खण्ड 42 संख्या 1 एवं 2 जनवरी से जून 2019 आई.एस.एस.एन.0253–6803
Volume 42 Number 1 & 2 January-June 2019 ISSN- 0253-6803

स्वास्थ्य एवं जनसंख्या : परिप्रेक्ष्य एवं मुद्दे

Health and Population: Perspectives and Issues

आरोग्यम् सुखसम्पदा
राष्ट्रीय स्वास्थ्य एवं परिवार कल्याण संस्थान
स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार के अंतर्गत एक स्वायत्तशासी निकाय
The National Institute of Health and Family Welfare
An autonomous organization, under the Ministry of Health and Family Welfare, Government of India
बाबा गंगनाथ मार्ग, मुनीरका, नई दिल्ली– 110067
Baba Gangnath Marg, Munirka, New Delhi-110067

Subscription

	In India	**Foreign**
Annual:	Rs. 200.00	$200 (US) including
Single Copy:	Rs. 50.00	air-mail postage
Individual Life Membership:	Rs. 2000.00	

Bank Drafts may be drawn in favour of the

Director, The National Institute of Health and Family Welfare, New Delhi

All editorial correspondences should be addressed to:

The Editor, Health and Population: Perspectives and Issues

The National Institute of Health and Family Welfare,

Baba Gangnath Marg, Munirka, New Delhi-110067, INDIA

E. mail: editor@nihfw.org

Website: www.nihfw.org (link: http://nihfw.org/WPublication.aspx?id=3)

April 2020/ 850 Copies

Design and Layout	**Hindi Translation**	**Technical Support**
Ms. Shashi Dhiman	Mr. Arvind Kumar	Ms. Anju Bala
Mr. Puranmal Meena	Dr. Ganesh Shankar Srivastava	Mr. Surender Prasad
	Ms. Kalpana Mishra	Mr. Puneet Devgan
	Ms. Monika	

खण्ड 42 संख्या 1 - 2 जनवरी - जून, 2019 आईएसएसएन0253-6803
Volume 42 Number 1 - 2 January-June, 2019 ISSN 0253-6803

स्वास्थ्य एवं जनसंख्याः परिप्रेक्ष्य एवं मुद्दे

Health and Population: Perspectives and Issues

आरोग्यम् सुखसम्पदा
राष्ट्रीय स्वास्थ्य एवं परिवार कल्याण संस्थान
The National Institute of Health and Family Welfare
(स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार के अधीन एक स्वायत्त संस्थान)
(An autonomous organization under Ministry of Health and Family Welfare, Government of India)
बाबा गंगनाथ मार्ग, मुनीरका, नई दिल्ली–110067
Baba Gangnath Marg, Munirka, New Delhi – 110067

HEALTH AND POPULATION - PERSPECTIVES AND ISSUES
[INCORPORATING NIHAE BULLETIN (EST. 1968) AND THE JOURNAL OF POPULATION RESEARCH (ESTD. 1974)]

VOLUME 42 **NUMBER 1&2** **January-June, 2019**

Health and Population:
Perspectives and Issues, 42 (1&2): 1-6/2019

Collaborative Governance for Sustainable Development of Health in India: Issues and Perspectives

A.M. Elizabeth*

Health is a prerequisite for human development. It is an essential component for the well being and quality of life of the mankind. However, the achievement in health status itself is not isolated rather it is intertwine with other social and distal determinants of healthy life like economic, social growth, water and sanitation, environment and climate change, urbanization, unhealthy trade policies and practices, health facilities and health financing, and human resources. Although, significant achievements have occurred within public health in India ever since the independence as shown by improvement in selected demographic indicators like IMR, MMR, TFR and doubling of life expectancy. But grading health of the people and the health care system across the states visage disagreement of an emerging disconnect between the complexity and iniquitous nature of problems, and the competence to address it meaningfully. The health outcomes still remain depleted when the country is compared with others with similar economic stage of development, attributed to coexistence of high prevalence of preventable diseases, low reproductive and child health status, nutritional deficiencies, chronic diseases, accidents and violence, injuries, disabilities, unbalanced health care services away from equity and affordability. Lack of public accountability, poor access to health information, lack of synergy between health research outcome and its application for development, low government expenditure on public health which has enhanced recently, and most spending on health is paid out of pocket along with expensive private health care providers which yet again mounting in cost. Individuals, who are deprived, mostly bear a disproportionate burden of death and disability. India ranks 130 among 189 countries in the latest human development Index report. Ranking of India's quality of life is 49 out of 66 with quality of life index of 121.61, health care ratio is 68.04, and the cost of living index is 23.81 (Human Development Report 2019).

As per the UN declaration to bridge the inequality and achieve the Millennium Development Goals (MDGs), and later Sustainable Development Goals (SDGs); the government of India framed the National Health Policy (2002 & 2017) and launched the National Rural Health Mission (NRHM-2005) which afterward modified to National Health Mission (NHM-2017) by incorporating National Urban Health Mission. Considerable progress has been made with new commitments under NRHM/NHM by the Central and State governments to correct some of the inequities and gap in the health care. Further, there is overlapping of programmes and financing by each state and centre in their attempt to bridge the gap of health inequities. However, the health system has to be reconfigured if the commitments under the Sustainable Development (SD) of Health are to provide the optimum benefits to the people. Further, India's economic development does not seem to shape substantial improvement in the health of the nation. It is contradictory to the general recognition that improvement in health contributes to accelerated economic growth which in turn, led to adequate investment resulting in the improvement and efficiency of the health care. But unfortunately, the country substantially could not achieve it uniformly across the various regions. The people of India are exposed to a wide variation in health care services; at one extreme, best possible health care is provided to those who can

*Research Officer, The National Institute of Health and Family Welfare, Munirka, New Delhi-110 067; E-mail: amelizabeth@nihfw.org.

afford to pay for the services even to the people from other countries under medical tourism to the other extreme, even the basic or essential service and technologies are lacking for a large proportion of the people who are poor and living in underserved and unserved rural and urban areas.

Studies and evaluation of various programmes conducted over the decades since independence list out several reasons- the health policy of the country places responsibility of the citizens' health on the government, lack of political commitment in acknowledging health as an important component for human development which is often exhibited by very low investment, feeble policy and inadequate programme implementation and monitoring, insufficient delivery of health care by the public sector, lack of involvement of community, active people participation and accountability of the programme implemented. Meanwhile, the private sector has also grown exorbitantly in an uncoordinated manner with an unregulated environment making neither the public sector nor the private sector able to provide an assured quality of care or access to services. The current century liberal market approach also resulted in the demand of redefining the role of the government, even in the health sector.

Over the years, there has been an increase in the government's fund allocation for health though the proportion remains low as compared to other developing countries. However, it has been observed that even this fund, mostly remain insufficiently used or underused or unused by the states due to lack of freedom for the state officials in flexible funding or lack of managerial expertise in implementing the programmes.

The National Health policy (2002 & 2017) emphasises on achieving the Universal Health Coverage by assuring free comprehensive primary health care services covering all the aspects of reproductive and child health, prevention of communicable and non-communicable diseases by investment in health, uniform organization of health care services, establishing inter-sectoral and multi-sectoral actions, access to viable technology, human resource development for health, encouraging medical pluralism, building knowledge base, developing better financial protection strategies, strengthening regulation and health assurance. The policy also highlights the need of governance in health for distribution of responsibility and accountability between the centre and states; recommends equity sensitive resource allocation, strengthening institutional mechanism for consultative decision-making and coordinated implementation as mechanisms to achieve it. It visualizes strengthening the Panchayati Raj Institutions to enhance their role at different levels of health governance including social determinant of health, making community-based monitoring and planning mandatory, so as to place people at the centre of the health system and development process for effective monitoring of quality of services; and for better accountability in the management and delivery of healthcare services. It focuses on increasing both horizontal and vertical accountability of the health system by providing a greater role and participation of local bodies and encouraging community monitoring, programme evaluation along with ensuring grievance redressal systems. The policy recognizes the essential of Sustainable Development Goals by highlighting the quantitative indicators with spellbound goals linked to the ongoing national efforts as well as the global strategic directions. Intervention to address malnutrition and micro-nutrient deficiencies calls for synergy of inputs from departments like women and child Development, Education, WASH, Agricultural, and Food and Civil Supplies with MoHFW in the role of convener to monitor and ensure effective integration of both nutrition-sensitive and nutrition- specific interventions for coordinated optimal outcomes.

NRHM (2005) later modified to NHM (2017) is an initiative to correct the imbalance in the health care services in rural and urban areas. It calls to actions for access to appropriate, adequate and affordable healthcare by transforming the health care system to promote equity, efficiency, effectiveness and accountability in all stages of delivery of health care by establishing an Integrated National Health System involving all the major providers in public and private sector and AYUSH system of medicine. The aspiration of Integrated National Health System is to ensure good quality health care services, reduce the financial burden of health care on the individual/family and empower people to take care of their health; and hold the health care system accountable. The central and state government considered the provision of universal health coverage by 2020 as a commitment and to implement Integrated National Health System consecutively to achieve its purpose. NHM visualizes attaining universal access to equitable, affordable and quality health care services by creating a fully functional, decentralized and community-owned system with greater inter-sectoral coordination so that wider social determinant factors affecting health are also equally addressed. Amongst the pool of strategies designed, it emphasises on decentralized planning with autonomy for local action, inter-sectoral district health plan including drinking water, sanitation, hygiene, nutrition; capacity building of Panchayati Raj Institutions, capacity building for preventive health care at all levels, health plan for each village through VHNSC, risk puling and social health insurance, promoting non-profit sector and PPP; and mainstreaming AYUSH and local health traditions. The other Departments identified for inter and intra-sectoral coordination and convergence are mainstreaming of AYUSH and revitalization of local traditions, integration with other programmes of the Ministry of Health and Family Welfare (MoHFW), National Aids Control Organization (NACO), Swachh Swasth Sarvtra, Ministry of Women And Child Development, Education department and with programmes like SABLA for preventing early age at marriage for girls, Ministry of Urban Development, Ministry of Housing and Urban Poverty Alleviation, Convergence with Jawaharlal Nehru National Urban Renewal Mission (JnNURM), Rajiv Awas Yojana (RAY), Swarn Jayanti Shahri Rozgar Yojana (SJSRY), Ministry of Human Resource Development and also Convergence with School Health Programme for Medical Examination of children and health education activities.

Considering the achievements made by the countries under the MDG, the UN has introduced the Sustainable Development Goals (SDGs). The United Nation Sustainable Development Goals 2030 are having 17 goals with 169 targets. Out of these SDGs, the goal SDG 3 focuses on health with 13 targets including four listed as means of implementation targets with a total of 26 indicators. Each target has one or two proposed indicators and these health Goal has the largest number of proposed indicators among the all the SDGs. Further, the SDG 3 emphasises on ensuring healthy lives and promote well-being for all at all ages, and to make it attainable by linkage with other eight SDGs i.e. SDG 1- End poverty in all its forms everywhere; SDG 2- End hunger, achieve food security and improved nutrition and promote sustainable agriculture; SDG 5- Achieve gender equality, and empower all women and girls; SDG 6- Ensure availability and sustainable management of water and sanitation for all; SDG 7- Ensure access to affordable, reliable, sustainable and modern energy for all; SDG 8- Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; SDG 11- Make cities and human settlements inclusive, safe, resilient and sustainable; and SDG 13- Take urgent action to combat climate change and its impacts.

The Sustainable Development (SD) of health expects greater synergy across sectors to address the economic, social and environmental disparities for quality of life. SD visualizes collaborative

governance as a process to structure public policy, decision making and management and engage people constructively across the boundaries of public agencies, level of government and/or the public, private and civic sphere for greater achievement. India's recent development agenda is a reflection of SD. The adorable phrase enunciated by the Prime Minister: *"Sabka Saath Sabka Vikas*" translated as "Collective Effort, Inclusive Development" forms the foundation of the new national development agenda. Hence, there should be collaboration with other departments for achieving quality of life; and it is desirable that each sector should consider Health dimension in their public policy and programme strategies with utmost priority. Documented evidences on the inter-sectoral cooperation for health showed that collaboration was enabled by authorizing directives and support from above. It is difficult to consider which one amongst will aid to build up a flexible health system, capable of adapting the universal Health approach. The experiences and lessons from the past struggles to find way forward on how to achieve collaborative action within the local health systems to address an unmet need for health transformation.

India's development agenda and National Health Programmes have contributed to the expansion of health system capacities but each state and union territory is at a different state of economic, social, democratic, political and health achievements. The GoI and the state should deliberate and consider several essential but critical aspects like-

- How to integrate the SD for health agenda into the existing policies, programme and plans;
- What additional strategies and resources can be mobilized for collaboration which would be required within and outside the health sector for coordination, cooperation for collective impact for health?
- How to implement and monitor progress on different targets, establish centre-state, and inter-sectoral and multi-sectoral coordination mechanism under collaboration for transition; and managing the change for sustainability?

Studies have shown that inter-sectoral coordination for health faces major challenges like lack of clear directives and institutional support for collaboration, obstacles to monitoring, inter-departmental administrative challenges, and differing perspectives on strategies among district leaders, community resistance, and intervention over commitment. Further, besides addressing the differences in inter-sectoral coordination, Governments continue to develop their sectoral actions and inter-sectoral coordination to address the health issues and challenges. But, broader efforts need to transform policy and programme into resulted-oriented achievable action. Further, India with its diversity of problems and issues; must develop sustainable development strategies for achieving the optimum quality of health. This will be a best model for replication by other countries with similar economy, demography, social and environmental status.

In line with the global attempt to achieve the sustainable development goals, India also set time-bound 13 targets for various health indicators by linkage with the Ministry of Health and Family welfare with 19 different Ministries/Departments through centrally-sponsored Schemes/Central sector schemes. Since health is the responsibility of all the Government departments, there is a need for a 'sub-department of health' for 'leaving no one behind' in all the ministries for health impact assessment of the policies/initiatives of these ministries right from the conceptual stages.

The rising interest in health system strengthening provides an opportunity to discuss inter-sectoral/multi-sectoral collaborations especially for the universal Health approach in the prevention, promotion, curative and rehabilitative aspects for quality health. Over the years, lots of research initiatives have been undertaken to understand the dynamics of inter-sectoral and multi-sectoral collaboration in the country. There is convincing shortcomings in health system decked in the literature such as lack of awareness, lack of access, human resource crisis, affordability, and lack of accountability. Further, among the different ministries and departments; there is lack of trust, mutual respect and clear-cut specified division of roles and responsibilities adversely affecting the concept of collaboration. These challenges that have an impact on quality of health issues can be overcome through a sustainable collaboration which was considered one potential solution. However, there is limited documented evaluation of collaborations for health, which makes difficult to consider which one amongst these will aid to build up a flexible health system, and capable of adapting the universal Health approach. Further, there is no standardized health care system between various players of the health system. Therefore, specific local-based strategies need to be designed for the region, district, state and country based on the different level-based research and solution-based collaborative strategies. Hence, for any collaboration approach, it is essential to have a profound understanding of the local needs and local probability for collaboration. A multiple collaboration with inter-ministerial Health task force and level-based collaborations comprising individuals like health professionals at various levels and community people for integrated surveillance, and monitoring and accountability, integrated locally-focused research for addressing crucial issues, will lead to a more resilient health system.

For making such inter-setoral/multi-sectoral collaboration meaningful and coherent, there is a need to explore the current status of collaborative Governance for Sustainable Development of Health issues, and future course of action. In addition, there is a need for further studies on the system and contextual factors responsible for health care strategies before implementation to make it more worthwhile focusing on the multi-sectoral agreement under various health associated developmental initiatives considering the subject areas like Power Structure and local decision making process at regional/local level, food distribution system and nutritional security, inter-sectoral and multi-sectoral collaboration for Leadership and Human Resource Management, Financing, Management of Resources, Environmental Challenges, Intimation for Non-Communicable Diseases Management, Mental Health and Community Health Initiative in the country, Research, Practice and Education for Development of Public Health. Further, crucial aspects such as Central and State role in the development of health, science and technology innovation for health, transportation, information and communication for public health intervention, inter-sectoral collaboration for reproductive and child health, epidemiology and new emerging local infectious diseases, migration and public health challenges and issues, non-government organisation for SD of health, education and community-based health practices. Besides, there is a need to relook into the current Governance policies, programmes, activities, and intervention that promote sustainable development of health, social policy initiative for health, public health pharmacy, coordination for gender equity and health, occupational health hazards; water, and sanitation and hygiene, urban health, tribal health, elderly health, management of violence and accidents, mass media on health development, integration with AYUSH and human rights under SD for building an effective strategic plan of action for the optimum health of the citizen.

References

1. Mathew A. Global research partnerships in advancing public health: A case study on India. Indian J Med Ethics. Oct-Dec. 2018; 3(4): 343-344.
2. National Health Mission-2017, MOHFW, GoI.
3. National Health Policy-2002, MOHFW, GoI.
4. National Rural Health Mission-2005, MOHFW, GoI.
5. Ramaswamy R, Kallam B, Kopic D, Pujic B, Owen MD. Global health partnerships: Building multi-national collaborations to achieve lasting improvements in maternal and neonatal health. Global Health. 20 May 2016; 12(1): 22.
6. Schneider H, Zulu JM, Mathias K, Cloete K, Hurtig AK. The governance of local health systems in the era of Sustainable Development Goals: Reflections on collaborative action to address complex health needs in four country contexts. BMJ Glob Health. 6 Jun 2019; 4(3).
7. Seshadri SR, Parab S, Kotte S, Latha N, Subbiah K. Decentralization and decision space in the health sector: aA case study from Karnataka, India. Health Policy Plan. Mar 2016; 31(2): 171-81.
8. Shukla A, Khanna R, Jadhav N. Using community-based evidence for decentralized health planning: Insights from Maharashtra, India Health Policy Plan. 1 Jan 2018; 33(1): 34-45.
9. WHO-Health in 2015 from MDG TO SDG.
10. WHO- MOHFW: The transition from MDGs to SDGs in India: Big agenda, big opportunity.

Health and Population:
Perspectives and Issues, 42 (1&2): 7-17/2019

Health Insurance in India– A Comparative Satisfaction Survey

Amarendra Pattnaik*

Abstract

Health is an important common concern for India with 1.37 billion population. Illness can strike anytime warranting hospitalization. With ever-rising healthcare cost, financing of such an unexpected cost through Health Insurance has taken traction. But as on date, only 20 per cent of the Indian population is covered with some form of Health Insurance or the other. Out of the above market penetration, Government-sponsored Health Insurance has a share of 17 per cent and Commercial Health Insurance contributes a mere three per cent. Government Schemes mostly cover the people in the economically poor segment though there are schemes that cover employees in Central Government jobs as well. While the Government is trying to expand the coverage with the recently launched Ayushman Bharat Health Insurance scheme, there has been very slow growth in the Commercial Health Insurance. One of the reasons of poor growth is low level of Customer Satisfaction in the Commercial Health Insurance as compared to the Government-sponsored Health Insurance. In this article, an attempt has been made to measure the satisfaction level of customers who have taken Commercial Health Insurance vis-à-vis those who have taken Government-sponsored Health Insurance.

Key words*: Customer satisfaction, Private health insurance, Public health insurance, CGIS, ESIC, Ayushman Bharat.*

Healthcare cost is unforeseen and more often catches one unprepared. Adequate financial provision for healthcare is a necessity. Catastrophic healthcare cost not only affects the poor but also the rich and affluent. With BPL segment still constituting 21.9 per cent of our population and income inequality higher than 0.40[1], financing of health expenses is even a bigger concern. There are ample examples of people pushed into debt trap because of borrowings to meet their healthcare expenses. In such a scenario, Health Insurance has been very effective.

Universal Health Insurance is the need of the hour. Global experience, both in developed and developing economies, shows universal coverage has been the goal; and that has been achieved either through a tax-based regime or social health insurance mechanism or a hybrid model[2]. Although India followed a combination of these strategies since 1950s, the penetration of health insurance remained low for the next six decades. India's tryst with health insurance programme goes back to the early 1950s, with the launch of Employees State Insurance Scheme (ESIS) in 1952[3] and Central Government Health Scheme (CGHS) in 1954[4].

However, India's landscape of health insurance has undergone tremendous changes in the last decade with the launch of several health insurance schemes in the country, largely initiated by the central and state governments. It is fascinating to observe the rapid and significant change in the geometry of health insurance coverage in the country. The country that has been witness to three health insurance programmes until 2007 (ESIS, CGHS and Private Health Insurance - PHI), is now swamped by a plethora of insurance programmes. The breadth and depth of health insurance coverage has witnessed enormous leap during this period.

India's population covered by the insurance scheme has accelerated from about 75 million people covered in 2007, to an estimated 302 million people in 2010, about one-fourth of

*Asst. Professor, KIIT University, Bhubaneswar, India; E-mail: amarendra.pattnaik.aa@gmail.com.

the population. Thanks to the four important initiatives: by the central government (through Rashtriya Swasthya Bima Yojana-RSBY)[5] and state-sponsored schemes, as in Andhra Pradesh, Tamil Nadu, and Karnataka. Three of the giant schemes (RSBY, Rajiv Aarogyasri and Kalaignar) in a span of three years have covered roughly 247 million, over one-fifth of India's population. The realization among the leadership for the commitment to cover nearly all the population despite their socio-economic status is quite commendable. Evidence clearly suggests that in India, it's not only the poor but a large sections of the above poverty line (APL) population also end up paying catastrophic payments and suffer impoverishment (transitory poverty) due to illness.

While Government is doing everything to cover as many poor people[6] as possible in its Health Insurance schemes, there is a need for Commercial Health Insurance to increase their market penetration which is very low at 3 per cent as of now. In this article, the authors have delved into the satisfaction issue in Health Insurance.

Discussion

There has been lot of deliberation on the effectiveness of State-sponsored Health Insurance schemes. One article has concluded that such schemes have not been able to mitigate the financial burden of the beneficiaries[7] which has been disputed by another author[8] citing it's sample size and methodological error. So, there is a contrarian point of view as well. A number of studies also have been done on the need of public financing of health care to reduce the out of pocket expenses of the patient[9]. This article says, the quantum of financial support is important, but what is more important is the number of beneficiaries covered under the scheme while another author[10] throws light on another dimension of public-sponsored health insurance. He says that the financial sustainability of such funding for secondary and tertiary care is possible only when there is adequate public health infrastructure to cater to the primary and preventive care of the population. He also adds safe drinking water and sanitation as two important areas which need attention of the State. Adding another dimension to Health Insurance, D. Narayana[11] underscored the importance of out-patient care cost, which most of the Health Insurance companies do not cover. Private Health Insurance players need to be duly regulated[12] to ensure that customers get the promised benefits and are not exploited by the fine prints of terms and conditions. Universalisation of Health Insurance has been discussed in an article[13] underscoring the fact that Health Insurance is the best form of Health Financing. On the other hand, R. Duggal[14] explains the barriers and economic challenges to this massive agenda. Another article[15] covers the political challenges of considering and approving such a plan.

Customer satisfaction means the extent to which the expectation of the customer has been met in a healthcare set up. Here, the patient is the customer and the health outcome[16] is the most important expectation. Lot of research has been done to find out how various factors effect customer satisfaction viz. doctors' communication with the patient[17], amount of time nurses spend with the patient, culture of the hospital, the team work at the hospital[18], and infrastructure which are critical for patient care and also that are needed for the comfort of patients and attendants[19]. But hardly any research has been made to find out how Health Insurance contributes to the patient's satisfaction. An article by Chen C.[20] talks about the satisfaction of all the stake holders in the health-care value chain which also includes patient as an important stake holder. It is relevant to mention that when a patient is hospitalized, he undergoes three types of stress–

physical, mental and financial. The stress of the first two can be alleviated to some extent if there is adequate financial provision to meet the cost of the treatment and other allied expenses. This article shows how Health Insurance can be a great satisfier and stress moderator. In India, only about 21 per cent[21] of the population has some kind of Health Insurance coverage. Out of this, nearly 17 per cent are covered under the State-sponsored Health Insurance and the rest by commercial health insurance. In this article, the authors try to find out which type of Health Insurance is giving higher satisfaction to the customers.

Objective

The objective of this research is to compare customers' satisfaction from the health insurance services provided by the Government-sponsored Health Insurance schemes (Public Health Insurance) vis-à-vis Commercial Health Insurance schemes (Private Health Insurance).

Health Insurance available in India is of two types– (i) Government-sponsored Health Insurance (GSHI) and (ii) Commercial Health Insurance (CHI). The three prominent Government-sponsored schemes are Employee State Insurance, Rashtriya Swastya Bima Yojna and Central Government Insurance Scheme. Besides these central schemes, some of the state governments have also their own Health Insurance schemes. Commercial Health Insurance products are being marketed by a number of companies, both public and private sector.

Composite Satisfaction Index

There are three models of measuring Customer Satisfaction– i) Customer Satisfaction Score (CST), Net Promoter Score (NPS) and Customer Effort Score (CES). CST model uses a scale of 1 to 5 to measure the level of satisfaction or dissatisfaction of customers on various facets of the product or service. Customers are asked to rate their level of satisfaction as i) Very Unsatisfied, ii) Unsatisfied, iii) Neutral, iv) Satisfied, and v) Very Satisfied. The scale can also be written in the opposite order.

NPS is used to assess the long-term satisfaction and customer loyalty. It indicates if the customer is a repeat purchaser or just a one-time buyer and can shift to any competitor anytime. NPS score is based on a single question- "How likely would you recommend our product or service to a friend or a colleague?" Customer responses are measured on a scale of 0 to 10. While 0 indicates least likely, 10 indicates most likely. CES essentially measures the amount of effort that a customer had to put in for getting the product or service from a company. This measure is more relevant in services than the products. Service is a chain of processes and a customer has a more intense interaction with the staffs of the service provider in every process.

A combination of CST and NPS or CST and CES is used for Satisfaction surveys. In this research, a combination of CST and CES as Health Insurance is used as a service, and the Insured has to interact with many persons of the service provider or their agents (TPAs) to get the service.

Composite Index of Satisfaction (CSI) for Government-sponsored Health Insurance and Commercial Health Insurance will be computed based on their performance in four critical parameters (CST-3 and CES-1). The best case Index will be 5. That means each of the parameter that will measure different facets of satisfaction and will have a maximum score of 5. If the

service provider gets 5 in all the parameters of satisfaction, then it will have a composite index of 5. But this is a very unlikely situation that customers will be completely satisfied with each parameter and will give them 5 points.

Socio-economic Segmentation

For the purpose of health insurance, Indian population can be divided into the following socio-economic segments based on their place of habitation, and source of income:

i) People working in the organized sector and drawing a salary of less than Rs. 21000/- p.m.
ii) People working in the organized sector and drawing salary of more than Rs. 21,000/- p.m.
iii) People working in the Central Government organizations
iv) People who work in the unorganized sector/self-employed, and are in the BPL category.

Methodology

This is a descriptive and analytical research to compare the level of customer satisfaction between those who have taken Government-sponsored Health Insurance vis-à-vis those who have taken Commercial Health Insurance. Quantitative Research method will be followed for data collection and percentage table/cross tables will be used for the data analysis.

The questions in the research were to what extent (level of satisfaction) the customers were satisfied with the insurance service. The interpretation of the term 'satisfaction' was done through the following four parameters: value for money (Claim-Premium relationship), affordability of the insurance premium, claim settlement satisfaction (Process), and claim settlement satisfaction (Amount)

Level of satisfaction is the Independent variable, and all the above mentioned parameters are contributors to the satisfaction are independent variables.

Hypothesis: Customers covered under the Public Health Insurance are more satisfied than those who are covered under the Private Health Insurance. This hypothesis is based on few good features of Government-sponsored Health Insurance schemes like no pre-enrolment medical check-up, no age restriction, no limit of medical expenses, low-cost of insurance premium, easy family floater schemes, etc.

Sample Frame: Quantitative research method was used to collect and analyze data. The target population for the research was all the people who have taken Health Insurance for themselves or their dependents at least for one year in his/her life time. There are four segments of population in the research– ESIC, RSBY, CGHS and Commercial. Snowball sampling method was used to select the respondents. In this method, the first respondent from a segment was selected through researcher's personal verification and the questionnaire was administered. Subsequent respondents were selected based on the references given by the previous respondents. Similar method was followed for each segment.

Method of Data Collection: A combination of Questionnaire and Interview Schedule was used to collect data from 400 respondents who have taken either Public or Private health insurance coverage. Many of the respondents, particularly those belonging to the BPL segment, may not be literate enough to completely understand the questionnaire and fill-up them. Hence, an Interview Schedule was included. In this case, the researcher poses the questions in simple native language to the respondent; and based on his/her response, s/he fills up the questionnaire.

Calculation of Sample Size: As per the latest census data available (Census-2011)[22], the population of Bhubaneswar was 8,43,402 and the population of Cuttack was 6,10,189 making the combined population of the twin cities 14,53,591. Therefore, a round figure of 15,00,000 has been considered as the population size. The market penetration of Health Insurance in India is approximately 21 per cent. However, the exact number of people who have taken health insurance in these twin cities is not available. Therefore, a conservative assessment of the sample size is made from the above census data on population. As mentioned in the Sample Frame, snowball sampling method was used to pick and chose respondents for the survey.

Sample Size = n = N*X / (X + N – 1),

Where,

N = Total population of Bhubaneswar and Cuttack municipality area

$X = Z_{\alpha/2}^2 * p*(1-p) / MOE^2$,

MOE is the margin of error

$Z_{\alpha/2}$ is the critical value of the Normal distribution

p is the sample proportion

Finite Population Correction (FPC) [23] has been applied to the sample size formula. For the calculation of sample, the Researcher has used MOE=+/-5%, $Z_{\alpha/2}$ =1.96 for 95% confidence level and p=0.5 to have the largest sample size.

X= (1.96^2)*0.5*(1-0.5)/(0.05^2)=384.16

Sample =n= 1500000*384.16/ (384.16+1500000-1) =384

By rounding the sample size to the nearest hundred a sample size of 400 was used for data collection.

Scope of the Study: The scope of the study would be restricted to Health Insurance customers residing in Bhubaneswar and Cuttack, twin cities of Odisha. All the segments of the respondents are available in the twin cities; and hence; the choice of the locations.

Questionnaire: Questions have been framed on three broad areas:

1. Demographic Questions– Q1 to Q16 relate to Name, Address, Gender, Age, Education, Gender, Marital Status, Income and Dependents, etc. Q17 and Q18 are related to the ownership of four-wheeler and if the respondent has taken Third Party insurance. The idea is to find out when some Insurance is compulsory, what is the general compliance among the people.

2. Health Insurance Questions– Q19 to Q24 relate to general questions on Health Insurance that included Awareness, Enrolment, Insurer, Reasons if not enrolled, etc.

3. Health Insurance Benefit Questions– Q25 to Q34 are related to various benefits that a customer expects from the insurance service.

Apart from the above three broad areas, policy related questions (Q35 - Q37) are used to find out the public opinion about some important issues which would help in policy decisions of the Government. Similarly, service satisfaction questions like Value for Money (Q30), Affordability (Q31), Claim settlement satisfaction (Process, Q34) and Claim settlement satisfaction (Amount, Q36) are used to find out the level of satisfaction of the respondents with respect to the Health Insurance. Equal weightage of 25 per cent was given to each of the variables- Q30, Q31, Q34 and Q36. Based on the overall score in these parameters, researchers find out the satisfaction level of customers from the Health Insurance services provided by public and private health insurance companies.

Sampling Method and Data collection: The sample size is 400 and snowball sampling is used for this survey. The initial points of contact for the survey were chosen as follows:

1. **CGIS beneficiaries**- Doordarshan, All India Radio and Office of the Accountant General, Odisha, were selected as the permanent employees are covered under CGHS. Sample size in this segment was 58.
2. **ESIC**– A Government skill training institute where a large number of employees are covered under ESIC was selected as the nodal point. Sample size in this segment was 91.
3. **RSBY**– People working as sweepers and other maniac work at one private university were selected as respondents. Sample size in this segment - 49
4. **Commercial Health Insurance**– Few Central and State PSUs, Private Organizations and one university was selected to take response from people who have taken private commercial health insurance. They are MMTC, Reliance Jio, OPTCL, Dept of Water Resources, PNB Insurance, etc. The sample size in this segment was 204.

Calculation of Composite Satisfaction Index: To check the Hypothesis, we calculated the Composite Index taking three variables related to CST (Value for Money, Affordability and Claim Settlement Amount) and one variable related to CES (Claim Settlement Process). The average score has been calculated, and an Index is derived giving equal weightage to each parameter. Details of calculation are given in the Table 1.

Table 1
Composite Satisfaction Index

(A) Value for Money (Q30)	
Commercial	
Total count	204
Total Score	599
Average	2.94
State sponsored	
Total count	198
Total Score	906
Average	4.58

(A) Value for Money (Q30)	
Commercial	
(B) Affordability (Q31)	
Commercial	
Total count "Yes"	67
Percentage "Yes"	32.84%
Score out of 5	1.64
State sponsored	
Total count "Yes"	145
Percentage "Yes"	73.23%
Score out of 5	3.66
(C) Claim Settlement (Process- Q34)	
Commercial	
Total Count "Very Easy"	6
Total Count "Easy"	53
Total Count "Difficult"	99
Total Count "Very Difficult"	46
Percentage "Easy and Very Easy"	28.92%
Score out of 5	1.45
State-sponsored	
Total Count "Very Easy"	2
Total Count "Easy"	162
Total Count "Difficult"	31
Total Count "Very Difficult"	3
Percentage "Easy and Very Easy"	82.83%
Score out of 5	4.14
(D) Claim Settlement (Amount- Q36)	
Commercial	
Total Score	631
Average	3.09
State-sponsored	
Total Score	870
Average	4.39
Composite Index- Commercial=(2.98+1.64+1.45+3.09)/4	2.29
Composite Index- State-sponsored=(4.58+3.66+4.14+4.39)/4	4.19

From the above calculation, it is found that the Composite Index of State-Sponsored Schemes is 4.19 while it is 2.29 for Commercial Health Insurance. Therefore, it can be concluded that the subscribers of State-Sponsored Health Insurance (Public Health Insurance) are more satisfied as compared to those who have taken Commercial Health Insurance (Private Health Insurance).

Findings

The major finding from this descriptive and analytical research work is that people who have taken Public Health Insurance are more satisfied as compared to those who have taken Private Health Insurance. This validates the hypothesis of this paper. People who took Private Health Insurance, consider tax benefit as one of the major benefits of Health Insurance. On the other

hand, those who had taken Public Health Insurance, consider it to be a prudent healthcare financing option.

Suggestions

Since the level of satisfaction in the State-sponsored Health Insurance scheme is higher than the Commercial Health Insurance, it will be easy for the State to bring all the eligible people under the State-sponsored health insurance schemes (ESIC, CGHS, Ayushman Bharat, etc). At the same time, the commercial health insurance should be promoted so that more and more economically sound people take up such Health Insurances. The causes of low satisfaction need to be eliminated so that there is a higher acceptability of the Commercial Health Insurance schemes. There is a need for Commercial Health Insurance as all can't be covered under State schemes. State schemes are meant to cover socio-economically deprived segments of the society. People who can afford, should take up Commercial Health Insurance.

Since nearly 21.9 per cent of India's population is in the BPL segment (Poverty Estimates 2011-12, Planning Commission)[24], Government's newly launched Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)[25] is in the right direction. But since the financing of the scheme will be done by the Centre and the State in the ratio of 60:40, the involvement of the State is very much necessary. Moreover, the administrative arm of the State Governments should ensure the enrolment of the eligible citizens as soon as possible. In August-2019, State Government of Odisha implemented Biju Swasthya Kalyan Yojana (BKSY) [26]. Beneficiaries of the BSKY scheme are getting medical assistance of Rs. 5 lakh and women are getting an additional Rs. 2 lakh. There are only three states (West Bengal, Telengana and Odisha) who have opted out of AB-PMJAY. It is expected that Odisha will eventually adopt AB-PMJAY as the scheme allows treatment at all the Public and network private hospitals across the country. Unlike BSKY, this scheme also covers all the migrants of the State working in other States. Further, the cost sharing will reduce the financial burden of the state.

While the recently launched Ayushman Bharat scheme will increase the demand for healthcare particularly in Tier-II and Tier-III towns, there is a huge limitation in the supply side of the healthcare service. So, the Government must not only improve the infrastructure in both the public and private sector but also ensure proper regulation to monitor and control the service providers.

The growth of Private Health Insurance is highly linked to the commercial viability. With high Incurred Claim Ratio (ICR), Private Health Insurance are facing a tough time in holding on to their business. With higher Health Insurance market penetration, ICR can be kept under control; and only then, insurance companies will have reasons to operate in this business.

Limitation of the Study

This research delved only into the matter of Satisfaction of the Health Insurance Services. It looked at only four important factors that contribute to satisfaction. There could be more other peripheral and incidental factors that impact satisfaction of consumers. Further study can be made in this direction.

This study also did not look at the influence of demographic variables like age, income, number of dependents, education, etc. on satisfaction. Research can be made in this area as well.

Conclusion

People should appreciate Health Insurance as a good mode of healthcare financing, and should enroll themselves and their families proactively. Insurers also have a role to play in this direction. Government should take up steps to cover all the eligible beneficiaries under the State-sponsored schemes. Similarly, Private Commercial Insurers have to come up with better products to cater to the varied needs of the customers. They also have to be customer-centric and ensure that their processes are geared up for greater customer satisfaction.

References

1. Chancel L & Piketty T. India Income Inequality 1922-2014 (2017). From British Raj to Billionaire Raj.World Inequality Database, 2017, July: 1-71.
2. Folland S, Goodman AC & Stano M. The Economics of Health and Healthcare. Prentice Hall; 7 edition, Feb. 2012.
3. Government of India. Ministry of Labour and Employment. ESIC Rule Book 1952 and amended from time to time. Available on https://www.esic.nic.in/esi-acts. Last updated/ Reviewed: 2019-07-23.
4. Government of India. Department of Health and Family Welfare. CGHS Rule Book. https://cghs.nic.in.
5. Government of India. Ministry of Labour and Employment. RSBY Rule Book. https:// www.india.gov.in/spotlight/rashtriya-swasthya-bima-yojana).
6. Ahuja R. Health Insurance for Poor. Economic and Political Weekly, 2004, 34: 3171-3178.
7. Selvaraj S. Publicly-Financed Health Insurance Schemes: Ignorance is not Bliss. Economic and Political Weekly. 2012, 47(29): 109-111. http://www.jstor.org/ stable/4172001724.
8. Dilip T. On Publicly-Financed Health Insurance Schemes: Is the Analysis Premature? Economic and Political Weekly. 2012, 47(18): 79-80. http://www.jstor.org/ stable/23214841.
9. Ellis R, Moneer A & Gupta I. Health Insurance in India: Prognosis and Prospectus. Economic and Political Weekly. 2000; 35(4): 207-217. http://www.jstor. org/stable/4408847.
10. Desai S. Keeping the 'Health' in Health Insurance. Economic and Political Weekly. 2009, 44(38): 18-21. Retrieved from http://www.jstor.org/stable/25663564.
11. Narayana. D. Scaling up Social Health Insurance without Analysis? Economic and Political Weekly. 2005, 40(47): 4954-4955. http://www.jstor.org/stable/4417430.
12. Mahal A. Assessing Private Health Insurance in India: Potential Impacts and Regulatory Issues. Economic and Political Weekly, 2002; 37(6): 559-571. Retrieved from http:// www.jstor.org/stable/4411719.
13. Mathew T. Medical Insurance for All? Economic and Political Weekly. 1997, 32(7): 370-372. Retrieved from http://www.jstor.org/stable/4405098.
14. Duggal R. Challenges in Financing Healthcare. Economic and Political Weekly. 2012, 47(35): 22-23. http://www.jstor.org/stable/41720079.
15. Srivatsan R & Shatrugna V. Political Challenges to Universal Access to Healthcare. Economic and Political Weekly. 2012, 47(8): 61-63. http://www.jstor.org/ stable/41419902.

16. Hudak P, Hogg-Johnson S, Bombardier C, Patricia D McKeever & Wright J. Testing a New Theory of Patient Satisfaction with Treatment Outcome. Medical Care. 2004, 42(8): 726-739. http://www.jstor.org/stable/4640811.
17. Chen J, Tao M, Tisnado D, Malin J, Ko C, Timmer M & Ganz P. Impact of Physician-Patient Discussions on Patient Satisfaction. Medical Care. 2008, 46(11): 1157-1162. http://www.jstor.org/stable/40221821.
18. Meterko M, David CM & Young G. Teamwork Culture and Patient Satisfaction in Hospitals. Medical Care. 2004, 42(5): 492-498. http://www.jstor.org/stable/4640779.
19. Junewicz A, & Youngner S. Patient-Satisfaction Surveys on a Scale of 0 to 10: Improving Health Care, or Leading it Astray? The Hastings Centre Report. 2015, 45(3): 43-51. http://www.jstor.org/stable/44158964.
20. Chen C. Who Really Matters? Revenue Implications of Stakeholder Satisfaction in a Health Insurance Company. The Accounting Review. 2009, 84(6): 1781-1804. http://www.jstor.org/stable/27784244.
21. Insurance Regulatory Authority of India. Handbook on Indian Insurance Statistics F.Y. 2017-18. https://www.irdai.gov.in/ADMINCMS/cms/whatsNew_Layout.aspx?page=PageNo3729&flag=1.
22. Govt. of India. Census.2011. https://www.census2011.co.in.
23. Daniel W. Biostatistics: A *Foundation* for Analysis in the Health Sciences. New York: John Wiley & Sons, 7th *edition.* 1999, p-141/142.
24. Govt. of India, Planning Commission. Poverty Estimates 2011-12. http://planningcommission.nic.in/news/pre_pov2307.pdf.
25. Govt. of India. Department of Health and Family Welfare. Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (PMJAY). https://pmjay.gov.in/about-pmjay.
26. Govt. of Odisha. Biju Swasthya Kalyan Yojana. http://nhmodisha.gov.in/frmrbsyostfbkky.aspx.

स्वास्थ्य एवं जनसंख्या:
परिप्रेक्ष्य एवं मुद्दे, 42 (1&2): 7-17/2019

भारत में स्वास्थ्य बीमा–एक तुलनात्मक संतुष्टि सर्वेक्षण

अमरेन्द्र पटनायक*

सारांश

1.37 बिलियन जनसंख्या वाले भारत के लिए स्वास्थ्य एक महत्वपूर्ण सामान्य चिंता है। रोग कभी भी उत्पन्न हो सकते हैं तथा अचानक रोगियों को अस्पताल में भर्ती कराना पड़ सकता है। कभी–कभी बढ़ती स्वास्थ्य देखभाल लागत के साथ, स्वास्थ्य बीमा के माध्यम से इस तरह की अप्रत्याशित लागत तथा वित्तपोषण के साथ कवर किया गया है। लेकिन आज तक, भारतीय जनसंख्या का केवल 20 प्रतिशत किसी न किसी रूप में स्वास्थ्य बीमा के साथ कवर किया गया है। उपरोक्त बाजार में प्रवेश के बाहर, सरकार द्वारा प्रायोजित स्वास्थ्य बीमा में 17 प्रतिशत की हिस्सेदारी है और वाणिज्यिक स्वास्थ्य बीमा में महज तीन प्रतिशत का योगदान है। सरकारी योजनाएं ज्यादातर आर्थिक रूप से गरीब तबके के लोगों को कवर करती हैं, हालांकि ऐसी योजनाएं भी हैं जो केंद्र सरकार की नौकरियों में भी कर्मचारियों को कवर करती हैं। जहां सरकार हाल ही में शुरू की गई आयुष्मान भारत स्वास्थ्य बीमा योजना के साथ कवरेज का विस्तार करने की कोशिश कर रही है, वहीं वाणिज्यिक स्वास्थ्य बीमा में बहुत धीमी वृद्धि हुई है। कम विकास के कारणों से एक सरकार द्वारा प्रायोजित स्वास्थ्य बीमा की तुलना में वाणिज्यिक स्वास्थ्य बीमा में ग्राहक संतुष्टि का निम्न स्तर है। इस लेख में, उन ग्राहकों की संतुष्टि के स्तर को मापने का प्रयास किया गया है, जिन्होंने व्यावसायिक स्वास्थ्य बीमा लिया है तथा जिन्होंने सरकार द्वारा प्रायोजित स्वास्थ्य बीमा लिया है।

मुख्य शब्दः ग्राहक संतुष्टि, निजी स्वास्थ्य बीमा, सार्वजनिक स्वास्थ्य बीमा, सीजीआईएस, ईएसआईसी, आयुष्मान भारत।

*सहायक प्रोफेसर, केआईआईटी विश्वविद्यालय, भुवनेश्वर, भारत; ई–मेलःamarendra.pattnaik.aa@gmail.com

Health and Population:
Perspectives and Issues, 42 (1&2): 18-29/2019

Availability of Drugs, Equipment and Other Logistics for Disaster Management in Health Facilities of Delhi: An Assessment

Sanjay Singh*, A. K. Sood and Utsuk Datta****

Abstract

India, due to its geological and climatological variation, is vulnerable to both natural and manmade hazards. Primary Health Centre (PHC) is the first point of interaction of patients where they meet the doctor. Availability of drugs, surgical items, dressing material, functional equipment and other miscellaneous items can save the life of the victims during the disaster. A descriptive study design was used for this study. A total of 22 health facilities of the district health department were selected in two districts of Delhi by systemic random sampling method. Primary and secondary data were collected. Availability of drugs, equipment and other logistics prescribed by the health department were assessed in the health facilities. Except stethoscope and torch, no all other prescribed equipment were available in functional state at all the health facilities. Some essential items like Ambu bag (Adult) and (Paediatric) were functionally available in 68.2 per cent of the facilities. Paracetamol syrup was available in all the health facilities. Injection Diclofenac was available in 95.5 per cent of the health facilities and normal saline was available in 90.9 per cent of the health facilities. Gloves (size 6.5) were available in 90.9 per cent of the health facilities and cotton rolls were available in 86.4 per cent of the health facilities. Coordination and communication gap during disaster phase were the major difficulties faced by the respondents while managing the disaster/ emergency situation. The study concludes that the health facilities in both the districts did not have 100 per cent availability of identified functional equipment, medicines, surgical and dressing materials and other miscellaneous items. However, disaster kits were available in all the health facilities. There is a need to strengthen all the health facilities of the district health department as far as availability of sufficient functional equipment, medicines, surgical and dressing items, and other miscellaneous items are concerned. Focus is also needed to improve the coordination mechanism and communication facilities for managing the disaster/disaster like situation at the primary health facility level.

Key words: *Disaster management, Health facilities, District health department, Equipment, Medicine, Surgical and Dressing items, Delhi.*

Disasters are happening everywhere in the world. As per the United Nations International Strategy for Disaster Reduction (UNISDR)[1], disaster is defined as a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts which exceeds the ability of the affected community or society to cope using its own resources.

Area-wise, India is the seventh largest country[2] and the second most populous country[3] in the world. Geographical variation of India makes it vulnerable to various hazards. The Building Materials Technology Promotion Council (BMTPC)[4], an autonomous agency which works under the aegis of the Ministry of Housing and Urban Affairs prepared the vulnerability atlas of India. In its second edition, it was reported that 59 per cent of the Indian land is vulnerable to earthquakes, 8.5 per cent of the land is vulnerable to cyclones and 5 per cent of the of land vulnerable to floods. Out of 59 per cent of the Indian land which is vulnerable for earthquake, 10.9 per cent of the land is liable for severe earthquakes.4 Indian coastline which is 7516 kilometer (km) long, 5700 km is vulnerable to storm surge, cyclones and tsunami.[5] It is not

**MD-CHA, E-mail: drsanjaysingh76@gmail.com; **Professor, Department of Education &Training; The National Institute of Health and Family Welfare, Baba Gangnath Marg, Munirka, New Delhi-110 067.*

the natural factors which are only responsible for disasters in India, other man-made causes like increasing demographic pressure, deteriorating environmental conditions, deforestation, unscientific development, etc. are also responsible for the accelerated impact and increase in the frequency of disasters.[6]

Many man-made disasters also occurred in India like the Bhopal Gas Tragedy[7], fire at AMRI Hospital[8] in Kolkata where 90 lives lost, Kerala fireworks show in temple which killed 110[9] and terrorist attack in Mumbai.[10] Road accidents are also common in India which has 1 per cent of the motor vehicles in the world, but bears the burden of 6 per cent of the global vehicular accidents.[11]

An approach to holistic management of disaster management was initiated after the Odisha cyclone in 1999[12] when thousands of people were killed. A High Powered Committee (HPC)[13] was set up to find out the ways of disaster management. The first step towards the holistic management of disasters was shifting of the Disaster Management Division from the Agriculture Ministry to the Ministry of Home Affairs (MHA) in 2002.[14] Later in 2005, the Government of India (GOI) enacted the Disaster Management (DM) Act[15] on the recommendation of the HPC. The DM Act provides a platform to deal with disaster management at all the levels of governance i. e. at the national level, state level and district level.

During emergencies or disasters, hospitals and other health facilities must remain safe, accessible and functioning at maximum capacity in order to help save lives. They must continue providing critical services such as medical and nursing care, laboratory and other health care services as well as respond to increased requirements related to the emergency.[14] Health facilities must be prepared to respond to any disaster situation. There are many preparatory measures required to be taken by the health facilities which include preparation of list of medicines and equipment and ensuring its availability with all the teams.[14,16]

Delhi as being the national capital and home for Very Very Important Persons (VVIPs), should always be ready to tackle any disaster. Delhi has witnessed many disasters in recent past like the Yamuna flood, earthquake, radiation exposure and terrorist attack. Fire accidents and building collapses in Delhi also occur frequently.[17] Recent incident of Tughlakabad chemical leak in 2017 had made Delhi to revamp its disaster management activities.[18]

As per the Delhi Disaster Management Plan prepared by the Delhi Disaster Management Authority in consultation with all the relevant departments, the task identified for the state health department at the state level and district level is to provide medical care and trauma counselling.[18] To provide the mentioned services, state/district health department has identified some equipment, drugs, medicines and other miscellaneous items to be available and functional all the time to respond to any disaster/disaster like situation. This study was carried out in the health facilities of state/district health department to assess the items identified by them to be ready and functional for the management of disasters in the health facilities.

Objectives

The objectives of the study were toassess the availability of drugs, equipment and other logistics identified by the state/district health department to be available in the health facilities; and find out the difficulties faced by the QRT in-charges, QRT members of each health facility

(where the assessment was made), and DPOs of both the districts whenever they involved in the management of any disaster/emergency situation.

Methodology

The descriptive study design was used for the study. There are 11 revenue districts in Delhi. Out of these 11 districts, two districts were selected using the simple random sampling method. The health facilities (dispensary/Seed PUHC (Primary Urban Health Centre)/Polyclinic) administered by the district health department were enlisted in both the districts separately, and total 22 such health facilities which have been identified to be ready for disaster management were selected using the simple systemic random sampling technique. The availability of functional equipment, medicines, surgical & dressing materials, and other miscellaneous items which had been identified by the health department, were assessed in these identified health facilities. District Programme Officers (DPOs) who were looking after the programme for immunization, Bio-Medical Waste (BMW) management and Integrated Disease Surveillance Programme (IDSP), were interviewed at the district level to find out the various difficulties they encountered during the disaster/emergency situations. Quick Response Team (QRT) In-charges and one of the Quick Response Team members, who were the part of the QRT constituted at every health facility, were also interviewed to find out their difficulties in mobilization of equipment and other relevant issues as far as the management of disaster is concerned.

Primary data were collected by observation using the checklist, and by doing the interview with the identified respondents using pre-tested and validated interview schedule. Secondary data were collected from the offices of both the district health departments of the state government which include various guidelines, disaster management plan, circulars, orders and from the website of Delhi Disaster Management Authority (DDMA) and National Disaster Management Authority (NDMA). The study was conducted during October 2017 - March 2018. Ethical approval was taken from The National Institute of Health and Family Welfare (NIHFW) prior to data collection. Only those participants who gave consent, were interviewed.

Inclusion Criteria:

1. Only the health facilities of the Delhi state government's Health Department at the district level were taken in the study as these are the primary points for trauma care and counseling.
2. In the health facilities (dispensaries and polyclinics) of the district health department, medical officers who were the in-charges of the QRTs, one of the other members of each QRT and DPOs were interviewed for the difficulty they faced during management of any disaster. They were taken in the study as the QRTs and DPOs respond first whenever asked by the higher authorities at the district and facility level.

Exclusion Criteria:

1. Mohalla clinics were not taken in the study, as they did not have QRTs.
2. Respondents who had recently joined or working for less than 3 months, were not interviewed.

Findings

The result has been presented as per the category of items identified by the Health Department.

Drugs (Tablets and Syrups)

The district health department has identified some tablets and syrups to be available in the disaster kits of the health facilities as shown in the Table 1. It was found that medicines like Paracetamol, Antacid, Avil, Diclofenac and Levocetrizine were available in all the health facilities but Domperidone, Omeprazole were available in 90.9 per cent of the facilities and Norfloxacin, Ibuprofen and Septran were available in 95.5 per cent of the facilities. Acetyl salicylic acid was available in 86.4 per cent of the health facilities. Paediatric syrups like Septran and Domperidone were available in 86.4 per cent and 95.5 per cent of the health facilities respectively. Paracetamol syrup was available in all the health facilities.

Table 1
Availability of Tablets and Syrups in Disaster Kits in Health Facilities of the District Health Department

Name of tablets and syrups in disaster kit of health facilities	Availability in health facilities (n=22)	%
Tablets		
Paracetamol (500mg)	22	100
Antacid	22	100
Avil (25mg)	22	100
Diclofenac Sodium (75 mg)	22	100
Levocetrizine (5mg)	22	100
Domperidone (10mg)	20	90.9
Omeprazole (20mg)	20	90.9
Norfloxacin (400mg)	21	95.5
Ibuprofen (400mg)	21	95.5
Septran SS (400+80 mg)	21	95.5
Acetyl Salicylic acid (75/150/300 mg)	19	86.4
Syrups		
Paracetamol (125mg/5ml)	22	100
Antacid	21	95.5
Domperidone (5mg/5ml)	21	95.5
Septran (40mg/5ml)	19	86.4

Life-saving injections, IV fluid and Disinfectants

The district health department also identified some injectable drugs required in emergency as shown in Table 2. Injection Diclofenac was available in 95.5 per cent of the health facilities and Normal Saline was available in 90.9 per cent of the health facilities. Injection Decadron and injection Adrenaline were available at 68.2 per cent and 77.3 per cent of the health facilities respectively. Injection CPM/Avil was available in 59.1 per cent of the health facilities. Hand-rub (alcohol-based) and Spirit were available in 68.2 per cent and 45.5 per cent of the health facilities respectively.

Table 2
Availability of Life-saving Injections, IV Fluid and Disinfectants in Disaster Kits in Health Facilities of the District Health Department

Name of lifesaving injections, IV fluid and Disinfectant in disaster kit of health facilities	Availability in health facilities (n=22)	%
Lifesaving injections and IV fluid		
Injection Diclofenac	21	95.5
Normal Saline	20	90.9
Injection Rantac	18	81.8
Injection Adrenaline	17	77.3
Injection Decadron	15	68.2
Injection Chlorpheniramine/Avil	13	59.1
Disinfectant		
Hand rub (Alcohol Based)	15	68.2
Spirit (500ml)	10	45.5
IV: Intravenous fluid		

Equipment and Other Miscellaneous Items

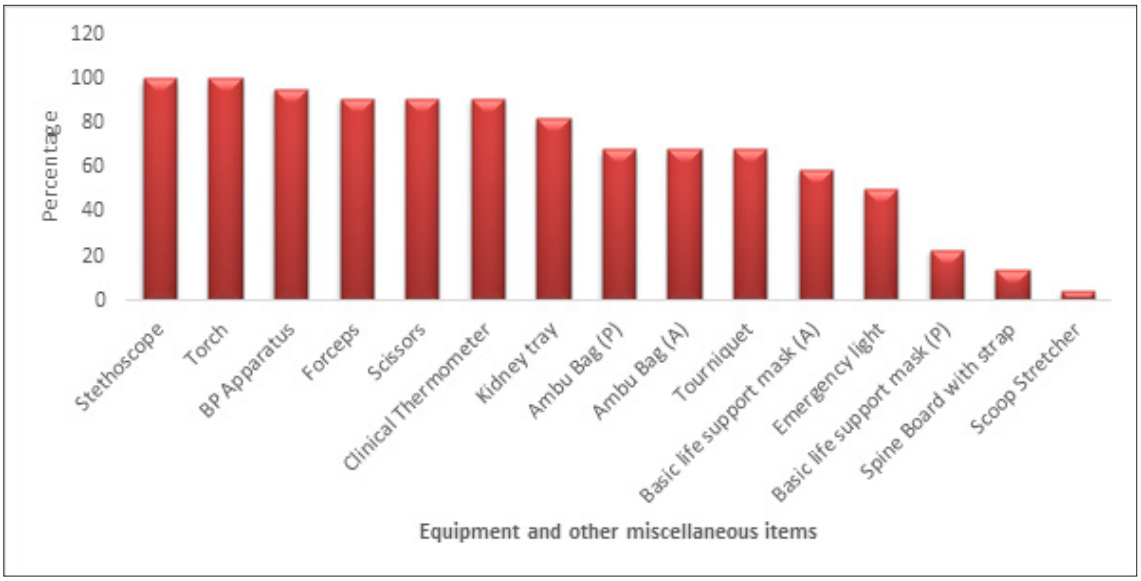
Lot of equipment is necessary to carry out the medical care. Availability of such equipment in the health facilities were assessed. The findings are shown in Table 3 and Figure 1. Ambu Bag (Adult) and Ambu Bag (Paediatric) were available in 68.2 per cent of the health facilities in functional state. Basic life support mask (Adult) and basic life support mask (Paediatric) were available in 59.1 per cent and 22.7 per cent of the health facilities respectively. Emergency light was available in 50 per cent of the health facilities. Spine board with strap and scoop stretcher were found only in 13.6 per cent and 4.5 per cent of the health facilities respectively.

Table 3
Availability of Functional Equipment and Other Miscellaneous Items in Health Facilities of District Health Department

Name of Equipment and Other Misc. Items	Availability in Health Facilities (n=22)	%
Stethoscope	22	100
Torch	22	100
BP Apparatus	21	95.5
Forceps	20	90.9
Scissors	20	90.9
Clinical Thermometer	20	90.9
Kidney tray	18	81.8
Ambu Bag (P)	15	68.2
Ambu Bag (A)	15	68.2
Tourniquet	15	68.2
Basic life support mask (A)	13	59.1
Emergency light	11	50
Basic life support mask (P)	5	22.7
Spine Board with strap	3	13.6
Scoop Stretcher	1	4.5

A: Adult, P: Paediatrics

Figure 1
Availability of Equipment and Other Miscellaneous Items in Health Facilities of District Health Department (%)



Surgical and Dressing Material

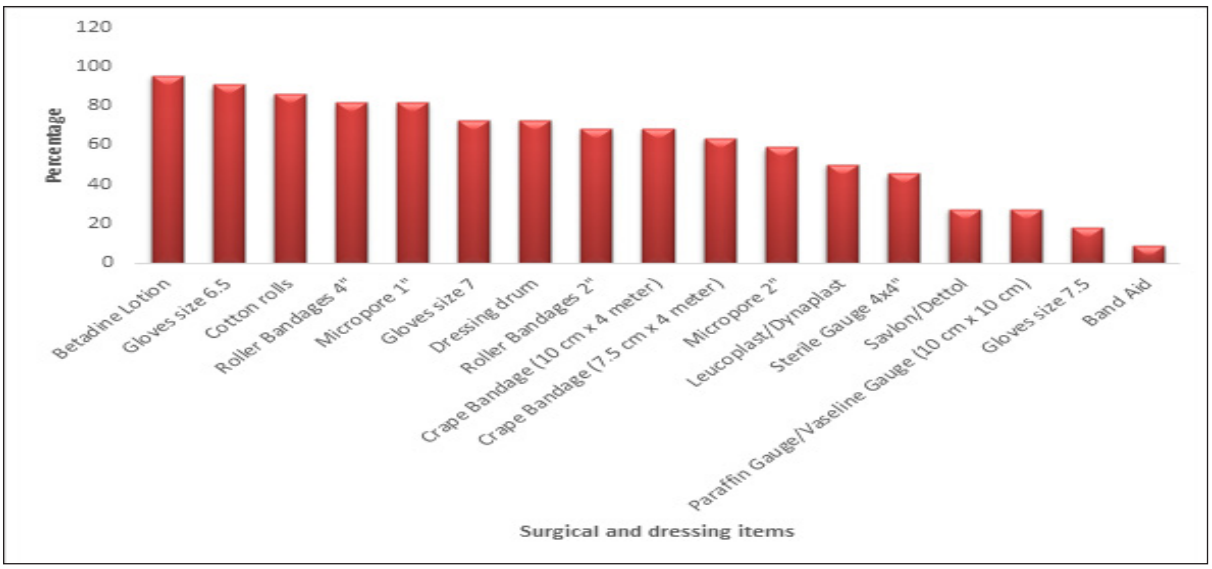
Surgical and dressing materials availability in the disaster kit were assessed in the health facilities. Table 4 and Figure 2 show that gloves (size 6.5) were available in 90.9 per cent of the health facilities. Roller bandages (4") and (2") were available in 81.8 per cent and 68.2 per cent of the health facilities respectively. Dressing drum was available in 72.7 per cent of the health facilities and Sterile Gauge in 45.5 per cent of the health facilities. Paraffin Gauge/Vaseline Gauge was available in 27.3 per cent of the health facilities and Cotton Rolls were available in 86.4 per cent of the health facilities. Crape bandages of both the sizes were available in less than 70 per cent of the health facilities. Savlon/Dettol was available in 27.3 per cent of the health facilities and Band- aids were available in only 9.1 per cent of the health facilities.

Table 4
Availability of Surgical and Dressing Materials in Health Facilities of District Health Department

Name of the surgical and dressing materials in health facilities	Availability in health facilities (n=22)	%
Betadine Lotion	21	95.5
Gloves size 6.5	20	90.9
Cotton rolls	19	86.4
Roller Bandages 4"	18	81.8
Micropore 1"	18	81.8
Gloves size 7	16	72.7
Dressing drum	16	72.7
Roller Bandages 2"	15	68.2
Crape Bandage (10 cm x 4 meter)	15	68.2
Crape Bandage (7.5 cm x 4 meter)	14	63.6

Name of the surgical and dressing materials in health facilities	Availability in health facilities (n=22)	%
Micropore 2”	13	59.1
Leucoplast/Dynaplast	11	50
Sterile Gauge 4x4”	10	45.5
Savlon/Dettol	6	27.3
Paraffin Gauge/Vaseline Gauge (10 x 10 cm)	6	27.3
Gloves size 7.5	4	18.2
Band Aid	2	9.1

Figure 2
Availability of Surgical and Dressing Items in the Health Facilities of District Health Department



Experience of Respondents on Difficulties Faced by Them during Management of Disasters

QRT in-charges and one of the members of QRT teams of the health facilities where the assessment was done, were asked about their experience and difficulty they faced during any disaster management they were involved. DPOs at the district level were also asked about their experience. Out of 49 respondents, only nine were involved in the management of any disaster. Their response on difficulties they faced during management of a disaster, in decreasing order, were compiled; and has been presented in the Table 5.

Table 5
Difficulties Faced by the Respondents of District Health Department

During Disaster/Disaster Like Situations
Pre-Disaster Phase
Mobilization of QRT teams
Non preparedness of health facilities
No awareness among people

During Disaster/Disaster Like Situations	
	Inadequate logistics
Disaster Phase	
	Coordination Gap
	Communication Gap
	Clean water management during flood
	Less equipment
	No mosquito shield for QRT Teams
	Difficulty in locating the site
	No vehicle provided
	Bed unavailability in hospital
	No sitting arrangement for QRT
Post-Disaster	
	Communication failure
	Damaged road caused delay in reaching
	Rehabilitation problem
QRT: Quick Response Team	

The respondents revealed that during pre-disaster phase, they faced difficulties like mobilization of QRT teams, inadequate logistics and non-preparedness of the health facilities. During the disaster phase, the major difficulties they faced were coordination gap among the various agencies, communication gap, unavailability of clean water during flood, less equipment, no mosquito shield for QRT, non-availability of vehicle, bed unavailability in the hospital during dengue outbreak and no sitting arrangement for the QRTs. The major difficulties faced during post-disaster phase were communication failure, damaged roads which caused delay in reaching, and rehabilitation problems.

Discussion

Disaster management was primarily relief-centric before the enactment of the Disaster Management Act in 2005. The role and responsibilities of each department including the health department has been defined in the Disaster Management Act.[15] Preparedness of health department has been emphasized in the guidelines on Medical Preparedness and Mass Casualty Management issued by the National Disaster Management Authority which is the apex body for the management of disasters in India.[19] State Disaster Management Authority i.e. Delhi Disaster Management Authority at the state level and District Disaster Management Authority at the district level have been constituted in Delhi also[20] as per the provisions of the DM Act 2005. State health department has been assigned the role of primary agency to work as the Essential Support Function (ESF) for Medical Trauma and Counseling Services.[17] The state health department at the district level was working to provide the Medical and Trauma Counseling services under the direction and consultation of the District Disaster Management Authority. The importance of preparedness of the health department is highlighted in the study conducted in Tehran[21]. In this study, it has been stated that the health care centers need to be prepared to react quickly and effectively to minimize the fatalities when unexpected incidents happen. Health care centres'/health facilities' preparedness also include preparation of list of medicines and equipment and ensuring its availability with all the teams.[14,16]

The district health department in Delhi also identified some equipment, medicines, surgical items and other miscellaneous items which should be available and functional in the disaster kit and must have QRT in all the identified health facilities. These identified equipment, medicines, surgical items and other miscellaneous items were assessed for their availability and functionality. It was found that except availability of stethoscope and torch, no all other functional item was available in all the health facilities. Some essential items like functional Ambu bag (Adult) and (Paediatric) were available only in 68.2 per cent of the facilities; spine board was available in 13.6 per cent of the health facilities and scoop stretcher in only 4.5 per cent of the health facilities. Medicines, essential injections like Decadron, Adrenaline, Hand-rub (alcohol based), Spirits and other surgical items were also found unavailable in some health facilities. Importance of their availability in the health facilities can be understood in the study conducted by Phalkey et. al.[22] wherein it was found that 72.4 per cent of the health facilities (primary) experienced stock outs during the flood days. Similar findings were observed in the study conducted by Preeti et. al.[23] wherein it was found that public health facilities, especially, the primary health centres (PHC) and Sub-Centres were not adequately equipped to manage the disasters. Another article[24] has also shown that the capabilities of the civil administration for combating disaster, remain inadequate. It revealed that during the Sikkim earthquake of September 2011, the State and Central authorities along with the National Disaster Relief Force (NDRF) fell short of personnel and lacked logistics backup. Disaster kit containing the identified drugs, surgical items, equipment and other miscellaneous items; is a very basic requirement in the health facility to respond to any disaster. In this study, it was found that disaster kits were available in all the health facilities but items were not available as per the prescribed norms. Similar finding is shown in the study conducted by Minh et. al.[25] wherein the first-aid kit was available at each health facility.

Experience of respondents was asked about the difficulties they faced during the management of disaster/disaster like situation. Respondents in this study said that there was less equipment during the pre-disaster as well as during the disaster phase. Similar finding is seen in the study conducted by Minh et. al.[25] in the Central Vietnam where 22 per cent of the respondents reported temporary shortages of some medicines and supplies during some storm and flood days. Respondents' opinion regarding necessities required for the management of disasters were found to be healthcare personnel, medical equipment, infrastructure and medical supplies in the study conducted by Chapin et. al.[26] In this study, the major gap identified by the respondents during the disaster phase was coordination among various agencies which corresponds with the finding of Mehta[27] who noticed the traditional separation between the medical care community working in the hospitals, nursing homes and the private physicians. He concluded that coordination is the key and the historic separation is a genuine disadvantage.

Conclusion

The drugs, lifesaving injections, intravenous fluid, disinfectants, equipment and other surgical and dressing items identified by the state/district health department were not available in all the health facilities. Some essential equipment like Ambu Bag (Adult) and Ambu Bag (Paediatric) were found in 68.2 per cent of the health facilities. Spine Board, Basic Life Support Mask (Paediatric) and Basic Life Support Mask (Adult) were available in 4.5 per cent, 22.7 per cent and 59.1 per cent of the health facilities respectively. Not all the health facilities had all the drugs identified for the disaster kit. Except two items, not all the identified surgical and dressing materials were available in more than 90 per cent of the health facilities. Except injection

Diclofenac and Normal Saline, all other injectables drugs and disinfectants were available in less than 90 per cent of the health facilities. Respondents' opinion about the difficulties they faced in the management of disaster was lack of coordination between the various agencies and communication gap during disaster phase; and lack of equipment and logistics during pre-disaster and post-disaster phases.

Recommendations

The district health department should ensure the availability of sufficient medicines, equipment, lifesaving injections, and surgical and dressing items in each health facility. Storekeeper of the health facility should maintain the disaster kit as per the items identified by the department and replace the consumables items as and when required. Coordination mechanism among various agencies and communication strategy need to be improved.

References

1. United Nations International Strategy for Disaster Reduction. Terminology [Internet]. Geneva Switzerland: UNISDR; 2009 [cited 2016 Oct 25]. https://www.unisdr.org/we/inform/terminology.
2. National Portal of India [Internet]. New Delhi. Ministry of Electronics and Information Technology, 2017, [cited 2017 Oct 16]. https://www.india.gov.in/india-glance/profile.
3. United Nations Department of Economic and Social Affairs [Internet]. Geneva Switzerland, UNDESA, 2017. World population prospects: the 2017 Revision. [cited on 16 Oct. 2017]. https://www.un.org/development/desa/publications/world-population-prospects-the-2017-revision.html.
4. Ministry of Housing and Urban Poverty Alleviation. An introduction to the vulnerability atlas of India, first revision [Internet]. New Delhi (IN). Building Materials and Technology Promotion Council; [cited 25 Oct. 2016]. P 8. http://www.bmtpc.org/DataFiles/CMS/file/map%20of%20india/Vulnerability%20Atlas%20of%20India.pdf.
5. Menon NVC. Challenges in disaster management. Yojana. March 2012, 56: 13–16.
6. National Disaster Management Authority. National disaster management plan. New Delhi (IN): NDMA, May 2016, p 162.
7. Bhopal disaster. [Internet]. place unknown: Wikimedia foundation. 2009 Feb 25- [16 Oct. 2017]. https://simple.wikipedia.org/wiki/Bhopal_disaster.
8. Singh SS. 90 killed in Kolkata hospital fire. The Hindu [Internet]. 9 Dec. 2011. [cited on 16 Oct. 2017]. http://www.thehindu.com/news/national/other-states/90-killed-in-kolkata-hospital-fire/article2700650.ece.
9. Pereira I. Fireworks show in Kerala goes awry, kills 107. The Hindu [Internet]. 10 April 2016. [cited on 16 Oct. 2017]. http://www.thehindu.com/news/ national/kerala/Fireworks-show-in-Kerala-goes-awry-kills-107/article14231744.ece.
10. Menon M & Gaikwad R. Rash of terror attacks in Mumbai. The Hindu [Internet]. 27 Nov. 2008. [cited on 16 Oct. 2017]. http://www.thehindu.com/todays-paper/RASH-OF-TERROR-ATTACKS-IN-MUMBAI/article15350079.ece.
11. Joshipura MK, Shah HS, Patel PR & Divatia PA. Trauma care systems in India- An overview. Indian J Crit Care Med. Apr-June 2004, 8(2): 93-97.
12. National Disaster Management Authority [Internet]. New Delhi: NDMA. Disaster data and statistics; [cited on 15 Oct. 2017]. http://www.ndma.gov.in/en/disaster-data-statistics.html.

13. Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India. The report of high powered committee on disaster management. New Delhi (IN); 2002. 107 p. Report No.: ISBN 019 5650298.
14. Ministry of Home Affairs. Disaster management in India [Internet]. New Delhi: MHA; 2011 [cited on 7 Oct. 2017]. 255 p. http://ndmindia.nic.in/disaster_management_in_india_09052017.pdf.
15. Disaster Management Act, 2005 (IN). http://atingl.nic.in/Downloads/THE%20DISASTER%20MANAGEMENT%20ACT%202005.pdf.
16. National Disaster Management Authority. National policy on disaster management 2009. New Delhi (IN). NDMA; 22 Oct. 2009, p 39.
17. Kumar A. Delhi disaster management plan (2014-2015) [internet]. New Delhi. Delhi Disaster Management Authority; 2015 [cited on 17 Oct. 2017]. p 236. http://delhi.gov.in/wps/wcm/connect/8d935d004829d5ec8becebae1ccb7dea/Delhi+Draft+State+Plan+09042015+Part+I.pdf?MOD=AJPERES&lmod=-300925450.
18. Express Web Desk. Gas leak in Delhi's Tughlakabad: All you need to know. The Indian Express [Internet]. 2017 May 06. [cited on 9 Dec. 2017]. http://indianexpress.com/article/india/delhi-gas-leak-tughlaqabad-school-studentshospitalised-manish-sisodia-jp-nadda-swati-maliwal-delhigovernment-delhihospitals-students-treatment-46-43477.
19. National Disaster Management Authority. National guidelines for medical preparedness and mass casualty management. New Delhi (IN): National Disaster Management Authority; 2007, p 84.
20. Portal of Government of Delhi [Internet]. New Delhi: Delhi Government; 2008. [9 Dec. 2017]. http://www.delhi.gov.in/wps/wcm/connect/95852e804247c072b64ff68155f92d0f/LG+notification+for+formation+of+DDMA+.PDF?MOD=AJPERES&CACHEID=95852e804247c072b64ff68155f92d0f.
21. Sokhanvar M, Mousavi SM, Nejad ML & Bahadori M. A survey on hazards threatening health care centers of Tehran and their level of preparedness for encountering. Int J Health Syst Disaster Manage. 2015, 3: 27-31.
22. Phalkey R, Dash SR, Mukhopadhyay A, Ranzinger SR & Marx M. Prepared to react? Assessing the functional capacity of the primary health care system in rural Orissa, India to respond to the devastating flood of September 2008. Glob Health Action. 4 March 2012, 5: 1-10.
23. Gupta P, Khanna A & Majumdar S. Disaster management in flash floods in Leh (Ladakh): A case study. Indian J Community Med. 2012, 37: 185-90.
24. Shivananda H & Gautam PK. Reassessing India's disaster management preparedness and the role of the Indian armed forces. J Defense Stud. 2012, 6(1): 102-13.
25. Minh HV, Anh TT, Rocklov J, Giang KB, Trang LQ, Sahlen KG, et al. Primary healthcare system capacities for responding to storm and flood-related health problems: A case study from a rural district in central Vietnam. Glob Health Action. 8 Dec. 2014, 7: 1-11.
26. Chapin E, Daniels A, Elias R, Aspilcueta D & Doocy S. Impact of the 2007 Ica earthquake on health facilities and health service provision in southern Peru. Prehosp Disaster Med. 7 Aug. 2009, 24(4): 326–32.
27. Mehta S. Disaster and mass casualty management in a hospital: How well are we prepared? J Postgrad Med. 2006, 52: 89-90.

स्वास्थ्य एवं जनसंख्या:
परिप्रेक्ष्य एवं मुद्दे, 42 (1&2): 18-29 /2019

दिल्ली की स्वास्थ्य सुविधाओं में आपदा प्रबंधन के लिए ड्रग्स, उपकरण और अन्य संभारतंत्र की उपलब्धताः एक आकलन

संजय सिंह*, ए.के. सूद** और उत्सुक दत्ता**

सारांश

भारत, अपनी भू–वैज्ञानिक और जलवायु भिन्नता स्थिति के कारण, दोनों प्राकृतिक और मानव निर्मित संकट के कारण भेद्य है। प्राथमिक स्वास्थ्य केंद्र (PHC) मरीजों के परस्पर सम्पर्क तथा बातचीत का पहला एवं आरंभिक बिंदु है जहां वे डॉक्टर से मिलते हैं। दवाओं, सर्जिकल आइटम, ड्रेसिंग सामग्री, कार्यात्मक उपकरण और अन्य विविध वस्तुओं की उपलब्धता आपदा के दौरान रोगियों तथा पीड़ितों के जीवन को बचा सकती हैं। इस अध्ययन के लिए एक वर्णनात्मक अध्ययन डिजाइन का उपयोग किया गया। जिला स्वास्थ्य विभाग की कुल 22 स्वास्थ्य सुविधाओं को दिल्ली के दो जिलों में प्रणालीगत यादृच्छिक नमूना विधि द्वारा चुना गया। प्राथमिक और माध्यमिक आंकड़े एकत्र किए गए। स्वास्थ्य विभाग द्वारा निर्धारित दवाओं, उपकरणों और अन्य उपभोज्य सामग्री की उपलब्धता का आकलन स्वास्थ्य सुविधाओं में किया गया। स्टेथोस्कोप और टॉर्च को छोड़कर अन्य सभी निर्धारित उपकरण सभी स्वास्थ्य सुविधाओं में कार्यात्मक अवस्था में उपलब्ध नहीं थे। कुछ आवश्यक वस्तुएँ जैसे अम्बु बैग (वयस्क) और (शिशु रोग चिकित्सा) कार्यात्मक रूप से 68.2 प्रतिशत सुविधाओं में उपलब्ध थीं। पेरासिटामोल सिरप सभी स्वास्थ्य सुविधाओं में उपलब्ध था। इंजेक्शन डिक्लोफेनाक 95.5 प्रतिशत स्वास्थ्य सुविधाओं में उपलब्ध था और 90.9 प्रतिशत स्वास्थ्य सुविधाओं में सामान्य खारा उपलब्ध था। 90.9 प्रतिशत स्वास्थ्य सुविधाओं में दस्ताने (आकार 6.5) उपलब्ध थे और 86.4 प्रतिशत स्वास्थ्य सुविधाओं में रूई के रोल उपलब्ध थे। अंतर आपदाओं/आपातकालीन स्थिति का प्रबंधन करते समय आपदा चरण के दौरान समन्वय और संचार उत्तरदाताओं द्वारा सामना की जाने वाली प्रमुख कठिनाइयाँ थीं। अध्ययन से यह निष्कर्ष प्राप्त होता है कि दोनों जिलों में स्वास्थ्य सुविधाओं में चिन्हित कार्यात्मक उपकरणों, दवाओं, शल्य चिकित्सा और ड्रेसिंग सामग्री और अन्य विविध वस्तुओं की 100 प्रतिशत उपलब्धता नहीं है। हालांकि, सभी स्वास्थ्य सुविधाओं में आपदा किट उपलब्ध थे। जिला स्वास्थ्य विभाग की सभी स्वास्थ्य सुविधाओं को मजबूत करने की आवश्यकता है, जहां तक पर्याप्त कार्यात्मक उपकरण, दवाएं, सर्जिकल और ड्रेसिंग आइटम, और अन्य विविध वस्तुओं की उपलब्धता का संबंध है। प्राथमिक स्वास्थ्य सुविधा स्तर पर आपदा/आपदा जैसी स्थिति के प्रबंधन के लिए समन्वय तंत्र और संचार सुविधाओं में सुधार के लिए भी ध्यान केन्द्रित करने की आवश्यकता है।

मुख्य शब्दः आपदा प्रबंधन, स्वास्थ्य देखरेख सुविधाएं, जिला स्वास्थ्य विभाग, उपकरण, चिकित्सा, शल्य चिकित्सा और ड्रेसिंग सामग्री , दिल्ली।

*एमडी–सीएचए, ई–मेलः drsanjaysingh76@gmail.com, **प्रोफेसर, शिक्षा और प्रशिक्षण विभाग; राष्ट्रीय स्वस्थ्य एवं परिवार कल्याण संस्थान, बाबा गंगनाथ मार्ग, मुनिरका, नई दिल्ली –110 067।

Health and Population:
Perspectives and Issues, 42 (1&2): 30-35/2019

A Literature Review of Information, Education and Communication (IEC) Activities for Malaria, Tuberculosis and HIV and AIDS after the 2015 Deadline of Millennium Development Goal

Manoj Varghese*

Abstract

Communication strategy and its application is a good means to create awareness among people about a disease, its causes and treatment, change a person's or group's attitude towards a disease, advocate for policy changes in favour of prevention and control, and develop social norms that favour a healthy living. A lot of emphasis has been given in the recent past to enhance the reach of IEC activities regarding social and health issues. Although, efforts have been made to address the health issues of Malaria, Tuberculosis (TB), and HIV and AIDS in India on a vigorous mode with the support of the media; unfortunately, no effort has been made to document such activities.

It is noted that communication interventions hold a vital and indispensable place in the prevention and treatment of diseases. Studies conducted in different countries including Ethiopia, Mexico, Nigeria, Pakistan, Thailand and India revealed that patients with low knowledge about the symptoms of these diseases are more likely to delay the testing and treatment. And, there is a possibility of these patients visiting traditional healers and worsening the case. In all the programmes, to overcome the problem of these diseases, the main content revolves around advocacy, behaviour change communication and social mobilization where IEC plays a vital role. In 2017, the malaria cases came down by almost three million over the previous year in India. Awareness created through the IEC activities, scaling up a diagnostic testing, treatment and training community workers in the endemic areas is learnt to have created the desired impact. The Government of India is committed to eliminate TB by 2025. All efforts are being made to address the recently discovered phenomenon of TDR-TB (Totally drug resistant TB) at the grass root level. An all out effort of creating public awareness on signs and symptoms has resulted in reducing the spread of HIV and AIDS. In view of this background, the systematic review of literature in this paper identifies the gap, and suggests strengthening the IEC activities to overcome the burden of Malaria, TB and HIV/AIDS so as to achieve the United Nation's Sustainable Developmental Goals (SDG) by 2030.

Key words: *Information Education and Communication (IEC), Millennium Development Goal (MDG), Social Behaviour Change Communication, Sustainable Development Goal (SDG).*

Communication is a vital component of healthcare delivery in the country. Health has been recognized as a central development imperative which acts not just as a resource but also as an indicator of sustainable development. In other words, health gains are directly proportional to economic growth and if the benefits of growth are equitably distributed, then poverty reduction will take place. Nevertheless, the development prospects of the world's poor countries have been directly undermined by major diseases such as HIV/AIDS, Malaria and TB. Policymakers across the globe appear to have realized this reality and have, therefore, introduced the intervention of programmes to promote economic growth.1

The MDGs acknowledged the centrality of health to the global agenda of human development. Goals 4, 5 and 6 aimed at reducing child mortality, improving maternal health and combating HIV and AIDS, Malaria and other diseases, respectively. The MDG 6 was successful in promoting public sympathy for these three major diseases and subsequently, realized billions

**Social Behaviour Change Communication (SBCC) Trainer for UNICEF projects, E-mail: manojmediacenter@yahoo.co.uk.*

of dollars to fight against the diseases. Health communication, therefore, plays an important role in raising awareness among the people about certain illness as well as about the available interventions in the country. HIV/AIDS, Malaria and TB have devastating impact on poorer countries. Together, these diseases, also known as the 'big three', account for a staggering 5.6 million deaths and the loss of 166 million disability-adjusted life years (DALYs) annually.1

Efforts are being made to promote adherence to treatment of TB and Malaria that has been reportedly hampered by drug resistance while improving innovative domestic financing and efficient use of available resources. There are ongoing efforts by the scientists to develop an anti-malaria vaccine which is currently undergoing clinical tests to ensure its safety. Efforts to curb the menace of the three illnesses were articulated in the National Policy on HIV/AIDS, National Tuberculosis and Leprosy Control Programme and National Malaria Control Programme. In all these programmes, the main content revolves around advocacy, behaviour change communication and social mobilisation. The gap is still evident, despite the fact that several health institutions like WHO, UNICEF, Public Health Foundation of India, National Institute of Health and Family Welfare, Population Services International and others have joined hands with the Government of India in executing the campaign to its full potential to overcome the problems of these diseases and achieve the SDG by 2030.

Looking at the above scenario, one is inclined to think that there is definitely a missing gap. It is either that the intervention programmes have not reached the desired target or they are not appropriately communicated to influence change. It is pivotal in the effort to understand, create and communicate people-oriented media messages which will ultimately improve healthcare. These three illnesses are seen as the most serious problems faced by the health practitioners. "The combined toll of the 'big three' diseases have been so high and the risk to global heath is too great," says Jack C. Chow, WHO's Assistant Director General for HIV/AIDS, TB and Malaria.[1] Thus, in order to reduce the infection rates, effective communication strategy is the fundamental key to overcome the problems associated with misinformation and myths around the epidemic.

The IEC strategy framework incorporates a variety of activities involving communities and the various media channels like Interpersonal Communication, Group Communication, Folk and Traditional Media and Mass Media formats like radio, television and print media. Also, the New Media form an important component of IEC strategy.[2] The sustained IEC campaign, later on called as the 'Social and Behaviour Change Communication (SBCC)' and hard work of health functionaries over several years led to the elimination of the incidence of polio in the country on 13 January 2011.

Methodology

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Review and Meta–Analysis (PRISMA) guidelines. The research papers and articles were systematically reviewed on the said topic with the help of Google Scholar. The review focused primarily on IEC, BCC, and awareness among people about various diseases, particularly with reference to Malaria, TB and HIV/AIDS. Restrictions were made on study location (India), date of publication after 2015 and English language only.

Approximately 40 research papers published on the likeness of this topic were reviewed and

identified 15 through the Google Scholar.[1-14] These papers were then screened to weigh the impact of IEC activities in creating awareness, sensitizing, prevention and treatment and in changing the behaviour of the patients and public. The papers were categorized into national and state level, based on the demography.

Findings and Discussion

Most of the research studies had adopted purposive stratified random sampling technique using a structured interview schedule to collect the primary data. The review reveals that the IEC strategy has mainly focused on either the Health Belief Model (HBM) or Social Ecological Model (SEM). The HBM is used to explain and predict the health behaviours by focusing on the attitudes and beliefs of individuals based on the media messages. On the other hand, the SEM suggests that human behaviour is influenced and shaped by the environment in which one lives. The model represents a comprehensive approach to designing, implementing and evaluating interventions which target the multiple influences on behaviour. It takes cognizance of the intricate interplay between individuals, relationship, community and societal factors.

Based on the review, it has been found that majority of the respondents have heard about the three diseases from media such as radio, TV, bill boards, hand bills, posters, text messaging on phones, workshops and schools.

The Global Malaria Eradication Programme's failure to eliminate malaria in the 1950s and 1960s underline the importance for its downfall by reintroducing transmission and spreading chloroquine resistance.[3] India reported almost three million fewer malaria cases in 2017, a 24 per cent decrease over the previous year, while cases increased worldwide to 219 million from 217 million, after registering a steady decline since 2010; according to the World Malaria Report 2018. The reduction of cases, however, means that India is no longer among the world's top three countries in terms of number of cases, which was around 8.7 m in 2017 (Neglected Tropical Diseases, 2017). Around 70 per cent of the world's malaria cases are found in India and 10 sub-Saharan African countries. "There were 3.5 million more malaria cases reported in these 10 African countries in 2017 as compared to the previous year while India showed progress in reducing its disease burden," said the report. Since 2000, India has reduced malaria deaths by two-thirds and halved the number of malaria cases. The other countries that showed results were the malaria-endemic countries of China and El Salvador which reported no local transmission in 2017. In 2017, India launched its five-year National Strategic Plan for Malaria Elimination that shifted focus from malaria 'control' to 'elimination' and provided a road map with targets to end malaria in 571 districts out of 678 districts in India by 2022.

The review indicates that the awareness created through the IEC activities, scaling up of diagnostic testing, treatment and surveillance and ensuring an un-interrupted drug supply chain, training community workers to test all fever cases and provide medicines, and distributing medicated bed-nets (11 m) for prevention, under it's 'test-treat-track' in the endemic areas; have helped in controlling the problems. Dr. Pedro Alonso, Global Malaria Programme Director, WHO, opined that 'Odisha is a driver of India's success against malaria, where innovations such as improving health care workers' skills, expanding access to diagnostics and treatment, and strengthening data collection, have led to the state recording a path-breaking decline of over 80 per cent in the reported malaria cases and deaths".[4]

India accounts for about a quarter of the Global TB burden. TB is responsible for the death of every third AIDS patient in India. TB has been attributed to a poor man's disease and is often spread among the family and community members living in dense clusters. As per the Ministry of Health and Family Welfare, 2.15 m new TB patients were discovered in 2018 (Global Tuberculosis Report 2018). The Government is committed to eliminate TB by 2025. TB is India's biggest health issue but what makes this issue worse is the recently discovered phenomenon of TDR-TB (Totally drug resistant TB). This issue of drug-resistant TB began with MDR-TB, and moved on to the most dangerous form of XDR-TB.

India has the third largest HIV epidemic in the world. As per the UNAIDS data 2018, In India 2.1 million people are living with HIV, 88,000 new HIV infections were reported, 69,000 AIDS related deaths occurred.[3] The study revealed that broad based response to HIV epidemic has helped to reduce the level of infections when compared to some other African countries. Mass awareness programmes, treatment of sexually transmitted diseases and effective promotion of condom use has resulted in reducing the burden of HIV cases in India.[1]

It is noted that Communication interventions, including IEC and Behaviour Change Communication (BCC) hold a vital and indispensable place in prevention and treatment. Studies conducted in different countries, including Ethiopia, Mexico, Nigeria, Pakistan, Thailand and India revealed that patients with low knowledge about the symptoms of these disease are more likely to delay the testing and treatment. And, there is a possibility of these patients visiting traditional healers and worsening the case.[1]

Conclusion

The main constraints to health communication interventions could be effectively addressed if we adopt a step-by-step approach in planning, properly selecting the target audiences and design the surveys, and formulate key messages that will provide the best foundation for a programme's success. Finally, engagement with key medical and required stakeholders, as well as the media, will maximize the positive outcomes for health communication programmes.

There is a need for attitudinal change by all to ensure that the level of awareness is matched with the action, and subsequently influence the adoption of intervention measures to improve the management of these diseases. There are many ways to address malaria and efforts should be tailored to the specific high-risk group with special focus on reducing receptivity; and killing the parasites by creating awareness as carried out by several malaria-free countries.

Understanding the situation, strategizing the interventions through better communication is the key to address these health issues of Malaria, TB and better vaccination. A well-stratified IEC campaign has reduced the spread of HIV in the recent past but needs to be curtailed fully by a holistic approach. SBCC for a social change is the need of the hour to address all the three diseases in India so that it achieves the SDG by 2030.

References

1. Chinwe Catherine Okpoko & Elias Chikee Aniwada. Investigating Health Communication Interventions on Three Major Illness in Nigeria. South Asian Journal of Social Sciences and Economics, 2018, 1(3): 1-9.

2. Lipi B Mahanta, Manisha Choudhury, Sikha Borthakur, Ritul Bhagabati & Partha Gogoi. Can Communication Media improve the KAP status of frontline health workers? A cross sectional study on MCH indicators from Assam, India. South East Asia Journal of Public Health, 2015, 5(2): 57-64.
3. Hugh JW Sturrock, Kathryn W Roberts, Jennifer Wegbreit, Colin Ohrt & Roly D Gosling. Tackling Imported Malaria: An Elimination endgame. The American Society of Tropical Medicine and Hygiene, 2015, 93(1): 139-144.
4. Sanchita Sharma. Sharp decline in malaria in India as cases rise globally: WHO report. Hindustan Times, 20 Nov 2018.
5. B Jyotsna Devi. Information, education and communication through self help group women. International Journal of Applied Home Science, January 2018, Volume 5 (1): 190-196.
6. V Uma Devi. Situation Analysis of IEC Activities in Family Welfare Programmes; The Journal of Family Welfare, June 2004, Vol 50, No. 1.
7. Vaidyanathan Radha. Efforts of an Information, Education and Communication (IEC) Strategy on Knowledge Quotient (KQ) Among School Students in Pune on Immunization. IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), May 2016, Vol 15 (5): Ver III, p 64–70.
8. Singh RK, Haq S & Dhiman RC. Studies on Knowledge, Attitude and Practices in Malaria Endemic Tribal Areas of Bihar and Jharkhand, India. Journal of Tropical Diseases, 2013, Volume 1 (3).
9. Kalyan B Saha, Ravendra K Sharma, Rajdeep Mishra, Arvind Verma, BK Tiwari & Neeru Singh. Establishing communication mechanism for malaria prevention in Baiga tribal villages in Baiga Chak area of Dindori district, Madhya Pradesh. Indian Journal of Medical Research, May 2015, 141, p 576 – 583.
10. Bratati Banerjee. Information, Education and Communication Services in MCH Care Provided at an Urban Health Center. Indian Journal of Community Medicine, October 2009, Vol 34 (4).
11. Mamta Parashar, SV Singh, Jugal Kishore, Ajay Kumar & Milan Bhardwaj. Effect of Community-based Behaviour Change Communication on Delivery and Newborn Health Care Practices in Resettlement Colony of Delhi. Indian Journal of Community Medicine, January, 2013, Vol 38 (1).
12. BN Mishra, D Sinha & A Salam. Evaluation of the Impact of Health Education Material on Maternal Knowledge and Practice. Indian J. Prev. Soc. Med., 2008, Vol 39 (1 & 2).
13. Global Tuberculosis Report, 2018. World Health Organisation.
14. Lipi B Mahanta, Manisha Choudhury, Sikha Borthakur, Ritul Bhagabati & Partha Gogoi. Can communication media improve the KAP status of frontline health workers? A cross-sectional study on MCH indicators from Assam, India. South East Asia Journal of Public Health, 2015, 55 (2): 57-64.

स्वास्थ्य एवं जनसंख्या:
परिप्रेक्ष्य एवं मुद्दे, 42 (1&2): 30-35 / 2019

सहस्राब्दी विकास लक्ष्य –2015 की समय सीमा के पश्चात् मलेरिया, क्षयरोग एवं एचआईवी और एड्स के लिए सूचना, शिक्षा और संचार गतिविधियों की एक साहित्य समीक्षा

मनोज वर्गीस*

सारांश

संचार रणनीति एवं इसका अनुप्रयोग एक रोग एवं इसके कारणों सहित तत्संबंधी उपचार के बारे में लोगों में जागरूकता पैदा करने, किसी रोग के प्रति किसी व्यक्ति या वर्ग के दृष्टिकोण को बदलने, रोग की रोकथाम और नियंत्रण करने के पक्ष में नीतिगत परिवर्तनों का पक्षपोषण करने और सामाजिक मानदंडों को विकसित करने के लिए एक अच्छा साधन है। एक स्वस्थ जीवन के पक्ष में सामाजिक और स्वास्थ्य मुद्दों के बारे में आईईसी गतिविधियों की पहुंच बढ़ाने के लिए हाल के दिनों में बहुत जोर दिया गया है। हालाँकि, मीडिया के समर्थन से भारत में मलेरिया, क्षयरोग (टीबी) और एचआईवी और एड्स के स्वास्थ्य के मुद्दों को जोरदार तरीके से जोर देने और संबोधित करने का प्रयास किया गया है; दुर्भाग्य से, इस तरह की गतिविधियों को प्रलेखबद्ध करने का कोई प्रयास नहीं किया गया है।

यह ध्यान रखने की बात है कि संचार साधनों का हस्तक्षेप बीमारियों की रोकथाम और उपचार में एक महत्वपूर्ण और अपरिहार्य स्थान रखता है। इथियोपिया, मैक्सिको, नाइजीरिया, पाकिस्तान, थाईलैंड और भारत सहित विभिन्न देशों में किए गए अध्ययनों से पता चला है कि इन रोगों के लक्षणों के बारे में कम जानकारी वाले रोगियों में परीक्षण और उपचार में देरी की संभावना अधिक है। और, इन रोगियों को पारंपरिक उपचार देने और नीम हकीमों से ईलाज कराने से मामला अधिक बिगड़ने की संभावना हो जाती है। सभी कार्यक्रमों में, इन बीमारियों की समस्या को दूर करने के लिए, मुख्य विषय सामग्री पक्षपोषणपूर्ण, व्यवहार परिवर्तन संचार और सामाजिक गतिशीलता के चारों ओर घूमती है जहां आईईसी एक महत्वपूर्ण भूमिका निभाता है। 2017 में, भारत में पिछले वर्ष की तुलना में मलेरिया के मामलों में लगभग तीन मिलियन की कमी आई। आईईसी गतिविधियों के माध्यम से बनाई गई जागरूकता, स्थानिक क्षेत्रों में एक नैदानिक परीक्षण, उपचार और प्रशिक्षण सामुदायिक कार्यकर्ताओं को स्केलिंग के माध्यम से वांछित प्रभाव पैदा करने के लिए है। भारत सरकार 2025 तक क्षयरोग को खत्म करने के लिए प्रतिबद्ध है। टीडीआर–टीबी (टोटली ड्रग रेसिस्टेंट टीबी) की हाल ही में खोज की गई घटना को जमीनी स्तर पर दूर करने के लिए सभी प्रयास किए जा रहे हैं। संकेतों और लक्षणों पर सार्वजनिक जागरूकता पैदा करने के एक पूरे प्रयास के परिणामस्वरूप एचआईवी और एड्स के प्रसार में कमी आई है। इस पृष्ठभूमि के मद्देनजर, इस पत्र में साहित्य की व्यवस्थित समीक्षा है जो मलेरिया, टीबी और एचआईवी/एड्स के बोझ से उबरने के लिए आईईसी गतिविधियों को मजबूत करने का सुझाव प्रस्तुत करता है ताकि वर्ष 2030 तक संयुक्त राष्ट्र के सतत विकास के लक्ष्य (एसडीजी) को प्राप्त किया जा सके।

प्रमुख शब्दः सूचना शिक्षा और संचार (आईईसी), सहस्राब्दी विकास लक्ष्य (एमडीजी), सामाजिक संचार व्यवहार परिवर्तन, सतत विकास लक्ष्य (एसडीजी)।

*यूनीसेफ परियोजनाओं के लिए सामाजिक व्यवहार परिवर्तन (एसबीसीसी) प्रशिक्षक, ई–मेलः manojmediacenter@yahoo.co.uk

Health and Population:
Perspectives and Issues, 42 (1&2): 36-47/2019

Tracking the Contributions of Faculty Members and Research Staff of The NIHFW: An Analytical Study

Giriraj Halkar*

Abstract

The present study is a bibliometric analysis that covers the 751 papers published by the officials of the National Institute of Health and Family Welfare in different aspects of health sciences during the period of 1978-2014. Publication productivity is expressed by the number of papers published by a selected unit in a given time. In India, although health education and research have much wider importance and the publication productivity is also increasing, no systematic attempt has been made to analyze the pattern of this literature productivity. In this context, it is relevant to examine the productivity patterns of the faculty members of the Institute. In authorship pattern, it is found that solo research is predominant then collaborative research. The objective of this paper is to analyse the bibliometric parameters for NIHFW publication output. The study demonstrates the various aspects of the data and investigation was carried out for the publications, year-wise distributions, subject-wise, authorship patterns as well as gender-wise and department-wise distributions. The degree of collaboration was calculated and it was found that the single authorship trend has increased gradually. It can be concluded that the Institute can attain visibility, prestige, and credibility in the broader academic community by producing high quality research; and this in turn, enhance the reputation of the Institute and provide a greater opportunity for attracting better students, faculty and researchers.

Key words: *Scientometrics, Quantitative data, Studies, Authorship pattern.*

The 20th century may be described as the century of the development of metric sciences. In this century itself, there have been developments of librametrics, bibliometrics, scientometrics, technometrics, biometrics, sociometrics, econometrics, cybermetrics or webometrics[1], and lastly informatics. Publication productivity is often considered to measure the prestige of an institution, and is associated strongly with an individual employee's reputation, visibility, and advancement in the academic world, particularly in research institutions and universities[2]. The relationship between output of research and input measured through the publication productivity. The contribution of the institution and the individual officers engaged in research are highlighted by the institutional productivity. It also provides some insights into the complex dynamics of research activity and enables policy makers and administrators to provide adequate facilities; and gauge the research activities in a proper direction. A well-known research productivity indicator is the number of publications produced by the officers, institutions or research groups. To evaluate the productivity of research institutions and an individual researcher, and to map the growth of the research area; scientometric and bibliometric techniques have become tools over the years.

The National Institute of Health and Family Welfare (NIHFW), New Delhi, India, was established on 9th March, 1977 with the merger of two national level institutions, viz. the National Institute of Health Administration and Education (NIHAE) and the National Institute of Family Planning (NIFP). The NIHFW, an autonomous organization of the Ministry of Health and Family Welfare, Government of India, acts as an 'apex technical institute' as well as a 'think tank' for the promotion of health and family welfare programmes in the country.

**Senior Technical Assistant, National Documentation Centre, The National Institute of Health & Family Welfare, Munirka, New Delhi-11006; E-mail: gghalkar@nihfw.org*

The Institute addresses a wide range of issues on health and family welfare from a variety of perspectives through the departments of Communication, Community Health Administration, Education and Training, Epidemiology, Management Sciences, Medical Care and Hospital Administration, Population Genetics and Human Development, Planning and Evaluation, Reproductive Bio-Medicine, Statistics and Demography and Social Sciences.

Review of Literatures

Kuruppu and Moore[3] conducted a study to examine the types of information used by graduate students in the fields of biological and agricultural sciences at Iowa State University (ISU). The citations of doctoral dissertations submitted in nine agriculture and biological science subject fields (crop production and physiology; molecular, cellular, and developmental biology; entomology; genetics; microbiology; plant breeding; plant pathology; plant physiology; and soil science) at ISU from 1997–2006 were analyzed. The study discussed the types and ages of resources cited in the different subject fields studied. The most cited journals in each discipline were identified, and the journal title dispersion was examined.

Similarly, Amsaveni N et al.[4] studied the authorship pattern of collaborative research in Bioinformatics, deals with the authorship collaboration research. The team's work has been a well-recognized feature of modern science and there has been a reliable trend towards enlarged collaboration in all branches of science and technology in the present century. Totally, 91655 authors produced 17318 articles in this subject of bioinformatics. 9.77 per cent of the articles were single authors' contribution whereas the remaining 90.17 per cent were by collaborative authors. Two-authors team has produced more articles and six-authors team has the least number of papers.

Aswathy & Gopikuttan[5] analysed the publication pattern of faculty members of three universities in Kerala viz University of Kerala, Mahatma Gandhi University and University of Calicut. Authorship pattern, degree of collaboration, the appropriateness of Lokta's Inverse Square Law and year-wise and designation–wise distributions have been studied. The year-wise distribution of publications indicates that there is a growth in the numbers publications. It is found that multi-authorship dominates among university teachers and there is no statistically significant difference between the experience and productivity. Designation-wise degree of collaboration shows that Professors are having a high degree of collaboration which indicates that increase in the age and experience results in more collaborative papers.

Vivekanandhan S and Bathri Narayanan AL[6] have carried on scientometric analysis of research publication productivity of the Barahiyar University. Data have been downloaded from the Scopus database for the period 2009-2013. Among the 1576 papers published in the span of 5 Years, the highest number of 452 papers was published in the year 2013. The majority of the Bharathiar University research outputs is published in joint authorship (98.86%). The average degree of collaboration is 0.99. Journal articles have occupied the top position with the highest number of article 1419 (90.04%). Maximum number of articles is published in English Language 1575 (99.87%).

Scope of the Study

The current study is aimed at analysing the mapping of publication productivity in NIHFW where the maximum number of articles has been published in English Language.

Variables Considered for Analysis

The following variables were considered for analysis to draw a meaningful conclusion:

- Total number of articles appeared during the period 1978-2014.
- Authorship pattern and collaborative authors
- Department wise distribution of contribution
- Number of pages per article

Objectives

The major objectives of this study were to:

i) find out the year-wise distribution of publications in NIHFW,
ii) examine the department-wise breakup of publications,
iii) ascertain the authorship pattern,
iv) find out the contribution Department-wise,
v) find out Degree of collaboration year-wise,
vi) analyze the relative growth rate,
vii) find out the average length of pages per contribution, and
viii) examine the fitness of Lotka's inverse square law.

Methodology

There are various sources contributing to the publication output of NIHFW. The study confined to a period of 37 years from 1978 to 2014 of the Institute. A survey has been conducted to collect data from the faculty members and research staff of all the Departments, Annual Reports and Newsletters of the Institute as well as the institute website. Analysis is done using excel for tabulation and calculation.

Data Analysis and Interpretation

Following tables represent the quantitative performance of NIHFW towards health science through different metrics

Year-wise Distribution of Publications

The distribution of 751 articles by publication year revealed a rise in publication trend only after 1998. The average output of the organization was 20 publications per year; and the minimum was 4 items in the year 1987.

Table 1
Growth of Publications

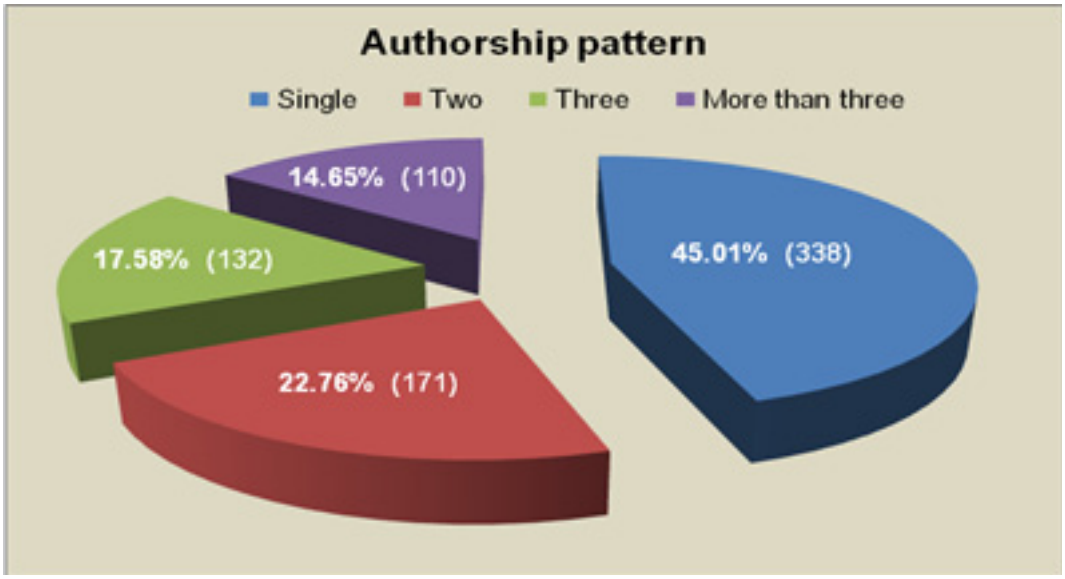
S. No.	Year	No. of publications	%
1	1978	30	3.99
2	1979	7	0.94
3	1980	22	2.93
4	1981	42	5.59
5	1982	17	2.27
6	1983	31	4.14

S. No.	Year	No. of publications	%
7	1984	12	1.59
8	1985	28	3.74
9	1986	10	1.33
10	1987	4	0.54
11	1988	18	2.39
12	1989	15	1.99
13	1990	6	0.79
14	1991	9	1.19
15	1992	13	1.74
16	1993	30	3.99
17	1994	12	1.59
18	1995	16	2.15
19	1996	9	1.19
20	1997	6	0.79
21	1998	12	1.59
22	1999	40	5.33
23	2000	11	1.47
24	2001	18	2.39
25	2002	25	3.33
26	2003	18	2.39
27	2004	11	1.47
28	2005	34	4.53
29	2006	35	4.68
30	2007	40	5.33
31	2008	30	3.99
32	2009	24	3.19
33	2010	12	1.59
34	2011	20	2.67
35	2012	27	3.59
36	2013	22	2.93
37	2014	35	4.66
Total		751	100.00

Authorship Pattern

It is observed from Figure 1 that maximum papers were contributed by single authors. Out of 751 papers, the highest number of papers was published by single author and it accounts for 338 with 45.01 per cent while by multiple-authors' articles account for 171 with 22.76 per cent. 17.58 per cent of the articles were published by three authors. Only 14.65 per cent of the articles were published by more than three authors. But the trend of the author pattern in the publications shows that the team size was two to four.

Figure 1
Authorship pattern



Year-wise Authorship Pattern

Data pertaining to year-wise authorship pattern have been given in the Table 2. Regarding single authored contributions, the year 1999 has the highest contributions with 26 respectively and the lowest in 1987. Regarding double author contributions, the year 1981 has the highest contributions with 16. The year 1993 and 2002 has the highest contributions regarding three authored contributions with 11. The year 2006 has the highest contributions of multiple authored (more than three authors) with 12.

Table 2
Year-wise Authorship Pattern

Year	Single	Double	Three	> Three	Total
1978	14	5	7	4	30
1979	7	-	-	-	7
1980	11	8	2	1	22
1981	20	16	4	2	42
1982	12	2	2	1	17
1983	11	7	6	7	31
1984	3	5	2	2	12
1985	10	5	8	5	28
1986	6	1	1	-	8
1987	1	3	-	-	4
1988	11	4	2	1	18
1989	5	2	7	1	15
1990	4	1	-	1	6
1991	3	-	4	2	9
1992	9	3	-	1	13
1993	11	5	11	3	30

Year	Single	Double	Three	> Three	Total
1994	7	3	2	-	12
1995	7	3	2	2	14
1996	4	-	1	1	6
1997	2	1	-	-	3
1998	3	8	1	-	12
1999	26	7	5	2	40
2000	7	1	-	-	8
2001	13	1	4	-	18
2002	11	12	11	7	41
2003	9	5	2	2	18
2004	7	1	-	3	11
2005	17	5	5	7	34
2006	14	8	1	12	35
2007	12	15	8	5	40
2008	14	5	4	7	30
2009	20	1	2	1	24
2010	3	2	2	2	9
2011	2	4	3	11	20
2012	8	4	8	7	27
2013	6	7	7	2	22
2014	8	11	9	7	35
Total	338	171	132	110	751

Gender-wise Analysis of Publications

Table 3 represents contribution of publications by gender. Out of 751 publications, 1221 (82%) have been contributed by male and 268 (18%) contributed by female authors. Among the authorship, it is found that male authors' contribution is more when compared to female contributors.

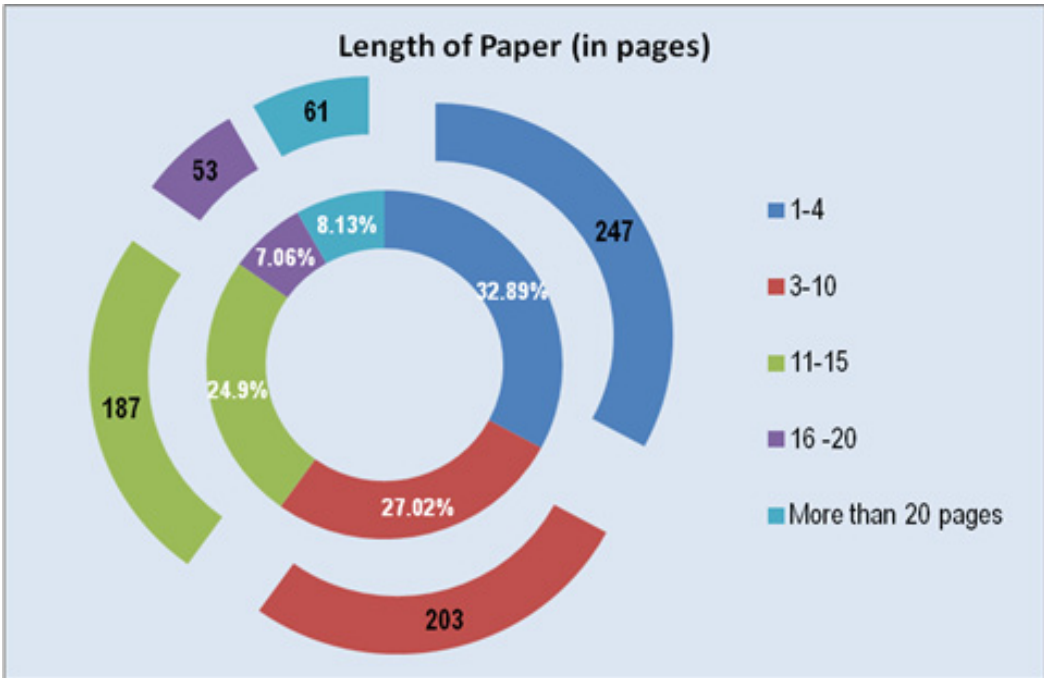
Table 3
Gender-wise analysis

Sl. No	Gender	Number	%
1	Male	1221	82
2	Female	268	18
	Total	1489	100

Length of Articles

Figure 2 contains that 247 (32.49%) papers have 1-4 pages, followed by 203 (27.02%) with 5-10 pages. However, the number of papers with more than 20 pages is 61 (8.13%).

Figure 2
Length of paper



Degree of Collaboration

Degree of collaboration is an examination of the prominent area of inquiry in Bibliometric studies indicating the trend in patterns of single and joint authorship in the publication the study of degree of collaboration is applied on the output of the Institute during the period of ten years from 1978 to 2014 it is observed that the Degree of Collaboration (DC) is 2.12) that means there are few/negligible contributions by single authors.

The formula given by K. Subramanyam[7] is useful for determining the degree of collaboration in quantitative terms. The extent/Degree of Collaboration (DC) in research can be measured with the help of the formula.

$$DC = \frac{NM}{NM + NS}$$

Where, DC = Degree of Collaboration

NM = Number of Multiple Authored Papers

NS = Number of Single Authored Papers in this present study

The year-wise DC of authors is presented in the Table 4. The DC ranges from 0.90 to 0.94. The average DC is 0.92 during the period 2005–2009 which clearly reflects a higher level of collaboration in the journal. Similar type of result has been drawn by Rajinikanth, et al. in the Journal of Surveying Engineering.

Table 4
Shows Single Vs Multi-Authored and Degree of Collaboration

Sl. No.	Year	Single Authored (NS)	Multiple Authored (NM)	NS+NM	Degree of Collaboration (DC)
1	1978	14	16	30	0.54
2	1979	7	-	7	1
3	1980	11	11	22	0.5
4	1981	20	22	42	0.53
5	1982	12	5	17	0.29
6	1983	11	20	31	0.65
7	1984	3	9	12	0.75
8	1985	10	18	28	0.64
9	1986	6	2	8	0.25
10	1987	1	3	4	0.75
11	1988	11	7	18	0.39
12	1989	5	10	15	0.67
13	1990	4	2	6	0.34
14	1991	3	6	9	0.67
15	1992	9	4	13	0.30
16	1993	11	19	30	0.64
17	1994	7	5	12	0.41
18	1995	7	7	14	0.5
19	1996	4	2	6	0.34
20	1997	2	1	3	0.34
21	1998	3	9	12	0.75
22	1999	26	14	40	0.35
23	2000	7	1	8	0.12
24	2001	13	5	18	0.28
25	2002	11	30	41	0.73
26	2003	9	9	18	0.5
27	2004	7	4	11	0.36
28	2005	17	17	34	0.5
29	2006	14	21	35	0.6
30	2007	12	28	40	0.7
31	2008	14	16	30	0.54
32	2009	20	4	24	0.17
33	2010	3	6	9	0.67
34	2011	2	18	20	0.9
35	2012	8	19	27	0.70
36	2013	6	16	22	0.72
37	2014	8	27	35	0.77
	Total	338	413	751	2.12 (Mean Value)

Department-wise Distribution of Contribution

The department-wise distribution of the publication output of institute is presented in Table-5. The analysis clearly shows that Reproductive Biomedicine (RBM) Department is having the highest contributions (35.42%) followed by the Department of Statistics and Demography (12.65%). And almost equal number of contributions (9.99%) by the Department of Community Health Administration (CHA), Education and Training (E&T) Department as well as Epidemiology departments. Only 1.73 per cent of the published papers were contributed by officers in the Department of Management Science.

Table 5
Collaborative Authors/Researches Department-wise

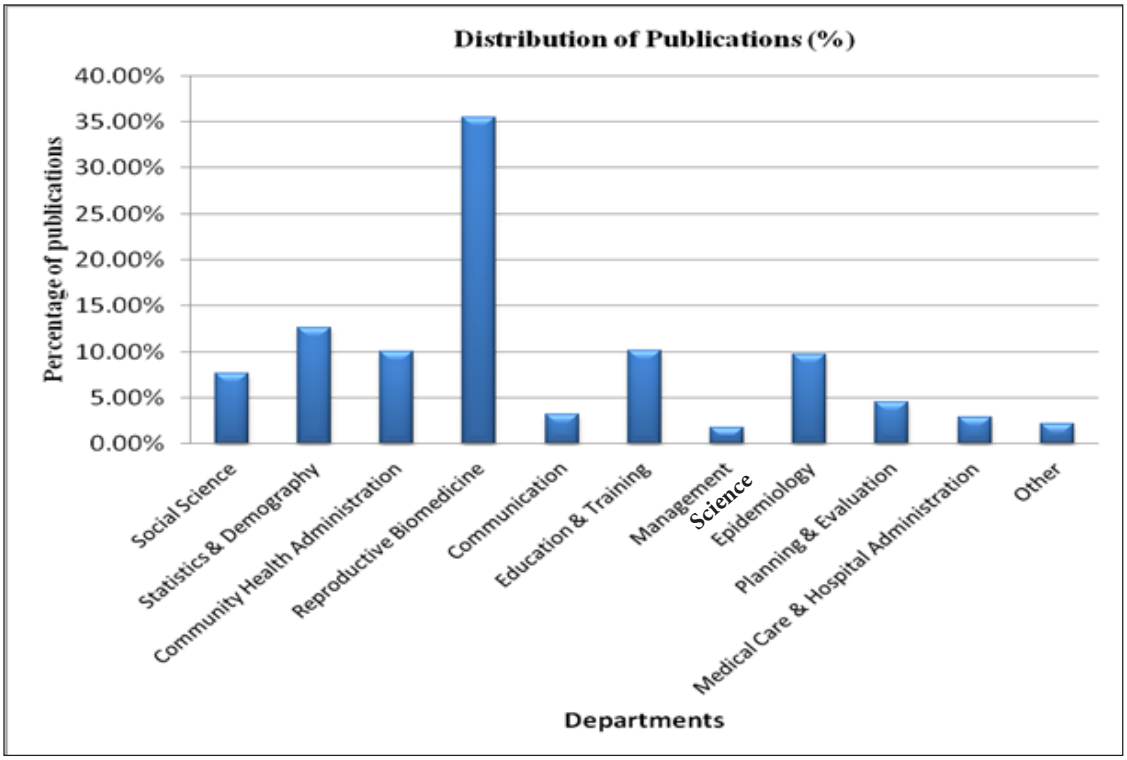
Sl.No.	Name of Department	No. papers	%
1	Social Science (SS)	57	7.59
2	Statistics & Demography (S & D)	95	12.65
3	Community Health Administration (CHA)	75	9.99
4	Reproductive Biomedicine (RBM)	266	35.42
5	Communication (Comm.)	24	3.19
6	Education & Training (E & T)	76	10.12
7	Management	13	1.74
8	Epidemiology	73	9.73
9	Planning & Evaluation (P & E)	34	4.52
10	Medical Care & Hospital Administration (MCHA)	22	2.92
11	Other	16	2.13
Total		751	100

Table 6
Distribution of Publications Year–wise and Department-wise

Year	SS	S & D	CHA	RBM	Comm.	E & T	Mngt.	Epidem.	P & E	MCHA	Other	Total
1978		7	4	16	1	2						30
1979			1	2		4						7
1980	8			6		1	1	2		4		22
1981	7	16	1	6	1	5	2	3	1			42
1982		6	4	2	3	1			1			17
1983	4	8	3	4		6		6				31
1984	2	1	1	6			1	1				12
1985	3	5	2	7		3		8				28
1986		1		3		3		2	1			10
1987						4						4
1988		3	1	5		9						18
1989	4	6		1		1		3				15
1990			3	1		2						6
1991			4	1				4				9
1992	3		1	1		5		1	2			13
1993	4	5		9		5	1	4			2	30
1994	2			5		5						12
1995		3		5		2		3		3		16

Year	SS	S & D	CHA	RBM	Comm.	E & T	Mngt.	Epidem.	P & E	MCHA	Other	Total
1996		2		4	2	1						9
1997				3			1	1	1			6
1998	2			2	3	4			1			12
1999	3	5	4	12	3	5	2	2	4			40
2000	1		1	6		2					1	11
2001	1			9					5	3		18
2002	1	7		12	2			2	1			25
2003		4	4	8					2			18
2004	3		1	6	1							11
2005	1	3	3	23			1		2		1	34
2006		4		19				1		6	5	35
2007	1	4	6	18	2			9				40
2008	3	1	1	18			1	3	2	1		30
2009	3		9	6		2		4				24
2010	1	2	2	2	2		1	2				12
2011			4	12	2			1	1			20
2012		2		17				2	4		2	27
2013			10	5				5	1		1	22
2014			5	4	2	4	2	4	5	5	4	35
												751

Figure 3
Distribution of Publications



Findings

The institute was established in the year 1977. The first article was been published in 1978 and in total, 30 articles were published in the first year. Majority of the research articles on

health sector was published during the year 1981 whereas the minimum number (0.54%) of articles published in the year 1987. Majority of the research articles on health sector came from the Department of Reproductive Biomedicine. The years 1978, 1993 and 2008 had the equal number of research articles published. It was also found that majority of the articles (247, 32.89%) have the length of four pages each and were in English whereas only a few articles were published in Hindi. The RGR ranges between 0.54 per cent and 5.59 per cent.

Conclusion

This attempt of quantitative analysis of papers published by National Institute of Health and Family Welfare (NIHFW) faculty members and research staff. The publishing trend totally depends on the productivity pattern of the authors. Now a day we can see the team research or collaborative research is visible in all the areas of knowledge, particularly in science and technology and with special reference in health sector. The present study also reveals that faculty members are very active in research in areas not only health science but in interdisciplinary areas. Scientometrics analysis is the major techniques of bibliometrics which is used in the further study. Considering published literature present study has used quantitative method. Scientometric is relatively new subject of information. It helps to evaluate information & to handle the information in libraries and information centers by the quantitative analyzed information. It deals with the mathematical and statistical analysis. This is an umbrella term used for many studies where quantitative method or techniques are used to investigate various aspect of written document.

References

1. Sen BK. Cybermetrics-Meaning, Definition, Scope and Constituents WIS-2004, International Workshop on Webometrics, Informetrics and Scientometrics, (eds.) Hildrun Kretschmer, Yogendra Singh, and Ramesh Kundra. (2-5 March, 2004). Organised by Society for Information Science, New Delhi, and Indian Institute of Technology, Roorkee, India, 2004, p 310-315.
2. Creamer EG. Assessing Faculty Publication Productivity: Issues of Equity. Eric Digest, 1990, 1-6. https://files.eric.ed.gov/fulltext/ED420242.pdf
3. Kuruppu PU & Moore DC. Information Use by Ph.D. Students in Agriculture and Biology: A Dissertation Citation Analysis. Portal: Libraries and the Academy, 2008, 8(4): 387-405. doi:10.1353/pla.0.0024.
4. Amsaveni N, Manikandan M & Manjula M. Authorship Pattern and Collaborative Research in Bioinformatics. International Journal of Computer Science and Mobile Computing, 2013, 2(11): 230–238.
5. Aswathy S & Gopikuttan A. Productivity Pattern of Universities in Kerala: A Scientometric Analysis. Annals of Library and Information Studies, 2013, 60: 176-185.
6. Vivekanandhan S & Bathri Narayanan AL. Authorship Trends and Collaborative Research in Bharathiyar University Research Output: A Scientometric Study. International Journal of Current Research in Life Sciences, 2014, 3(12), 91-96.
7. Subramanyam K & Elsie MS. Stephens, Research collaboration and funding in biochemistry and chemical engineering, International Forum on Information and Documentation, 1982, 7(4): 26-29.

स्वास्थ्य एवं जनसंख्या:
परिप्रेक्ष्य एवं मुद्दे, 42 (1&2): 36-47 /2019

राष्ट्रीय स्वास्थ्य एवं परिवार कल्याण संस्थान के संकाय सदस्यों और अनुसंधान कर्मचारियों के योगदान पर सतत दृष्टि : एक विश्लेषणात्मक अध्ययन

गिरिराज हलकर*

सारांश

वर्तमान अध्ययन एक ग्रंथ सूची विश्लेषण है जो 1978–2014 की अवधि के दौरान स्वास्थ्य विज्ञान के विभिन्न पहलुओं में राष्ट्रीय स्वास्थ्य और परिवार कल्याण संस्थान के अधिकारियों द्वारा प्रकाशित 751 पत्रों को कवर करता है। प्रकाशन उत्पादकता एक निश्चित समय में एक चयनित इकाई द्वारा प्रकाशित पत्रों की संख्या से व्यक्त की जाती है। भारत में, हालांकि स्वास्थ्य शिक्षा और अनुसंधान का बहुत व्यापक महत्व है और प्रकाशन उत्पादकता भी बढ़ रही है, इस साहित्य उत्पादकता के पैटर्न का विश्लेषण करने के लिए कोई व्यवस्थित प्रयास नहीं किया गया है। इस संदर्भ में, संस्थान के संकाय सदस्यों के उत्पादकता पैटर्न की जांच करना प्रासंगिक है।लेखकीय पद्धतियों में, यह पाया गया है कि सहयोगी अनुसंधान के बाद एकल शोध प्रमुख है। इस पत्र का उद्देश्य राष्ट्रीय स्वास्थ्य एवं परिवार कल्याण संस्थान के प्रकाशन उत्पादन के लिए ग्रंथ सूची मापदंडों का विश्लेषण करना है। अध्ययन आंकड़ों के विभिन्न पहलुओं को प्रदर्शित करता है, इसके अंतर्गत प्रकाशन, वर्षवार वितरण, विषयवार, लेखक के पैटर्न के साथ–साथ लिंगवार और विभागवार वितरण के आधार पर समीक्षा की गई है। सहयोगी अनुसंधान की गणना की गई है और यह पाया गया कि एकल लेखकों की प्रवृत्ति इस ओर धीरे–धीरे बढ़ी है। यह निष्कर्ष निकाला जा सकता है कि संस्थान उच्च गुणवत्ता अनुसंधान का उत्पादन करके व्यापक शैक्षणिक समुदाय में दृश्यता, प्रतिष्ठा और विश्वसनीयता प्राप्त कर सकता है; और बदले में यह संस्थान की प्रतिष्ठा को बढ़ाता है और बेहतर छात्रों, शिक्षकों और शोधकर्ताओं को आकर्षित करने का एक बड़ा अवसर प्रदान करता है।

मुख्य शब्दः साइंटोमेट्रिक्स, क्वांटिटेटिव आंकड़ा, अध्ययन, लेखकीय प्रवृत्ति।

* वरिष्ठ तकनीकी सहायक, राष्ट्रीय प्रलेखन केंद्र, राष्ट्रीय स्वास्थ्य और परिवार कल्याण संस्थान, नई दिल्ली –11006; ई–मेलः gghalkar@nihfw.org

Health and Population:
Perspectives and Issues, 42 (1&2): 48-58/2019

Review and Situational Analysis of Health Work Force in India for Universal Health Coverage

Sabin Syed* and Snehil Kumar Singh**

Abstract

India has a critical scarcity of human resources for health. One of the major identified challenges is to motivate qualified health workers to serve in remote, rural and underserved areas. Apart from shortage, retaining qualified health workforce remains a huge challenge. This crisis is likely to persist until and unless the health system addresses the fundamental requirements of the health workers as envisaged in the health policies. Concerted attention and long-term political commitments are required to overcome the health system barriers to achieve the rural recruitment and retention across various cadres in the states.

The paper analyses the current status of human resources for health in India, key challenges and reasons for scarcity of human resources and initiatives adopted to deal with the existing shortage; and what is further recommended to manage the existing crisis. Descriptive research design is used for secondary data from journals and articles using the key words. The study was done using an extensive review of literature on health sector, health workforce, its availability and scarcity in India. The review of articles provided an insight into the current status of health workforces in India. Findings of the current article suggest that mere an increase in the production capacity is unlikely to resolve the issues related to health-workers availability or distribution. There is an urgent need to adopt sustained and innovative actions to address India's current health-workforce crisis. The study provided an insight into the factors further leading to scarcity of human resources for health, and needs for initiatives to control factors like attrition. The study suggests the need of implementing a comprehensive national policy for human resources to achieve the universal health care in India. The public sector will need to redesign appropriate packages of monetary and non-monetary incentives to encourage qualified health workers to work in rural and remote areas. Such a policy might also encourage task-shifting and mainstreaming the doctors and practitioners who practice traditional Indian medicine (ayurveda, yoga and naturopathy, unani, and siddha) and homoeopathy to work in these areas while adopting other innovative ways of augmenting human resources for health. At the same time, additional investments will be needed to improve the relevance, quantity, and quality of nursing, medical, and public health education in the country.

Key words: *Health workforce, Talent management, Scarce health workforce, Availability of human resource for health, Acquisition, Training and development of health workforce.*

Global support for universal health coverage (UHC) is gathering momentum with the unanimous adoption of a resolution in the United Nations General Assembly (UNGA) that emphasizes health as an essential element of international development. The resolution, adopted on 12 December 2012, urges the governments to provide all the people with access to affordable quality health-care services.

India has also expressed its commitment towards UHC and embarked on a path to achieve it. Framework for the implementation of the National Health Mission defines UHC as "attainment of universal access to equitable, affordable and quality health care services, accountable and responsive to people's needs, with effective inter-sectoral convergent action to address the wider social determinants of health." Human resource for health (HRH) is acknowledged as

**Senior Training Officer–Medical, Central Health Services Cell, The National Institute of Health and Family Welfare, Munirka, New Delhi, 110067, E-mail : sabin2012@gmail.com. **Coordinator and Team Lead, National Cold Chain and Vaccine Management Resource Centre, The National Institute of Health and Family Welfare, Munirka, New Delhi-110067, E- mail : snehil@nihfw.org.*

the fundamental slabs for constructing an effective health care system. According to WHO Health Workforce document, HRH comprises multi-skilled workforce including physicians, surgeons, nursing professionals, midwives, dentists, allied health professions, community health workers, social health workers and other health care providers, as well as health management and support personnel. Health management and support personnel are those who may not deliver services directly but are essential to effective health system functioning, including health services managers, medical records and health information technicians, health economists, health supply chain managers, medical secretaries and others.

A number of studies show evidence of a direct and positive link between numbers of health workers and population health outcomes. Mark Britnell in his book "Human Solving the Global Workforce Crisis in Health" indicated towards a worldwide health crisis in terms of the health workforce. Mentioning that there are not sufficient health workers or lacunae are encountered regarding the right expertise and sustenance systems, they are overtaxed and overstrained, and frequently not in accurate settings. The Dublin Declaration on HRH said that we will need around 40 million more healthcare workers by 2030 but we are in danger of being 18 million short. It called for countries across the globe to increase the health financing and the recruitment, development, training, and retention of healthcare workers. Health Worker Shortages and Global Justice Milbank Memorial Fund by Paula O'Brien and Lawrence O. Gostin highlights the predicament of vacuous and unbalanced distribution of skilled health care providers and existence of marked differences in the enormity of crisis, on the basis of multiple social, economic and political diversities of these nations.

WHO has mentioned, "In absolute terms, the greatest shortage occurs in South-East Asia, dominated by the needs of Bangladesh, India and Indonesia. The largest relative need exists in the Sub-Saharan Africa, where an increase of almost 140% is necessary." At present, in India, the total number of doctors, nurses and midwives are able to meet up to half of WHO benchmark of 25.4 per 10,000 people. Furthermore, in comparison to the international health manpower norms, after adjusting for educational qualification, the numbers fall to just a quarter of the WHO benchmark. The circumstances are more perilous in the rural areas as the dissemination of health workforce is prodigiously slanted in favour of the urban areas.

The scarcity exists even though, India boasts of 412 medical colleges with around 50,000 admissions capacity, about 550 AYUSH institutes with over 32,000 admissions capacity, 3000 nursing colleges with over 118,000 admissions capacity, and over 1900 ANM training institutes with around 55,000 admissions capacity. Government has an intensified obligation not only to train the health care professionals but also to devise regulations and incentives to draw their interest to serve in rural areas. Interventions to make rural postings attractive through monetary as well as other incentives can serve effectively to bridge the gap between need and availability of health workforce in rural areas. Extensive enrichment in the public expenditure on healthcare by concerned governments may alter the situation towards favorability. HRH is a multi-faceted domain. 'Improving HRM Capacity' by Dr. Stephen Bach Senior Lecturer, The Management Centre, King's College, University of London mentions that HRH embraces numerous components like planning, development, performance, management, retention, information, and research.

Methodology

Extensive analysis of literature was done to identify journal articles on health workforce, its scarcity, its availability and attrition in rural as well as urban areas. Electronic searches were conducted in search database engine like the International Journal of Human Resource Management, Taylor and Francis Group, Indian Journal Medical Research, Indian Journal of Medical Sciences, Indian Journal of Public Health, Journal of Family Medicine and Primary Care, BIO Med Central- Human Resource for Health, Springer Science, Journal of Health Management, SAGE Publications, Journal of Medical Education. Websites like Google Scholar, OECD, World Health Statistics, and various websites of ministries were also searched for further information.

The search used keywords like health workforce, human resource for health, health professionals, rural health centres, public health, medical college, hospitals, doctors, physicians, attrition, talent management, scarce health workforce, availability of human resource for health, acquisition, training and development of health workforce, work environment, work hours and work load. Only English language was considered for the search of articles. The review included articles that had studies on physicians' availability, distribution, and training, attrition, emigration and retention in rural or urban areas from both developed and developing countries, and covering doctors, nurses, ANMs and medical colleges, nursing institutions. The study presented government measures in brief through review of National Health Policy 2017

Findings

As India strives to achieve universal health coverage, improvement in health-care delivery through the availability of skilled and motivated health workers is essential. A clear understanding of the health-workforce situation is critical to the development of effective policies to develop and manage a responsive workforce. Human resource shortages hinder the scale-up of health services and limit the capacity to absorb additional financial resources. From the WHO Health Care Reform for the 21st Century in the South East Asian Region, it can be observed that the shortages in health workers suggest the need to strengthen the available alternative workforce such the Accredited Social Health Activists (ASHAs- frontline health workers introduced under the National Rural Health Mission) and the Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) doctors. Both these providers can play a vital role in enhancing access to basic health-care services, especially at the community level. In conclusion, while production of health workers has greatly expanded in recent years, this has been at the cost of increased privatization of medical education in India. The rapid growth in the production of health workers such as doctors, dentists, nurses and midwives has not helped fill vacant positions in the public-health system. Further, the problems of imbalances in the distribution of these health personnel persist, with certain states remaining at a disadvantage. These findings suggest that mere increase in production capacity is unlikely to resolve the issues related to health-worker availability or distribution. There is an urgent need to adopt sustained and innovative actions to address India's current health-workforce crisis.

Major Challenges of HRH in India

The review of articles on healthcare scenario in India highlights the hindrances faced by the healthcare industry of burden of diseases, scarce health human resources and increasing

attrition/emigration. The review brought to light that consequence of failure to retain human resource for health may lead to higher healthcare cost and further increase in out of pocket expenditure, increased time of service delivery, decrease in quality and coverage of service, increase in hiring and training cost and decrease in motivation to live in the organization.

1. Shift in disease pattern- India is undergoing a demographic and health transition. 38 per cent of the deaths are due to communicable diseases, maternal, pre-natal and nutritional disorders and non-communicable diseases account for 42 per cent of all the deaths. The healthcare sector has to deal with the challenges of funding, infrastructure and the most critical is the availability of skilled manpower.
2. Attrition– The inability of the existing system and policies to retain the existing healthcare workforce due to any factor like personal, organizational and job-oriented that includes career aspiration, socio-economic status, organizational policies, work environment, growth opportunities, role clarity, autonomy, compensation and recognition is a major challenge pertaining to HRH.
3. Emmigration- S Nandkumar in his book 'What's up Doc', summarises the ideology of brain drain. It highlights the opinion of greener pasture in the form of attractive pay packages, better training infrastructure, better education system who are aspiring for higher education, organised and corruption-free government system and a sense of achievement influence the decision.

Key Measures Undertaken / Proposed to Improvement in HRH

The Bajaj Committee (1986) had suggested for the establishment of Universities of Health Sciences in the states and Union Territories to grant degrees and diplomas in health sciences. A few states like Tamil Nadu, Karnataka, Maharashtra, etc. have already done so. All colleges offering Diploma in nursing and other paramedical professionals can be affiliated to these Universities. Moreover, courses pertaining to public health and related fields such as health economics, epidemiology, health management, health informatics, etc. can be offered through these Universities. Additionally, the National Health Policy 2017, in order to combat the issue of HRH proposes the following interventions:

I. Attracting and retaining doctors in remote areas: Policy proposes financial and non-financial incentives, creating medical colleges in rural areas; preference to students from under-serviced areas, realigning pedagogy and curriculum to suit the rural health needs, mandatory rural postings, etc. Measures of compulsion through mandatory rotational postings dovetailed with clear and transparent career progression guidelines are valuable strategies.
II. Specialist attraction and retention: Proposed policy measures include recognition of educational options linked with National Board of Examination and College of Physicians and Surgeons, creation of specialist cadre with suitable pay scale, up-gradation of short term training to medical officers to provide basic specialist services at the block and district level, performance linked payments and popularize MD (Doctor of Medicine) course in Family Medicine or General Practice.
III. Mid-level service providers: For expansion of primary care from selective care to comprehensive care, complementary human resource strategy is the development of a cadre of mid-level care providers. Bridge courses could admit graduates from different clinical and paramedical backgrounds like AYUSH doctors, B.Sc. Nurses, Pharmacists, GNMs, etc. and equip them with skills to provide services at the sub-centre and other peripheral levels.

IV. Nursing education: The policy recognizes the need to improve regulation and quality management of nursing education. Other measures suggested are establishing cadres like Nurse Practitioners and Public Health Nurses to increase their availability in most needed areas.

V. ASHA: This policy supports certification programme for ASHAs for their preferential selection into ANM, nursing and paramedical courses. Policy also supports enabling engagements with NGOs to serve as support and training institutions for ASHAs and to serve as learning laboratories on future roles of community health workers.

VI. Paramedical skills: Training courses and curriculum for super specialty paramedical care (per fusionists, physiotherapists, occupational therapists, radiological technicians, audiologists, MRI technicians, etc.) would be developed. The policy recognizes the role played by physiotherapists, occupational and allied health professionals keeping in view the demographic and disease transition the country is faced with and also recognizes the need to address their shortfall.

VII. Public health management cadre: The policy proposes creation of Public Health Management Cadre in all the States based on public health or related disciplines, as an entry criterion. The policy also advocates an appropriate career structure and recruitment policy to attract young and talented multidisciplinary professionals.

VIII. Human resource governance and leadership development: Policy recommends development of leadership skills, strengthening human resource governance in public health system, through establishment of robust recruitment, selection, promotion and transfer postings policies.

Discussion

As per MCI data, India is short of 50,00,000 doctors to meet the WHO norm of 1:1000 doctor-population ratios. Currently, India has one doctor for every 1674 patients. Not only doctors, there is a serious shortage of staff at the PHC and the CHC level as well. The CHCs need to have four specialists- a surgeon, a physician, a gynecologist, and a paediatrician. However, as per the Rural Health Survey 2016, India is facing a shortage of 84 per cent surgeons, 77 per cent gynaecologists and obstetricians, 83 per cent physicians and 80 per cent pediatricians at the CHC level.

The government had announced under the National Health Policy 2017 that sub-centres and PHCs would be converted to Health and Wellness Centres. This would call for compliance and well-managed human resources. Conversely, the NHP 2017 does not put forward an actual approach to accomplish this objective. Bearing in mind the escalating saddle of work and unavailability of HRH at all levels of health care, this goal seems to be beyond reach as of now. The fact that the government has called for volunteers to work pro bono to fill the gap of human resource in urban areas, where a fee will be levied on the middle class, does not seem to be a well thought out policy.

Recommendations

To address the preceding points, this paper proposes following interventions to improve the existing HRH situation in India:

1. Policy and strategies for HRH

At present, there is no exclusive or comprehensive policy on HRH at the national level. The National Health policy document of 2017 refers to HRH. The DOPT has brought out the generic training policy for the employees of the Government departments (2012). Within the health sector, NRHM developed training strategies for training under RCH-II (2008). MCI has issued guidelines for CMEs for medical college faculty. Some state councils have issued guidelines for compulsory CME as a precondition for re-registration. States, over a period of several years, have evolved and followed service rules and regulations. Strategies developed so far did not impact the health system due to various implementation challenges.

i. Formal and comprehensive framework of policy for HRH is required at the national level, from which states can adapt/adopt as per their needs.
ii. The scope of the policy should include all the aspects of HRH for UHC, specifying the numbers, skills, competencies, roles, responsibilities, cadre development and management, Human resource development mechanisms, both in the public and private sectors.
iii. As a part of the UHC implementation mechanism, a national stakeholder forum should be established to help develop strategies to implement the HRH policy. Similar forum at the state level is also recommended. There is a need to revisit the National Health Policy (2002) in the context of HRH in the changed circumstances visualizing the needs for at least the next two decades.

2. Defining HRH, their number and competencies

Definitions of HRH given by different agencies cover a wide range of manpower dealing with promotion, protection or improvement of population health which include care providers, managers, researchers, technicians, etc. both in public and private sectors. The following aspects would help in the better understanding and operationalization of the UHC concept in India:

i. The minimal/optimal package of promotive, preventive, curative and rehabilitative as well as public health services for the UHC at the earmarked government and private health institutions at the primary, secondary and tertiary levels should be identified.
ii. The minimal/optimal infrastructure for promotive, preventive, curative, rehabilitative and public health services for the UHC at the earmarked government and private health institutions at the primary, secondary and tertiary levels should be defined.
iii. In the Indian context, the categories/types of the HRH at primary, secondary and tertiary health institutions in the government and private sectors, should be clearly defined for providing identified promotive, preventive, curative, rehabilitative and public health services for the UHC.
iv. The job functions, standard treatment/operating protocols, for each of the HRH at primary, secondary and tertiary health institutions in the government and private sectors should be clearly defined based on the workloads. The roles for the public and private sectors at each of these three levels should also be decided. Opportunity of pilot implementation of states should be utilized to develop and field-test the required number and skills of HRH services covered under the UHC package.

v. Since the NHM document emphasizes on an effective inter-sectoral convergent action to address the wider social determinants of health, these sectors (related to the identified minimal/optimal package of promotive, preventive, curative, rehabilitative and public health services for the UHC) should be identified; their roles, responsibilities, contributions, coordinating and monitoring mechanism should be defined at all the three levels of services.

vi. WHO expert committee calculates HRH density based on doctors, nurses, and midwives/10,000 population. The studies have related this to IMR and below 5 year mortality rates, etc. In the Indian setting, AYUSH doctors, ASHAs, AWWs, TBAs, Block, district, state Programme Mangers (cadre created under the NRHM) play an important role and these should also be considered while calculating HRH density in future.

3. **Estimating the number of HRH in India.**

The present sources for HRH data are the registries maintained at the Medical Council of India, the Nursing Council of India, Pharmacy Councils of India, and other councils.

i. These are not the live registries and hence, there is a need to update these frequently. For this, the required resources be provided for ensuring continuous online update of data.

ii. The Rural Health Statistics format should be modified to collect additional information on the other HRH in the rural areas in future.

iii. A comprehensive database of all HRH is required to be developed at the state level, both for the public and private sectors.

iv. There is an urgent need to evolve a system to constantly update the data base of HRH exploiting the potential of information technology. Availability of cadre-specific workforce in public and private sector would facilitate the decision makers in planning and managing health services more efficiently and effectively.

4. **Specialists and paramedics to fulfill the needs of the secondary and tertiary health care institutions**

i. The specialists and paramedical services are to be strengthened in a big way to fulfill the needs of the secondary and tertiary health care institutions.

ii. With the advancement of medical technologies and interventions, newer sub-specialties in medical, nursing and paramedical fields have emerged. The regulatory councils need to approve and start such courses in the form of short-term fellowships, diploma or post graduate degree courses.

iii. Alternative training mechanism through the National Board of Examinations may be also explored by accrediting certain non-medical college hospitals for such courses for the medical, nursing and paramedical manpower.

iv. The challenge of making modern medical technologies available in rural areas may be met by providing special incentives to the private sector for providing identified diagnostic services in rural areas through mobile units.

5. **Female care providers**

Ensuring female care providers especially at the level of medical officers in rural settings is a big challenge.

i. Special incentives may be given for the lady doctors posted in rural areas.

ii. Incremental seats may be reserved in the various curses for women so that we have more of the women HRH.

6. **Ensuring specialists in rural areas and sub-district hospitals**

i. The challenge of placement of specialists in rural areas and sub-district hospitals can be either met by having specialty specific short-term skill-based courses for the medical officers posted in these institutions or having the panel of accredited specialists from private sector on service based payment in these areas.

7. **Development of newer cadres and strengthening of current cadres**

i. Newer cadre of workers like B.Sc. (Community Health), Rural Medical Assistants, etc. will require creation of posts by the state governments and regulation of their practices; and ensuring their stay in rural areas should be monitored by linking them with the current health services set up.
ii. The corresponding strengthening of Primary Health Centres, sub-centres, CHC, sub-district and district hospitals will be required to achieve the IPHS (2012 revised standards). This needs to be worked out in a phased manner starting from the priority areas. The additional manpower for these norms will require strengthening of the training institutions. For meeting the demands for the female health workers, ASHAs working in the local areas who fulfill the basic criteria for admission to these institutions and after training, may be offered the positions in the local sub-centres/ PHCs/CHCs.

8. **Role of informal care providers**

Role of informal care providers in the form of RMP, traditional healers, faith healer, unregistered practitioners, etc. needs to be looked into. Despite being ignored by government and professional bodies, they are accessible, available, and acceptable; and many times, the only source of health services for communities, provided the dictum is "first do no harm".

i. Research studies may be done to assess their level of competencies, profile analysis, types of services offered, profile of clients using their services, etc. Then suitable decisions be taken whether they can be utilized for some preventive, promotive or rehabilitative services, especially at the primary levels in the areas where they are available but the reach of government services is poor.
ii. Decisions are to be taken on the type of orientation training, and supervisory mechanisms that will be required for their regulation and monitoring.

Scope for Future Research

Studies provide ample information on rural health scenario and government employed doctors, nurses and ANMs but less account is available on urban health issues and data on Health workforce employed and working conditions in the private sector. The different Government health programmes have tried to cater to the problem by increasing the supply of human resource for health through various health programmes, opening of colleges, etc. But there is a need for concrete policy for controlling the exit of employees. A better understanding and identification of real attributes of attrition/emigration is needed and use of talent management strategy as a successful tool to attract, acquire, develop and retain the human resource for health.

References

1. https://www.who.int/healthinfo/systems/WHO_MBHSS_2010_section2_web.pdf?ua=1.
2. Anand S, Bärnighausen T. Health workers and vaccination coverage in developing countries: an econometric analysis. The Lancet, 2007, 369: 1277–1285.
3. https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/03/human-britnell-preface.pdf.
4. https://www.who.int/hrh/events/Dublin_Declaration-on-HumanResources-for-Health.
5. HealthWorkerShortagesfinal.pdf, ISBN 978-1-887748-74-2.
6. https://www.who.int/whr/2006/en/ 06_chap1_en.pdf [Internet]. [Cited 2019 Oct 4].
7. https://www.researchgate.net/publication/274546947_Health_workforce_in_India_Assessment_of_availability_production_and_distribution.
8. Retaining health workforce in rural and underserved areas of India: What works and what doesn't? A critical interpretative synthesis Natl Med J India. 2016 Jul-Aug, 29(4): 212-218.
9. Draft_NEP_2019_EN_Revised.pdf [Internet]. [Cited 2019 Oct 4]. Available from: https://mhrd.gov.in/sites/upload_files/mhrd/files/Draft_NEP_2019_EN_Revised.pdf.
10. https://www.researchgate.net/publication/312943464_Retaining_health_workforce_in_rural_and_underserved_areas_of_India_What_works_and_what_doesn't_A_critical_interpretative_synthesis/citation/download.
11. https://www.who.int/hrh/en/Improving_hrm_capacity.pdf.
12. https://www.oxfamindia.org/sites/default/files/2018-09/HumanResources_ForHealth_Digital.pdf.
13. WHO. Health Care Reform for the 21st Century in the South East Asian Region. Report of the Regional Meeting, Bangkok, Thailand, 20-22 October, SEA-HSD-329 Deoki Nandan, Panel B: Health Workforce Development and Management Recruitment. Deployment Task Shifting and Multidisciplinary Health Team. New Delhi, India: WHO, South-East Asia Regional Office, 2009.
14. Global Journal of Medicine and Public Health 1 www.gjmedph.com Vol. 5, No. 4 2016 ISSN#- 2277-9604; Key challenges of human resources for health in India Priya Sinha* 1 , Sigamani P 2.
15. Annual Report to the people on Health, 2011.Ministry of Health and Family Welfare, available at:http://www.mohfw.nic.in/showfile.php?lid=121.
16. Mobley, W. H. (1982). Employee Turnover: Causes, Consequences, and Control. Addison-Wesley Publishing, Philippines.
17. S. Nandkumar .What's Up Doc? (New Delhi: Parity Paperbacks, 2004).
18. Bajaj JS. Expert Review Committee Health Manpower Planning and Development, U11010/2/86-MEP dated 8/5/1986. Ministry of Health and Family Welfare, New Delhi: Government of India, 1986.
19. https://mohfw.gov.in/sites/default/files/9147562941489753121.pdf.
20. Kumar, A. Rural Health Statistics 2016 Explained in 10 Charts, PUBHEAL, 14February 2017. [https://pubheal.wordpress.com/2017/02/14/rural-health-statistics-2016-explained-in-10-charts/].
21. Ministry of Health and Family Welfare. Rural Health Statistics 2015-16, Ministry of Health and Family Welfare, Government of India, December 2016. [https://nrhm-mis.nic.in/Pages/RHS2016.aspx?RootFolder=%2FRURAL%20HEALTH%20STATISTICS%2F%28A%29RHS%20%202016&FolderCTID=0x01200057278FD1EC909F429B03E86C7A7C3F31&View=%7B3EF44ABD-FC77-4A1F-9195-D34FCD06C7BA%7D].

22. Sundararaman, T. National Health Policy 2017: A cautious welcome", Indian Journal of Medical Ethics, 4 April 2017. [http://ijme.in/articles/national-health-policy-2017-a-cautious-welcome/?galley=html].
23. Patel, V. Cure the Doctor, The Indian Express, 21 December 2015. [http://indianexpress.com/article/opinion/cure-the-doctor-healthcare-healthcare-in-india-indian-doctors/].
24. https://www.researchgate.net/publication/225747262_Bhore_Committee_1946_and_its_relevance_today/citation/download.
25. PTI. In Gujarat, out of 4,341 Doctors Only 530 Served in Rural Areas, The Indian Express, 4 April 2016 [http://indianexpress.com/article/india/in-gujarat-out-of-4341-doctors-only-530-served-in-rural-areas/].
26. Sethi, N. NITI Aayog against Free Health Care, Bats for More Private Sector Role, Business Standard, 25 August 2015. Last accessed on 6 May 2017. [http://www.business-standard.com/article/economy-policy/niti-aayog-against-free-health-care-bats-for-more-private-sector-role-115082500061_1.html].
27. Doctor population ratio for India- The reality, Madhav G. Deo Indian J Med Res. Apr 2013, 137(4): 632–635. PMCID: PMC3724242.
28. WHO Library Cataloguing-in-Publication Data Global strategy on human resources for health: Workforce 2030. I.World Health Organization. ISBN 978 92 4 151113 1.
29. Not Enough Here, Too Many There, Health Workforce in India, WHO country Office, 2007,http://dendrytes.com/Blog/download/health_care_management/Human_Resources_Health_Workforce_in_India_-_Apr07.pdf, accessed on 5 December 2013.
30. Rural Health Statistics in India 2012, Statistics Division, Ministry of Health and Family Welfare, Government of India, New Delhi http://mohfw.nic.in/WriteReadData/l892s/492794502RHS%202012.pdf, accessed on 9 March 2014.
31. Twelfth Five-Year Plan (2012–2017), Social Sectors, Volume III, Planning Commission of India, New Delhi. http://planningcommission.gov.in/plans/planrel/12thplan/pdf/12fyp_vol3.pdf, accessed on 15 January 2014.
32. Guidelines for Sub-Centres Revised 2012, DGHS, MOHFW, Govt. of India, New Delhi; http://health.bih.nic.in/Docs/Guidelines/Guidelines-Sub-Centers-(Revised)-2012.pdf, accessed on 9 March 2014.
33. Guidelines for Primary Health Centres Revised 2012, DGHS, MOHFW, Govt. of India, New Delhi; http://health.bih.nic.in/Docs/Guidelines/Guidelines-PHC-2012.pdf, accessed on 9 March 2014.
34. Guidelines for Community Helth Centers Revised 2012, DGHS, MOHFW, Govt. of India, New Delhi; http://health.bih.nic.in/Docs/Guidelines/Guidelines-Community-Health-Centres.pdf, accessed on 9 March 2014.
35. Guidelines for Sub district Hospital, Revised 2012, DGHS, MOHFW, Govt. of India, New Delhi; http://health.bih.nic.in/Docs/Guidelines/Guidelines-SD-&-SDH-(Revised)-2012.pdf, accessed on 9th March 2014.
36. Guidelines for District Hospital, Revised 2012, DGHS, MOHFW, Govt. of India, New Delhi.

स्वास्थ्य एवं जनसंख्या:
परिप्रेक्ष्य एवं मुद्दे, 42 (1&2): 48-58 /2019

भारत में यूनिवर्सल हेल्थ कवरेज के लिए स्वास्थ्य कार्य बल की समीक्षा और परिस्थितिजन्य विश्लेषण

सबिन सैयद* और स्नेहिल कुमार सिंह**

सारांश

भारत के स्वास्थ्य क्षेत्र में मानव संसाधनों की अत्यधिक कमी है। दूरवर्ती, ग्रामीण तथा वंचित एवं अल्पसेवित क्षेत्रों में स्वास्थय सेवा प्रदान करने के लिए योग्य स्वास्थ्य कार्यकर्ताओं का चयन करना तथा उन्हें प्रेरित करना, एक बहुत बड़ी चुनौती है। संसाधनों की कमी के अलावा, योग्य स्वास्थ्य कार्यबल को बनाए रखना एक बड़ी चुनौती है। यह संकट तब तक बने रहने की संभावना है जब तक कि स्वास्थ्य प्रणाली, स्वास्थ्य कार्यकर्ताओं की मूलभूत आवश्यकताओं को वैसे संबोधित नहीं करती है, जैसा कि स्वास्थ्य नीतियों में परिकल्पित है। राज्यों में विभिन्न संवर्गों में ग्रामीण भर्ती और अवधारण को प्राप्त करने के लिए स्वास्थ्य प्रणाली बाधाओं को दूर करने के लिए ध्यान और दीर्घकालिक राजनीतिक प्रतिबद्धताओं की आवश्यकता होती है। प्रस्तुत लेख में, भारत में स्वास्थ्य के मानव संसाधन की वर्तमान स्थिति का विश्लेषण किया गया है, तथा इसमें वर्तमान चुनौतियों एवं मौजूदा संसाधनों की कमी से निपटने के लिए मानव संसाधन और पहल सम्बन्धी कमी; और मौजूदा संकट के प्रबंधन के लिए और अधिक उपायों के बारे में संस्तुति की गई है। इस लेख में विभिन्न पत्रिकाओं के लेखों से चुने शब्दों तथा गौण आंकड़ों का उपयोग करके वर्णनात्मक अनुसंधान डिज़ाइन का उपयोग किया गया है। यह अध्ययन भारत के स्वास्थ्य क्षेत्र, स्वास्थ्य कार्यबल, इसकी उपलब्धता और कमी संबंधी पक्षों पर उपलब्ध साहित्य की व्यापक समीक्षा का उपयोग करके किया गया था। लेखों की समीक्षा द्वारा भारत में स्वास्थ्य कार्यबल की वर्तमान स्थिति के बारे में सूचनाएं उपलब्ध कराई गई हैं। वर्तमान लेख में शोध से पता चलता है कि उत्पादन क्षमता में वृद्धि स्वास्थ्य कार्यकर्ताओं की उपलब्धता या वितरण से संबंधित मुद्दों को हल करने की संभावना नहीं है। भारत के वर्तमान स्वास्थ्य–कार्यबल संकट को दूर करने के लिए सतत और अभिनव कार्यों को अपनाने की तत्काल आवश्यकता है। अध्ययन में स्वास्थ्य के लिए मानव संसाधनों की कमी के कारण कारकों में एक अंतर्दृष्टि प्रदान की गई है, और इस तरह के कारकों को नियंत्रित करने के लिए पहल करने की आवश्यकता है। अध्ययन को लागू करने की आवश्यकता का पता चलने से भारत में सार्वजानिक स्वास्थ्य देखभाल सेवा उपलबध करने के लिए मानव संसाधनों के लिए व्यापक राष्ट्रीय नीति आवश्यक है। सार्वजनिक क्षेत्र को ग्रामीण और दूरदराज के क्षेत्रों में काम करने के लिए योग्य स्वास्थ्य कर्मचारियों को प्रोत्साहित करने के लिए मौद्रिक और गैर–मौद्रिक प्रोत्साहन के उपयुक्त पैकेजों की रूपरेखा फिर से तैयार करने की आवश्यकता होगी। इस तरह की नीति पारंपरिक भारतीय चिकित्सा पद्धति (आयुर्वेद, योग और प्राकृतिक चिकित्सा, यूनानी, और सिद्ध) की प्रैक्टिस करने वाले चिकित्सकों को कार्य–परिवर्तन करके और मुख्यधारा में लाने के लिए प्रोत्साहित कर सकती है, जबकि स्वास्थ्य के लिए मानव संसाधन बढ़ाने के अन्य नवीन तरीके अपनाते हुए इन क्षेत्रों में काम करने के लिए होम्योपैथी चिकित्सा प्रणाली भी उपलबध है। साथ ही, देश में नर्सिंग, चिकित्सा और सार्वजनिक स्वास्थ्य शिक्षा की प्रासंगिकता, मात्रा और गुणवत्ता में सुधार के लिए अतिरिक्त निवेश की आवश्यकता होगी।

प्रमुख शब्द: स्वास्थ्य कार्यबल, प्रतिभा प्रबंधन, दुर्लभ स्वास्थ्य कार्यबल, स्वास्थ्य के लिए मानव संसाधन की उपलब्धता, स्वास्थ्य कार्यबल का अधिग्रहण, प्रशिक्षण और विकास।

*वरिष्ठ प्रशिक्षण अधिकारी–चिकित्सा, केंद्रीय स्वास्थ्य सेवा प्रकोष्ठ, राष्ट्रीय स्वास्थ्य एवं परिवार कल्याण संस्थान, मुनिरका, नई दिल्ली, 110067, ई–मेलः sabin2012@gmail.com , **समन्वयक और टीम लीडर, नेशनल कोल्ड चेन और वैक्सीन प्रबंधन संसाधन केंद्र, राष्ट्रीय स्वास्थ्य और परिवार कल्याण संस्थान, न मुनिरका, ई दिल्ली –110067, ई–मेलः snehil@nihfw.org

Health and Population:
Perspectives and Issues, 42 (1&2): 59-71/2019

Adolescent Health: Present Status and Its Related Programmes in India

J.B. Babbar* and Kunal Babbar**

Abstract

Adolescents are the future of the nation, forming a major demographic and economic force. They have specific needs which vary with gender, life circumstances and socio-economic conditions. They face challenges like poverty, lack of access to health care services, unsafe environments, etc. Adolescent health programmes are fragmentary at present, and there is no comprehensive programme addressing all the needs of adolescents. Access to and availability of health care services are severely limited. Lack of accurate information, absence of proper guidance, parents' ignorance, lack of skills and insufficient services from health care delivery system are the major barriers. Interventions should focus on providing psychological and mental health services and behaviour change communication towards leading a healthy lifestyle, restricting advertisements related to junk food products, awareness creation about reproductive and sexual health, educating parents to prevent early marriage, teenage pregnancy and to counsel their children on nutrition and reproductive health. Universal coverage of Adolescent-friendly clinics is highly recommended.

Key words: *Adolescent health, Nutrition, Reproduction.*

The term Adolescence is derived from the Latin term 'adolescere' which means 'to grow up'. It is a phase of rapid growth and development during which physical, physiological and behavioural changes occur between childhood and adulthood .

India has currently around 1.36 billion people which account for 17.7 per cent of the world population. About 21 per cent of the Indian population is adolescents aged between 10 and 19 (about 243 million). They are the future of the nation, forming a major demographic and economic force. They have specific needs which vary with gender, life circumstances and socio-economic conditions. They face challenges like poverty, lack of access to health care services, unsafe environments, etc. It is a period of preparation for undertaking greater responsibilities like familial, social, cultural and economic issues in adulthood.

In India, data on adolescents from national surveys including National Family Health Survey-IV (2015-16), District Level Household and Facility Survey–IV (2012-13) and the Sample Registration System call for focused attention with respect to health and social development for this age group. It has, therefore, been realized that investing in adolescent health will yield demographic and economic dividends for India. In view of this, Government of India launched its first comprehensive programme for adolescents, 'Rashtriya Kishor Swasthya Karyakram', during January 2014 which has a sharp focus on adolescents' sexual health[2].

The Ministry of Women and Child Development (MWCD) commenced POSHAN Abhiyaan from 2017-18 onwards. 315 districts were covered in the first year, 235 districts in the second year and remaining districts in the third year.

The leading health-related problems in the age group 10–19 years:

- Early pregnancy and childbirth
- HIV and AIDS

Senior Consultant- Medical, CBPHEM, The National Institute of Health and Family Welfare, Munirka, New Delhi-110067; E-mail: drbabbar_21@yahoo.com. Medical Officer, Air India, T-3, Indira Gandhi Airport, New Delhi.*

- Other infectious diseases
- Mental health problems including depression and suicide
- Violence
- Alcohol and other drugs
- Injuries both unintentional and self-injury
- Sexual health / Infectious diseases
- Malnutrition and obesity
- Tobacco use
- Challenges in Existing Adolescent Health Services
- Challenges in Parenting
- Road Traffic Accidents

Adolescent health programmes are fragmentary at present, and there is no comprehensive programme addressing all the needs of adolescents. Access to and availability of health care services are severely limited. Lack of accurate information, absence of proper guidance, parents' ignorance, lack of skills and insufficient services from health care delivery system are the major barriers. Interventions should focus on providing psychological and mental health services and behaviour change communication towards leading a healthy lifestyle, restricting advertisement-induced junk food products, awareness creation about reproductive and sexual health, educating parents to prevent early marriage, teenage pregnancy, and to counsel their children on nutrition and reproductive health. Universal coverage of adolescent-friendly clinics is highly recommended. To be cost-effective, health services addressing the requirements of the adolescents should come under a single programme. This review is intended to create awareness among the stakeholders about the importance of strengthening adolescent health services in order to meet their felt needs.

In India, 44 million adolescents belong to Scheduled Caste category comprising 17 per cent of the total adolescent population of the country. 23 million adolescents belong to Scheduled Tribe category comprising 9 per cent of the total adolescents in the country.

Adolescent's percentage in the top and bottom five States17

Top Five State	% Adolescent	Bottom Five State	% Adolescent
Uttar Pradesh	24.5	Kerala	16.3
Rajasthan	22.9	Tamil Nadu	17.2
Uttrakhand	22.5	Karnataka	18.9
Bihar	22.5	Maharashtra	19.0
Jharkhand	22.2	Andhra Pradesh	19.3

Source: Size, Growth and Composition of Adolescent and Youth Population in India, Census of India.

Age Group

The World Health Organization defines adolescents as those individuals between 10 and 19 years of age. These age definitions are useful for a common understanding but do not convey any strict age compartments. For better understanding, it can be divided into three different phases according to different age groups viz. early adolescence, mid adolescence and late adolescence group . The detail about each group is given below:

	Early Adolescence Group	Mid Adolescence	Late Adolescence
Age Group	10 years -13 years Developmental changes on the onset of puberty May get disturb due to sudden changes in the sexual organs	14 years-16 years Follow puberty by about one to one and a half years There may be precocious puberty or delayed	17 years – 19 years Period of transition-individual gains grip of his/her future
Behaviour Change	Demand for privacy Group activities are primarily with members of his own gender	Period of irritability, wide mood swings and rapidly changing feelings	Realize that their parents can be their best friend Increase bonding between parent and adolescents especially if both shows mutual respect for each other
Priorities Changes	May start engaging in risky behaviors' such as experimenting with smoking, sex , masturbation and drugs Pressure from the peer group Start experimenting with sexual organs	Parental obedience is replaced by conformity to peer group standards and loyalties Contact with adult outside the family May become introvert.	More selective and discriminating in his relationships. Very much concerned about the future May get disturbed easily

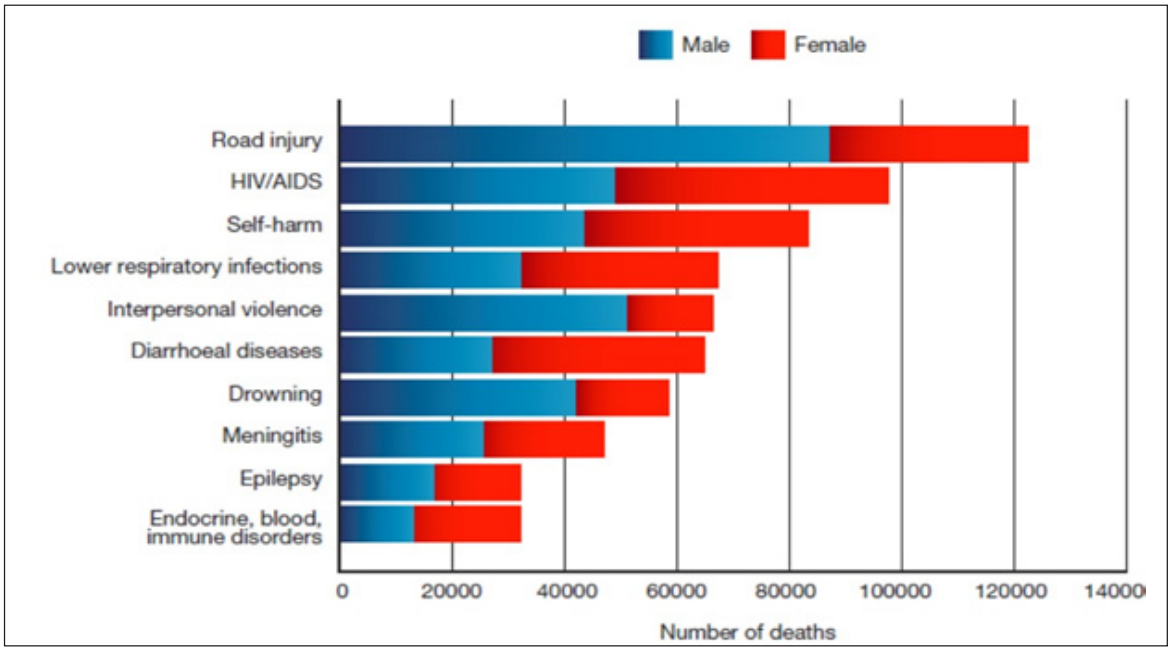
Why Do We Need to Address Adolescent Population

The number of adolescents (age 10-19) is increasing and comprises over one-fifth of the population in our country. A large number of them are school pass outs, get married early, work in vulnerable situations, are likely to be sexually active due to lack of knowledge and peer pressure, and are exposed to several health risks, early pregnancy or unsafe abortions. These have serious social, economic and public health implications for the nation .

Their needs vary by their age, sex, stage of development, life circumstances, socio-economic status, marital status, class, region and cultural context. This calls for interventions that are flexible and responsive to their desperate needs else some factors might turn some of them into antisocial elements. Some of the public health challenges for adolescents are related to early pregnancy with associated higher risk of maternal and infant mortality, sexually transmitted infections (including HIV) and reproductive tract infections, under-nutrition and anaemia, substance abuse, injuries, etc.

According to WHO reports, about 1.3 million adolescents died of preventable or treatable causes during 2012. Road traffic injuries were the leading cause of death among adolescents which may be due to rash driving/not using safety measures or disobeying the traffic rules. Injuries and neuropsychiatric/mental disorders were the major issues in adolescents. There is an increasing trend in adolescent obesity due to great shift in life style, diet and activity pattern. Nearly 35 per cent of the global burden of disease has its roots in the adolescence. Half of all the mental health disorders, sexual abuse and social abuse in adulthood start by the age of 14 years, most cases remain undetected and untreated due to lack of knowledge, awareness and perception .

Figure 1
Top 10 Causes of Death among Adolescents



Source: Health for World's adolescents. WHO

Adolescent Health Problems

The health status of an adolescent determines the health status in his/her adulthood. Many serious diseases in adulthood have their roots in adolescence. The main health issues faced by the adolescents include mental health problems, early pregnancy and childbirth, HIV/sexually transmitted infection (STI) and other infectious diseases, violence, unintentional injuries, malnutrition, and substance abuse. The major issues are discussed in detail below:

Nutritional Health

As per NFHS-4 report published in January 2018, total adolescents population (between 10 and 19 years of age) is 19.5 per cent. Only 10 per cent of females and 13 per cent of males completed 10-11 years of schooling. 31 per cent of females and 15 per cent of males have never attended school. Only 66 per cent of girls and 69 per cent of boys aged 11-17 attended secondary school. Among the adolescents aged 15-19 years, 54.1 per cent girls and 29.2 per cent boys were anaemic. 47 per cent of them were consuming fried foods, protein supplements, consumption of anabolic steroids, consumption of aerated drinks was also very high (26% among girls and 36% among boys). It shows that the consumption of junk food is very high among the adolescents. It is observed that the coverage of the adolescents on health scheme or health insurance is very low. Only 17.0 per cent of the girls and 18.5 per cent of the boys were covered under any health scheme or health insurance. 69.3 per cent of the girls in the age group of 15-19 years reported a major issue in having awareness about where and how to get medical advice or treatment for themselves when they are sick. Additionally, use of mass media is also very high among the adolescents (male 88.2% and female 71.5%). It reflects that mass media plays an important role in habit picking and deciding their lifestyle pattern .

POSHAN Abhiyaan

It is a multi-ministerial convergence mission with the vision to ensure attainment of malnutrition free India by 2022. The objective of POSHAN Abhiyaan is to reduce stunting in identified Districts of India with the highest malnutrition burden by improving utilization of key Anganwadi services and improving the quality of Anganwadi Services delivery. It aims to ensure holistic development and adequate nutrition for pregnant women, mothers and children .

Mental Health

Mental health problems are one of the most neglected issues among adolescent. Mortality and morbidity due to mental disorders in adolescents have increased and topped in recent years. A study from Goa among people in the age group of 16–24 years showed that 3.9 per cent of them reported suicidal behaviours with females four times more prone than the males. This suicidal behaviour is independently associated with factors such as absenteeism, independent decision-making, premarital sex, sexual abuse, early pregnancy, unsafe abortion, mental torture, physical torture; physical abuse by siblings, parents, paternal or maternal uncle or aunty; and mental disorders. In India, suicide among adolescents is higher than any other age groups, which is 40 per cent deaths due to suicide in men and 56 per cent in women occurred in the age group of 15–29 years. The prevalence rate of child and adolescent psychiatric disorders in the community has been found to be 6.46 per cent; and in schools, it was 23.33 per cent. The reporting systems of psychiatric disorders in children are found to be inadequate. From the above figures, it is evident that a considerable proportion of adolescent suffer from mental health issues[9].

Accidents and Violence

In India, deaths due to pneumonia/chest diseases is 73 age, diarrhea related illness- 23 per cent and injuries constituted nearly 20 per cent of the total deaths in the 5–19 years age group. Majority of the adolescents are at risky behaviours, rash driving, disobeying traffic rules, show off among the peer group all leads to road traffic accidents and deaths . Sexual abuse by the neighbors, peer group, antisocial elements, uncle, aunties, parents and cousins may be the major problems faced by the adolescent girls and boys equally.

Reproductive and Sexual Health

Adolescents have diverse sexual and reproductive health problems. From the studies done in the past, it is evident that adolescent have no proper knowledge regarding STIs/ HIV/AIDS/ unwanted pregnancy/ unsafe abortion/ legal issues. Studies also prove that the educational intervention shows significant improvement in the knowledge, awareness and perception level of the participant. At this age, curiosity about sexuality increases, they start showing sexual interest in the opposite sex. In addition to social stigma, broken homes, quarrel between the parents lead to unsafely behaviour. Therefore, the diseases were often undisclosed, left untreated leading to complications such as early adolescent pregnancy and, pre mature birth, small for dates, IUGR, still birth, precipitated labour, maternal deaths, unsafe or septic abortions, infertility, pelvic inflammatory disease, and cancer. Media plays a major role in exposing them to sexually explicit materials which make them perpetrators of sexual violence[12].

Reproductive and Sexual Health Status of Indian Adolescents

Factors	Male (%)	Female (%)
Sexual debut before the age of 15+	2.7	8
Contraceptive awareness (15-19)+	96	94
Ever used Contraceptives+	29.4	40.4
Condom used during first time+	19	3
Births by age 18 (2008-2012)*	-	21.7
Comprehensive knowledge of HIV among adolescents+	34.5	18.6
STI/ symptoms of STI in sexually active adolescents+	10.8	10.5
Prevalence of HIV among adolescents+	0.01	0.07

Substance Abuse

Substance abuse is yet another serious issue as adolescents are ignorant about its consequences. NFHS-4 data shows, in the age group 15–19, about 8.9 per cent of adolescent boys and 0.5 per cent of the adolescent girls had consumed alcohol of which 2.6 per cent consume it daily. About 18.5 per cent boys and 1.6 per cent girls use some kind of tobacco. The average age at tobacco use initiation was earliest at 12.3 years and alcohol usage at 13.6 years among adolescents[10]. The commonest drugs of abuse were (in decreasing order of frequency): tobacco, alcohol, cannabis and inhalants, followed by pharmaceutical opioids, heroin/smack and sedatives. Drug use showed a progression from licit to illicit substances. About 11 per cent of cannabis users were introduced to it before the age of 15. Initiating cannabis at this age is strongly associated with the development of schizophrenia spectrum disorders in adulthood[10].

Rashtriya Kishor Swasthya Karyakram (RKSK)

In order to ensure holistic development of adolescent population, the Ministry of Health and Family Welfare launched the Rashtriya Kishor Swasthya Karyakram (RKSK) on 7 January 2014 to reach out to 253 million adolescents- male and female, rural and urban, married and unmarried, in and out-of-school adolescents with special focus on the marginalized and undeserved groups. The programme expands the scope of adolescent health programme in India- from being limited to sexual and reproductive health. It now includes in its ambit nutrition, injuries and violence (including gender-based violence), non-communicable diseases, mental health and substance misuse. The strength of the programme is its health promotion approach. There is a paradigm shift from the existing clinic-based services to promotion and prevention and reaching adolescents in their own environment, such as in schools, families and communities. Key drivers of the program are community based interventions like, outreach by counsellors; facility based counselling; social and Behaviour Change Communication; and strengthening of Adolescent Friendly Health Clinics across levels of care .

Strengthening Inter-sectoral Collaboration for Adolescent Health

A meeting of the national programme managers of the South-East Asia Region was held in New Delhi, India, on 25–27 November 2014. The objective of this meeting was to review the status of adolescent health (AH) in SEAR countries and to promote implementation of adolescent-friendly health services (AFHS) by strengthening partnerships and intersectoral coordination.

Adolescent Health–Talk to Action

India, with the largest group of adolescents worldwide (253 million) and the stark realities of gender inequality, child marriages, poverty, malnutrition, and the emergence of a large burden of non-communicable diseases (NCDs), together with important environmental risk factors, such as air pollution, is a very pertinent location for this age group. Certainly, the goal, set out first in the 2012 Lancet Series, to forge stronger links between adolescent health and wider global health thinking, has been achieved. The Every Woman Every Child Global Strategy for Women's, Children's, and Adolescents' Health, launched by then UN Secretary General Ban Ki-moon, kickstarted a new era for including adolescents into global health agendas.

Marginalized adolescents and young people-those incarcerated, displaced, unemployed, out of education, or in war and disaster zones-need special attention therefore the next step is to provide the impetus and momentum to move from Global talk to global and country-level action. Adolescents' and young people's are the future of our Country. The 2030 Agenda for Sustainable Development and its Global Strategy for Women's, Children's and Adolescents' Health provides a unique opportunity for accelerated action for the health of adolescents. Investment in adolescent health is also essential to achieve the 17 SDGs and their 169 targets, each of which relates to adolescent development, health or well-being directly or indirectly. The main health issues faced by the adolescents include: Mental health problems, early pregnancy and childbirth, (HIV/STI) and other infectious diseases, violence, injuries, malnutrition and substance abuse.

National Mass Deworming Programme among Adolescents

School-based National Mass Deworming Programme has been executed in Delhi as a part of National Mass Deworming Programme on National Deworming Day (NOD) on 9 February 2017 followed by Mop up Day (MUD) for left out children on 15 February 2017. All school going children in the age group of 3-19 years (Nursery to class XII) are being given a single dose of Chewable Tablet Albendazole 400 mg.

Challenges Concerning Adolescent Health

Though adolescence is usually a healthy period, several risk factors of adult diseases which begin in the adolescence phase can be prevented with proper interventions during this period, though there are challenges. Exclusive data pertaining to adolescent health issues in the Indian scenario is not available. Data about important adolescents' health issues in different areas are limited. Hence, detailed investigation and reports on adolescent's health issues is the need of the hour.

India is also the second largest consumer of tobacco in the world, first being China. The prevalence of tobacco use among adolescents (15 years and above) is 35 per cent. The prevalence of overall tobacco use among males is 48 per cent that among females is 20 per cent. Nearly two in five (38%) adolescents in rural areas and one in four (25%) adolescents in urban areas use tobacco in some form. Setting up of Tobacco Cessation Clinics in India has been one of the major highlights of WHO/Ministry of Health and Family Welfare collaborative programme in the area of tobacco control. Tobacco cessation is one of the important links of tobacco control as it helps the current users to quit tobacco use in a scientific manner.

Article 14 of the WHO Framework Convention on Tobacco Control (FCTC) also requires countries to take effective measures to promote cessation of tobacco use and adequate treatment for tobacco dependence.

Different Strategies for Tobacco Control in India:

1. National Inter ministerial Taskforce for Tobacco Control
2. Steering Committee on Section 5 of COTPA
3. Alternate livelihood initiatives by Ministry of Labor
4. The Ministry of Health and Family Welfare
5. Integration of TB and Tobacco Project
6. Mainstreaming tobacco control in medical and dental education in the country
7. National Tobacco Control Helpline
8. National Consultation on Smokeless Tobacco

Parivarthan

Counselling Children and Adolescents require particular skills and qualities, and is different from counselling adults. The aim of this course is to develop awareness and skills that are beneficial while working with children and adolescents from the counselling perspective and is based on the knowledge drawn from different psychological theories, developmental psychology and clinical observation. This Advanced Training Module has included Child and Adolescent Counselling Skills, Use of Media, viz: Play and Art Therapy, Counselling for CSA, along with an Introduction to Sand Therapy and School Counselling are being used for the counselling purposes of adoloscents.

Adolescent Health Care Programs in India

Since 1946, Bhore Committee proposed to integrate Health and Education ministries. However, the scope for integration of health services with other services is the need of the hour. Listed below are the few proposed development for inter-sectoral convergence:

Sl. No.	Ministries and Adolescent Health Programmes		Services
	Bhore Committee 1946		
	The integration of preventive and curative services at all administrative levels.		
1.	**Ministry of Health and Family Welfare**		
	a.	Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A)	Adolescent nutrition, iron and folic acid supplementation, adolescent health clinics and counselling
	b.	Adolescent reproductive and sexual health (ARSH)	Preventive, promotive, curative and counselling services for reproductive and sexual problems
	c.	Rashtriya Kishor Swasthya Karyakram (RKSK)	Strengthen adolescent components of RMNCH+A strategies. Communi-tybased and facility based interventions, and social and behaviour change communication with focus on interpersonal communication
	d.	Weekly Iron Folic Acid Supplementation(WIFS)	Covers Govt. School students of Class VI to XII. Weekly dose of IFA Tablet is provided to beneficiaries in Schools under supervision of teachers.
	e.	National AIDS Control Programme	Prevention, control and appropriate referral of HIV/AIDS and RTI/STI cases
	f.	School Health Programme	Nutritional interventions, promoting health lifestyle, counselling and im-munization
2.	**Women and Child Development**		
	a.	Kishori Shakti Yojana	Services improving health, nutritional and educational status of girls

Sl. No.	Ministries and Adolescent Health Programmes		Services
	b.	BalikaSamridhiYojana	Services to raise the age of marriage and to improve enrollment and retention of girls at school
	c.	Rajiv Gandhi Scheme for Empowerment of Adolescent Girls	Iron and Folic Acid supplementation, nutrition & health education, ARSH, life skill education and vocational training for girls aged 16 and above under National Skill Development Program
	d.	Integrated program for street children	Shelter, nutrition, education, health care and recreation facilities to street children. Child Help Line Service (1098)
3.	**Human Resource Development**		
	a.	Samagra Shikhsa	During 2018-19,it has proposed to treat school education holistically without segmentation from pre-nursery to Class 12. Samagra Shiksha - It subsumes the three schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE)[16].
	c.	Adolescence Education program	The Adolescence Education Programme (AEP) is an important initiative that aims to empower young people with accurate, age appropriate and culturally relevant information, promote healthy attitudes and develop skills to enable them to respond to real life situations in positive and responsible ways[16].
4.	**Youth Affairs and Sports**		
	a.	Nehru Yuva Kendra Sangathan	Empowerment of rural youth
	b.	National Program for Youth and Adolescent Development	Leadership qualities and personality development of youth
5		Strengthening inter-sectoral collaboration for adolescent health	Meeting of regional programme managers, New Delhi, India, 25–27 November 2014 to promote implementation of adolescent-friendly health services (AFHS) by strengthening partnerships and - coordinatio
		Others	
	a	Narcotic Drugs &Tobacco, Psychotropic Substances Act, 1985- AH Strategy	Prohibition on sale to minors
	b	National AIDS Control Programme Phase –III	Appropriate referral of HIV/AIDS and RTI/STI cases

Adolescent Health Programmes, Ministries and Their Services

Sl. No.	Ministries and Adolescent Health Programmes		Services
1	**Ministry of Health and Family Welfare**		
	a	Adolescent reproductive and sexual health (ARSH)	Preventive, promotive, curative and counseling services for reproductive and sexual problems.
	b	School health programme	Nutritional interventions, promoting health lifestyle, counseling and immunization
2	**Women and Child Development**		
	a	Kishori shakti yojana	Services improving health, nutritional and educational status of girls
	b	Balika samridhi yojana	Services to raise the age of marriage and to improve enrollment and retention of girls at school
	c	Rajiv Gandhi Scheme for Empowerment of Adolescent Girls	Iron and Folic Acid supplementation, nutrition & health education, ARSH, life skill education and vocational training for girls aged 16 and above under National Skill Development Program
	d	Integrated program for street children	Shelter, nutrition, education, health care and recreation facilities to street children. Child Help Line Service (1098)
3	**Human Resource Development**		
	a	Sarva Shiksha Abhiyan	Free and compulsory education to 6-14 years age group
	b	Mahila samakhya programme	Provides equal educational opportunities for women
	c	Adolescent education program	Creates awareness and positive attitude to develop skills to enable them to respond to real life situations

Sl. No.	Ministries and Adolescent Health Programmes		Services
4	**Youth Affairs & Sports**		
	a	Nehru yuva Kendra sangathan	Empowerment of rural youth
	b	The national service scheme	Personality development of students through community service
	c	National Program for Youth and Adolescent Development	Leadership qualities and personality development of youth
5	**Others**		
	a	Narcotic Drugs and Psychotropic Substances Act, 1985- AH Strategy	Prohibition on sale to minors
	b	National AIDS Control Programme Phase –III	Appropriate referral of HIV/AIDS and RTI/STI cases

List of common adolescent issues

• **Pubertal issues** ➢ Adolescent Growth and Development ➢ Pubertal delay or precocity ➢ Weight and height issues • **Sexual and reproductive Health** ➢ Gynaecological and Menstrual Problems ➢ Contraception ➢ STD/HIV Screening counseling and treatment ➢ Sexual & Reproductive health education	• **Psycho-social issues Relationship Development Adjustment problems Growing-up issues** • **Nutrition issues** ➢ Healthy eating during Adolescence ➢ Anaemia prevention and management ➢ Under nutrition and obesity ➢ Eating Disorders (Anorexia nervosa, Bulimia nervosa, Binge Disorder) • **Immunization** • **Safety and Injury Prevention**
• Chronic conditions like Asthma, Diabetes, Hypertension, Renal Disorders • Eye Care, ENT care, Dental care • Preventive health check-ups, like, annual check-up, pre-college health check-up, pre-marital counselling etc.	• **Adolescent Mental Health** ➢ Psychiatric disorders: Depression, Anxiety, bipolar, personality disorder ➢ Substance abuse including tobacco and alcohol

Conclusion

Exclusive data pertaining to the adolescent health issues in the Indian scenario is not available when compared to the developed countries. Nation and States-wise detailed investigation and reports on adolescents' health issues is the need of the hour. This will help to create better awareness among the stakeholders about the importance of strengthening adolescent health services under a single agency in order to meet their felt needs.

To achieve wholesome adolescent health, we need to have a multidimensional approach covering all the adolescent health problems with special emphasis on mental health, behaviour change communication towards healthy lifestyle and positive social environment to acquire life skills. Adolescent-friendly clinics need to be widely established throughout India and should achieve universal coverage. Screening of adolescents on regular basis could be an effective tool to control the existing disease and to update occurrence of any new diseases. Empowering and involving adolescents in decisions that affect them and facilitating them with every opportunity for developing into a successful adult will give rich dividends. Offering such opportunities to the growing children gives them a chance to build a safe, happy, healthy and productive nation in the future. Adolescents and young people- those incarcerated, displaced, unemployed, out of education, or in war and disaster zones; need special attention. Therefore, the next step is to provide the impetus and momentum to move from mere global talk to global and country-level action.

The 2030 Agenda for Sustainable Development and its Global Strategy for Women's, Children's and Adolescents' Health provides a unique opportunity for accelerated action for the health of adolescents. Investment in adolescent health is also essential to achieve the 17 SDGs and their 169 targets, each of which relates to adolescent development, health or well-being directly or indirectly. This review helps to create awareness among the stakeholders about the importance of strengthening adolescent health services in order to meet their felt needs therefore just Create a positive environment before interaction with adolescent.

When we are talking to youth, focus is on creating positivity, connectedness, opportunity to contribute and take the time to ask about social issues, and then follow up on them. Programmes for Adolescents with focus on youth and community development are very important for their effective implementation. They must be engaged in the planning process in order to better understand and serve their needs.

Recommendation

Exclusive data pertaining to the adolescent health issues in the Indian scenario is not available while compared to the developed countries. Nation and States-wise detailed investigation and reports on adolescents' health issues is the need of the hour. This will help to create a better awareness among the stakeholders about the importance of strengthening adolescent health services under a single agency. In the policies and programmes, emphasis must be on how to meet their felt needs, age appropriate sex education with abuse prevention skills at school, college and community levels to bridge the knowledge gap among the adolescents. With this approach, sexual abuse, early sex debut and unsafe sexual practice can be reduced, and the contraceptives usage can be increased. This, in turn, will prevent unwanted pregnancy, AIDS/STIs and its complications. Step is to be taken to delay the age of marriage through advocacy, counseling and strict enforcement of law. Adults should be educated to prevent early marriage of adolescents, teenage pregnancy and its complications. Focus on effective implementation of mental health services at all levels will result in the reduction of psychological disorders and social misbehaviour among the adolescents.

Medical officers and the health workers at all levels should be given exclusive training in handling adolescents. Health workers of the same gender should address the problem of boys and girls separately. Facilitation to provide the accurate and detailed information related to their health problems will boost the trust of the adolescents on the community which in turn, will lead to building a better and constructive society. Counseling should be strengthened by engaging well-trained healthcare providers, and by involving parents and elders of the family in home-based counseling. Encouraging community participation in mobilizing the adolescents to build life skills and to take active part in community programmes is also important. Strict enforcement of laws related to traffic rules, prohibiting sale of tobacco, alcohol and other substance of abuse to minors will produce more responsible citizens. Restricting advertisements related to junk food products is essential for getting healthy adolescents.

References

1. Kar S.K, Choudhury A & Singh A.P. Understanding normal development of adolescent sexuality: A. bumpy ride. J. Hum ReprodSci 2015, 8: 70-74.

2. Sivagurunathan C. et al. Adolescent Health: Present Status and Its Related Programmes in India, Journal of Clinical and Diagnostic Research. 2015 Mar, Vol-9 (3): LE01-LE062 2.
3. Adolescents: Health Risks and Solutions. Available on https://www.who.int/news-room/fact-sheets/detail/adolescents-health-risks-and-solutions.
4. Guidelines formulated by Adolescent Health Committee FOGSI for Establishing Adolescent Friendly Health Centers (AFHCs) [Available on https://www.fogsi.org/wp-content/uploads/2015/05/pdf/adolescent_health_guidelines.pdf].
5. Report of the Working Group on Adolescents for the Tenth Five Year Plan Planning Commission Government of India [Available on: http://www.planningcommission.nic.in/aboutus/committee/wrkgrp/wg_adolcnts.pdf].
6. World Health Organization. Health for the world's adolescents: a second chance in the second decade. 2014. www.who.int/maternal_child_adolescent/ topics/adolescence/second-decade/en/.
7. Taghizadeh Maghaddam H, Bahreini A, AjilianAbbasi M, Fazli F & Saeidi M. Adolescence Health: the Needs, Problems and Attention. Int J Pediatr 2016; 4(2): 1423-38 [Available on: http://ijp.mums.ac.ir/article_6569_730511251d3e060fdd0318cecf61c984.pdf].
8. Mortality, morbidity and disability in adolescence: Health for the world's adolescents. Top 10 causes of death among adolescents by sex WHO 2014 [Internet]. [cited on 20 November2014]. Available on http://apps.who.int/adolescent/second-decade/ section/section_3/level3_2.php
9. Maliye C, Garg BS. Adolescent health and adolescent health programs in India. J Mahatma Gandhi Inst Med Sci. 2017, 22: 78-82.
10. International Institute for Population Sciences (IIPS) and ICF. 2017. National Family Health Survey (NFHS-4), 2015-16: India. Mumbai: IIPS. [Available on: http://rchiips.org/NFHS/NFHS-4Reports/India.pdf].
11. POSHAN Abhiyan (Available on https://www.india.gov.in/spotlight/poshan-abhiyaan-pms-overarching-scheme-holistic-nourishment.
12. Kohli Gaurav, Kodi Malar & Sethi Manu. Road Accidents among Adolescents; Journal of Asia Pacific Studies, December 2013, Volume 3 (2): 245-259.
13. Launch of Rashtriya Kishor Swasthya Karyakram and National Consultation on Adolescent Health, Ministry of Health and Family Welfare [Available on http://www.rksklaunch.in/rksk strategy.html].
14. India Tobacco Production [Available on http://www.tobacco-facts.net/tobacco-industry/india-tobacco-production].
15. World Health Organization (WHO). Fresh and alive: MPOWER, WHO Report on The Global Tobacco Epidemic, Geneva, Switzerland: 2008.
16. Department of School Education and Literacy, Ministry of Human Resource Development, Govt. of India.
17. Journal of Clinical and Diagnostic Research 2014.

स्वास्थ्य एवं जनसंख्या:
परिप्रेक्ष्य एवं मुद्दे, 42 (1&2): 59-71 /2019

किशोर स्वास्थ्यः भारत में वर्तमान स्थिति और इससे संबंधित कार्यक्रम

जे.बी. बब्बर* और कुणाल बब्बर**

सारांश

किशोर एक प्रमुख जनसांख्यिकीय और आर्थिक शक्ति का गठन करते हुए, राष्ट्र का भविष्य हैं। उनकी विशिष्ट आवश्यकताएं हैं जो लिंग, जीवन परिस्थितियों और सामाजिक–आर्थिक परिस्थितियों के साथ–साथ बदलती हैं। वे निर्धनता, स्वास्थ्य देखभाल सेवाओं तक पहुंच की कमी, असुरक्षित वातावरण आदि जैसी चुनौतियों का सामना करते हैं। किशोर स्वास्थ्य कार्यक्रम वर्तमान में खंडित हैं, और किशोरों की सभी जरूरतों को पूरा करने वाला कोई व्यापक कार्यक्रम नहीं है। स्वास्थ्य देखभाल सेवाओं की पहुंच और उपलब्धता गंभीर रूप से सीमित है। सटीक जानकारी का अभाव, उचित मार्गदर्शन का अभाव, माता–पिता की अज्ञानता, कौशल की कमी और स्वास्थ्य देखभाल वितरण प्रणाली से अपर्याप्त सेवाएं प्रमुख बाधाएं हैं। अंतःक्षेपों द्वारा एक स्वस्थ जीवन शैली का नेतृत्व करने, जंक फूड उत्पादों से संबंधित विज्ञापनों को प्रतिबंधित करने, प्रजनन और यौन स्वास्थ्य के बारे में जागरूकता सृजन, माता–पिता को शिक्षित करने, शीघ्र विवाह को रोकने के लिए शिक्षित करने, किशोर गर्भावस्था और उनके बच्चों की सलाह के लिए मनोवैज्ञानिक और मानसिक स्वास्थ्य सेवाएं और व्यवहार परिवर्तन संचार प्रदान करने पर ध्यान देना चाहिए। किशोरों के अनुकूल क्लीनिकों के सार्वभौमिक कवरेज की अत्यधिक अनुशंसा की जाती है।

मुख्य शब्दः किशोर स्वास्थ्य, पोषण, प्रजनन।

*वरिष्ठ सलाहकार– चिकित्सा, सीबीपीईएमईएम, राष्ट्रीय स्वास्थ्य और परिवार कल्याण संस्थान, मुनीरका, नई दिल्ली –110067; ई–मेलः *drbabbar&21@yahoo-com*, ** चिकित्सा अधिकारी, एयर इण्डिया, टी–3, इन्दिरा गांधी एयर पोर्ट, नई दिल्ली

HEALTH AND POPULATION - PERSPECTIVES AND ISSUES

VOLUME 42 NUMBER 1&2 January-June, 2019

NIHFW thanks the following reviewers of the respective papers published in this issue.

1.	**Health Insurance in India– A Comparative Satisfaction Survey** Dr. V.K. Tiwari, Professor, NIHFW, New Delhi Dr. V. Selvaraju, Consultant- Health Economics, New Delhi
2.	**Availability of Drugs, Equipment and Other Logistics for Disaster Management in Health Facilities of Delhi: An Assessment** Dr. Renu Agrawal, Associate professor, SPM Department, S.N. Medical College, Agra, Uttar Pradesh Dr. Shivlal, ex-Advisor, CDC Project, NIHFW, New Delhi
3.	**A Literature Review of Information, Education and Communication (IEC) Activities for Malaria, Tuberculosis and HIV and AIDS after the 2015 Deadline of Millennium Development Goals** Dr. T. Mathiazhagan, ex-Professor, NIHFW, New Delhi Dr. Ankur Yadav, NIHFW, New Delhi Prof. U. Dutta, ex-Professor, NIHFW, New Delhi
4.	**Tracking the Contributions of Faculty Members and Research Staff of NIHFW: An Analytical Study** Dr. K.P. Singh, Associate Professor, Department of Library Sciences, University of Delhi, New Delhi Mr. Salek Chand, Senior Documentation Officer, NIHFW, New Delhi
5.	**Review and Situational Analysis of Health Work Force in India for Universal Health Coverage** Utsuk Dutta, ex-Professor, NIHFW, New Delhi A.K. Sood, ex-Professor, NIHFW, New Delhi
6.	**Adolescent Health: Present Status and Its Related Programmes in India** Prof. Saroj Yadav, Dean (Academic) and Project Coordinator-AEP/NPEP, NCERT, New Delhi Dr. Chetna Chouhan, SMO, NIHFW, New Delhi

Journal Information

The journal is indexed in Google Scholar. The abstracts of the papers published in the journal are available on the Institute's website: www.nihfw.org.

GUIDELINES FOR AUTHORS

Health and Population: Perspectives and Issues (HPPI) is a peer reviewed Journal devoted to publishing papers of scientific and educational interest based on primary or secondary data as well as a review in the areas of Health, Family Welfare, and Population. The scope of the Journal covers original articles on the four dimensions of health-physical, mental, social and spiritual; and also population concerns, health services administration, family planning, demography, social and behavioural sciences, communication, bio-medical sciences in family planning and allied subjects with emphasis on hospital administration and community health management. Manuscripts are critically reviewed by experts in the relevant field. Authors are given the benefit of comments, whenever necessary. Acceptance of the paper for publication is based on the originality of the research work or ideas projected, and clarity of presentation. Published papers represent the opinion of the authors and do not reflect the views or the policy of the Institute. Materials (tables, figures, and content) published in HPPI can be reproduced with due acknowledgment.

How to submit the manuscript: A computer typed MS Word document with 12-point Times New Roman font in double line spacing on A4 size paper should be submitted to Editor through E-mail editor@nihfw.org by addressing to The Editor- HPPI, The National Institute of Health and Family Welfare, Munirka, New Delhi-110067. The paper must accompany a declaration that it is an original work of the author/s; and has not been published, submitted, or under consideration for publication anywhere else. **The concerned author/s will be responsible for any kind of plagiarism or copyright violation in the published papers.** Any communication from the Editor-HPPI, to the author/s, will be done only through E-mail. The paper should not exceed 5000 words with an abstract of 200-300 words preceding the title and followed by a maximum of 7 keywords. The combined number of Tables, Graphs, Figures, Illustrations, and Charts must not go beyond 10. Tables, Graphs, Figures, Illustrations, Legends, and Charts must not appear at the end of the paper but these should be given at appropriate place amidst the text content in Black colour only.

The first page of the manuscript should contain the title, authors, affiliations, and corresponding author and his/her E-mail address. On the second page, Title, abstract and keywords of the manuscript should be provided. The paper should be precisely written following Vancouver style/format. The flow of the paper to be read as follows: Title, Abstract, Keywords, Introduction, Materials and Methods, Results, Discussion, Conclusion and Recommendations and at the end References. The title of the paper should be short and clear. Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript. The corresponding caption should be placed directly below the figure or above the Table. Each table should be referred to as e.g. Table 2 using an Arabic number. Figures and Tables must be appropriately cited in the text.

References: All the references should be cited in superscript in a numerical consecutive order in the text. The reference list should also be arranged in the same order. References not reflected in the text, must not be included in the list of references and vice-versa.

Example of References

Journal Article

1. Halpen SD, Ubel PA, Caplan AL. Solid-organ transplantation in HIV-infected patients. N Engl J Med. 2002 Jul 25;374(4):284-287

Journal article with more than 6 authors

2. Kawamura R, Miyazaki M, Shimizu K, Matsumoto Y, Silberberg YR, Ramachandra Rao S, et al. A new cell separation method based on Antibody-immobilized nanoneedle arrays for the detection of intracellular markers, Nano Lett.2017Nov 8;17(11):7117-7124

Book/Monograph Entry

3. Carlson BM. Human embryology and developmental biology. 3rd ed. St. Louis: Mosby; 2004.

Chapter in a Book

4. Yadav A. Sharma KKN. Awareness of reproductive and child health care programme among Rajgonds tribe of Sagar district, Madhya Pradesh. In: Sharma K.K.N., editor. Reproductive and child health problem in India. New Delhi: Academic Excellence; 2005, pp. 592-597.

Electronic material

5. World Health Organization (WHO). Mortality country fact sheet 2006 [internet]. Geneva: WHO; 2006. Available from: www.who.int/whosis/mort_emro_pak_pakistan.pdf (Accessed 27 August 2018)

Reports

6. Reddy, K. Srinath, and Gupta, Prakash C (ed). Tobacco Control in India. Ministry of Health and Family Welfare, Government of India, Centre for Disease Control and Prevention, USA and World Health Organization. Report, 2004.

THE NATIONAL INSTITUTE OF HEALTH AND FAMILY WELFARE

The National Institute of Health and Family Welfare (NIHFW) an autonomous organization, under the Ministry of Health and Family Welfare, Government of India, acts as an 'apex technical institute' as well as a 'think tank' for the promotion of Health and Family Welfare Programmes in the country. The NIHFW is known for its Education, Training, Research, and Specialized advisory services.

Educational activities: The educational activities of the Institute contribute to Human resource development for better management of health and family welfare programmes in the country. The on campus courses are: Three-year Post-graduate Degree in Community Health Administration, a two-year Post-Graduate Diploma in Health Administration, and a one year Post-Graduate Diploma in Public Health Management. The Institute offers six Post-Graduate Diploma courses in distance learning mode of one year duration each. These are: Health and Family Welfare Management, Hospital Management, Health Promotion, Health Communication, Public Health Nutrition and Applied Epidemiology. These courses are need based and multidisciplinary in nature. The Institute has also developed certificate courses through e-learning mode for enhancing the skills and competencies of in-service middle level health professionals in the areas of 'Professional Development in Public Health and Health Sector Reforms' for Medical Officers, and "Programme Management for Public Health care for the Programme Managers working in National Health Mission or in the health sector.

Training and Workshops: The training courses and workshops (intramural and extramural), numbering around 45-50 are organized by the Institute every year with an aim to familiarize the participants with the goals and the objectives of health and family welfare programmes; updating their knowledge and understanding of operational difficulties in implementation and suggesting remedial measures to overcome such constraints.

Research and Evaluation: The Institute gives priority attention to research in various aspects of health and family welfare. The Institute has an Academic Committee and a high level Programme Advisory Committee for ensuring the quality in academic endeavours. The Institute also conducts evaluation studies of National Health Programmes and various other related activities initiated by the Government of India.

Specialized Services: Specialized services of the Institute include Clinical services, National Cold Chain and Vaccine Resource Management Centre (NCCVMRC), Centre for Health Informatics, Skill Lab, National Documentation Centre and publications. The Ministry of Health and Family Welfare (MoHFW) has entrusted the Institute to act as a 'National Nodal Agency' to organize, coordinate and monitor the training programmes of Reproductive and Child Health (RCH) in the country. The main objective of the Clinic is to render Mother and Child Health services. The clinical work in relation to infertility, reproductive disorders, especially endocrinology and sexual dysfunctions deserve special mention. NIHFW in partnership with UNICEF through the National Cold Chain Management Information System, is responsible for the overall maintenance, implantation and monitoring of NCCMIS across the country including providing support to the end users. The reference, referral, press clipping and bibliographic services of the National Documentation Centre; and the publication, art and projection services of the Department of Communication compliment the activities of the Institute.

Advisory and Consultancy Services: The Director and faculty members of the Institute provide advisory and consultancy services to various national, international and voluntary organizations in various capacities.

PRINTED AND PUBLISHED BY THE DIRECTOR,
The National Institute of Health and Family Welfare, Munirka, New Delhi- 110067
Website: www.nihfw.org