition *etc.* Efforts have been made to develop a bibliographic database on HSR. With WHO support, nearly 400 HSR studies have been abstracted and a database was developed by the NIHFWS in 1996 and efforts are on to cover other areas also.

Nepal

A National Health Policy (NHP) in Nepal was formulated in 1991 with the objective of enhancing the health status of the population, 86% of which is rural. The NHP is a comprehensive policy that addresses service delivery as well as the administrative structure of the health system. The 8th Health Plan (1992-1997), 9th Health Plan (1997-2002) and Second Long Term Health Plan (SLTHP) (1997-2017) were developed in keeping with the NHP. The Nepal Health Research Council is the main body for planning and coordinating research activities related to bio-medical and operational research. The provision of grants is a means for promoting young researchers, research programs of the institutions of medical education and activities of selected NGOs specializing in research.

Maldives

In Maldives health is considered a basic right of every citizen and the government emphasizes the goal of *health for all* based on the primary health care approach. The island nature of the country poses a major challenge to providing equitable access to health care. A number of researches have been carried out in the recent past, mainly to assess prevailing situations in reproductive health, nutrition and some other disease conditions, along with assessing knowledge, attitude and practice. Almost all these researches have been carried out with expatriate technical assistance, as the country does not have appropriately trained

personnel. Focus has not been given to clinical based research mainly due to lack of appropriate resources and manpower. However, this is an area the country needs to focus.

Bhutan

Bhutan has enjoyed peace and political stability since the present line of hereditary monarchs was established in 1905. Bhutan's approach to health care has been the delivery of an integrated health service package to its population scattered across a difficult mountainous terrain. It has made significant strides after adopting the primary health care approach in 1978. Substantial financial allocation has been earmarked for development of research capacity within the Health Division. Future strategies will also include collaboration with research institutes in other countries.

Sri Lanka

Sri Lankan policy, irrespective of the government in power, has always regarded education and health as crucial to socioeconomic development, while the concept of equity and social justice in favor of the underprivileged has also been a feature of state policy. Institutions and organizations involved include the National Institute of Health Sciences which is the focal point for HSR, the Medical Research Institute which is mainly involved in biomedical research, the Faculties of Medicine of the Universities, operational units of the Ministry of Health such as the Family Health Bureau, Epidemiology Unit, etc., professional organizations such as the Sri Lanka Medical Association, other ministries and institutions, NGOs and the Traditional Medicine Institute.. The main constraints have been inadequate funding, minimal health research utilizing a multidisciplinary and intersectoral team approach, and the absence of a mechanism for adequate dissemination of information and utilization of research findings.

3. *Methodology*

For the study we downloaded papers indexed in PubMed [2] for the year(s) 1997 & 2000 , from the SAARC countries- Pakistan, India, Nepal, Maldives, Bangladesh, Sri Lanka, and Bhutan. The Pubmed covers most of the core primary journals published from these countries . PubMed is available via the NCBI Entrez retrieval system, and has been developed by the National Center for Biotechnology Information (NCBI) at the National Library of Medicine (NLM), located at the National Institutes of Health (NIH), USA. Entrez is the text-based search and retrieval system used at NCBI for services including PubMed, Nucleotide and Protein Sequences, Protein Structures, Complete Genomes, Taxonomy, OMIM, and many others. PubMed also provides access and links to the other Entrez molecular biology resources.

4. *Analysis and Discussion*

As mentioned earlier this is a pilot study (to be extended later) to observe the pattern of papers published from SAARC countries. Almost all the countries are geographically placed as the neighbors of India. Any comparison among these countries carries no meaning as R&D activities in most of the smaller nations (Bhutan, Maldives) are either missing or are at its infancy . The year selected for the study coincides with the data reported by WHO statistical health figures for the year 1997 and 2002 [3].

Growth of SAARC Publications

Table 2 indicates that in 1997, 5312 total papers were reported by other nations on SAARC countries while 3224 papers were published by SAARC researchers in health related areas. A total of 6417 papers were published by SAARC countries and 10036 total papers were published on SAARC countries by other nations in 2002. The rise in total papers on SAARC countries was at an average of 47.1% and in case of papers by SAARC countries only, it was 47.9%. A substantial increase in the publication activity by all the SAARC countries, from 1997 to 2002 was witnessed except for Bhutan and Maldives.

On Bhutan or by Bhutanese no papers were published during 1997 or 2002, it could be presumed as a result of lack of any research facilities in medicine. In Maldives only one paper was published in 2002. The maximum rise in total papers was seen in Nepal (52.8%) followed by India (48.2%) while after Bhutan the least rise was seen in Bangladesh.

Table 2: Trends of papers published from SAARC countries (1997, 2002)

Countries	Total Papers on SAARC		Papers by nations of SAARC		% increase of Total papers over five year period		% increase of Papers over five year period	
	1997	2002	1997	2002	1997	to 2002	1997	to 2002
1. Pakistan	268	430	150	252		37.7		40.5
2. Bangladesh	143	188	86	107		23.9		19.6
3. Bhutan	0	1	0	0		100.0		0
4. Maldives	0	0	0	0		0		0
5. Nepal	67	142	34	59		52.8		42.4
6. Sri Lanka	96	131	59	85		26.7		30.6
7. India	4738	9144	2895	5914		48.2		51.1

International Collaborative R & D Activities on SAARC countries

Table 3 projects the total papers on SAARC countries and by SAARC countries during 1997 and 2002. Scholars from rest of the world have shown a substantial interest on health problems of Sri Lanka (61.5%) followed by India (61%) and Bangladesh (61%) during 1997, while in 2002 the focus was on Nepal (58.5%) followed by Bangladesh (43%). There is substantial percentage increase of interest in SAARC health activities over the last five years. As a result one may assume that SAARC forum has drawn attention to other forums such as ASEAN, SAF, OECD, OPEC and the developed countries. The lower percentage of interest by scholars from outside SAARC on India and Pakistan during 2002 compared to 1997 may reflect strong local R&D activities. In 1997 the international collaboration with scholars of SAARC nations was 39.3% while in 2002 it decreased to 37.1%. Thus, it could be assumed that there was an increase in activities of local scholars working on SAARC health problems within the SAARC region only.

Table 3: International Collaborative R & D Activities on SAARC Countries

Countries	Total Papers on SAARC (TP)		Papers by nations of SAARC (P)		% of Papers by other Countries	
	2002	1997	2002	1997	2002	1997
1. Pakistan	430	268	252	150	41.4	56.0
2. Bangladesh	188	143	107	86	43.0	60.1
3. Bhutan	1	0	1	0	100	0
4. Maldives	0	0	0	0	0	0
5. Nepal	142	67	59	34	58.5	50.8
6. Sri Lanka	131	96	84	59	35.1	61.5
7. India	9144	4738	5914	2895	35.2	61.0

Total **10036** **5312** **6417** **3224** **37.1** **39.3**

SAARC Collaboration Pattern

Table 4 indicates the pattern of collaboration among the scholars of the respective SAARC nations which may be referred as national collaboration for the year 1997 and 2002. In 1997 a total of 2852 (85.3%) co-authored papers were reported and 6050 (94.3%) were there in 2002. The single authored papers were 14.7% in 1997 and reduced to 5.7% in 2002. Most of the decline in single authored papers and the drastic increase in co-authored papers was as result of Indian co-authored papers with an increase from 78% to 88.1%. Similar trends were visible among other SAARC countries.

Table 4: Collaborative Papers of SAARC (2002)

Countries	Total Papers		Collaborative Papers (%)		Single Author papers (%)	
	1997	2002	1997	2002	1997	2002
1. Pakistan	150	252	85.3	92.8	14.7	7.2
2. Bangladesh	86	107	91.9	95.3	8.1	4.7
3. Bhutan	0	1	0	0	100	0
4. Maldives	0	0	0	0	0	0
5. Nepal	34	59	83.3	81.3	16.7	18.7
6. Sri Lanka	59	84	78.0	88.1	22.0	11.9
7. India	2895	5914	84.8	94.6	15.2	5.4
Total	3224	6417				

The growing professionalisation in the area of health studies is an indicator of this trend. Before coming to a major conclusion one needs to carry out a major and extensive study.

Major health Issues of SAARC Countries

Table 5 presents the analysis of the 2002 papers pertaining to health issues faced by SAARC member states. For analysis purposes five major areas of the region have been identified and further discussed. The areas have been identified through personal observations and experiences of the authors of this paper who are the bonafide citizen of one the SAARC member countries. The issues pinpointed are: Local Health, General Medical Practices, Tropical Diseases, Cancer and HIV/AIDS. The purpose is to reflect the issues that are of interest and are favorite to the scholars of SAARC countries. Pakistan (71.4%) and Bangladesh (65.4%) contribute maximum papers to local health issues while percentage share of papers on Tropical diseases problems were , Pakistan (15.9%), Bangladesh (15.0%) and Sri Lanka (13.1) . India and Nepal contributed maximum papers towards studies related to the area of Cancer and in AID/HIV. The overall contribution of India and Sri lanka was maximum papers during 2002. In General Medical Issues, the topics covered were experiments to test certain medical equipments, drug analysis, traditional and medicinal plants related experiments, etc. Sri Lanka lead (48.8%) the list followed by it. India contributed papers in all the five identified areas significantly, instead of concentrating any one of the areas being discussed here. Although India has a strong medical research base and can

certainly lead in any of the issues reflected in the study, but the present data does not support this, this may need further exploration.

Table 5 Papers published by : SAARC Countries during 2002 ,on Health Issues.

Countries	Total Papers (2002)	Local Health Problems	General Medical Issues	Tropical Diseases	Cancer	HIV/AIDS
1. Pakistan	252	71.4	9.9	15.9	2.8	0.0
2. Bangladesh	107	65.4	17.8	15.0	0.0	1.8
3. Bhutan	0	0.0.	0.0.	0.0.	0.0.	0.0.
4. Maldives	0	0.0.	0.0.	0.0.	0.0.	0.0.
5. Nepal	59	57.6	22.0	15.3	5.1	0.0.
6. Sri Lanka	84	34.5	48.8	13.1	1.2	2.4
7. India	5914	40.6	44.0	10.1	4.2	1.1

Another observation that can be made is the poor interest of the researchers in the issues relating to tropical diseases which SAARC nations are facing from time to time. Tropical diseases such as Malaria, Filariasis, Cholera, TB, etc. has not been wiped out from this part of the continent but continue to ruin the economy of these countries.

5. Conclusions

The following conclusion can be drawn from this study:

1. Health related R&D institutions in SAARC Countries, needs to be more focussed towards studies related to tropical diseases.
2. Closer cooperation needs to be established among the SAARC nations dealing with local issues and tropical medicine.
3. An extensive collaboration study of the SAARC countries needs to be carried out of wider scope, maybe for the period of 1995-2005. The international collaboration among the SAARC nations and other countries needs to be carried out in detail.
4. Pubmed subject classification should be followed for subfield studies.

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