

NATIONAL HEALTH POLICY 2002: AN ANALYSIS FROM THE HEALTH SYSTEMS PERSPECTIVE

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ABSTRACT

In contrast to India's Health Policy-1983 (Health for All by the year 2000); National Health Policy, 2002, seeks to achieve increased access, improved efficiency, affordable cost and high quality' through an array of 20 detailed strategies. The objective of the present study was to analyse these strategies from a health system perspective. Potential impact of each strategy on the core objectives of equity, efficiency, sustainability and quality were assessed. Four important effects- positive, negative, no impact and uncertain, were considered and the overall impact was assessed in terms of a net positive impact. While four strategies were identified to have the potential to fulfill the entire core objectives, there were two others with no impact. All the other strategies either induced a trade off or have the potential to deter the objectives. Overall emphasis of NHP-2002 was based on quality, which was expected to extract a maximum of 75 per cent from net benefits, followed by 50 per cent from efficiency, 35 per cent from equity and a negative 5 per cent from sustainability.

Key-words: National Health Policy, Strategies, Quality, Efficiency, Equity, Sustainability.

India released her second National Health Policy (hereafter NHP-2002) in 2002, nearly 20 years after the formulation of the first one in 1983. The Policy is released at a time when the Indian Health Care System is looking for financial means, organizational structure and procedures to respond to the emerging new diversity brought into the system by several new situations hitherto uncommon to it. The policy is formulated in such a way that it will respond to the emerging needs in a more flexible and efficient manner. On the demand side new disease causing organisms, fast-changing lifestyles, environmental and demographic conditions and the inflow of the population towards urban areas are trying to alter the country's epidemiological profile and treatment requirements. At the same time, the high-cost technological innovations are offering unprecedented opportunities to the rich for treatment of even the most cosmetic defects with the comparative neglect of the poor, who are prone to higher morbidity and mortality but have no or little access to basic medical care. Poor, compared to the rich, are estimated to have a 4.3 times higher probability of death between birth and the age of 5 years and a 3.7 times higher probability of death between the ages of 15 and 59 years. Higher morbidity rate and increasing treatment costs impose a disproportionately higher burden of treatment on the poor in the rural areas. In the process, an increasing proportion of the population is left unsatisfied.

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On the supply side, technological advances, besides enhancing the awareness and expectation level of the population, tend to widen the spectrum of possible interventions and force the system to look for costlier treatment alternatives literally with respect to each disease condition. As a result, they tend to challenge the available health care resources and put additional pressure on the already burdened health care system, widening the gap between 'what is possible' and what the system can offer'. This paper provides an overview of NHP-2002 and analysis of the potential impact of its strategies from the health system perspective. While 1983 Policy aimed at Health for All by the year 2000 AD., NHP-2002 seeks to achieve 'increased access, improved efficiency, affordable cost and higher quality to health services'. It has come out with an array of 20 strategies to fulfil this broad objective.

Context

Policy proposals are generally guided by the nature and functioning of a country's health system and only those proposals fitting this basic foundation gain overall appeal. India is one of the few nations in the world where the take-off in life expectancy preceded economic growth. Her success vis-a-vis life expectancy (it rose from 27 years in 1946 to 64.6 years in 2000) coincided with the shaping of the rural-centric and health system based on 'classical universalism' framework.

At present, Indian health system is facing numerous challenges. First of all, the country is in the midst of economic transition since the economic reforms started in 1991. Privatization has become a centerpiece of economic liberalization and structural reform with the belief that government institutions are inherently inefficient and the only way by which they can be rehabilitated is through a transfer of ownership to private hands. As a result, government health care system is faced with the problem of resource strap¹² H Share of the government in the health care expenditure has come down from about 25 per cent in 1991 to 17 per cent in 2001. This is happening at a time when the cost of medical care is increasing at a rate higher than the index of general commodities due to application of more expensive technologies in medical care. This is again accompanied by several new challenges on technological advances, new disease causing organisms, fast-changing lifestyles, environmental and demographic conditions and the inflow of the population towards urban areas.

Second, even the prevailing level of public spending on health is inequitable and is lower in poorer States having lower health status³⁹. The ratio of per capita spending on public health between the highest and the lowest States is found to be 7 to 1. As a result, availability and utilization of services are poorest in the most needy States/districts. Consequently, key health indicators remain low for India as a whole when compared to some other Asian countries like China and Sri Lanka.

Third, the public health care system, by design, fails to capture the geographic, epidemiological and cultural diversity among the regions, States or districts are insensitive to the local needs of the population and function at a sub-optimal level with massive inter-state/inter-district disparities. In Kerala and Tamil Nadu, the system is efficient but on the other hand, in Bihar and Uttar Pradesh, it is grossly inefficient. In Andhra Pradesh and Himachal Pradesh, its existence is inadequate, while the functioning of infrastructure is 'above average'. In Punjab and Haryana, while the existence is good, the functioning of infrastructure is 'below average'.

Fourth, urban infrastructure is insufficient to meet the health care needs of the population resulting in over-crowding of facilities. Existing health care is not optimally utilized by the rural people due to the absence of appropriate facilities in rural areas and lack of proper referral system. This, in turn, affects the quality of care in the urban areas and inflicts greater burden in the form of transport and other costs on the rural population. Over-crowding also leads to corruption and nepotism. At the same time, under-utilization of the rural health care facilities results in wastage of resources.

Fifth, private sector literally enjoys the *laissez-faire* status and has already grown into a major player in the delivery of health care commanding control over 75 per cent of resources, 55 per cent of hospitals, 54 per cent of the dispensaries, 30 per cent of the hospital beds and about 75 per cent of the registered doctors. Private health care providers, on an average, treat more than two-thirds of outpatients accounting for about 50 per cent of national health expenditure. Uninterrupted growth of the private sector has raised a number of concerns, most of which stem from reasons of market failure. Expenditure per episode for private providers averages 1.5 to 2 times the cost of patients of consultations at Government facilities and the burden falls disproportionately on the poor and on rural populations.

Strategies

NHP-2002 acknowledges that the prevailing health system is afflicted with several ills and diagnoses that there has been a decline in public health investment as a percentage of GDP from 1.3 per cent in 1990 to 0.9 per cent in 1999 (some estimates even put it around 0.6%) and that the major source (83%) of health care financing in the country is private out-of-pocket expenditure. The other weaknesses prevailing in the current health care system as identified by the document are:

- Inefficient functioning of the public health care sector
- Uneven spatial distribution of health care services
- Inequitable distribution of medical care personnel
- Inter-State disparity in the distribution of medical and dental colleges
- Uneven quality and spread of private providers
- Inadequate health research
- Insufficient urban public health care infrastructure
- Rudimentary nature of disease surveillance system
- Absence of scientific database
- Lack of professional ethics and
- Lack of regulation.

Hence, the policy seems to have come out with a fair diagnosis. The policy aims at achieving an increased access (equity), affordable cost (sustainability) and improved efficiency and quality.

A cursory look at the document suggests that the policy priorities lie in the order of equity, sustainability, efficiency and quality. It has come out with an array of 20 clearly visible intervention strategies to overcome the loopholes in the existing health care system and fulfils the objectives (Box 1). Although the document contains numerous slogans, only 20 can be identified

as concrete strategies. A glance at the strategies suggests that they encompass all the four control knobs concerning the health system viz., financing, organisation, regulation and incentive. The seven strategies that concerned with financing are as given below:

- (i) Raising health care expenditure from 5.2 per cent to 6 per cent of the GDP by 2010.
- (ii) Earmarking 2 per cent of the GDP for public health.
- (iii) Raising state resources from 5.5 per cent of budget to 8 per cent and Centre's share from 15 per cent to 25 per cent.
- (iv) Allocating 55, 35 and 10 per cent of the budget meant for health to primary, secondary and tertiary health sectors respectively.
- (v) Spending two per cent of health budget for Government-funded medical research by 2010.
- (vi) Reviving Primary Health Care System by providing essential drugs under the Central Government funding and through the decentralized health system.
- (vii) Providing adequate health care to the poor under the cover Social health insurance.

The six strategies that aim at streamlining organizational set-up are:

- (i) Implementation of public health programmes through local self-governments.
- (ii) Set up of organized urban primary health care infrastructure.
- (iii) Co-operation of private health practitioners in national disease control programmes.
- (iv) Integrated disease control network from the lowest rung of public health administration to the highest level under the Central Government by 2005.
- (v) Identification of specific programmes targeted at women's health and
- (vi) Baseline estimates for the incidence of TB, Malaria and Blindness by 2005.

Six other proposals deal with the aspects of regulation in the health care system. These are:

- (i) Setting up of a Medical Grants Commission.
- (ii) Raising postgraduate seats in 'public health' and 'family medicine' to 25 per cent.
- (iii) Legislation for minimum infrastructure standard by 2003.
- (iv) Legislation for minimum quality standard by 2003.
- (v) Strengthening of food and drug administration and
- (vi) Securing worldwide commitments to lighten restrictive features of TRIPS in its application to health sector target regulation.

The lone strategy pertaining to incentive is 'providing commercial health services to overseas care seekers'. Hence, the strategies are in favour of financing followed by organization, regulation and incentives.

Analytical Framework for Policy Analysis

Health systems should ideally be driven by values such as human dignity, equity, professional ethics and solidarity, people-centric policies, targeted health approach, quality and sound financing. Health policy should aim at reshaping health care delivery, re-orient human resources and strengthening management. In short, health policy should maintain balance

between the administrative and managerial efficiency and individual citizen's quest for the best possible health care. If we carefully look at the successful policies that work for equilibrium elsewhere, they are theoretically sound and based on practical experiences. They also take into account the needs and expectations of the population and are well understood by the politicians, stakeholders, officials who implement them and the society as a whole.

Are they feasible? Where will the strategies lead us to the strategies mentioned in NHP-2002? Do we have the capability to implement the strategies⁹ These are some of the questions left unanswered. The analytical framework of this paper includes these three aspects of policy analysis. NHP-2002 has the core objectives of equity, sustainability, efficiency and quality. The framework, here, takes into account these core objectives as the nucleus for analysis. All the strategies are analyzed for their potential influence on these core objectives.

The term 'equity' implies a value judgment signifying an absence of avoidable, unnecessary and unfair inequality and hence needs to be interpreted with caution. Similarly, the term 'efficiency' carries varied connotations in health care depending upon the context in which it is employed. In this paper, the terms 'equity', 'efficiency', 'sustainability' and 'quality' are employed on mean 'equity in health care', 'technical efficiency', 'cost-efficiency' and 'quality of care' respectively (Table 1).

TABLE 1
STRATEGIES VIS-A-VIS OBJECTIVES

Sl. No.	Strategy	Potential Impact On			
		Equity	Efficiency	Cost Efficiency/ Sustainability	Quality
1.	Increased health expenditure	∞	⇔	↑	↑
2.	Increased public health investment	↑	↑	↑	↑
3.	Increased government health expenditure	↑	∞	↑	∞
4.	55:35:10 ratio for primary, secondary and tertiary sectors	↑	↑	↑	↑
5.	More drugs for primary health system	↑	↑	↑	↑
6.	Public health programmes through local bodies	↓	↑	↑	↑
7.	Medical Grants Commission	↑	↓		⇔
8.	Promote public health and family medicine	⇔	↑	↑	↑
9.	Organized urban primary health care	↑	⇔	↑	⇔
10.	Increased government research	↑	↑	↓	↑
11.	Minimum infrastructure standard	↓	∞	↓	↑
12.	Minimum quality standard	↓	↑	↓	↑
13.	Non-governmental providers in disease control programmes	↓	⇔	↓	⇔
14.	Integrated disease control network	↑	↑	↓	↑
15.	Baseline estimates for common diseases	↑	↑	↓	↑
16.	Programmes promoting women's health	↑	∞	↓	↑
17.	Improving food and drug Administration	∞	↑	↓	↑
18.	Commercial health service to overseas clients		↑	↓	↑
19.	Commitment on TRIPS	↑		∞	⇔
20.	Social Health Insurance	↑	↑	↑	↑
	Number of Net Positives (Positive-Negative)	7	10	-1	15

Each strategy is assessed for its influence on each of the core objectives. Four possible influences are considered - positive (indicated by 'f' meaning enhancement of the concerned objective), negative (indicated by 'l' signifying derailment of the objective), no impact (indicated by '∞' stating *status quo*) and uncertain (indicated by meaning that the impact is not predictable). Since the strategies broadly aim at achieving one of the core objectives, each one is expected to have positive influence on at least one of the 4 core objectives, as otherwise the strategy would not exist. Given this, the overall potential of the strategies is gauged from the total number of net positive (number of positive minus negative) influences they generate. The strategies and the symbols indicating their impact are given in the Table above.

Quality is the Key

As it can be seen from Table 1, there are 48 (60%) positive influences, 17 (21.3%) negative influences, 8 (10%) no impacts, and 7 (8.7%) uncertainties. If we discount the negative influences, then there are 31 (38.8%) net positives implying that the overall impact of the NHP-2002 tends to be positive. Here, we assume that positive and negative impacts are of same magnitude. Four strategies viz., increased public health investment; 55 to 35 to 10 to ratio which is for primary, secondary and tertiary sectors; more drugs for primary health system and social health insurance have the potential to positively influence all the core objectives. At the same time, two more strategies viz., promotion of public health and family medicine and organized primary health care are unlikely to deter any of the objectives. In other words, they either promote the objectives or maintain *status quo*. All the remaining (14) strategies cause a trade-off between the objectives. Their overall impact would depend on the relative strength of positive, negative and uncertain influences.

Between the core objectives, there seems to be a strong emphasis on quality, as it has the maximum number (15) of net positives in comparison to efficiency (10), equity (7), and sustainability (-1). The fact that no strategy has the potential to negatively influence the quality gives an impression that the strategies are tailor-made to suit this objective. Greater emphasis on quality and efficiency in comparison to equity and sustainability means that the strategies do not match with the desired order of priority (equity, sustainability, efficiency and quality). In fact, the strategies tend to revert the order of priority.

Resource Allocation

NHP-2002, unlike the 1983 policy, brings resource allocations into focus. Its strategies pertaining to resource allocation are appealing but their applicability is questionable. That is, the basic difficulty is not getting the number right but actually achieving it. For instance, it is not clear as to how the States would raise their budgetary share from 5.5 per cent to 8 per cent especially when the States' budgetary allocations to various sectors are inelastic (as acknowledged by NHP-2002 itself). Many States are now facing fiscal crisis due to mismanagement of budgetary resources and looking at the Centre to bail them out. In this context, it is difficult to expect them to raise the budgetary resources for health by about 50 per cent in 8 years' time (by 2010) from now.

Similarly, there is no mention about how the formula of 55 to 35 to 10 per cent ratio for primary, secondary and tertiary sectors is to be arrived at nor does it spell out a strategy to achieve this optimum. Will the government move excess (?) resources from tertiary to primary care sector?

Or will it achieve Pareto optimum by raising overall investment on health? Both appear to be infeasible at the moment. While the first option seems to be near impossible, the second option means an increase of health care resources by 5 to 6 fold in 8 years time. If it happens, it would demand a much higher budgetary share for health than the projected or rather wishful 8 per cent.

A portion of the public sector inefficiency stems from the way private financial resources are organized and managed. Health expenditure pattern of different countries mentioned in the document suggests that India spends enough to get a better outcome than other countries such as China and Sri Lanka. The difference between these countries and India is that India spends more (83%) in the form of out-of-pocket expenditure. It is important for India to streamline this dominant source of health expenditure and NHP-2002 proposes to introduce social health insurance on a lot basis. Hopefully, it will mature into a full-fledged programme in the years to come. Otherwise, entry of public expenditure is a difficult route to solve the financial ills concerning health care.

Public Sector (In) Efficiency

NHP-2002 is silent on the strategies to deal with public sector inefficiency. Sub-optimal input combination could be a major cause for public sector inefficiency because some inputs have outgrown others. Creation of extra facilities without assessing their relevance, cost-effectiveness, usefulness or sustainability actually causes more problems than solutions. *Panchayati Raj* (local self governance) might extend this undesirable practice further as heads of local self-governments compete with each other in creating extra facilities¹⁷. This is not to say that *panchayati raj* leads to inefficiency. At the same time, it is better to take a close look at the way the political decentralization process works in the country. The better option, however, is that a careful reorganization of the existing inputs and priorities without much financial commitment from the government can eliminate such kind of inefficiency.

It is also essential to make government health care facilities like sub-centres, PHCs and CHCs patient-oriented in such a way to attract more patients from upper economic strata of the society. Presently, these strata keep away from government health care system thus leaving the poor functioning of the system rather unnoticed. Attracting higher strata people towards government health care system not only facilitates an improvement in the resource generation capacity of these facilities, but also makes the system more accountable. Otherwise, only 'voiceless' people (i.e. poor people from the lower strata of the society) would visit government health care system. Views of such people are usually challenged whenever they raise a point regarding the functioning.

CONCLUSION

The overall potential of NHP-2002 strategies to enhance the core objectives tends to be positive. Positive impact signifies narrowing of inequity, enhancement of efficiency, lengthening of sustainability and improvement of quality. Nevertheless, only 4 strategies have the potential to positively influence all the core objectives and the other 14 cause a trade-off between them. Therefore, the overall potential depends on the relative strengths of the positive and negative influences of the strategies. Hence, it is imperative that the government focuses on those objectives that are likely to generate more positive influences while keeping under check those strategies that are likely to produce negative impact.

On the other hand, the strategies, while promoting the objectives, revert the order of priority because greater emphasis is placed on quality and efficiency in comparison to equity and sustainability. Since both emphasis and priorities are not openly spelt out in the document, it is difficult to say whether it really means a reversal of the order. Nevertheless, the strategies converge towards quality, efficiency, equity and sustainability. If this is not the order the government wants, then there is a need to rework the strategies.

All said and done, the document fails to come out with any clear action plan to reap the theoretical benefits accrued to the identified strategies. Hence, it is hazardous to predict the direction of the effects. In the absence of action plan, the prescriptions may only find the shelves, not the shops, without any benefit to the vast majority of the country's poor patients.

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A STUDY OF CONTRACEPTIVE USE AMONG EVER-MARRIED MUSLIM WOMEN IN AN URBAN SLUM OF DELHI

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ABSTRACT

In order to find out the contraceptive prevalence amongst the Muslim population residing in a Delhi slum, a study based on house-to-house survey and focus group discussions (FGDs) was undertaken. The contraceptive use was found to be only 8.6 per cent. While condom was the most popular contraceptive method (37.2%), tubectomy (16.6%) was the least preferred. Awareness about various contraceptive methods was uniform. Husbands with education up to primary level used contraceptives comparatively much more than others ($p=0.013$). Other socio-demographic factors like literacy status of women, income, type of family, occupation etc. didn't show any significant association with the contraceptive usage. Based on FGDs, the main reasons for low contraceptive usage were fear of side-effects, contraception failure, myths and beliefs such as impotency and weakness after vasectomy and religious restrictions etc. Findings from the present study suggested that intensive campaigns focussing on demystifying the prevailing myths and beliefs with active involvement of community leaders are necessary to improve the contraceptive usage among Muslim women.

Key-words: Urban slum, Muslim women, Contraceptive awareness and prevalence.

Muslims form the largest minority group in India. They constitute about 12 per cent of the country's population, which gives India the distinction of having the second largest Muslim population in the world. The growth rate of Muslim population in India during last three decades is somewhat higher than that of non-Muslim population¹. Sample surveys carried out by a number of agencies have shown that Muslim have higher fertility and prefer larger families.

The Family Planning Programme in India has had limited success in helping to reduce fertility. The greatest need before us is to promote family planning methods is among the socio-economically disadvantaged groups, as their fertility takes long to decline in developing countries⁶. The present study was carried out among Muslim population of a Delhi slum, characterized by deficient civic facilities, overcrowding, inadequate housing and poor sanitary conditions.

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METHODOLOGY

The present study was undertaken in Lok Nayak Colony, a slum area near Guru Nanak Eye Centre, New Delhi, between February and April 2000. The Department of community medicine, Maulana Azad Medical College, New Delhi, was operating a new health centre here since February 2000. Formal health services were non-existent in this slum community before starting this health centre. As a part of planning for providing family planning services, situational analysis was done to map out the existing population characteristic by conducting a household survey in the colony. There were 457 ever-married women aged 15-45 years of which 449 were Muslims and 8 were Hindus. Four medical interns under supervision of a senior resident and faculty collected information pertaining to socio-demographic characteristics, income and contraceptive usage at the time of survey using a pre-tested questionnaire after taking verbal consent. Repeated visits were made to interview all the women and there was no refusal for participation. Focus group discussions were conducted to find out the awareness, common beliefs, myths about contraceptive methods and reasons for their non-acceptance in the community.

Data were analyzed using Epiinfo version 6.04⁷. Chi-square test was used for comparison of categorical variables; 'p' value less than 0.05 was considered significant.

FINDINGS

The mean age at marriage was 17.2 years. Occupation wise, 44.8 percent of them were engaged in work such as house-maids 44.3 per cent, petty shop owners 32.3% percent and 23.4 percent had household business of making decorative and ornamental materials, assembling electronic goods etc. 418 (83.7%) women had a per capita income per month of less than Rs. 200 and the rest 81 (16.3%) had an income of Rs.200-499. Majority 421 (84.36%) of women belonged to a joint family.

The contraceptive use rate was 8.6% of which 29 (67.4%) were in the age group of 21 to 30 years. None in the age group of 41-15 years used any contraceptive method. Tubectomy was adopted by older women aged 26 years and above. Condom was the most popular method followed by intrauterine contraceptive device (IUCD) (Table 1). 418 (83.7%) of the subjects and 402 (80.5%) of their husbands were illiterate (Table 2). Literacy status of the women did not show any significant association with contraceptive use. However, contraceptive use was most prevalent among women whose husbands had education for five or less years ($p=0.013$).

TABLE 1
TYPES OF CONTRACEPTIVE USE VERSUS AGE OF SUBJECTS

Age group (Years)	Contraceptive method users					Total Number of women	Age - specific use rate (%)
	Condom	OCP*	IUCD#	Tubectomy	Number of women using contraceptive		
15-20	2	1	0	0	3	56	5.4
21-25	6	1	5	0	12	136	8.8
26-30	3	3	6	5	17	128	13.3
31-35	5	0	1	2	8	77	10.4
36-40	0	0	2	1	3	72	4.2
41-45	0	0	0	0	0	30	0.0
Total	16	5	14	8	43	499	8.6
%(N=43)	37.2	11.6	32.5	18.6	100.0		

TABLE 2
CONTRACEPTIVE USE AND LITERACY STATUS OF SUBJECTS AND THEIR HUSBANDS

Completed years of education	Contraceptive method users					Total Number of persons	Contraceptive use rate (%)
	Condom (n=16)	OCP* (n=5)	IUCD# (n=14)	Tubectomy (n=8)	Total number of contraceptive users (n=43)		
Wife							
Illiterate	13	4	11	7	35	418	8.4
1<5	0	0	2	1	3	33	9.1
6-10		1	1	0	5	48	11.5
Husband							
Illiterate	10	4	10	6	30	402	7.5
1<5	4	0	2	2	8	37	21.6"
6-10	2	1	2	0	5	60	8.3

"Chi-square value = 8.63, 2d.f. p.0.013

About 49 per cent had used a contraceptive method for 2 to 5 years especially a spacing method (Table 3) and 69.9 per cent users were married for a period ranging from 11 to 15 years (Table 4). Awareness about modern contraception methods was universal among the subjects.

TABLE 3
DURATION OF CONTRACEPTIVE USE

Contraceptive method	Duration (Years)				Total
	<1	2-5	6-10	>11	
Condom	4	9	3	0	16
OCP*	1	3	1	0	5
IUCD#	2	7	5	0	14
Tubectomy	2	2	3	1	8
Total	9	21	12	1	43
% (n=43)	20.9	48.9	27.9	2.3	100

TABLE 4
DURATION OF MARRIED LIFE AND CONTRACEPTIVE USE

Duration (years)	Contraceptive methods				Total	%
	Condom	OCP*	IUCD#	Tubectomy		
1<5	4	1	1	0	6	13.9
6-10	5	1	7	0	13	30/3
11-15	4	3	5	5	17	39.6
16-20	3	0	0	3	6	13.9
21-25	0	0	1	0	1	2.3
>26	0	0	0	0	0	0
Total	16	5	14	8	43	100

Focus Group Discussion with the men revealed that use of condoms was limited because of non-availability and decrease in sexual pleasure. They had doubts about the efficacy of oral contraceptive pills (OCPs). It was evident from the response of the participants "*Grabh nirodh ke liye khone vale goll ki koi thos saboot nahin hain*" (There is no sound proof for the oral pills in preventing pregnancy). Moreover, if the woman forgets to take a pill she conceives. It was also thought to be associated with giddiness and weakness. Regarding copper-T, they opined that

side effects like weakness and pain in abdomen leads to removal by women. They had strong objections against vasectomy. In their words "Muslim ko operation haram hai, gunah hain" (Operation is inappropriate and a crime for Muslims). They also had some beliefs associated with vasectomy such as "Mard, mard nahin rehta" (man doesn't remain a man) indicating towards impotency and weakness among vasectomised men. Tubectomy in women was associated with loss of vigour and vitality. Their response against tubectomy was: "*Operation ke bad aurat murda ho jati hai* (women become dead after operation). Injectable contraceptives, according to them were not freely available, expensive and thought it to be for the rich people only. Some even believed in faith healers and application of *surma* (black powder) in the eyes for avoiding pregnancy. By and large, they had big families, as only 10 to 15 percent of the literate did not prefer to produce more children. They did not disclose what (Quran had to say about family planning as religious sanctity has to be maintained.

FGDs conducted with women revealed that men did not like to use condoms, as they felt no responsibility towards women. Moreover, they engaged themselves in promiscuous behaviour and had a number of extra marital affairs without bothering to use condoms. OCPs were not popular for reasons such as "Har roj goli khane ke liye yad nahin rehati aur bhul jane se garbh ho jati hain" (one tends to forget to take pills daily and becomes pregnant if it is forgotten). Women also implicated the non-popularity because of perceived side effects of OCPs like vomiting, diarrhoea and gas in the abdomen. IUCD such as copper-T was not acceptable to the women because of associated symptoms such as excessive white discharge per vaginum and abdominal pain leading to difficulty in doing "Namaz" (Praying). Women also had a common misconception about copper-T viz "*Agar apney jagah se hat jati hai to ooper galey ko chad jati hai aur mar sakti ha*" (if displaced from its place it can go up to the throat and can cause death). They believed this reason to be the cause of death of one lady from their area. They also perceived that copper-T leads to several diseases. In their words "*Issey chattish bimarian hoti hain*" (it causes 36 diseases). Besides these myths and misconceptions, the other factor contributing to its non-popularity was the rude behaviour of the doctors compelling them to go for tubectomy in cases of problems associated with copper-T. Women were opposed to tubectomy as they opined that God had made women to bear children and it would be against the wish of the God to under go tubectomy. Also, they felt insecure in case of death of children, leaving no option for them to have another child. Women were unaware about injectable contraceptives. However, they had also reservations that injectables were only for the rich because of its unaffordable high cost. A common prevailing misconception about injectable contraceptive was that it leads to infertility. They were extremely unhappy about the service provision in case of contraceptive failure and suggested that the government should provide facilities for medical termination of pregnancy free of cost in such cases.

DISCUSSION

The mean age at marriage observed in this study (17.2 years) was in accordance with the data already available for Muslim population in UP (17.3 years). This is less than the legal age at marriage in India. Over 80 per cent of the present study population was illiterate. Similar finding was also observed among subjects from UP in the above-mentioned study. In contrast, a study conducted in Malegoan, Maharashtra, reported only 33 per cent of the Muslim women to be illiterate. The discrepancy in the present study might be due to the low socio-economic status where education is not regarded as top priority by the people.

The contraception use rate for the modern methods was 8.61 per cent, close to the value of 13.8 per cent observed amongst Muslim women from UP. In Malegoan, 32 percent were found to be everusers⁸. In Pakistan, only 16 per cent of the currently married women had used a modern contraceptive. Among Muslim population from a different slum of Delhi, the prevalence was reported to be 28 per cent, which was in complete agreement with the figure reported in NFHS-II. In the present study, contraceptive use was maximum in the age group of 26-30 years and those married for 11-15 years. The number of tubectomy acceptors was also found to be maximum in this group. This reflects the felt need of the couples in limiting the family size only after they had the desired number of children. Low acceptance of contraception in the age group of 15-19 years might be due to the desire of newly married couples to prove their fertility first since contraceptive use is associated with side effects. Similar views were also reported in many other studies.

Increasing literacy status of the women may not yield any significant impact on increasing contraceptive use unless their husbands are also literate. Use of a contraceptive method depends upon the mutual choice of both husband and wife. Besides females, literacy campaigns should focus specially on adult males so as to empower them to make decisions in controlling population.

The main reasons that emerged from the PGDs for the low acceptance of contraceptive methods were fear of side effects and failure of temporary contraceptive methods. This accounted for 5-6 per cent of the unmet need among Muslim women in UP. Some of the reasons quoted were directly or indirectly related to norms under religion. Acceptance of tubectomy, vasectomy and copper-T was influenced by their beliefs. In UP, as much as 38 per cent of the unmet needs of contraception was contributed to religious beliefs. In Delhi, 31.8 per cent of the never users who cited religion forbidding the use of contraception were all Muslims. Since there was no mention of contraception in Quran, the first source of Islamic law, most of the 'sayings (hadith) of the Prophet Mohammed (the second source of Islamic law) on the subject, advocate coitus interruptus to control family size (azl). The most commonly held view by Islamic jurists on coitus interruptus is a blameworthy but tolerated (makruh) act. A minority of jurists has always opposed to contraception. Analogical reasoning (qiyas, the fourth source of Islamic law) makes it possible to legitimize most modern contraceptive techniques. The majority of Islamic governments presently have passed family planning laws because of the risks of overpopulation. But the wrong belief of Islamic law prohibiting contraception was seen as the major obstacle among the masses.

Use of condoms was most popular and that of tubectomy the least in the study population. Several others reported similar findings. The awareness about contraception was universal (93%) similar to what was observed among Muslims in UP.

RECOMMENDATIONS

There is a need to spread contraceptive specific messages emphasizing the positive aspects and dispelling the misconceptions. Since Muslims residing in slums either do not send their children to school or send them to madrasas run by Muslim trusts, the overall environment of the latter institutions helps in the continuation of their traditional values and thus retards the process of social change. For effecting social change in these centers of learning, there is a need for improving their infrastructural facilities and quality of education. Programme managers should also plan special strategies for motivating and educating the community. They should not leave these

localities unserved as other studies have indicated that family planning providers feel insecure to visit localities predominated by Muslims. Initiatives could include community based contraceptive distribution programmes, increasing contraceptive outlets through social marketing in Muslim localities, involvement of local health practitioners and non-governmental organizations run by Muslim community members.

The programme implemented should also attempt to clarify religious misconceptions about family planning by seeking active collaboration and support of religious leaders as exemplified in Muslim countries such as Indonesia, Egypt and Iran. It would raise the community's consciousness while leaving room for dissenting personal decisions by the average Muslim.

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**SEXUAL BEHAVIOURAL PATTERNS RELATING TO HIV/AIDS AND
SEXUALLY TRANSMITTED DISEASES AMONG COLLEGE
STUDENTS OF DELHI**

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ABSTRACT

In order to assess the sexual behavioural patterns in relation to HIV/AIDS and STDs among college students, 1,000 boys and girls, from ten colleges of Delhi and from various disciplines were interviewed on a self-administered questionnaire. It was revealed that 105 students had prior sexual exposure, out of which 9 students had experienced sex by the age of as low as 14. The age at first sexual contact ranged from 15 to 20 years for 89 students. 36 students had more than 1 sexual partner, the largest number of sexual partners as reported by one student was 19. Five students claimed to have engaged in same-gender sex and 8 were bisexual. Friends followed by television and newspapers /magazines were cited to be their main sources of information on sexual matters. Almost half of the students surveyed had never been taught sex education in schools. Besides 15 students, all others were of the opinion that sex education should be included in educational institutions. The above findings indicate that our efforts in current educational programmes about sex education are not sufficient and need to be stretched more to raise awareness amongst the students on the aspect of true risk, HIV infection and other such sex related practices.

Key Words: Sexual behaviour, HIV/AIDS and STDs, Awareness, College students.

The HIV/AIDS epidemic represents one of the most serious public health problems for India and the rest of the world. There is no denial of the enormity of the problem. In addition to the human tragedy associated with HIV and AIDS, it poses an unprecedented challenge to the growth and economic stability of many developing countries.

According to estimates by UNAIDS, by 1st December 1996, more than 8.4 million AIDS cases had occurred since the start of the global AIDS epidemic¹. As of December 1999, UNAIDS estimated that there were more than 33.6 million people worldwide with HIV infections or AIDS, 43 percent of them females. An estimated 5.6 million new HIV infections occurred worldwide during 1999, approximately 16,000 each day; more than 95 percent of these new infections occurred in developing countries.

According to NACO 3.86 million Indians are estimated to be infected with the virus.

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However, the actual numbers of both infected persons and AIDS cases may be more. It is believed that for every reported case of HIV/AIDS, there are at least ten unreported cases in India.

The first AIDS case was reported in Delhi in the year 1988. Since then, the number of AIDS cases is on the rise in Delhi. According to the Delhi State AIDS Control Society, over 22,000 HIV-positive cases and 646 cases of AIDS have been reported in Delhi of which, 167 patients have already succumbed to the disease.

Today HIV/AIDS poses a major challenge. Young people are particularly vulnerable due to some of their age related socio-psychological and developmental characteristics. According to WHO, globally more than half of all new HIV infections is among the 15-24 age group. They are an important segment of society and have great potential in the economic, social and political development of the nation. Their health is of immense importance to the health of all in the society as they would be the parents in the near future. Since one-fourth of India's population is made up of young people, the priority is to ensure that all of them have access to information and education on HIV/AIDS and STDs.

Sexual contact is known to be the most common mode of transmission of HIV. Because of the sensitivity of issues associated with sexual behaviour, communicating about STDs and HIV/AIDS is extremely difficult and health care workers and public health personnel confront major problems in the prevention and control programme of HIV/AIDS and STDs.

The social meaning of sex varies in each society and sub-culture, as does its place in the life of an individual. Savara in her paper on 'Sexuality' notes that:

"It has finally been accepted that there are no 'natural' sexualities; and that sexual behaviour is socially constructed; that the rates and forms of sexual expression vary across time and space, and that they differ for different classes and social groups. In each society and subculture, the social meanings of sex differ, as does its place in the life of men and women."

Khan highlights the various myths surrounding sexuality and the Asian communities; one of them is that there is no homosexuality within the Asian communities. Part of the reason for such an erroneous view, he argues, is because of the invisibility of the issue in Indian subcontinent. Sexuality is not discussed and when it differs from heterosexuality, it is certainly not discussed in the Asian communities; this silence brings invisibility and ignorance resulting in such myths.

In India, so far, not much work has been done on sexuality. This makes it difficult to draw a real picture of Indian sexuality, taking into account the many regional and sub-group differences. However, a look at the trends in India indicates that there are changes taking place which point to growing sexual promiscuity. Nevertheless, given the vast varieties of groups that India encompasses, it is still difficult to discuss and assess people's opinion on sex.

Traditionally, Indian boys and girls are not expected to have sexual relations until marriage. The dominant value system in India strongly disapproves pre-marital sex among both boys and girls. But there has always been some laxity in favour of boys. Girl's virginity until marriage is still greatly valued. Observance of pre-marital chastity was facilitated when girls were

often married off before they attained their puberty. Even today this practice continues in some sections of the Indian society.

The average age at marriage for both boys and girls in India has been gradually rising during the last few decades with the result that there is a consequent prolongation of the period between puberty and marriage. This has contributed to an increasing practice of pre-marital sex. Since pre-marital sex is coupled with the risks of HIV/AIDS/STDs, unwanted pregnancies and hazardous abortions, there is a need to address sexual health issues of young people through research and analysis in this area.

Sexuality and sexual behaviours are intimately and inseparably related to the control of HIV/AIDS and STDs. In India, studies pertaining to knowledge about sex and sexual behaviour among young college students are very inadequate. The present study was therefore undertaken to assess the sexual behavioural patterns of college students in Delhi with respect to their views on HIV/AIDS and STDs.

OBJECTIVES

- (i) To assess knowledge of college students on sexuality.
- (ii) To explore their attitudes towards sex.
- (iii) To find out the self-reported sexual behaviour of college students.
- (iv) To find out their views about effectiveness of various sources of information about sexual matters.
- (v) To find out their views on sex education in schools and colleges.

METHODOLOGY

An anonymous self-administered questionnaire was used to collect required information from a sample of 1000 students (650 girls and 350 boys) pursuing graduate studies in various disciplines from different colleges of Delhi. Ten colleges (3 women's colleges and 7 co-educational) and 100 students from each college were selected. Equal number of girls and boys was included from each of the co-educational colleges. College students were selected as the study population since the former have the ability to take leadership role in implementing future strategies on prevention and control of HIV/AIDS.

It was decided to conduct the study in Delhi, which is the national capital of India and also one of India's fastest growing cities. Presently, the population of Delhi is 101 million. Delhi being a place for studies in many disciplines, quite a large number of students from different states assemble here for higher studies. They also constitute a smaller risk group. Being in the prime of youth and sexual vigor, some of them occasionally find themselves indulging in risky behaviour.

FINDINGS

General Information: Information on sex, age, religion, etc. are shown in Table 1. There were 650 female respondents compared to 350 males in the age group of 16 to 27 years. Majority of the respondents were aged up to 19 years. A very high proportion of the respondents were Hindus followed Christians, Sikhs and Muslims. Jains, Buddhists or Parsees represented only a

very insignificant proportions of respondents. A majority of the respondents resided in urban areas. Only one out of every 10 respondents was from a rural area. Less than one fourth of the respondents stayed in a hostel and the rest were day scholars. More than three-fourth of the respondents belonged to nuclear families.

TABLE 1
CHARACTERISTICS OF THE RESPONDENTS

S.NO.	Characteristics	Number	Percentage
1.	Sex Female Male	650 350	65.0 35.0
2.	Age Upto 19 years 20+ years	633 367	63.3 36.7
3.	Religion Hindu Muslim Sikh Christian Others	864 25 37 40 34	86.4 2.5 3.7 4.0 3.4
4.	Place of Residence Rural Urban	102 898	10.2 89.8
5.	Stay in the hostel Yes No	230 770	23.0 77.0
6.	Type of family Joint Nuclear	216 784	21.6 78.4

Sources of Information about Sexual

A majority of the respondents cited friends as their main source of information on sexual matters followed by television and newspapers/magazines. Teachers were cited by almost one out of every 9 respondents (Table 2). The proportion of male respondents was slightly higher than their female counterparts in all these categories. One out of every 8 respondents cited parents as their main source of information on sexual matters.

Respondents were asked to mention the three sources they would prefer to get information on sexual matters. As Table 3 depicts, friends were cited as the first preferred source for more than half of the respondents; the proportion of female respondents was a little higher in this case. This was followed by television and newspapers/magazines.

TABLE 2
MAIN SOURCES OF INFORMATION ABOUT SEXUAL MATTERS

Sources	Extend of Information Received									Grand Total		
	None			Some			A lot					
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Teachers	192 (54.9)	271 (41.7)	463 (46.3)	115 (32.9)	313 (48.2)	428 (42.8)	43 (12.3)	66 (10.2)	109 (10.9)	350 (100.0)	650 (100.0)	1000 (100.0)
Parents	205 (58.6)	269 (41.4)	474 (47.4)	115 (32.9)	292 (44.9)	407 (40.7)	30 (8.6)	89 (13.7)	119 (11.9)	350 (100.0)	650 (100.0)	1000 (100.0)
Friends	31 (8.9)	33 (5.1)	64 (6.4)	104 (29.7)	220 (33.8)	324 (32.4)	215 (61.4)	397 (61.1)	612 (61.2)	350 (100.0)	650 (100.0)	1000 (100.0)
Health Workers	167 (47.7)	337 (51.8)	504 (50.4)	94 (26.9)	179 (27.5)	273 (27.3)	89 (25.4)	134 (20.6)	223 (22.3)	350 (100.0)	650 (100.0)	1000 (100.0)
Television	21 (6.0)	35 (5.4)	56 (5.6)	147 (42.0)	303 (46.6)	450 (45.0)	182 (52.0)	312 (48.0)	494 (49.4)	350 (100.0)	650 (100.0)	1000 (100.0)
Radio	87 (24.9)	241 (37.1)	328 (32.8)	173 (49.4)	311 (47.8)	484 (48.4)	90 (25.7)	98 (15.1)	188 (18.8)	350 (100.0)	650 (100.0)	1000 (100.0)
Posters/Pamphlets	67 (19.1)	122 (18.8)	189 (18.9)	173 (49.4)	394 (60.6)	567 (56.7)	110 (31.4)	134 (20.6)	244 (24.4)	350 (100.0)	650 (100.0)	1000 (100.0)
News Papers/Magazines	27 (7.7)	41 (6.3)	68 (6.8)	138 (39.4)	305 (46.9)	443 (44.3)	185 (52.9)	304 (46.8)	489 (48.9)	350 (100.0)	650 (100.0)	1000 (100.0)
Books	53 (15.1)	92 (14.2)	145 (14.5)	126 (36.0)	277 (42.6)	403 (40.3)	171 (48.9)	281 (43.2)	452 (45.2)	350 (100.0)	650 (100.0)	1000 (100.0)

(Figures in parentheses are in percentages)
Multiple responses, the total does not add to 100.

TABLE 3
PREFERENCE OF SOURCES OF INFORMATION ABOUT SEXUAL MATTERS

Sex	1st Preference					2 nd Preference					3 rd Preference				
	Friends	TV	Newspapers/ Magazines	No Response	Total	Friends	TV	Newspapers/ Magazines	No Response	Total	Friends	TV	Newspapers/ Magazines	No Response	Total
Male	181 (51.7)	88 (25.1)	29 (8.3)	52 (14.8)	350 (100.0)	51 (14.6)	96 (27.4)	137 (39.1)	66 (18.9)	350 (100.0)	84 (24.0)	27 (7.7)	105 (30.0)	134 (38.3)	350 (100.0)
Female	360 (55.4)	150 (23.1)	80 (12.3)	60 (9.2)	650 (100.0)	122 (18.8)	191 (29.4)	253 (38.9)	84 (12.9)	650 (100.0)	186 (28.6)	42 (6.5)	204 (31.4)	218 (33.5)	650 (100.0)
Total	541 (54.1)	238 (23.8)	109 (10.9)	112 (11.2)	1000 (100.0)	173 (17.3)	287 (28.7)	390 (39.0)	150 (15.0)	1000 (100.0)	270 (27.0)	69 (6.9)	309 (30.9)	352 (35.2)	1000 (100.0)

(Figures in parentheses are in percentages)

Sex Education in Schools and Colleges

When asked if they had received any sex education in schools, less than half of the respondents replied in affirmative. Similarly, almost one fourth of the respondents reported to have received sex education in college (Table 4). Among those who did receive sex education in schools and colleges, the proportion of female respondents was slightly higher than that of male respondents.

TABLE 4
SEX EDUCATION RECEIVED IN SCHOOLS AND COLLEGES

Sl. No.	Sex	Received sex education in schools				Received sex education in colleges			
		Yes	No	Don't know	Total	Yes	No	Don't know	Total
1.	Male	140 (40.0)	191 (54.6)	19 (5.4)	350 (100.0)	83 (23.7)	247 (70.6)	20 (5.7)	350 (100.0)
2.	Female	329 (50.6)	300 (46.2)	21 (3.2)	650 (100.0)	165 (25.4)	429 (66.0)	56 (8.6)	650 (100.0)
	Total	469 (46.9)	491 (49.1)	40 (4.0)	1000 (100.0)	248 (24.8)	676 (67.6)	76 (7.6)	1000 (100.0)

(Figures in parentheses are in percentage)

As Table 5 indicates, except for 15 respondents, all the others i.e. 985 respondents were of the opinion that sex education should be included in educational institutions; a majority of them felt that it should be included at the secondary level, one-fifth of the respondents stated that it should be at the middle level. For almost one out of every six respondents, sex education should be included at college. The proportion of students who felt that sex education should begin at primary level was insignificant.

TABLE 5
SEX EDUCATION TO BE INITIATED IN EDUCATIONAL INSTITUTIONS AT DIFFERENT LEVELS

Sex	Positive Response (Sex education to be included)	Levels of educational institutions			
		Primary	Middle	Secondary Schools	College
Male	345 (100.0)	9 (26)	49 (14.2)	231 (67.0)	56 (16.2)
Female	640 (100.0)	10 (16)	143 (22.3)	393 (61.4)	94 (14.7)
Total	985 (100.0)	19 (1.9)	192 (19.5)	624 (63.4)	150 (15.2)

(Figures in parentheses are in percentage)

Opinion on 'first sexual exposure'

The proportion of respondents who believed that one could have sex anytime after puberty, even if not married and those who felt that a person should have sex only after marriage

was nearly one to three-fourth. More females than male respondents favoured sex only after marriage. A negligible proportion of respondents were not very sure about it (Table 6).

TABLE 6
RIGHT TIME FOR A PERSON TO BEGIN SEXUAL INTERCOURSE

Sl. No.	Response	Sex		Total
		Male	Female	
1.	Any time after puberty, even if not married	132 (37.7)	116 (17-8)	248 (24.8)
2.	Only after marriage	209 (59.7)	515 (79.2)	724 (72.4)
3.	Not sure	9 (2.6)	19 (30)	28 (2.8)
	Total	350 (100.0)	650 (100.0)	1000 (100.0)

(Figures in parentheses are in percentage)

Reasons for Belief/Non-belief in Sex Outside Marriage

When asked about their belief in sex outside marriage, nearly one-fifth of the respondents replied in affirmative. There was not much difference between the proportions of male and female respondents in this case. Various reasons were cited by these respondents as depicted in Table 7. Four out of 10 respondents believed that it is 'human nature' to go for sex outside marriage. One-fifth of the respondents believed sex outside marriage as a result of the impact of modernization.

TABLE 7
REASONS FOR THE BELIEF IN SEX OUTSIDE MARRIAGE

S. No.	Reasons	Sex		Total (N=211)
		Male (N=107)	Female (N=104)	
1.	Human nature	44 (41.1)	37 (35.6)	81 (38.4)
2.	Not satisfied with one's own spouse	13 (12.2)	22 (21.2)	35 (16.6)
3.	Modernization	29 (27.1)	17 (16.3)	46 (21.8)
4.	Variety is the spice of life	27 (25.2)	13 (12.5)	40 (19.0)
5.	To break the monotony	5 (4.7)	11 (10.6)	16 (7.6)
6.	For enjoyment	2 (1.9)	3 (2.9)	5 (2.4)
7.	No response	30 (28.0)	34 (32.7)	64 (30.3)

Multiple responses, the total does not add to 100
Percentage calculated on the basis of N

The reasons stated by the 789 respondents who did not believe in sex outside marriage are shown in Table 8. A little more than one-fourth of the female as well as the male respondents

felt that the social norms didn't permit for this sort of activity. 1 out of every 7 respondents feared that such practices would increase the spread of STDs. Girls responded more positively than boys in this case.

S.No.	Reasons	Sex		Total (N=789)
		Male (N=243)	Female (N=546)	
1.	Good to enjoy with single partner	25 (10.3)	53 (9.7)	78 (9.9)
2.	Fear of spreading STDs	22 (9.1)	85 (15.6)	107 (13.6)
3.	Faith in one's own spouse	8 (3.3)	31 (5.7)	39 (4.9)
4.	Social norms do not permit	63 (25.9)	162 (29.6)	225 (28.5)
5.	Own wish	28 (11.5)	65 (11.9)	93 (11.8)
6.	Creates disturbance in two lives	51 (21.0)	56 (10.3)	107 (13.6)
7.	No response	114 (46.9)	252 (46.2)	366 (46.4)

(Multiple responses, the total does not add to 100)

Percentages calculated on the basis of N

Sexual Activity

105 respondents, 81 males and 24 females, claimed to have had sexual intercourse. The age at first sexual intercourse for an overwhelming proportion of these ranged between 15 to 20 years (Table 9). 9 respondents (7 males and 2 females) reported to have had sex by the age of as low as 14 years. There was not much difference in the proportion of male and female respondents in these categories.

TABLE 9
AGE OF RESPONDENTS HAVING HAD SEXUAL INTERCOURSE

Sl. No.	Sex	Respondents who have had				
			Up to 14	15 to 17	18 to 20	21 years
		sex	years	years	years	& above
1.	Male	81 (100.0)	7 (8.6)	36 (44.5)	33 (40.7)	5 (6.2)
2.	Female	24 (100.0)	2 (8.3)	12 (50.0)	8 (33.3)	2 (8.3)
	Total	105 (100.0)	9 (8.6)	48 (45.7)	41 (39.0)	7 (6.7)

Figures in parentheses are in percentage)

Coital Frequency and Gender of Sexual Partner(s)

As seen in Table 10, out of the 105 respondents who claimed to have had sex, a little more than half of them said that they had sex occasionally, nearly one-fifth regularly while slightly more than one-fourth of the respondents reported to have gone in for sex only once.

An overwhelming proportion of male as well as female respondents claimed to have had sex with opposite gender while for 3 male and 2 female respondents, it was same gender sex. 8 respondents reported to be bisexual; the proportion of female respondents was slightly higher in this category.

TABLE 10
COITAL FREQUENCY AND GENDER OF SEXUAL PARTNER(S)

Sex	No. of sexually active respondents	Coital frequency			Gender partner	of sexual s)	
		Only once	Occasionally	Regularly	Male	Female	Both sexes
Male	81	21 (25.9)	43 (53.1)	17 (21.0)	3 (3.7)	72 (88.9)	6 (7.4)
Female	24	6 (25.0)	12 (50.0)	6 (25.0)	20 (83.3)	2 (8.3)	2 (8.3)
Total	105	27 (25.7)	55 (52.4)	23 (21.9)	23 (21.9)	74 (70.5)	8 (7.6)

Number of respondents=105

(Figures in parentheses are in percentage)

Sexual Partner(S)

As seen in Table 11, out of the 81 sexually active male respondents, 10 stated to have sex with paid workers, 4 with their girl friends as well as paid workers and 3 with their boy friends.

Out of the 24 female respondents who claimed to have had sex, 19 had so with their boy friends, 2 with their girl friends and 1 with a paid worker 6 male and 2 female respondents have had sex partners of both sexes.

Table 12 depicts the number of sexual partners as claimed by respondents. About half of the male as well as female respondents reported to have had only 1 sexual partner. 7 respondents reported to have had more than 5 partners; the proportion of female respondents was slightly higher in this case. The maximum number of sexual partners, as reported by one male respondent was 19. Almost one out of every 11 respondents did not remember the number of sexual partners he/she have had so far.

TABLE 11
CATEGORIES OF SEXUAL PARTNER(S)

Sex	No. of sexually active respondents	Partner(s)						
		Boy friend	Girl friend	Paid Workers		Girl friend / call girl / prostitutes	Relative/ Neighbors	Boy & Girl Both
				Callgiri	Prostitute			
Male	81 (100.0)	3 (3.7)	54 (66.7)	7 (8.6)	3 (3.7)	4 (4.9)	5 (6.2)	6 (7.4)
Female	24 (100.0)	19 (79.2)	2 (8.3)	1 (4.2)	0 (0.0)	0 (0.0)	0 (0.0)	2 (8.3)
Total	105 (100.0)	22 (21.0)	56 (53.3)	8 (7.6)	3 (2.9)	4 (3.8)	5 (4.7)	8 (7.6)

Number of respondents 105
(Figures in parentheses are in percentage)

TABLE 12
NUMBER OF SEXUAL PARTNER(S)

Sl. No.	Number of sexual partner(s)	No. of respondents		Total
		Male	Female	
1.	Not mentioned	3 (3.7)	2 (8.3)	5 (4.8)
2.	Do not remember	9 (11.1)	1 (4.2)	10 (9.5)
3.	One	42 (51.9)	12 (50.0)	54 (51.4)
4.	Two	8 (9.9)	4 (16.7)	12 (11.4)
5.	Three	8 (9.9)	2 (8.3)	10 (9.5)
6.	Four	3 (3.7)	1 (4.2)	4 (3.8)
7.	Five	3 (3.7)	0 (0.0)	3 (2.9)
8.	More than five	5 (6.1)	2 (8.3)	7 (6.7)
	Total	81 (100.0)	24 (100.0)	105 (100.0)

Number of respondents=105
(Figures in parenthesis are the percentages)

Contraceptive Use

Out of the positively identified 105 sexually experienced respondents, an overwhelming proportion reported to have ever used any contraceptive. In this case, the proportion of female respondents was much higher than their male counterparts (Table 13). More than two-third of these respondents, male as well as females, claimed to have used condom while oral pills were reported to be used only by one out of every 10 respondents.

TABLE 13
CONTRACEPTIVE(S) PREVALENCE RATE

Sex	No. of sexuallyactive respondents	No. of Respondents ever used contraceptive(s)	Contraceptive method*				Total
			Oral pills	Condom	Safe period	Use of Gels	
Male	81 (100.0)	62 (76.5)	8 (10.9)	51 (70.0)	14 (19.1)	0 (0.0)	73 (100.0)
Female	24 (100.0)	21 (87.5)	2 (8.0)	18 (72.0)	3 (12.0)	2 (8.0)	25 (100.0)
Total	105 (100.0)	83 (79.0)	10 (10.2)	69 (70.4)	17 (17.4)	2 (2.0)	98 (100.0)

Number of respondents=83

*Percentage calculated on the basis of total
(Figures in parentheses are in percentage)

The reasons given by 22 respondents who claimed to have had sex but didn't ever use any contraceptive are shown in Table 14. An overwhelming proportion of male respondents didn't use any contraceptive, as sex was unplanned and impulsive for them. A majority of the female respondents didn't use any contraceptive as they used withdrawal as a contraceptive measure.

TABLE 14
REASONS FOR NON-USE OF CONTRACEPTIVE

Sl. No.	Reasons	Sex		Total
		Male	Female	
1.	Sex unplanned and impulsive	17 (89.4)	1 (33.3)	18 (81.8)
2.	Withdrawal	1 (5.3)	2 (66.7)	3 (13.6)
3.	Natural experience	1 (5.3)	0 (0.0)	1 (4.6)
	Total	19 (100.0)	3 (100.0)	22 (100.00)

Number of respondents=22 (Figures in parentheses are in percentage)

Need for More Information about Sex

As evident from Table 15, almost one out of every 7 respondents was not sure of whether or not he/she wanted to know more about sex. However, more than one-third of the male as well as female respondents stated that they wanted to know more about sex but felt hesitant to discuss with others. The suggestions given by them to improve the situation are described in Table 16. Nearly half of the respondents suggested that sex education should be provided in schools and colleges; the proportion of female respondents was much higher in this case. Nearly one-fourth suggested that information should be provided through mass media to create awareness about sexual issues. The proportion of those who stated that sex should be discussed freely was insignificant. About one-fifth of the respondents didn't comment.

TABLE 15
RESPONDENTS EAGER TO KNOW MORE ABOUT SEX
BUT FEEL HESITANT TO DISCUSS WITH OTHERS

Sex	Response			Total
	Yes	No	Not sure	
Male	135 (38.6)	160 (45.7)	55 (15.7)	350 (100.0)
Female	235 (36.2)	320 (49.2)	95 (14.6)	650 (100.0)
Total	370 (37.0)	480 (48.0)	150 (15.0)	1000 (100.0)

Number of respondents=1000

(Figures in parentheses are in percentage)

TABLE 16
SUGGESTIONS FOR IMPROVING THE SITUATION OF SEX AND
SEXUALITY AMONG COLLEGE STUDENTS

Sl. No.	Suggestions	Sex		Total (N=370)
		Male (N=135)	Female (N=235)	
1.	Develop healthy outlook about sex	14 (10.4)	42 (17.9)	56 (15.1)
2.	Sex education in schools/colleges	62 (46.0)	132 (56.1)	194 (52.4)
3.	Awareness/information through newspapers/ books & other mass media	40 (29.6)	55 (23.4)	95 (25.7)
4.	Sex should be discussed freely	4 (3.0)	11 (4.7)	15 (4.0)
5.	Proper Counseling	11 (8.1)	29 (12.3)	40 (10.8)
6.	Parents should know/discuss behaviour of their children with teachers	12 (8.9)	17 (7.2)	29 (7.8)
7.	No comments	45 (33.3)	37 (15.7)	82 (22.1)

Number of respondents=370

(Figures in parentheses are in percentage)

Multiple responses, the total does not add to 100

SUMMARY AND CONCLUSION

The results of this study provide some interesting insights into the sexual behaviour patterns of the college students in the capital city of India. 105 students in this study were sexually experienced. Since the study group was unmarried college students, these relationships were premarital. Though this is a smaller proportion when compared to the findings of similar studies in other countries, it is a significant finding in the Indian context since dominant value system in India strongly disapproves premarital sex.

Nine students had experienced sex by the age of 14. The age at first sexual contact ranged from 15 to 20 years for 89 students. 11 students in this study claimed to have gone in for paid sex and 8 students have had sex partners of both sexes. 36 students had more than 1 sexual partner; the largest numbers of sexual partners, as reported by one student was 19. These findings imply that there are changes taking place in the behaviour of students which point to a growing sexual relationships and to a greater risk of susceptibility to HIV/AIDS and STDs.

In India, men who have sex with men are almost invisible. This is partly because of the strong prejudice against homosexuality and partly because the family pressures force many homosexual or bisexual men to get married and lead apparently heterosexual lives. However, all these men are at a higher risk of contracting or spreading HIV/STD infection as they must have had unprotected anal sex. Though only 5 students claimed to have engaged in same-gender sex and 8 were bisexual in this study, the study does indicate the prevalence of such behaviour among Indian youth.

One-fourth of the students believed that one could have sex anytime after puberty, even if not married and nearly one-fifth of them believed in sex outside marriage. This again implies a growing change in views about sexuality among Indian students.

In this study, out of the 105 students who were sexually experienced, 22 had never used any contraceptive; a very high proportion of them expressed so because sex was unplanned and instant. This implies that there are some students in the colleges of Delhi who are at risk for HIV/STDs, unintended pregnancies and hazardous abortions. Those who claimed to have multiple partners or sex with paid workers are likely to be at even greater risk for these health problems.

The results revealed that there was not much communication between teachers/parents and children about sex and so the students depended on peer groups and other sources. Friends followed by television and newspapers/magazines were cited to be other main sources of information on sexual matters.

More than half of the male as well as female students identified friends as their first preferred source of information on sex. This was followed by television and newspapers/magazines. This implies that peer education and media may be used more effectively to promote healthy behaviours among college students. Peer educators may be used in colleges to provide knowledge and skills to students about AIDS/STDs and sexuality in general.

From the findings it appears that newspapers and magazines are read by a large proportion of students. In the absence of adequate sex education at home or at school/college, these could be utilized to disseminate information about sex and AIDS/STDs.

Almost half of the students surveyed had never been taught sex education in any of their school classes. However except for 15 students, all the others were of the opinion that sex education should be included in educational institutions. Majority of them felt that it should be included at secondary level, about one-fifth stated that it should be at middle level while according to almost one out of every 6 students, sex education should be included at college level. The findings revealed that most students welcomed the idea of having sex education in the schools and colleges. Education authorities working in this area should be encouraged by such views from college students since they are the ones to become the responsible parents in near future.

RECOMMENDATIONS

Based on the above findings, the following recommendations are made:

1. The colleges need to offer AIDS/STD education programmes which, besides targeting specific knowledge gaps and misperceptions among students, should include efforts to gain their self-confidence and emphasize on decision making, communication and psychomotor skills. Also, life skills like taking responsibility, resisting peer pressure, assertiveness, coping with stress and building self-esteem need to be emphasized.
2. HIV/AIDS/STD education should be essentially backed-up with adequate clinical services including contraceptives. Counseling services must be an integral part of such services with special emphasis on family life education and pre-marital counseling. The staff at the health centres in the colleges should have necessary communication and interpersonal skills to deal with health needs of students effectively.
3. There needs to be more involvement of youth in defining their own problems and in formulating national policies and programmes. As friends were cited among the preferred source of information about sex, peer education is recommended to promote protection from HIV/AIDS/STD infections among students. Student Unions, National Service Scheme, and other student groups should be actively involved in HIV/AIDS/STD prevention. They should be assisted to run health clubs for preventing risky behaviour among students.
4. Parents and other members of family should be involved in programmes relating to human sexuality for college students as it has a beneficial effect on both students and parents. There is a need to remove barriers of communication and encourage parents to discuss sexuality frankly with their children to enable them to make informed choices about their sexual behaviours.
5. Television and press should be used more effectively to disseminate vital information on AIDS/STDs and to correct misconceptions. Our media should consider the composition of its target group. Youth should be provided the capacity to assess advertising critically.

Mass-based approaches must be followed by person-to-person and small, uniform group-based approaches as these provide the opportunity to readjust to the need of recipients and therefore prove to be more effective in imparting appropriate knowledge and attitude.

6. There is a need for change in the attitude of society towards sex in a sense that sex should be regarded as something natural and healthy but not a taboo. All key groups such as the school, the family, the health system, religious and community leaders, and the community organizations are needed to be involved in this process.
7. Sex education should be mandatory for all school children. Since some students become sexually active by the age of as low as 14 years, it is recommended that sex education should begin at a pre-pubertal age and should continue throughout schooling. Besides relevant information, it should include skills in communication, decision-making, and attitudes to help children manage their relationships in a healthy and responsible manner.

Professional development programmes for sex educators should provide opportunities to help them explore their personal sexual attitudes and how these attitudes affect their teaching in sex education. School sex education must work in collaboration with parents and other members of the community. It is recommended that an expert group be formed to look into the existing curriculum on family-life education/sex education and make appropriate changes with the involvement of teachers.
8. Targeted intervention requires re-thinking and instead of victimizing certain section of the society, it should now focus on young adults and adolescents.
9. It is recommended that besides sexual behaviour, studies on other aspects such as behaviour of drug taking among college and university students should be undertaken at the national level. Research should also be done on similar aspects in adolescent population too.

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HEALTH MELA: A TOOL FOR HEALTH CARE DELIVERY TO THE MASSES

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ABSTRACT

An exit interview was conducted to assess the views of beneficiaries, who utilized the services of a health mela organized at Phulwarisharif, Patna, during 15 to 19 June 2002. This quick assessment provided feedback on the viability of health Melas as a means of providing health care in remote areas. People from both rural and urban areas were found to have equally benefited from it. Majority of the beneficiaries (83%) came from within a radius of 5 kms from the mela site while around 4 per cent from a long a distance of 21 kms or more. Males and females in equal proportions in the age group of 20-49 years, attended the mela. Most of the beneficiaries (43.7%) of the health mela were illiterates with a median income of Rs. 1,000/- per month. Housewives outnumbered other occupational categories in availing the services, emphasizing the fact that the responsibility of seeking health care for the family lies largely on women. Inter-personnel communication appeared to be a more effective way for disseminating information on the health mela. Besides common illnesses like headache, fever, cold, cough; services for respiratory disorders, eye problems and skin diseases were more in demand. More than 90 per cent of the people preferred Allopathic system of treatment. Efforts are thus necessary to make ISM more popular. The main expectation of people was to get good treatment and free medicines. Non-availability of all kinds of medicines was the major complaint by the people not satisfied with the health mela. However, majority of them (86%) expressed satisfaction on the usefulness of the health mela in providing services for their health problems.

Key-words: Health mela, Health care delivery, Participation, Satisfaction, Rural masses.

Any fair in the community often provides an opportunity to disseminate or propagate current ideas and opinions as well as to launch new and innovative products in an attractive way. Normally melas offer an opportunity to promote bartering of goods and services within groups of

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people or villages lying in a close geographical proximity. Now a days, however, melas have been found to generate overall participation of people in developmental activities.

Health mela is one of the media or interfaces adopted by the MOHFW to cater to the much needed health care services at free of cost. It is worthwhile to mention that the Ministry of Health and Family Welfare has already conducted a number of health melas in the country.

The past experience shows that the health melas have immensely contributed towards creating health awareness and can be treated as an effective communication input through which people update their knowledge about different types of health care facilities. These melas act as a platform for seeking and sharing information about various health and family welfare programmes. Organising such health melas is a challenge to the organizers because each mela has to be organised in such a way keeping in mind the socio-cultural set up, disease prevalence, and the existing health facilities of the area, where the mela is to be organized.

For the past few years, the health melas are becoming very popular and acceptable in the community. Health melas provide instant and massive awareness information on public health services rendered by Government and Non-Government Institutions and also disseminate information on prevention of various diseases. The uniqueness of health mela as an approach is to provide composite health facilities such as laboratory services, consultation, medicine and treatment etc. under one roof. This is done with the help of specialized doctors and other health professionals who come forward from various reputed medical colleges/institutions from different parts of the country for the purpose. In the past, people have appreciated the provision of variety of medical services under one roof with no charges whatsoever. Thousands of people were found availing various health services offered at the mela site.

OBJECTIVES

The primary objectives of the health-mela were to:

- (i) Provide basic health care services to the public of a locality,
- (ii) Know the basic health care requirements of a region, and
- (iii) Make people aware about different health and family welfare programmes undertaken by the government which could lead them to avail such services.

The secondary objectives of the health mela were to:

- (i) Assess the satisfaction level of the health mela beneficiaries
- (ii) Know the age-sex composition of the beneficiaries,
- (iii) Know the literacy level of the beneficiaries
- (iv) Know what are the services people expect from a health mela and what they get,
- (v) Know the distance between the beneficiary's place of residence and the mela site, and
- (vi) Know the mode of transport used by the beneficiary to reach the mela site.

METHODOLOGY

The health mela was organized for five days from June 15 to 19, 2002 in Phulwarisharif of Patna District, Bihar. The exit-interviews were concluded on the spot at the mela site. The findings are based on the feedback collected through interview schedules from the 604 respondents who visited the mela.

The NIHFV has already conducted some pre-health mela surveys to identify the services demanded by the people and their expectation from such melas.

Every tenth beneficiary, excluding those at medicine distribution counters (both allopathy and ISM) was identified and considered for the interview. Interviews were conducted with a concise and well-structured schedule developed at NIHFV. It contained questions on age, sex, education, expected services and services obtained etc. from the health mela.

Most of the beneficiaries cooperated during the interview barring a few. A total of 610 beneficiaries were interviewed to elicit their views and opinions about the health mela and its usefulness. However, 6 of the schedules were dropped due to incomplete information.

The people who visited the health mela availed various health services, viz., paediatrics, cardiology, dermatology, oncology, eye care, gynaecology and dental care services etc. The medical colleges of Patna city, viz. Dental College and Regional Institute of Ayurveda participated in the health mela.

There were four to five registration counters in the health mela. The health stalls put up by the District Tuberculosis Unit, Patna; Regional Research Institute of Ayurveda, Patna; and District Leprosy Unit, Patna; are worth mentioning. The demonstrations organized by the Hindustan Latex on AIDS prevention and control attracted a large number of visitors during this health mela.

Demographic Profile of Phulwarisharif

Phulwarisharif is a rural block under Patna district. Although, it adjoins to urban and semi-urban areas, it may be considered as a sub-urban part of the Patna district.

As per census 2001, the average sex ratio in Phulwarisharif is 893 females to 1000 males and sex ratio in the age group of 0 to 6 years is 930 females to 1000 males. The demographic and family planning statistics of the Phulwarisharif Primary Health Centre is shown in Table 1. It has a total population of 2,52,836 and a IMR of 70.0, as per PHC records.

TABLE 1
SOCIO-DEMOGRAPHIC INDICATORS OF THE
PHULWARISHARIF

Demographic Indicators	Figures	Source
Male Population	132,068	PHC Records
Female Population	120,768	PHC Records
Total Population	252,836	PHC Records
Crude Death Rate (CDR)	80	PHC Records
Total Fertility Rate (TFR)	320	PHC Records
Infant Mortality Rate (IMR)	70.0	PHC Records
Sex Ratio*	893	Census 2001
Sex Ratio 0-6 years*	930	Census 2001
Literacy Rate (Percentage)		
Total	74.6	Census 2001
Male	82.0	Census 2001
Female	66.2	Census 2001

*Number of females per 1000 males

FINDINGS AND DISCUSSION

Distance

Distance is one of the variables reflecting both the keenness of the prospective beneficiary as well as the accessibility of services. It indicates both demand and supply through holistic provision of services. The survey collected information from the persons who attended the health mela, on the distance between the residence of the beneficiary and the mela site (in km). People staying as far as 250 kilometres away came to seek the services of the health mela. Most of the people of surrounding areas of Phulwarisharif got the benefits of the services at the health mela. Median distance worked out to be 2 km. Again, majority of the beneficiaries of the health mela were from the adjoining areas within a radius of 5 km from the mela site (Table 2).

TABLE 2
DISTANCE BETWEEN THE RESIDENCE OF THE BENEFICIARIES AND THE
MELA SITE

Distance (Km.)	No. of beneficiaries	Percentage
<5km	499	82.6
6-10	54	8.9
11-20	29	4.8
>21	22	3.6
Total	604	100.0

Mode of Transport

Information was sought on the mode of transportation used by the beneficiaries to reach the mela site. It is also observed that majority of people (50.3%) came on foot to receive the health services at this mela whereas one-third of them used the public transport system (32.5%) to avail the health services. This indicates the interest of people in visiting the mela (Table 3).

TABLE 3
DISTRIBUTION OF RESPONDENTS BY MODE OF TRANSPORT

Mode of transport	Frequency	Percentage
On foot	304	50.3
Bicycle	62	10.3
Private vehicle	32	5.3
Public transport	196	32.5
Other	10	1.7
Total	604	100.0

Justification of the Location of Mela Site

Out of 604 respondents who were interviewed during the health mela at Phulwarisharif, more (52.5%) of them were from rural areas and the remaining 47.5 per cent were from urban areas and the remaining 47.5 per cent were from urban areas. The health mela at Phulwarisharif was able to create a demand among rural and the urban people for catering instant health services to all people, irrespective of area and population groups. The reason for this is probably the location of health mela that was adjoining the areas of urban, suburban and villages as well.

Sex Composition

The sex composition of the sample population of beneficiaries shows that almost equal proportion of males and females (51.2%) attended and utilised the health services at this mela. A higher turnout of females at the mela site was a positive indication towards easy access of health facilities than the usual health care services provided at sub-centres or at PHC. The proposition confirms that utilisation of health care services depends on the accessibility of the services supported by mass campaign approach.

Age Composition

Age distribution of the sample respondents clearly shows that a sizeable number of older people also came to the health mela (Table 4). Even persons as old as 85 years also attended and sought health care services from this mela. Majority of people who visited the health mela were in the age group of 20-49 years (63.1%). The highest number of beneficiaries (155) were in the age group of 30-39 years which accounts for 25.7 per cent of the total respondents.

TABLE 4
DISTRIBUTION OF RESPONDENTS BY AGE

Age (in years)	Number	Percentage
0-9	53	8.8
10-19	77	12.7
20-29	117	19.4
30-39	155	25.7
40-49	109	18.0
50-59	58	9.6
60+	35	5.8
Total	604	100.0

Religious Composition

Majority of the beneficiary respondents who availed health services from the mela were Hindu (88.1%), while only one was Sikh. The proportion of Muslims seeking health care services from the mela was 11.8 per cent.

Community Groups

Among the 604 persons in the survey, majority belonged to backward classes (OBC, 34.7%) followed by other castes (31%). The proportion of scheduled castes and scheduled tribes attending the mela was 19.9 and 11.3 per cent respectively (Table 5).

TABLE 5
DISTRIBUTION OF RESPONDENTS BY COMMUNITY GROUPS

Caste/Tribe	Number	Percent
Scheduled castes	120	19.9
Scheduled tribes	68	11.3
Other backward class	210	34.7
Others	206	31.1
Total	604	100.0

Literacy

It was found that less than half of the beneficiaries were illiterates (45%), followed by those who were primary level literates (20%). Comparatively fewer numbers of highly educated people attended and utilised the services of the health mela (Table 6). It is suggestive of the fact that higher educated people usually prefer and utilise health services from either specialised public or private providers or both.

TABLE 6
DISTRIBUTION OF RESPONDENTS BY EDUCATIONAL QUALIFICATION

Educational qualification	Number	Percent
Illiterates	271	44.9
Primary	120	19.9
Middle	66	10.9
High school and higher secondary education	81	13.4
Degree and above	35	5.8
Can't say	31	5.1
Total	604	100.0

Occupation

It was heartening to see that 27.5 per cent of the housewives attended the mela (Table 7). Twenty-one per cent of mela service users were labourers. Notable among users were cultivators (7.5%), students (10.8%) and business class (9.4%). However, relatively, a quite small

proportion of service holders (5.8%) attended the mela. This is expected since participation in the mela would unable the service holders to attend to their regular office duties.

TABLE 7
DISTRIBUTION OF RESPONDENTS BY OCCUPATION

Occupation	Frequency	Percentage
Service	35	5.8
Cultivator	45	7.5
Skilled labour	14	2.3
Business	57	9.4
Retired	5	0.8
Student	65	10.8
Unemployed	25	4.1
Housewife	166	27.5
Others	60	9.9
Total	604	100.0

Household Income

It is found that the median income of health mela beneficiaries is Rs.1,000/- per month which incidentally, is same as modal value of income distribution. These people were mainly from the lower income groups. It is thus clear that health mela generally benefits the poor or people of lower socio-economic strata (Table 8).

TABLE 8
DISTRIBUTION OF RESPONDENTS BY MONTHLY HOUSEHOLD INCOME

Rupees	Number	Percent
≤1000	316	52.3
1001-1500	124	20.5
≥1501	89	14.7
Not responded	75.	12.4
Total	604	100.0

Source of Information

Regarding the dissemination of information about the health mela, majority of respondents expressed that they had the information from many sources that health mela would be organized. Table 9 shows that a little more than one-fourth (26.8%) of the respondents knew about the mela through friends and relatives and 25 per cent came to know through loudspeaker. Nearly 7 per cent received the information from the health and family welfare functionaries, pamphlets and other print media materials distributed on the road and public places contributed to about 20 percent of the coverage. Some also reported that they knew about the health mela through multiple sources (16.7%) (Table 9).

TABLE 9
DISTRIBUTION OF RESPONDENTS BY SOURCE OF INFORMATION

Source of information of health mela	Frequency	Percent
Pamphlet	46	7.6
Paper	39	6.5
Poster	22	3.6
Hoarding	8	1.3
Radio/TV	7	1.2
Health and Family Welfare functionary	41	6.8
Friends/relatjve	162	26.8
Loudspeaker	151	25.0
Multiple sources	101	16.7
Others	27	4.5
Total	604	100.0

Purpose of Visit

The health mela at Phulwarisharif highlighted the information on the type of health problems prevailing in the area, for which health services were sought. Almost one-fifth of the respondents had pain/ache, while some had stomach problems (11.1%), eye problems (10.4%), and other multiple health problems (12.1%). Other notable health problems were pain (19%), cough/cold/fever, ENT, skin problems etc. (Table 10). There were only one case each in counselling, consultation, investigation, TB, jaundice, leprosy, BP, diabetes, infertility, HIV/AIDS, renal problems, and two cases each of malaria, typhoid, diarrhoea and polio (data are not shown separately) (Table 10).

Treatment Preferences

Majority of people (90.7%) who came to the health mela, sought allopathy system of treatment and medicine. The remaining (5.5%) opted for Indian Systems of Medicine (Unani, Ayurveda). Only a few opted for both the system of medicine viz. allopathy and ISM (Table 11).

Service Expectations

Most of the respondents (88%) who visited the health mela opined that they received some services from the health mela. Around 10 per cent expressed to have received no service from the health mela.

It was observed that around 50 per cent of the respondents who attended the health mela had expectations of getting 'good treatment' and 'free medicines' from the mela. These two reasons were the most desired service expectations in the health mela at Phulwarisharif (Table 12).

TABLE10
DISTRIBUTION OF RESPONDENTS BY PURPOSE OF VISIT

Purpose	Number	Percent
Just visit	6	1.0
Family planning service	8	1.3
Pain/ache	115	19.0
Cough/cold/fever	47	7.8
Asthma	15	2.5
Other respiratory	11	1.8
Stomach	67	11.1
Ortho	15	2.5
ENT	29	4.8
Gynaecological problem	6	1.0
Gastric	11	1.9
Skin problem	40	6.6
Eye problem	63	10.4
Dental problem	8	1.3
Heart problem	4	0.7
Accident/injury	3	0.5
Weakness	16	2.6
Multiple problems	73	12.1
Others	40	6.6
Fewer response and not mentioned	28	4.6
Total	604	100.0

TABLE 11
DISTRIIBUTION OF RESPONDENTS BY TYPE OF SERVICE UTILISATION FROM DIFFERENT SYSTEMS

Type of system	Frequency	Percent
Allopathy	548	90.7
ISM	33	5.5
Can't Say	23	3.8
Total	604	100.0

TABLE 12
DISTRIBUTION OF RESPONDENTS BY SERVICE EXPECTATION

Expectation	Number	Percent
Good treatment	308	51.0
Getting medicine	116	19.2
Both (above)	118	19.5
Just to see	1	0.2
Benefit for poor	2	0.3
Can't Say	58	9.6
Others	1	0.2
Total	604	100.0

Service Satisfaction

Half of those who availed the health mela services expressed their full satisfaction. However, around 12 per cent of them were found dissatisfied (Table 13).

TABLE 13
DISTRIBUTION OF RESPONDENTS' BY LEVEL OF SATISFACTION

Level of satisfaction	Number	Percent
Fully satisfied	297	49.2
Partially satisfied	217	35.9
Not satisfied	73	12.1
Can't say	17	2.8
Total	604	100.0

Reasons for Non-Satisfaction

The reasons of dissatisfaction in the health mela are the non-availability of medicine (12%) followed by improper treatment (5.3%) and over crowdedness (1.5%) at the time of availing health mela services (Table 14).

TABLE 14
DISTRIBUTION OF RESPONDENTS BY REASONS OF NON SATISFACTION

Reason for non satisfaction	Number	Percent
Not good treatment	32	5.3
No medicine	72	11.9
Over crowded	9	1.5
Can't say	486	80.4
Others	6	1.0
Total	604	100.0

Rating of Health Mela

Around half of the people who attended the health mela rated the services as good while 29 per cent felt quite all right (Table 15). However, around 11 per cent of those attended graded the services provided in the health mela as 'poor' and very poor*.

TABLE 15
DISTRIBUTION OF RESPONDENTS BY RATING THE HEALTH MELA

Rating of health mela	Number	Percent
Good	298	49.3
OK	173	28.6
Poor	57	9.4
Very poor	7	1.2
Can't say	4	1.9
Total	604	100.0

Usefulness of Health Mela

Nine out of ten beneficiaries said that the health mela was useful for them. However, only a small proportion (8.4%) of them felt it was not useful to them. The remaining 5.5 per cent of them were not sure about the usefulness of the health mela.

Suggestions of Beneficiaries

Table 16 shows some of the measures suggested by the beneficiaries for the future health melas. Expectation of 'good treatment' ranks first amongst suggestions. It is followed by the suggestion that all medicines should be available as prescribed by the health mela doctors'. They also expressed that such a health mela should be organised at regular intervals. However, 60 per cent of those interviewed did not mention of any suggestion.

TABLE 16
DISTRIBUTION BY SUGGESTIONS RECEIVED FROM THE BENEFICIARIES

Suggestion for mela	Number	Percent
Good treatment	92	15.2
Availability of all medicines prescribed	42	7.0
Organized regularly	29	4.8
Proper management	18	3.0
Specialist available	11	1.8
Organised in rural/remote area	5	0.8
Proper guide to OPD	8	1.3
Can't say	399	61.1
Total	603	100.0

Recommendations for Planning and Management of Health Melas

Based on the qualitative spot observations and the survey results by the NIHFWS field team, the following recommendations are drawn for planning future health melas.

- (i) Health mela is a viable approach to create awareness about health problems and for generating demand among the people for health service delivery. It should be organized at regular intervals.
- (ii) Location is an important factor for enhancing both the accessibility and acceptability of health melas.
- (iii) Health mela should be organized during favourable climatic conditions and not during hot months of summer that may adversely affect attendance. It should be conducive to both the service providers (doctors, para-medical staff etc.) and the patients.

- (iv) Adequate number of registration counters and medicine counters should be opened in health melas. More volunteers need to be positioned to help and guide people at the time of mela.
- (v) Mini health melas on specific health problems covering limited areas like organizing eye camps etc. is also necessary to cater qualitative health care delivery.
- (vi) Provision of to and fro transport facility with special buses and nominal charges would be helpful in increasing the participation of people.
- (vii) More social workers/volunteers from institutions and NGOs need to be roped in to support the health mela activities.
- (viii) Proper preliminary pre-screening of patients at the time of registration is not feasible. However, this may help in streamlining the patients depending on their ailments.
- (ix) Pre-health mela survey is a pre-requisite and should be made mandatory prior to the planning for effective health delivery services during the mela.

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A STUDY OF PATTERN OF SICKNESS AMONGST AIR TRAVELLERS AT IGI AIRPORT, NEW DELHI

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ABSTRACT

In order to find out the pattern of sickness among air travellers passing through the Indira Gandhi International (IGI) airport, New Delhi, a study was undertaken from the data records during 01 July 2000 to 30 June 2001 to analyse the frequency, age, gender, types of illness, location of patients during air travel, disposal of cases, deaths at airport and non-scheduled landings / flight diversions due to medical reasons. A total of 89,51,869 passengers had passed through the IGI airport, New Delhi, during the study period; of which 1,814 passengers reported sick. The proportion of sick passengers was one in 4,900 normal passengers while the ratio of sick passengers on board was 1:11,000. It was found that for every 10 sick travellers, four were sick from departure and three each fell sick on board and on arrival. Gastro intestinal diseases, nausea, vomiting and diarrhoea accounted for 24 per cent of the ailments among the departing passengers. A few were suspected to have infectious diseases like chicken pox, measles and communicable disease like malaria etc. Further, the study revealed that one death takes place in every three million air passengers and those who suffered from sickness were mainly in the age group of 31 to 70 years.

Key-words: Air port, Air travelers, Pattern of sickness, Flight diversion.

In the year 2000, world over 1.5 billion passengers were transported to different places on 22 million flights involving 15000 aircrafts. But in spite of the best of efforts, there are health encountered by air travellers that needed medical intervention. Presently, all air carriers are equipped with Enhanced Medical Kits to offer medical aid on board by cabin crew or by Good Samaritan doctors. Even then, occurrence of some life-threatening emergencies on board force pilots to divert flights to the nearest destinations for non-scheduled landing of aircrafts. It is presumed that there is one in-flight incidence in every fifty international flights in wide-bodied aircrafts. At least one diversion of flight occurs somewhere in the world everyday due to health related emergencies among passengers. It was found that five out of seven diversions could have been avoided if proper screening of air travellers had been done on health grounds. A need for screening of air travellers for their fitness to fly has been recommended by various workers. There

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is no standardized procedure on central reporting of medical incidences happening in aircrafts or at airports⁷. So far, no epidemiological study on air passengers at airports has been reported. The present study was therefore undertaken to study the epidemiological pattern of sicknesses among air travellers at the Indira Gandhi International Airport, New Delhi, during 1 July 2000 to 30 June 2001

METHODOLOGY

Indira Gandhi International (IGI) airport is located in New Delhi, India, where tropical diseases are endemic. This airport caters to the needs of approximately 200 million people for international travel residing in four hundred kilometers radius area covering almost entire North, Northwest, Central and some parts of Eastern India. Therefore, an effort was made to identify and record the cases of infectious diseases which occur during or upon arrival for the air travel. Deaths at the airport were also analyzed in this study. In addition, an attempt was made to look into the reasons why only a few of these cases need medical assistance while majority of air passengers manage themselves. Does air travel really make a person sick? If so, what are the factors? There are different types of air travellers asking for medical assistance for various medical problems. Therefore age, gender, type of illness, location of air passenger, in building or on board, stage of travel while seeking medical help, provisional diagnosis and outcome of cases were studied. The occurrences of flight diversions due to medical reasons were also included in the analysis.

Data were collected from records collected by the medical staff members who were present round the clock and attended to the medical needs of passengers at the airport. Only those complaints had been taken into consideration where associated symptoms were also present. For example, in case of diarrhoea; nausea and vomiting, giddiness and fever were also present but cases were categorised as diarrhoea. Persons of different agencies on duty at the airport, visitors, air travellers who had taken self-medication or had been attended by co-passengers except during in-flight medical emergency have been excluded from the study.

FINDINGS

A total number of 89,51,869 passengers travelled during the study period, of which, 49,84,168 (55.67%) were domestic and 39,67,701 (44.33%) were international passengers. There were 81,592 aircraft movements; of which 28,751 (35.2%) were in the international sector while the rest 52,841 (64.8%) were in the domestic sector⁸. Of the total air travellers during the study period, only 1,814 passengers were found sick and attended either by airport or in-flight doctors. It was seen that one out of every 4,934 travellers and 10,948 on board passengers seeks medical assistance. The study shows that one passenger seeks medical assistance out of 4,934 travellers and one traveller seeks medical help out of 10,948 on-board passengers. On an average 5 calls per day are registered by travellers for medical help. Out of the 1,814 sick passengers included in the study period of one year, 31.75 per cent (576) and 68.25 per cent (1,238) were from domestic and international sectors respectively.

Among the 1,814 sick passengers 70 per cent (1,272) cases were reported from the terminal building while the remaining 29.87 per cent (542) fell sick on-board. Among the 1,272 sick passengers recorded from the terminal building, 703 cases (38.75%) were at the time of departure and remaining 569 (31.36%) were at the time of arrival. Out of the 703 sickness cases reported

during departure of flights, 456 (64.86%) passengers were for international air flights and the remaining 247 persons (34.67%) were for domestic flights. Similarly, of the 569 sickness cases, 314 (73.33%) passengers were from overseas and the rest 255 (26.67%) were from domestic flights. Out of 542 passengers who fell sick on-board, 86.34 per cent (468) were travelling on international flights and 13.65 per cent (74) were traveling on domestic flights (Table 1).

TABLE 1
SECTOR-WISE LOCATION OF SICK AIR TRAVELLERS

Departure Lounge	N-703	%
International	456	64.86
Domestic	247	34.67
Arrival Lounge	N-569	
International	314	73.33
Domestic	255	26.67
On Board	N-542	
International	468	86.34
Domestic	74	13.65

Again, out of 456 passengers who fell ill at the international terminal during departure, 156 (34.21%) cases were reported from the security hold area followed by 132 (28.94%) from the departure hall, 84 (18.42%) from the immigration and transit hall and 12 (02.63%) from outside the terminal building. Similarly, out of the 247 sick domestic fliers at the time of departure, 58.29 per cent fell ill at the terminal-IA followed by 25.10 per cent in the medical clinic and 02.20 per cent from outside the terminal (Table 2).

Out of total sick cases (314) arriving from international flights, the highest number of cases 112 (35.66%) were reported from the baggage hall followed by 68 (21.65%) from the aerobridge, 49 (14.64%) from the custom counter, 43 from the immigration hall and the least number of 42 (13.37%) from outside the building. In contrast, out of total sick cases (255) arriving from domestic flights, the highest number of cases were from the dispensary (61.17%) followed by 96 (37.64%) from the arrival hall and only 3 (1.17%) from the car park area (Table 2).

Pattern of Sickness

The sicknesses faced by the air passengers were due to different reasons. The highest number of passengers 439 (24.20%) took medical assistance for gastro intestinal problem followed by 359 (19.74%) for cardiovascular, 201 (11.08%) for respiratory problem and the rest for other causes (Table 3).

TABLE 2

LOCATION-WISE BREAK-UP OF FALLING SICK AMONG AIR TRAVELLERS

A. Departure

N-703

(i) International Terminal

N-456

Location	No.	%
Security Hold Area	156	34.21
Departure Hall	132	28.94
Immigration and Transit Hall	84	18.42
Medical Clinic	48	10.52
Visitor Lounge	24	05.26
Outside Building	12	02.63

(ii) Domestic Terminal

N-247

Terminal-IA	144	58.29
Terminal-IB	36	14.57
Medical Clinic	62	25.10
Outside	5	02.20

B. Arrival

N-569

(i) International

N-314

Location	No.	%
Aerobridge	68	21.65
Immigration Hall	43	13.69
Baggage Hall	112	35.66
Custom Counter	49	14.64
Outside Building	42	13.37

(ii) Domestic

N-255

Dispensary	156	61.17
Arrival Hall	96	37.64
CarPark Area	03	1.17

TABLE 3

PATTERN OF SICKNESS OF AIR TRAVELLERS (N-1814)

Sr. No.	Type of Sickness	Number	%
1	Gastro Intestinal	439	24.20
2	Cardio- Vascular	359	19.74
3	Respiratory	201	11.08
4	Central Nervous	158	08.76
5	Musculoskeletal /Skin	153	08.43
6	Metabolic	102	05.62
7	Oto-Rhinolaryngeal	89	04.90
8	Psychiatric	61	03.36
9	Urogenital	47	02.59
10	Miscellaneous	205	11.30

Age Pattern

Majority of sick air travellers were in the age group of 31 to 70 years. A few patients were from the paediatric age group. However, a highest number of sick travellers was reported between 51 and 55 years of age group (Table 4).

Gender Ratio

Out of 1,814 sick air travellers, 955 (52.64%) were males and 859 (47.36%) females. No significant gender variation with regard to sickness among the air travellers was observed (Table 4).

TABLE 4
AGE AND GENDER-WISE DISTRIBUTION OF SICK AIR TRAVELLERS

Age Group (5 years)	Number	Male		Female	
		Number	%	Number	%
0-5	23	12	0.66	11	0.60
6-10	25	14	0.77	11	0.60
11-15	27	15	0.82	12	0.66
16-20	31	16	0.88	15	0.82
21-25	44	21	1.15	23	1.28
26-30	47	25	1.37	22	1.22
31-35	101	58	3.19	43	2.37
36-40	112	60	3.30	52	2.88
41-45	144	75	4.14	69	3.82
46-50	177	91	5.02	86	4.74
51-55	332	169	9.31	163	8.99
56-60	253	129	7.11	124	6.84
61-65	247	125	6.90	122	6.72
66-70	103	56	3.09	47	2.59
71-75	56	30	1.66	26	1.43
76-80	45	26	1.43	19	1.04
81-85	28	17	0.94	11	0.60
86-90	13	10	0.56	03	0.16
91-95	06	06	0.34	00	0.00
96-100	00	00	0.00	00	0.00
Total	1814	955	52.64	859	47.36

Disposal of Cases

Majority of cases (62.40%) were of minor illness. Therefore, these were disposed off by providing first aid and only 434 (23.92%) cases were referred to different hospitals for specialised treatment. Out of 1,814 cases, 245 (13.50%) cases were off loaded and were advised to postpone their journey (Table 5).

TABLE 5
TREATMENT AND OUTCOME OF CASES ATTENDED AT IGIA, NEW DELHI

First Aid	1132/1814	62.40%
Referral	0434/1814	23.92%
Offloaded	0245/1814	13.50%
Death	0003/ 1814	00.16%

Of the five deaths reported at the airport during the period of study, three deaths were from air travellers and two were from staff on duty. There were two deaths at the arrival lounge in the terminal building and one passenger died on board. Two passengers were males and one was female. All were in the age group of 62-70 years. One was terminally ill because of Carcinoma Lung with secondary problems and the two others were reportedly having history of ischaemic heart disease and out of these two, one had additional illness of Diabetes Mellitus of long duration.

Flight Diversions

Three non-scheduled landings took place in the international sector and there was not a single diversion reported in the domestic sector. In one case, a 52-year-old Indian male passenger developed severe chest pain, while flying over Afghanistan after two hours of departure from New Delhi in Lufthansa Flight LH —761, New Delhi-Frankfurt. The flight returned to Delhi. The passenger was referred to a hospital where he showed uneventful recovery. Another diversion was due to a sudden cardio-respiratory arrest of a 69-year-old Chinese female who died on board of a Thai Airlines, TG-931, Paris-Bangkok. Third case was of an air rage due to violent behaviour of an 18-year-old Australian male passenger in the Singapore Airlines, flying from Singapore to Frankfurt (Flight No. SQ-326). The passenger was attended on board and later he was off loaded by a commander at the IGIA, New Delhi. After detoxification, counselling and psychotherapy, he showed a considerable improvement. He was then flown back to Singapore after two days, where he was tried in a court of law as reported by the station manager of the Singapore Airiines. One passenger, a citizen of Mauritius had Dystonia in one of the domestic flights, which was due to Extra Pyramidal Syndrome caused by self-consumption of metachlorpropamide, taken prior to one hour before air journey. This has not been included in non-scheduled landings due to medical reasons but needs a special mention. All these flight diversions could have been averted if passengers were screened before boarding the respective flights.

TABLE 6
REASON FOR FLIGHT DIVERSIONS AT IGIA, NEW DELHI

Date	Air Carrier	Sector	Nationality of Patient	Age in years	Sex	Reason
12.2.01	Lufthansa	Delhi-Frankfurt	Indian	52	M	Angina
25.4.01	Singapore Airlines	Singapore-Frankfurt	Australian	18	M	Air Rage
22.6.01	Thai International	Paris-Bangkok	Chinese	69	F	Cardiac Arrest

In all the cases, the respective in-flight supervisors advised the respective pilots to make an emergency landing to minimize the stress on board to other passengers but in case of air rage, the safety of aircraft was at risk. The time duration, for non-scheduled landings at the airport, ranged from 70 minutes to 160 minutes. The ground staff of the concerned airlines had to make arrangements for safe and early evacuation of the diseased, transporting him/her to the hospital or to a mortuary. For early departure of the affected aircrafts, revised flight schedules were prepared and permissions were obtained from the concerned authorities for take off after refueling and reloading of food and water for the onward journey (Table 6).

DISCUSSION

IGIA, New Delhi, has comparatively less sickness rate among the air travellers. It may be due to selection of cases included in study. The study has also excluded those passengers who have not reported their minor discomfort, taken self-medication, or help from co-passengers and others already cleared by the medical boards of their concerned employers. Besides this, a few travellers who were suffering from chronic diseases like Diabetes Mellitus, Hypertension, Ischaemic Heart Disease, Epilepsy, Asthma etc. might be carrying their own medication. Therefore, they might not have asked for any medical assistance while travelling. A few other passengers might not have reported their sicknesses to avoid delay in their travel programme or for unfounded apprehension of additional financial expenditure.

Sixty eight per cent of total air travellers had sought medial assistance in the international travel area i.e. at Terminal-II. Out of the total sick international passengers, 60 per cent of the sickness cases were due to long duration of travel, person's own health dynamics and stress of aircraft. The remaining 40 per cent of the cases were reported from the departing passengers who may have had the effect of exposure to tropical diseases as well as stress of travel from different places of northern and central India before arriving at IGIA. In addition to this, these stresses of airport tumult for departing passengers, which may be a precipitating, factor in crossing their stress tolerance limit. All these might be adding to a multiple effect on sickness patterns of air travellers.

About two-third cases were reported from the terminal building (70%) and one-third cases (30%) were attended on board. Four out of ten cases were attended during departure, indicating that most of the travellers reaching New Delhi airport are from adjoining areas with endemic diseases but have not taken enough precautions.

About one-third (34%) of the departing passengers at the international terminal were attended by the medical staff at the security hold area where most of the travellers had to wait for a long time before boarding the aircraft. It is interesting to note that most of the travellers feel the effect of cumulative stress of airport tumult on their health dynamics. Similarly, on arrival after international travel, 36 per cent was attended in the arrival hall that were waiting at the baggage collection area signifying cumulative stress due to aircraft ambience during flight along with exposure at airport tumult combined with person's own health dynamics. In domestic travel, 58 per cent of departing passengers were attended in the terminal building, termed as T-1A, which is used for private airline operations. In arrival cases for domestic travellers, 61 per cent reported at the medical clinic at the airport for medical assistance.

Flight diversions are inevitable hazards of civil aviation and need further work to identify the factors. It may prove beneficial if the cost effective pattern of flight diversion is worked out.

CONCLUSION

There were 89,51,869 passengers passed through the IGI airport, New Delhi, during the period of study; of which 1,814 passengers were found sick. The proportion of sick passengers was one in 4,900 normal passengers while the ratio of sick passengers on board and normal passengers was 1:11,000. It was found that out of 10 sick travellers, four were sick from departure and three each fell sick on board and on arrival. Among the pattern of diseases, gastro intestinal diseases, nausea, vomiting and diarrhoea accounted for 24 per cent among the departing passengers. A few cases were suspected to have infectious diseases like chicken pox, measles and communicable disease like malaria etc. Further, the study revealed that one death takes place in every three million air passengers. Among the air travellers, who reported sick were mainly in the age group of 31 to 70 years.

Acknowledgement

The author expresses his gratitude to Dr. Claus Curdt-Christiansen, MD DAv Med, Chief, Aviation Medicine Section, ICAO Navigation Bureau, Quebec, Canada; Station Managers, British Airways; Dr John Llewellyn, Regional Medical Advisor, British High Commission, New Delhi, India; Dr M.C. Kapilashrami, Director, NIHFV, New Delhi; and the Airport Director, IGI Airport, New Delhi for their help and support in conducting the study.

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