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CONTRACEPTIVE KNOWLEDGE, PRACTICE AND ACCEPTANCE AMONG WOMEN SEEKING TERMINATION OF PREGNANCYAT A SECONDARY LEVEL HOSPITAL IN SOUTHERN KARNATAKA

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ABSTRACT

The study attempts to find out the contraceptive knowledge, practice and acceptance among women seeking termination of pregnancy in Southern part of Karnataka. The study reveals that (i) the knowledge of women regarding various contraceptive methods is very high, however, the majority of the women are not using contraceptives, (ii) the main reasons for termination of pregnancy were (a) the previous child was young, (b) did not want any more pregnancy and (c) contraceptive failures, and (iii) the women who came for termination of pregnancy had no regrets for termination.

Key words: Voluntary termination of pregnancy, Contraception, Knowledge, Practice

Induced abortions have always been of a great concern to medical practitioners worldwide. To reduce the maternal morbidity and mortality associated with illegal abortions, the medical termination of pregnancy has been legalized in India when the Government of India passed the Medical Termination of Pregnancy Act in 1971 (MTP)[1]. Encouraging active couples to use effective contraceptive methods is yet another way to reduce voluntarily induced abortions either illegal or otherwise. This can be achieved by providing adequate information about the available contraceptive methods and helping couples to choose one that suits them. By definition contraceptives are methods or a system which allows intercourse and yet prevents contraception. Unfortunately abortion has become a common method of limiting and spacing birth, but it should on no account be promoted as a family planning method.[2]. Unfortunately MTP is on its rise as a common method for limiting and spacing births. High rates of induced abortions reflect low prevalence of contraceptive use and its effectiveness.

MATERIALS AND METHOD

This is a cross sectional study conducted between January, 2007 and December, 2007 in the Department of Obstetrics and Gynaecology, Dr.TMA Pai Hospital,Udupi, a secondary level hospital attached to Kasturba Medical College and Hospital, Manipal, Karnataka. Udupi is a district in South Karnataka and has a geographical area of 3575 sq.kms. The total population as per 2001 census was 11, 09494 and the literacy rate was 79.9%. The socio-economic status is fairly good and people generally believe in small family norm. All pregnant women coming to the outpatient department of Obstetrics and Gynaecology with a request for termination of pregnancy were included in this study. Those who had incomplete abortion or who had to undergo termination of pregnancy for obstetric reason, like missed abortion, molar pregnancy; congenital anomalies like anencephaly were excluded from the study. Those who came with spontaneous abortion were also excluded as they might not be willing to use contraception because they would want a pregnancy. A

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pre-designed check-list was filled at the time of request for termination including age, married life, educational status, occupation, previous obstetric history, last menstrual period (LMP) and period of gestation (POG) calculated. A Transvaginal ultrasound (TVS) done for dating and to rule out ectopic pregnancy. The investigators also enquired about the reason for termination of pregnancy, their knowledge of contraception, source of knowledge about contraception, the present contraceptive use and the future choice of contraception after the termination of pregnancy. The method of termination whether medical or surgical depended upon the POG. Medical methods included RU 486 followed by misoprostol and the surgical method included pre-ripening of the cervix and subsequent evacuation. University Ethical Committee clearance was obtained for the study. The data were fed in SPSS 11 and descriptive analysis done.

FINDINGS

Ninety seven pregnant women came for termination of pregnancy between January, 2007 and December, 2007, who fulfilled the inclusion criteria. Table 1 show the socio-demographic characteristics of the women who came for termination. There were 5 women (5.2%) between 18 and 20 years of age. The majority of the women were in the age group of 21–30 years (70.1%). After 30 years of age we had a decline in women coming for termination. The study had 92 women (94.8%) who were married while only 4 women (4.1%) were unmarried and one woman (1.0%) was a widow. Of the women who came for termination 78 women (94.4%) were home makers while 19 women (19.6%) were employed.

TABLE 1
SOCIO-DEMOGRAPHIC CHARACTERISTICS

Characteristics	Number	Percentage
Age		
18 – 20	5	5.2
21 – 30	68	70.1
31 – 35	18	18.6
36 – 40	4	4.1
> 41	2	2.1
Marital status		
Married	92	94. 8
Unmarried	4	4.1
Widow	1	1.0
Years of marriage		
< 1	11	11.3
1 – 5	44	45.4
6 – 10	26	26.5
11– 15	9	9.3
16 – 20	2	2 .1
> 20	1	1. 0
Unmarried	4	4
Educational status	**Number**	**Percentage**
Illiterate	4	4.1
Just literate	3	3.1
Primary education	10	10.3
High school	20	20.6
PUC	23	23.7
Graduate	36	37
Post-graduate	1	1.04
Religion		
Hindu	79	81.4
Muslim	3	3.1
Christrian	14	14.4
Others	1	1.0
Home maker	78	80.4
Employed	19	19.6

Most of the women were Para I (80.4%) and we did not have any women who had more than two children. (Table 2)

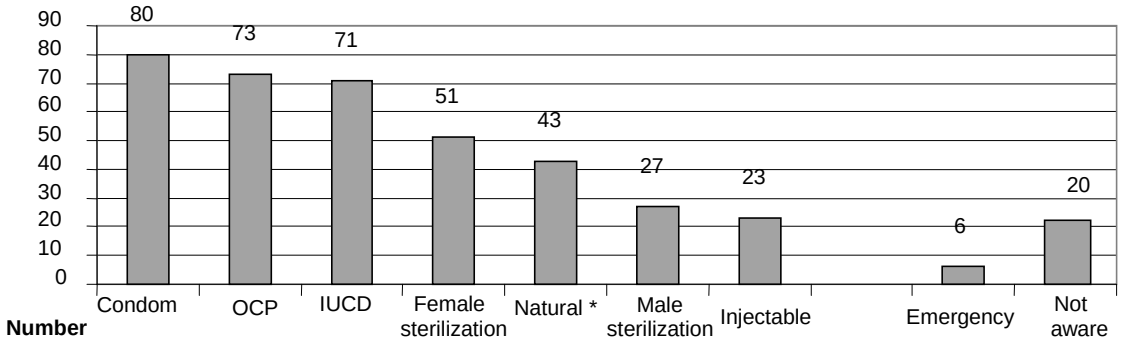
TABLE 2
SHOWING THE PARITY OF WOMEN WANTING TERMINATION OF PREGNANCY

Para	Parity	Percentage
P0	14	14.3
P1	78	80.4
P2	5	5.1

Majority of the women were aware of the various contraceptive methods available.

Only 4 (4.1%) were not aware of contraceptive methods. Awareness was maximum for Barrier 80 (82.5%), OCP 73 (75.3%) and IUCD 71 (73.2%). Among the permanent methods 51 (52.6%) were aware of female sterilization and 27 (27.8%) of male sterilization. (Diagram 1). The most commonly used method of contraception among those seeking termination was condom 39 (40.2%) followed by natural methods 23 (23.7%) and IUCD 19 (19.6%) (Diagram 2).

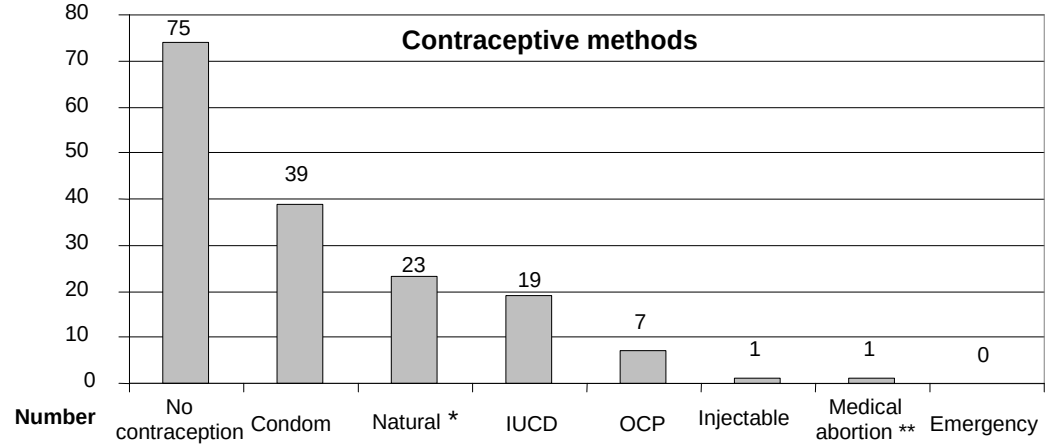
DIAGRAM 1
Awareness of contraceptive methods



*Natural methods: calendar, withdrawal

There were 75(77. 3%) women who were not following any form of contraception (Diagram 2).

DIAGRAM 2
CONTRACEPTIVE METHOD PREVIOUSLY USED



* Natural methods: calendar, withdrawal

Most of the women came early for termination of pregnancy (Table 3). In this study 53 (54.6%) women came before 6 weeks of pregnancy and 29 (29.9%) women came between 7 and 8 weeks. Most of the women were aware of problems associated with termination of pregnancy when the POG increased .

TABLE 3

GESTATIONAL AGE AT TERMINATION OF PREGNANCY

POG (weeks)	Number	Percentage
< 6	53	54.6
7 – 8	29	29.9
9 – 12	13	13.4
> 12	2	2.1

Thirty five women (36.1%) did not want any more pregnancy irrespective of whether they were Para I (80.4%)or Para 2 (5.1%). 27 (27.8%) women thought that their previous child was young and 24 (24.7%) women reported contraceptive failures. Besides, social and economic reasons were also cited by 12.4 per cent and 7.2 per cent of women respectively .

TABLE 4

REASONS FOR TERMINATION OF PRESENT PREGNANCY:

	Number	Percentage
Previous child was young	27	27.8
Does not want any more pregnancy	35	36.1
Failed Contraception	24	24.7
Social reasons	12	12.4
Financial reasons	7	7.2

Among the women who came for termination of pregnancy 92 (94.8%)of them did not have any regrets for termination and 5 (5.2 %) were unhappy to undergo termination as they were forced due to their either for social or financial reasons. (Table 5)

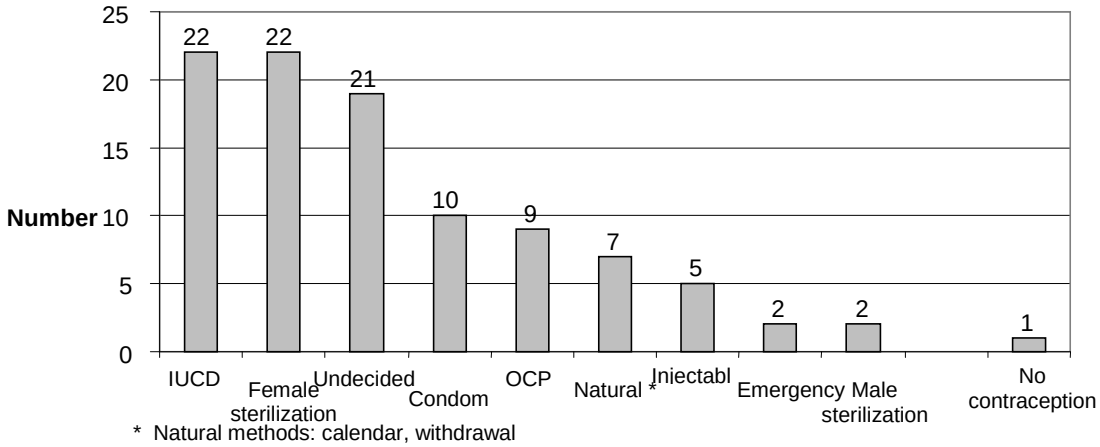
TABLE 5

REGRETS AT TERMINATION OF PREGNANCY

	Number	Percentage
Yes	5	5.2
No	92	94.8

After termination of pregnancy most of the women opted for female sterilization 22 (22.7%) or IUCD 22 (22.7%) while 21 (21.6%) were undecided and one did not want to use any contraception (Diagram 3).

DIAGRAM 3
CONTRACEPTION FOR FUTURE USE



DISCUSSION

In this study the percentage of illiterates were only 4 as compared to the study by Srivastava et al [3] (36.5%) N.Jha et al (99.6)[4]. and Patel Tejal Bakul [5] (21.92%) In this study as compared to study by Srivastava ET al[3] who had P3 (28%), P4 + above (33.2%); and Patel Tejal (71.1%) [5], we had majority of women who had 2 children (5.1%). The unawareness of contraceptives among women in this study was only 4.1 per-cent as compared to the other study by Srivastava R. et al (10.7%) [3]. The awareness regarding permanent method of sterilization,l female sterilization and male sterilization in the study by Srivastava Reena et al[3] was 89.3 per-cent and 64.5per-cent respectively, while in this study it was 52.6 per cent and 27.8 per cent respectively. Those who came for termination, 76.3 per cent of the women were not following contraception as compared to 55.2 per-cent by Srivastava Reena et al[3], 39 per-cent by young et al[6], 33 per-cent by Aneblom et al[7], and 84.1 per cent by N Jha et al[4]. The women who were undergoing termination when POG was > 12 weeks was 2.1 per cent in this study while it was high in other study by Patel Tejal et al [5]. The trend is coming down from 12 per-cent in 1988 to 10.7 per-cent in 2004. A decline of 3.4 per cent was observed. 4.2 per-cent of women had 12 weeks of pregnancy in a study by Tripathi and Pathrar K[8] Verma[9] had 17.4 per cent with > 1 2 weeks gestation. The authors observed that acceptance of IUCD and female sterilization after termination was less as compared to by Srivastava. Reena et al[3]. Even after termination of pregnancy, 21.6 per cent of women in the study were not able to decide about the choice of contraception as compared to 6.1 per cent in another study[3].

CONCLUSION

From this study the authors conclude that in spite of the high illiteracy rate and awareness regarding contraception among the women in Karnataka, it was surprising to see that many opt for termination of pregnancy as a method of contraception. Also MTP was being used as a spacing method. Further it was unfortunate that five women of those who came for termination of pregnancy were between 18 and 20 years and four of them were unmarried. This brings to light that girls at a younger age were getting sexually active and taking it lightly as they could go for termination of pregnancy. Realising the importance of contraception, the health care providers may take active part in educating people about the use of contraceptives which would help reduce failure of contraceptives as it had came to light in the present study.

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RISK FACTORS FOR ACUTE MYOCARDIAL INFARCTION: A HOSPITAL-BASED CASE CONTROL STUDY

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ABSTRACT

The prevalence of coronary heart disease has increased tremendously over last few decades both in developed as well as developing countries. It has also become a major health concern for developing countries like India. In the present study the risk factors for acute myocardial infarction and the association and strength of association of these risk factors in relation to acute myocardial infarction was studied at Government Medical College Nanded and one private hospital at Nanded. Study design Hospital based case control study. Sample size: 272 cases of acute myocardial infarction and 272 controls. Statistical analysis: Association of the risk factors under study was assessed by applying chi square test. To assess the strength of association the odds ratio and 95 percent confidence interval of odds ratio was calculated. For all these statistical analysis Epi info version 5 computer package was used. Maximum numbers of cases of A.M.I. were in the age group of 51 to 70 years (59.55%). Upper socio-economic status is significantly associated with occurrence of A.M.I. (χ^2=30.5, P<0.001) .Urban residence, positive family history, hypertension and diabetes mellitus are significantly associated with risk of A.M.I. (O.R. =2.09, 3.14, 4.75 and 2.89 respectively). Consumption of tobacco and heavy alcohol consumption is also significantly associated with A.M.I (χ^2=25.79, P<0.01 and χ^2=11.36, P=0.003 respectively). It is observed that gradual increment in odds ratio with increasing body mass index and light occupational physical activity increases risk of A.M.I

Keywords: A.M.I., Risk factor, Association, Case control study.

Coronary heart disease has emerged as a major health problem in developing countries including India. Precious life is snatched away when person is in most productive stage of life, when the social and family responsibilities are the greatest. Overall prevalence has increased from 2.06 percent in 1970 to 5 percent in 2002 in rural area and 1.04%in early 1960 to 13.02% in 2004 in urban area.[1]The Global Burden of Diseases (GBD) study reported the estimated mortality from CHD in India at 1.6 million in the year 2000. It has been predicted that by 2020 there would be a 111 percent increase in cardiovascular deaths in India. This increase is much more than 77 percent for China, 106 percent for other Asian countries and 15 percent for economically developed countries.[2] Identification of risk factors is an essential prerequisite to contain this menacing problem. Present study was conceived which is an attempt to study the risk factors associated with the development of acute myocardial infarction (A.M.I.).

MATERIALS AND METHOD

The present study was carried out at G.M.C. Nanded, a tertiary care teaching hospital and one private hospital at Nanded for the period of one year from 1St September 2000 to 31st August 2001.

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W.H.O. diagnostic criteria were followed for the diagnosis of AMI [3].All the patients were interviewed and examined while in hospital, all the information was filled up in a specially prepared pretested proforma.

STUDY DESIGN

Hospital based Case –Control study

Study consists of 272 incident cases of A.M.I. and 272 controls. For each case one age and sex matched control was selected. After taking the case of AMI controls were taken fulfilling following criteria

1) Age ± 2 years of the case of AMI and in the same age interval. This was done to ensure the comparability between cases and controls and therefore it is less likely that considerable biases with respect to age and sex related risk exists between them. Whether possible the control was taken on the same day, if not possible within 7 days after taking case.
2) Sex matched.
3) Admitted for condition other than A.M.I.

Exclusion criteria for controls:

- All patients with any cardiovascular problem, previous history of exertional chest pain,
- Patients having cerebrovascular disease, stroke.

Inclusion and exclusion criteria for both cases and controls were clearly defined and meticulously followed throughout study period.

As per the patients statement the income from salary, business, income of all other members of family and land was considered for calculation of total income. The socio-economic classification suggested by Prasad B.G.[4] was adopted and modified for current price index of mid study period (Rs.445). Accordingly following classification was used.

Socio-economic status / Class	Income/ Capita / Month (Rs.)
Lower/ V	Below 328.5
Upper lower/IV	328.5-656
Lower middle / III	657-1094
Upper middle / II	1095-2189
Upper / I	2189 and above

Statistical analysis

Association of the risk factors under study was assessed by applying chi –square test. To assess the strength of association the odds ratio was calculated. For all these statistical analysis Epi- info version 5 computer package was used.

TABLE 1
AGE AND SEXWISE DISTRIBUTION OF CASES AND CONTROLS

Sr. No	Age (Years)	Cases		Controls	
		Male (%)	Female (%)	Male (%)	Female (%)
1.	31-40	23(8.45)	5(1.84)	23(8.45)	5(1.84)
2.	41-50	47(17.28)	12(4.42)	47(17.28)	12(4.42)
3.	51-60	61(22.43)	23(8.66)	61(22.43)	23(8.66)
4.	61-70	51(18.75)	27(9.93)	51(18.75)	27(9.93)
5.	71-80	14(5.14)	9(3.30)	14(5.14)	9(3.30)
Total		196(72.05)	76(27.95)	196(72.05)	76(27.95)

Results

Table 1, shows the characteristics of the study subjects by matching factors (age and sex).It was observed that, the maximum number of cases of A.M.I. were in the age group of 51 to 70 years (59.55%).The cases were predominantly males with male to female ratio being 2.57:1.

TABLE 2
SOCIO-ECONOMIC STATUS

Sr. No.	Social class	Cases (%)	Controls (%)	O.R.	95% Confidence Interval(C.I.) of O.R.
1.	Lower	12(4.41)	25(9.19)	1	
2.	Upper lower	52(19.12)	74(27.2)	1.46	0.63-3.42
3.	Lower middle	107(39.33)	126(46.33)	1.76	0.80-3.94
4.	Upper middle	60(22.06)	32(11.78)	3.9	1.62-9.56
5.	Upper	41(15.08)	15(5.5)	5.69	2.1-15.75
Total		272(100)	272(100)		

$\chi^2 = 30.55$ $P < 0.001$

It is evident from Table 2, that upper socio-economic status is significantly associated with occurrence of A.M.I.

TABLE 3
RESIDENCE AND MEDICAL HISTORY

Sr. No.	Variable	Case (%)	Controls (%)	Odds Ratio	95% C.I.	χ^2	P value
1.	Urban Residence	174(63.9)	125(47.95)	2.09	1.46-2.99	17.11	<0.01
2.	Family H/O C.H.D.	37(13.6)	13(4.77)	3.14	1.56-6.3	11.65	<0.01
3.	Hypertension	91(33.45)	26(9.55)	4.75	2.88-7.89	44.60	<0.01
4.	Diabetes mellitus	44(16.17)	17(6.25)	2.89	1.56-5.44	12.48	<0.01

It is evident from Table 3, urban residence, positive family history, hypertension and diabetes mellitus are significantly associated with risk of A.M.I.

Table 4
Consumption of Tobacco

Sr. No.	Type of consumption	Cases (%)	Controls (%)	Odds Ratio	95%C.I.
1.	No H/O Tobacco consumption	84(33.88)	138(50.74)	1	
2.	Chewing	52(19.12)	46(16.91)	1.85	1.12-3.09
3.	<10Bidi/Cigaretts/day	31(11.39)	26(9.55)	1.95	1.05-3.67
4.	10-20 Bidi/Cigaretts/day	47(17.28)	36(13.24)	2.14	1.25-3.70
5.	>20 Bidi/Cigaretts/day	58(21.33)	26(9.56)	3.06	2.08-6.5
		272(100)	272(100)		

$\chi^2 = 27.59$ $P < 0.01$

It is clearly evident from Table 4, that consumption of tobacco is significantly associated with A.M.I.

TABLE 5
ALCOHOL CONSUMPTION

Sr. No.	Alcohol consumption	Cases (%)	Controls (%)	Odds Ratio	95%C.I.
1.	No h/o alcohol consumption	118(43.38)	139(51.1)	1	
2.	Less than once a week	62(22.79)	74(27.21)	0.98	0.64-1.53
3.	1-2 times a week	67(24.64)	48(17.65)	1.64	1.03-2.56
4.	3times/week to daily	25(9.19)	11(4.04)	2.67	1.20-6.07
Total		272(100)	272(100)		

χ^2 =11.36, P=0.003

It has been observed that regular and heavy alcohol consumption is significantly associated with A.M.I.

TABLE 6
OCCUPATIONAL PHYSICAL ACTIVITY

Sr. No.	Occupational physical activity	Cases (%)	Controls (%)	Odds Ratio	95%C.I.
1.	Light (sedentary)	146(53.67)	88(32.36)	2.21	0.94-5.26
2.	Moderate	114(41.92)	168(61.76)	0.90	0.39-2.13
3.	Heavy	12(4.41)	16(5.88)	1.00	
Total		272(100)	272(100)		

χ^2 = 25.29, P<0.01.

It seems that light (sedentary) occupational physical activity increases risk of A.M.I.

TABLE 7
BODY MASS INDEX

Sr. No.	Body mass index	Cases (%)	Controls (%)	Odds Ratio	95%C.I.
1.	18.5-24.99	149(58.67)	183(72.04)	1	
2.	25-29.99	89(35.03)	64(25.20)	1.7	1.14-2.56
3.	30-39.99	16(6.30)	7(2.76)	2.8	1.05-7.75
		254(100)	254(100)		

χ^2 =11.09, P=0.003

It is observed that gradual increment in odds ratio with increasing body mass index. (In 18 cases, it was not possible to measure height and weight.)

DISCUSSION

Epidemiological transition with increasing life expectancy and demographic shift in population age profile combined with lifestyle related increase in the levels of cardiovascular risk factors is accelerating the coronary heart disease epidemic in India. In the present study higher socio-economic status was significantly associated with A.M.I. Singh et al (1997)[5] cited that higher socio-economic status was significantly associated with coronary heart disease in both sexes. India may be in the transition from pattern of disease seen in developing countries to that seen in developed ones. In the present study positive family history was significantly associated with A.M.I. Gillurkar et al (1998)[6] also reported similar findings with that of present study. In their case control study family history of coronary heart disease was present in 17.8 percent of

patients (OR= 3.O6; X^2 =9.03, P< 0.01). Family history of coronary heart disease is known to increase the risk of premature death. Genetic factors appear to play an important role along with conventional and emerging risk factors.

In the present study person with hypertension is at 4.75 time's higher risk of A.M.I. than normotensive subjects. Hypertension is truly "silent killer". Yoshihiro Miyake et al (2000), [7] W.H.O. international case- control study (1997)[8] also observed that hypertension was significantly associated with A.M.I. In association with diabetes and risk of A.M.I. Gillurkar et al (1998) [6] observed the odds ratio of 3.38; X^2=11.6 and P<0.01. For diabetes our findings are consistent with Gillurkar et al (1998) [6].In the present study dose response relationship was observed in relation to tobacco consumption and risk of A.M.I. Gupta et al (1995) [9] reported higher prevalence of coronary heart disease in smokers as compared to non-smokers (4.08 Vs 2.7%). For alcohol consumption our findings is concordance with those of Klatsky et al (1990)[10] whose group was first among the first to describe 'U' shaped curve that describes the fact that mild to moderate alcohol consumption have lowest rate of coronary heart disease and excessive users having higher rates .In present study sedentariness was significantly associated with the risk of A.M.I. Gupta et al (1995)[9] also found higher prevalence of C.H.D. and sedentary lifestyle in urban population. Sedentary lifestyle has been shown to be important in the genesis of caloric imbalance, resulting obesity and all consequences of obesity. In the present study B.M.I. was significantly associated with A.M.I. Gradual increment in odds ratio with increasing body mass index is evident. Sudarsana et al (1997)[11] Singh et al (2001)[12] also observed obesity as important risk factor for A.M.I. in their hospital based study.

Expression of coronary heart disease phenotype is feature of ageing and therefore increased life expectancy has resulted in the greater exposure to the risk factors of coronary heart disease. As a result of population growth and demographic trends ,urban population of India is expected to double to 600 million by 2020, further expanding the coronary heart disease epidemic.[13] In the present study except family history all other risk factors are modifiable, illustrating the enormous potential for prevention of acute myocardial infarction.

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PERCEPTION OF PATIENTS ABOUT QUALITY OF SERVICES UNDER HEALTH SECTOR REFORMS IMPLEMENTED IN HARYANA

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ABSTRACT

The global economic environment has undergone a significant change during the last decade due to liberalization, privatization and globalization and social sector developments have become the integral part of overall economic development. With this background, the National Rural Health Mission (NRHM), which is under implementation since 2005, seeks to provide accessible, affordable and qualitative health care to the rural population of India through initiation of Health Sector Reforms (HSRs) at various levels of service delivery. These reforms can be in various forms such as constitution of societies at various levels, decentralization, Public-Private Partnership (PPP), implementation of User Charges etc to achieve the overall objective of NRHM. The State of Haryana has implemented the Health Sector Reforms, starting with the constitution of the State Sector Reform Cell and Advisory Committee in January 2000 District Health and Family Welfare Society (DH&FWS) (at District level)and District Hospital, Sub-Divisional Hospital, CHC and PHC, Swasthya Kalyan Samitis (SKS) were constituted at facility level under the programme. The main objective of the constitution of these societies was to bring about structural, systematic and operational reforms so as to create synergies with the RCH and other Family Welfare Programmes. The present paper explores the improvements made in quality of services as a result of these reforms in the State of Haryana.

Key-words: Health Sector Reforms, Public-Private Partnership, User Charges, Quality of services

In the current public health care system, Health Sector Reforms are being implemented or proposed for implementation in many developing as well as in developed countries. The objective of these reforms is to make resource allocation in health sector more efficient, innovative and responsive to customer's preferences. Berman defines health sector reforms as' sustained, purposeful change to improve the efficiency, equity and effectiveness of the health sector[1]. There are various factors affecting these reforms which include changing health scenario, macro-economic situation, political environment, social structure, economic resources, external influences etc. The on-going global socio-economic changes are the major reasons for reforms in addition to epidemiological and demographic transitions. However, in practice, reforms in the health sector are likely to be influenced by external changes and pressures rather than epidemiological and demographic factors[2].

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In the Indian context, reforms per se were a response to the view that inspite of some gains, the earlier regulatory model of development had not delivered the expected results. These reforms sought to achieve rapid economic development to (i) improve the living standards of the people and ensure their development, (ii) eliminate poverty, (iii) protect human rights and (iv) ensure people's participation, especially the excluded groups[3]. The essence of the reforms was to increase the productivity of all sections of the society[4]. During the reforms, the state monopoly has been abolished virtually in all the sectors. The impact of policy trends on deregulation, liberalization and integration with the global economy has been felt in the health sector too[5].

Realizing the need for introducing Health Sector Reforms in Haryana, the Sector Investment Programme (SIP) of European Commission was implemented for bringing about changes in the health sector for better delivery of services[6]. The main objective of HSRs was to implement decentralization and institutionalize the user charges at the facility levels through formation of health societies named as Swasthya Kalyan Samities (SKSs). In the state, SKSs have been constituted at every health facility i.e. PHC, CHC, Sub-divisional Hospital and District Hospital. Besides, the programme also focussed on improvement in quality of services as a result of administrative as well as structural decentralization.

The present study was conducted in the State of Haryana to assess the perception of patients through exit-interviews about quality of services available at health care facilities under HSRs.

MATERIALS AND METHOD

The study was conducted in four districts of Haryana where Health and Family Welfare Societies are functioning. A multi-stage random sampling design was adopted for the study. At the first stage, the State was stratified into four regions as per the administrative divisions i.e. Ambala Division, Rohtak Division, Hisar Division and Gurgaon Division. Four districts (two with high user charge collection and two with low user charge collection) namely Yamuna Nagar, Panipat, Jind and Narnaul were selected. In Yamuna Nagar, the collection and utilization of user charge money was the highest followed by district Jind. On the other hand, district Panipat and Narnaul were having the lowest collection and utilization of user charge money.

At the third stage, from each selected district, one CHC, one Sub-Divisional Hospital and one District Hospital were selected. Further, from each CHC, two PHCs were randomly selected. A total of 528 OPD patients and 115 indoor patients from all the four districts were interviewed from the selected district hospital, sub-divisional hospital, CHC and PHCs. Eight separate schedules and two checklists one for FGD and another one for the facility survey for various health officials were used. In all, six visits were made to the selected districts and state headquarters for collection of data. The quantitative data were analyzed using SPSS package.

FINDINGS AND DISCUSSION

Profile of Patients

A total of 528 OPD patients (82.1%) and 115 indoor patients (17.9%) from four selected districts were interviewed. The proportion of OPD patients was more than 80 percent in each selected district and indoor patients was about 17 percent. Of the total patients, 264 were males (41.1%) and 379 (58.9%) were females. The percentage of female patients interviewed was high due to the availability of free ante-natal, natal and post-natal care services in public health institutions. Most of the patients were Hindus (92.7%). Muslims constituted a meagre percentage (5.4%) and rest either Sikh or Christian (1.90%). The caste-wise distribution of patients interviewed include Scheduled Caste (53%), General Category (28.5%) and OBC (12.1%). Education-wise, 41 per cent of patients were illiterate and only 3.4 per cent were graduate or having higher qualifications.

More than one-third of patients were labourers (35.8%) followed by farmers (20.4%), private jobs (9.5%), unemployed (9.5%), business (8.7%) and government jobs (7.5%) . Most of the patients (85.1%) had 3-9 family members, 7 percent had 1-2 members and 8.2 percent had more than 10 members. Overall, the average family size was 6.1. Regarding family income, it was found that majority of the patients (72.4%) had income in the range of Rs. 12,000-50,000/- per annum. The overall average annual income worked out to be Rs. 44,392/-. As per the Statistical and Economic Organization, the per capita income in the State was Rs.31,509/-, which was the second highest after Goa with Rs. 58,677/- (Statistical Abstract 2005-06).

Utilization of Health Facilities

More than one-third of the patients (37.8%) reported to have availed of services from District Hospital 22.9 percent from sub-divisional hospital, 17.7 percent from CHC and 21.6 percent from PHC. The distance of health facility for 55.5 % of the patients was less than 5 kms from their residence. While for 16.3 % it was 5-10 kms and 9.8 % it was more than 20 kms. On an average, patients had to travel 6-7 kms to avail of health facility from their residence. More than one third of the patients (39%) took 10-20 minutes to reach the facility and 24.0 % took 30-40 minutes to reach the health facility. Regarding the mode of transport, 39.0 percent walked to the health facility 25 % hired vehicles and 18.0 percent used public transport. Only a small proportion of the patients (12.1%) used their own vehicles.

Present Health Problems and Related Parameters

Most of the patients were suffering from common ailments (13.2%), respiratory diseases (12.6%), digestive system disorders (10%) and injury/accident (8.7%). The other important health problems reported were dermatological (7.3%), Gynae (6.7%), ANC (5.8%), Cardiovascular (4%), delivery (1.7%) and infectious disease (1.6%). Almost a similar pattern was observed in all the selected districts under study (Table 1).

TABLE 1
HEALTH PROBLEMS OF RESPONDENTS AND RELATED PARAMETERS

S. No.	Description	Yamuna Nagar	Narnual	Panipat	Jind	Total
1.	**Diseases**					
	Common ailment	20 (14.3%)	21 (15.3%)	20 (12%)	24 (12%)	85 (13.2%)
	Digestive System	12 (8.6%)	10 (7.3%)	14 (8.4%)	28 (14%)	64 (10%)
	Respiratory	12 (8.6%)	18 (13.1%)	28 (16.9%)	23 (11.5%)	81 (12.6%)
	System	1 (0.7%)	1 (0.7%)	7 (4.2%)	1 (0.5%)	10 (1.6%)
	Infectious	20 (14.3%)	21 (15.3%)	13 (7.8%)	26 (13%)	80 (12.4%)
	Pain/Ache/Arthritis	6 (4.3%)	5 (3.6%)	6 (3.6%)	9 (4.5%)	26 (4.0%)
	Cardiovascular	16 (11.4%)	10 (7.3%)	11 (6.6%)	10 (5%)	47 (7.3%)
	Dermatological	13 (9.3%)	9 (6.6%)	8 (4.8%)	13 (6.5%)	43 (6.7%)
	Gynae	12 (8.6%)	12 (8.8%)	19 (11.4%)	13 (6.5%)	56 (8.7%)
	Injury/accidents	15 (10.7%)	10 (7.3%)	5 (3%)	7 (3.5%)	37 (5.8%)
	ANC	4 (2.9%)	5 (3.6%)	1 (0.6%)	1 (0.5%)	11 (1.7%)
	Delivery	1 (0.7%)	1 (0.7%)	0 (0%)	0 (0%)	2 (0.3%)
	PNC	2 (1.4%)	2 (1.5%)	0 (0%)	0 (0%)	4 (0.6%)
	Immunization	0 (0%)	0 (0%)	2 (1.2%)	1 (0.5%)	3 (0.5%)
	FP services	2 (1.4%)	0 (0%)	0 (0%)	0 (0%)	2 (0.3%)
	Cancer	4 (2.9%)	2 (1.5%)	1 (0.6%)	2 (1.0%)	9 (1.4%)

	Minor surgery	0 (0%)	2 (1.5%)	2 (1.2%)	0 (0%)	4 (0.6%)
	Dog/Snake bite	22 (15.7%)	18 (13.1%)	36 (21.7%)	62 (31.0%)	138
	Others	140(100%)	137(100%)	166(100%)	200(100%)	(21.5%)
	Total*					643(100%)
2.	How long Patient is Suffering from this Disease					
	< 1 week	15 (10.7%)	65 (47.4%)	63 (38.0%)	84 (42.0%)	227
	1 week –1 month	36 (25.7%)	34 (24.8%)	44 (26.5%)	63 (31.5%)	(35.3%)
	1–3 months	29 (20.7%)	23 (16.8%)	31 (18.7%)	29 (14.5%)	177
	3–6 months	15 (10.7%)	5 (3.6%)	7 (4.2%)	9 (4.5%)	(27.5%)
	6–12 months	25 (17.9%)	5 (3.6%)	18 (10.8%)	9 (4.5%)	112
	12 months+	20 (14.3%)	5 (3.6%)	3 (1.8%)	6 (3.0%)	(17.4%)
	Total	140	137 (100%)	166 (100%)	200 (100%)	36 (5.6%)
		(100%)				57 (8.9%)
						34 (5.3%)
						643 (100%)
3.	No. of Times Patient has Visited this Facility for Current Illness (in case of OPD patients only)					
	Once	45 (38.8%)	67 (59.3%)	87 (62.6%)	109(68.1%)	308(58.3%)
	2–3 times	35 (30.2%)	36 (31.9%)	39 (28.1%)	38 (23.8%)	148
	4–5	17 (14.7%)	5 (4.4%)	3 (2.2%)	6 (3.8%)	(28.0%)
	6–10	14 (12.1%)	3 (2.7%)	5 (3.6%)	7 (4.4%)	31 (5.9%)
	>10 times	5 (4.3%)	2 (1.8%)	5 (3.6%)	0 (0.0%)	29 (5.5%)
	Total	116	113 (100%)	139 (100%)	160 (100%)	12 (2.3%)
		(100%)				528 (100%)
4.	No. of Days Admitted in this Facility (in case of IPD patients only)					
	1 day	3 (12.5%)	6 (25.0%)	4 (14.8%)	6 (15.0%)	19 (16.5%)
	2–3 days	7 (29.2%)	12 (50.0%)	3 (11.1%)	15 (37.5%)	37 (32.2%)
	4–7 days	8 (33.3%)	3 (12.5%)	4 (14.8%)	17 (42.5%)	32 (27.8%)
	8–15 days	3 (12.5%)	3 (12.5%)	11 (40.7%)	2 (5.0%)	19 (16.5%)
	>15 days	3 (12.5%)	0 (0.0%)	5 (18.5%)	0 (0.0%)	8 (7.0%)
	Total	24 (100%)	24 (100%)	27 (100%)	40 (100%)	115 (100%)
5.	Referred by					
	Self	96 (68.6%)	122(89.1%)	129(77.7%)	176 (88%)	523
	Relatives / friends	20 (14.3%)	27 (19.7%)	23 (13.9%)	21 (10.5%)	(81.3%)
	Private Practioner	1 (0.7%)	0 (0%)	4 (2.4%)	1 (0.5%)	91 (14.2%)
	CHC/PHC/SC	14 (10.0%)	2 (1.5%)	8 (4.8%)	2 (1.0%)	6 (0.9%)
	Others Like	10 (7.1%)	2 (1.5%)	2 (1.2%)	0 (0%)	26 (4.0%)
	(ESI etc.)					14 (2.2%)
	Total*	140	137 (100%)	166 (100%)	200 (100%)	
		(100%)				643 (100%)

Due to multiple responses, total may exceed 100%.

Affordability of Services

61.9 percent of the patients were of the view that they cannot afford to have the services (Table 2).

More than 80 percent of the patients said that they cannot afford to pay for services like laboratory investigations; radiological services and medicines whereas, 56.3 percent and 45 percent stated that they cannot afford to pay for surgery and bed charges respectively.

TABLE 2
AFFORDABILITY OF PATIENTS FOR CERTAIN SERVICES

Variable	Yamuna Nagar	Narnual	Panipat	Jind	Total* (percent)
Percentage of Patients reported non-affordability	56 (40.0%)	60 (43.8%)	112 (67.5%)	170 (85.0%)	398 (61.9%)
Type of Services non-affordable					
Lab Investigations	14 (25.0%)	54 (90.0%)	107 (95.5%)	156 (91.8%)	331 (83.2%)
Radiological Services	13 (23.2%)	56 (93.3%)	106 (94.6%)	157 (92.4%)	332 (83.4%)
Medicines	49 (87.5%)	49 (81.7%)	102 (91.1%)	167 (98.2%)	367 (92.2%)
Surgery	4 (7.1%)	25 (41.7%)	65 (58.0%)	130 (76.5%)	224 (56.3%)
Bed Charges	3 (5.4%)	16 (26.7%)	46 (41.1%)	114 (67.1%)	179 (45.0%)
Others	3 (5.4%)	2 (3.3%)	0 (0%)	0 (0%)	5 (1.3%)

Percentage may exceed 100 due to multiple responses

Awareness about Free Treatment Facility among Patients

Only 19.4 % of the patients had BPL card. The highest number of the patients had BPL cards were in Yamuna Nagar district (28.6%) and the lowest in Panipat district (12.7%). More than half of the patients had information about exemption of user charges (54.4%). More than half of the patients in Narnual, Panipat and Jind were aware of exemption criteria in comparison to only 38 percent of the patients in Yamuna Nagar district (Table 3).

Awareness about Patients Exempted from Payment of User-Charges

More than 90 percent of the patients in each district were aware that BPL cardholders are exempted from user charges. Awareness about exemption criteria for categories like government servants, SC/ST, freedom fighters, disabled, senior citizens and widows was almost negligible among patients interviewed.

Awareness about Free Services Provided at Health Facilities

Only half of the patients (50.2%) were aware of availability of the free services. Awareness level in this regard was high among the patients in Narnual district (61.3%) and low in Panipat district (38.6%). Regarding the type of services available free, about 92 percent of the patients reported immunization as free service. The other free services reported were ANC (79.6%), delivery (72.4%), family planning (63.5%) and National Health Programmes (47.4%). Similar trends emerged in selected districts. However, awareness level of free services under National Health Programmes (NHPs) was very low among the patients in Panipat district in comparison to other three districts. In Panipat district only 15.6 percent of patients were aware of free services under NHPs as compared to more than half patients in other three districts (Table 3).

TABLE 3
PERCEPTION OF THE PATIENTS ABOUT THE USER CHARGES

S. No.	Perception About	Yamuna Nagar	Narnual	Panipat	Jind	Total
I.	Holding BPL Card	40 (28.6%)	21 (15.3%)	21 (12.7%)	43 (21.5%)	125 (19.4%)
II.	Exemption of User Charges	53 (37.9%)	72 (52.6%)	95 (57.2%)	130 (65%)	350 (54.4%)
	Type of People Exempted					
	BPL	53 (100%)	71 (98.6%)	93 (97.9%)	126 (96.9%)	343 (98.0%)
	Govt. Servants	0 (0%)	1 (1.4%)	1 (1.1%)	1 (0.8%)	3 (0.9%)
	Disabled	0 (0%)	1 (1.4%)	0 (0%)	1 (0.8%)	2 (0.6%)
	SC/ST Category	0 (0%)	7 (9.7%)	1 (1.1%)	1 (0.8%)	9 (2.6%)
	Freedom Fighters	0 (0%)	2 (2.8%)	0 (0%)	1 (0.8%)	3 (0.9%)
	Old Age	0 (0%)	1 (1.4%)	0 (0%)	0 (0%)	1 (0.3%)
	Widows	0 (0%)	1 (1.4%)	0 (0%)	1 (0.8%)	2 (0.6%)
III.	Availability of free Services	62 (44.3%)	84 (61.3%)	64 (38.6%)	113(56.5%)	323(50.2%)
	Type of Services Provided Free					
	Immunization	58 (93.5%)	72 (85.7%)	60 (93.8%)	108 (95.6%)	298 (92.3%)
	ANC Services	56 (90.3%)	72 (85.7%)	44 (68.8%)	85 (75.2%)	257 (79.6%)
	Delivery Services	33 (53.2%)	70 (83.3%)	49 (76.6%)	82 (72.6%)	234 (72.4%)
	FP Services	38 (61.3%)	58 (69.0%)	36 (56.3%)	73 (64.6%)	205 (63.5%)
	NHPs	32 (51.6%)	47 (56.0%)	10 (15.6%)	64 (56.6%)	153 (47.4%)
	Others	5 (8.1%)	23 (27.4%)	0 (0%)	0 (0%)	28 (8.7%)

Satisfaction with Health Facilities/ Services at Various Levels

At the institutional level, it can be observed from Table 4 that more than 90 percent of the patients were satisfied with the availability of doctors/nurses as well as with their behaviour. No significant difference was seen among the selected health institutions. About 63 percent of the patients were satisfied with ANC, delivery and immunization services. The highest proportion of such patients was from CHC (70.2%) and the lowest was from sub-divisional hospital (57.1%).

TABLE 4
SATISFACTION OF THE PATIENTS WITH HEALTH FACILITIES/SERVICES AT THE INSTITUTIONAL LEVEL

Type of Facilities/Services	DH (N = 243)	SDH (N = 147)	CHC (N = 114)	PHC (N = 137)	Total (N = 643)
Infrastructure	119 (49%)	83 (56.5%)	43 (14.2%)	57 (18.9%)	302 (47%)
Diagnostic/Lab facility	114 (46.9%)	78 (53.1%)	50 (43.9%)	48 (34.5%)	290 (45.1%)
Availability of doctors/nurses	225 (92.6%)	141 (95.9%)	107(93.9%)	130 (93.5%)	603 (93.8%)
Availability of tech staff	115 (47.3%)	76 (51.7%)	58 (50.9%)	70 (50.4 %)	319 (49.6%)
Availability of Medicines and Drug	99 (40.7%)	63 (42.9%)	84 (73.7%)	86 (61.9%)	332 (51.6%)
Emergency care	79 (32.5%)	46 (31.3%)	35 (30.7%)	14 (10.1%)	174 (27.1%)

ANC, delivery, immunization	150 (61.7%)	84 (57.1%)	80 (70.2%)	89 (64%)	403 (62.7%)
Linen services	78 (32.1%)	32 (21.8%)	17 (14.9%)	10 (7.2%)	137 (21.3%)
Dietary facilities	31 (12.8%)	15 (10.2%)	9 (7.9%)	0 (0%)	55 (8.6%)
Toilet facilities	92 (37.9%)	46 (31.3%)	29 (25.4%)	44 (31.7%)	211 (32.8%)
Drinking water	113 (46.5%)	74 (50.3%)	38 (33.3%)	52 (37.4%)	277 (43.1%)
Waiting hall	132 (54.3%)	106 (72.1%)	62 (54.4%)	71 (51.1%)	371 (57.7%)
Recreation	7 (2.9%)	3 (2%)	3 (2%)	4 (2.9%)	17 (2.6%)
Security	21 (8.6%)	8 (5.4%)	9 (7.9%)	16 (11.5%)	54 (8.4%)
Overall cleanliness	103 (42.4%)	73 (49.7%)	42 (36.8%)	62 (44.6%)	280 (43.5%)
Ambulance	36 (14.8%)	34 (23.1%)	7 (6.1%)	12 (8.6%)	89 (13.8%)
Waiting time for availing services	127 (52.3%)	103 (70.1%)	70 (61.4%)	86 (61.9%)	386 (60%)
Behaviour of doctors/staff	232 (95.5%)	143 (97.3%)	108(94.7%)	131 (94.2%)	614 (95.5%)
Public Canteen	107 (44 %)	39 (26.5%)	24 (21.1%)	40 (28.8%)	210 (32.7%)
Availability of sign boards	139 (57.2%)	70 (47.6%)	34 (29.8%)	75 (54%)	318 (49.5%)
Others	6 (0.9%)	0 (0%)	3 (0.5%)	2 (0.3%)	11 (1.7%)
– Average	2125(41.6%)	1317(42.7%)	912(38.1%)	1099(38.2%)	5453(40.9%)

Overall 60 percent of the patients were satisfied with the waiting time for availing of services at the facility level and there was no much variation among the selected institutions in this regard. Further, about 52 percent of the patients were satisfied with the availability of medicines. The satisfaction with availability of medicines and drugs was reported by 73.7 percent of the patients at CHC level and 40.7 percent at district level. It was encouraging to note that more than half of the patients (57.7%) were satisfied with the waiting hall facilities.

Less than half of patients (47%) reported to have satisfied with infrastructure and diagnostic facilities and it was reported maximum at sub-divisional hospitals (56.5%) and minimum at CHC level (14.2%). However, no significant difference was found in regard to diagnostic facilities among the selected institutions. Further, satisfaction of the patients with toilet, drinking water and cleanliness facilities were 32.8 %, 43.1 % and 43.5 % respectively. Here also, no significant variation was observed among the selected institutions. The satisfaction with services such as emergency, ambulance, linen, dietary facilities and recreation was reported between 21 % and 8 %.

It is evident from Table 4 that, the average satisfaction level of the patients with respect to facilities/services varies from 38 percent to 43 percent at the selected health institutions (Table 4).

More than 80 % of the patients were satisfied with the availability of doctors/nurses as well as with their behaviour at the district level (Table 6).

It can be seen from the Table 5 that more than half of the patients were satisfied with ANC, delivery, immunization, waiting time and waiting hall facilities. Wide variation among the patients was observed with respect to ANC, delivery and immunization services in various districts under study, 21.4 percent in Yamuna Nagar district and 69.3 percent in Narnaul district. However, no significant difference was observed among the selected districts with regard to waiting time and waiting hall facilities. It is evident from table that the average level of satisfaction of the patients with respect to health facilities/services varies from 30.0 percent to 39.0 percent in various districts under study (Table-7). The table further reveals that more than one-third of patients were satisfied with infrastructure facilities, diagnostic facilities, availability of medicines and drinking water facilities at the institutions in selected different districts under study. Only 32.0 percent of the patients were satisfied with cleanliness. Satisfaction with ambulances, linen and dietary facilities was reported by relatively less percentage of patients in all the institutions in different districts under

study (Table 5). However 40.0 percent of the patients were satisfied with drinking water facilities, toilet facilities and cleanliness.

TABLE 5
SATISFACTION OF THE PATIENTS WITH HEALTH FACILITIES/SERVICES AT THE SELECTED DISTRICTS

Type of Facilities/Services	Yamuna Nagar (N = 140)	Narnaul (N = 137)	Panipat (N = 166)	Jind (N = 200)	Total (N = 643)
Infrastructure	45 (32.1%)	33 (24.1%)	49 (29.5%)	91 (45.5%)	218 (33.9%)
Diagnostic/Lab	52 (37.1%)	34 (24.8%)	49 (29.5%)	102 (51%)	237 (36.86%)
Availability of doctors/ nurses	53 (37.9%)	110(80.3%)	133 (80.1%)	168 (84%)	464 (72.16%)
Availability of tech staff	56 (40%)	60 (43.8%)	57 (34.3%)	98 (49%)	271 (42.15%)
Availability of medicines and drug	45 (32.1%)	70 (51.1%)	53 (31.9%)	57 (28.5%)	225 (34.99%)
Emergency care	35 (25%)	50 (36.5%)	20 (12%)	50 (25%)	155 (24.10%)
ANC, delivery, immunization	30 (21.4%)	95 (69.3%)	105 (63.3%)	127 (63.5%)	357 (55.52%)
Linen services	32 (22.9%)	14 (10.2%)	28 (16.9%)	48 (24%)	122 (18.97%)
Dietary facilities	17 (12.1%)	2 (1.5%)	25 (15.1%)	2 (1.0%)	46 (7.15%)
Toilet facilities	68 (48.6%)	16 (11.7%)	35 (21.1%)	68 (34%)	187 (29.08%)
Drinking water	77 (55%)	19 (13.9%)	48 (28.9%)	90 (45%)	234 (36.39%)
Waiting hall	82 (58.6%)	67 (48.9%)	69 (41.6%)	107 (53.5%)	325 (50.54%)
Recreational activities	15 (10.7%)	—	—	—	15 (2.33%)
Security	25 (17.9%)	8 (5.8%)	1 (0.6%)	17 (8.5%)	51 (7.93%)
Overall cleanliness	59 (42.1%)	25 (18.2%)	44 (26.5%)	78 (39%)	206 (32.04%)
Ambulance	20 (14.3%)	10 (7.3%)	6 (3.6%)	52 (26%)	88 (13.69%)
Waiting time for availing services	75 (53.6%)	73 (53.3%)	77 (46.4%)	114 (57%)	339 (52.72%)
Behaviour of doc/staff	43 (30.7%)	97 (70.8%)	131 (78.9%)	174 (87%)	445 (69.21%)
Public Canteen	21 (15.0%)	43 (31.4%)	60 (36.1%)	78 (39%)	202 (31.41%)
Availability of sign boards	28 (20%)	57 (41.6%)	77 (46.4%)	142 (71%)	304 (47.28%)
Others	2 (1.4%)	2 (1.5%)	2 (1.2%)	2 (1.0%)	8 (1.24%)
– Average	880(29.9%)	885 (30.8%)	1069(30.7%)	1635(38.9%)	4199 (31.1%)

Recommendations for Availing of Public Health Facilities

Ninety one percent of the patients said that they would recommend to others for availing of public health facilitites as the services were (Table 6) free as well as low cost.

TABLE 6
PATIENTS RECOMMENDATIONS FOR PUBLIC HEALTH FACILITIES

Would Recommended Services	Yamuna Nagar	Narnaul	Panipat	Jind	Total
Yes	127 (90.7%)	125 (91.2%)	149 (89.9%)	185 (92.5%)	586 (91.1%)
No	13 (9.3%)	12 (8.8%)	17 (10.2%)	15 (7.5%)	57 (8.9%)

Approaches to Improve the Quality of Public Health Services

To address the upcoming challenges after initiation of HSRs in the country as well as to cope up with the various new opportunities arising as a result of globalization in health sector in India, there is a need to focus on supply as well as demand side of health services.

The following approaches can be used to improve the quality of health care services as envisaged under NRHM:

Coordination between Public and Private Sectors

The overall strategy for the health sector may take into account the existing levels of private resources for providing services. State government may play an active role in creating an enabling environment for active participation of private sector in the health sector for establishing Public-Private Partnership while ensuring the quality of care in the public sector. There are several options for the government to ensure that the private health sector continues to play a vital role in the health sector. The options include:(i) Encourage private participation for optimum utilization of available resources in health sector and the State government may evaluate alternatives related to direct provision of services by the private sector, for example, areas such as laboratory and advanced diagnostic facilities and other support services.(ii) In view of certain difficulties in recruitment of staff to the government sector, outsourcing could be a viable option for services like laundry, kitchen, landscaping, dietary, sanitation, security, diagnostic and clinical services, and (iii) Strengthen linkages between Government and Non-Governmental Organizations (NGOs)[7].

Transparency and Publicity

It has been observed that the general awareness levels amongst the community regarding the contents and implementation of the reforms are low. Therefore, it is important to sensitize the community as well as the politicians to gather support for the programmes.

Effective Involvement of PRIs

Decentralized governance and local level participation can contribute to improve the health care system through better monitoring and supervision of the functioning of the health system at the local level. Panchayati Raj Institutions (PRIs) can address the issue of decentralized governance. To make the PRIs to be more effective, it is better to ensure their participation ensured in the areas of policy and planning, budget allocation, resource use, revenue raising, supervision, maintenance and training. The notion of decentralized governance would be more meaningful only when the PRIs capacity is enhanced and their access to resources becomes more substantial. Efforts should be made to use Local Area Development Funds available with MPs and MLAs for improving hospital services.

DISCUSSION AND CONCLUSION

The public health sector is confronting with the problem of dwindling financial resources such as financing of non-salary expenses, shortage of diagnostic and laboratory facilities and deterioration of physical infrastructure. This is the reason that user charge is being experimented as an alternative financing mechanism to generate resources locally. Under the HSRs, autonomous societies have been constituted and registered under Society Registration Act 1860. These societies have been constituted up to PHC level and empowered to decide what services to charge for and much to charge. These societies are empowered to manage the health facilities with user charge money as well as with government budget.

A study on the Andhra Pradesh State Health System Project, a study revealed that the people would be willing to pay for the services (including the registration fee as well as visitor fee) provided that the

collections are properly used for improving the quality of services at the hospital. The study also revealed that the service providers as well as the users (actual and potential) felt that the charges at government hospitals may be fixed at about 50 percent of the rates prevailing in the open market (i.e. private sector). In addition, the study recommended that user charges should be made compulsory for all except for the 'below poverty line' category. There should be a foolproof method to identify poor people and adequate financial powers should be granted to the administrative medical officer (the officer in-charge) of government hospitals for better maintenance of the hospital[4].

The system of user fee is a good feature and should be periodically reviewed to enhance both the base and the scale of fee. It would be necessary to reiterate that the collection of user fee by a hospital would be exclusively meant for its improvements[8]. As it has been found during the present study that the money generated through user charge is not being retained at the facility level uniformly in the State which is disturbing the spirit of reforms as envisaged. Moreover, the BPL population is not aware of the fact that they user exempted from payment of are charges. Therefore, there is a need to generate awareness among population about exemption criterion.

The health sector reforms have been implemented throughout the country under the umbrella of overall economic reforms. The main objective of these reforms is to make public health services more accessible, equitable, qualitative and consumers responsive[9]. Various initiatives in the form of reforms are being undertaken to achieve these objectives. At the policy levels it is necessary to give attention to improve the accessibility and quality of public health services in rural India and in this direction as already discussed the untapped resources of Corporate Houses and credible NGOs can be utilized in collaboration with public sector as has been happening under some of the national health programmes such as Revised National Tuberculosis Control Programme and National Programme for Control of Blindness. Partnership with the private health providers is also one of the effective ways to increase the coverage and accessibility of health services in remote areas. Besides, the services of private providers so called quacks can also be used by building their capacities rather than putting them under clutches of law and this will be a useful tool for creating more trained manpower in the health sector in the country. Again the capacities of health department officers need to be enhanced so that they are able to tackle the challenging problem of improving access and quality of services and manage new initiatives under health sector reforms. There is also scope for strengthening the local capacities at community levels in the form of Self Help Groups (SHGs) to improve awareness, for better utilization of health care services.

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TELE-MEDICINE: AN ASSESSMENT FOR DELIVERY OF QUALITY HEALTH CARE

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ABSTRACT

With the goal of eventually ensuring delivery of quality medical care, a tele-medicine system has been designed to make health care accessible at an affordable rate to people living in remote areas. The purpose of the system is to give people living at remote locations the ability to consult specialists using a combination of video, audio and externally acquired medical images. The project was implemented by the Andhra Pradesh Vaidya Vidhana Parishad (APVVP) along with CARE foundation as a public-private partnership at the district hospital, Mahaboobnagar on a pilot basis to understand the effectiveness of health care delivery by the use of the Tele-medicine Technology.

An Echocardiography unit and an ECG machine were positioned at the district hospital centre. Application software was developed to interface the medical equipment with computers and medical grade images along with patient history and transmitted over a leased line network of 256 Kbps bandwidth to the hub centre. A bi-directional video interactive system between the specialist and the patient was also ensured. Real time methodology of transmission of echocardiographic images was adopted wherein a trained technician provided the necessary views to the cardiologist through the tele-medicine system for analysis.

A total of 2068 cases have been analyzed using this medium from January 2002 to February 2007, of which 1207 cases were positive studies while 861 cases were normal studies. Of the 1207 positive studies, 993 were medically managed without their travel to city while the remaining 214 of them required further evaluation/interventions. An important aspect that emerged from this experiment was that this system can be utilized as an excellent screening examination for the patients at remote centres and can help potential patients at risk of cardiovascular disease take preventive measures.

Key Words: Tele-medicine Efficiency, Echocardiography, Cost-Benefit, Rural Health Care

Tele-medicine has been defined as the use of tele-communications to provide medical information and services. It may be as simple as two health professionals discussing a case over the telephone, or as sophisticated as using satellite technology to broadcast a consultation between providers at facilities in two countries, using video-conferencing equipment. The actual practice of tele-medicine can be defined as integration of medical, communication and information technology to provide medical advice on the basis of comprehensive information transferred from remote centres to specialty centres.

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Mahaboobnagar Region

Mahaboobnagar located 100 kms south-west of Hyderabad and about 18,432 square meters in area has a population of 39, 53,818[1], with surrounding townships of Vanaparthy, Kalwakurthy, Nagarkurnool, Gadwal, Shadnagar, Narayanpet and Kodangal. It is the second largest district in Andhra Pradesh. The occupation in this district is predominantly farming and hence only a small percentage of the entire population has any access to good health care facilities. Floating population makes up for a large part of the inhabitants and hence the governing bodies are less likely to address issues of periodic health check-ups and establishing a disease classification for the people of the district[1].

The demography of the Mahaboobnagar region, with its scattered population creates many challenges in emergency situations at the remote sites. Many of the local communities do not have roads or railways linking them to the outside world for medical expertise. This situation requires a special emergency centre in order to co-ordinate the need for emergency transfers of patients and health care personnel.

LEVELS OF HEALTH CARE

The basic health care system consists of three levels:

- Primary health care centres
- District hospitals
- Super/specialty hospitals

The first level includes primary health care centres and rural hospitals. India's primary health care system is based on the Primary Health Centre (PHC) which suffers chronically from an inability to detect diseases early due to the absence of multi-disciplinary medical expertise and laboratory facilities. Further, patients usually do not visit PHCs in the early stages of their disease. Even so, the volume of cases is so large that health care providers are forced to focus only on seriously ill patients[1]. The second level is where patients receive intensive treatment and specialized care in district hospitals, which in our case is the district hospital at Mahaboobnagar. The third level provides highly specialized medical care, which is CARE Hospital in the present set-up. This level helps in facilitating medical expertise to the district hospital through tele-medicine. The main objective of tele-medicine is to provide the expertise available at tertiary centres to the secondary care centres and to the primary health care centres.

MATERIALS AND METHOD

Patient Selection

Patients admitted to the district hospital or who visited the hospital on an out-patient basis with symptoms of chest pain, previous history of cardiac problem and hypertension. There were no exclusion criteria to the study.

Protocol

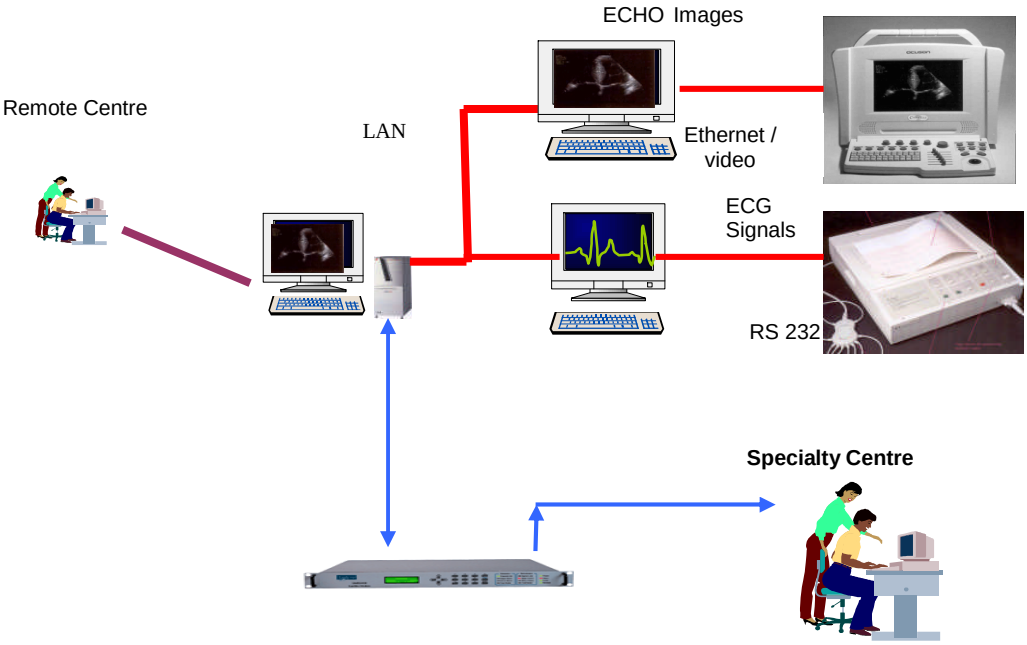
Every patient directed by the general physician at the district hospital for a cardiac tele-consultation was subjected to an ECG, Echocardiographic test and this was followed with an interactive session with the specialist. A complete patient profile, including the demographic data, history of illness and the risk factors and ECG data, was recorded. Echocardiographic images were beamed live through the network for diagnosis by the specialist at CARE. A report based on the available information was generated by the specialist in an electronic format through the application software, and this was transmitted back to Mahaboobnagar. The print-outs of these reports were given to the patients.

SYSTEM REQUIREMENTS

The network operates on a 256 kbps leased line of point-to-point connectivity. Real time methodology was adopted for viewing echocardiographic images with the technology at Mahaboobnagar providing the views for the specialist at CARE. Figure 1 illustrates a tele-medicine workstation set-up at Mahaboobnagar district hospital. This workstation included

medical equipment: ECG machine with RS232 interface, an echocardiogram machine with a composite interface, communication equipment: Routers, leased line modems, video conferencing equipment and hub and computers: one server and two clients. The application software on integration of these modalities with the systems facilitated the seamless transmission of the echocardiograph along with the clinical information to the specialty centre. The consultant used a corresponding server system, which included the application software for viewing the details.

Figure 1
Tele-medicine Work Station



FINDINGS AND DISCUSSION

From January 2002 to July 2007, a total of 2068 cases (994 males, 1074 females) were transmitted over the network for diagnosis. Of this group, as shown in Figure 1a, 1696 (82%) of the patients were white card holders (below poverty line) while the remaining 372 (18%) belonged to the private category which suggests that this technology assisted in reaching out to the underprivileged population in the community.

Of the 2068 patients studied, as shown in Figure 2, 861 (41%) were classified as normal. The remaining 1207 (59%) were diagnosed as 'positive', and consisted of those with a past history of cardiac illness or abnormal findings in the present investigations. Of these, 292 patients (24%) were diagnosed to have Rheumatic Heart Disease (RHD) followed by 139 patients (11%) congenital heart disease (CHD), 245 patients (21%) Coronary Artery Disease (CAD), 138 patients (11%) Valvular Heart Disease (VHD), 173 patients (14%) Hypertensive Heart Disease (HHD), 151 patients (13%) Cardiomyopathy (CMP), 41 patients (3%) Pulmonary Arterial Hypertension (PAH), 24 patients (1%) Pericardial Disease (PD) and 4 patients (0.3%) with mass (Figure 3).

Figure 2 -Total ECHO Cases = 2068;
Normal vs. Positive Study

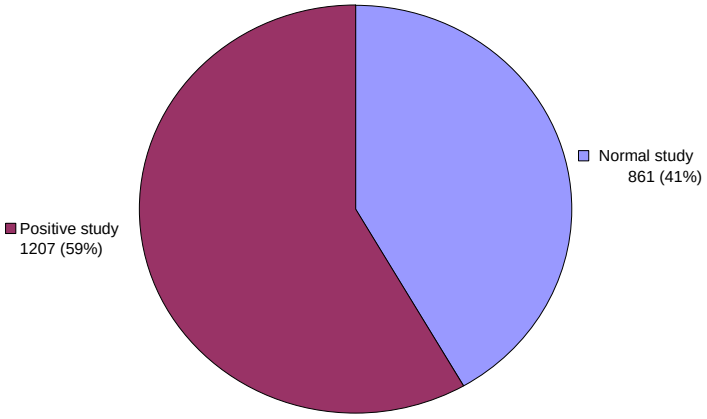


Figure 1a - Categorisation of Patients Based On Cost

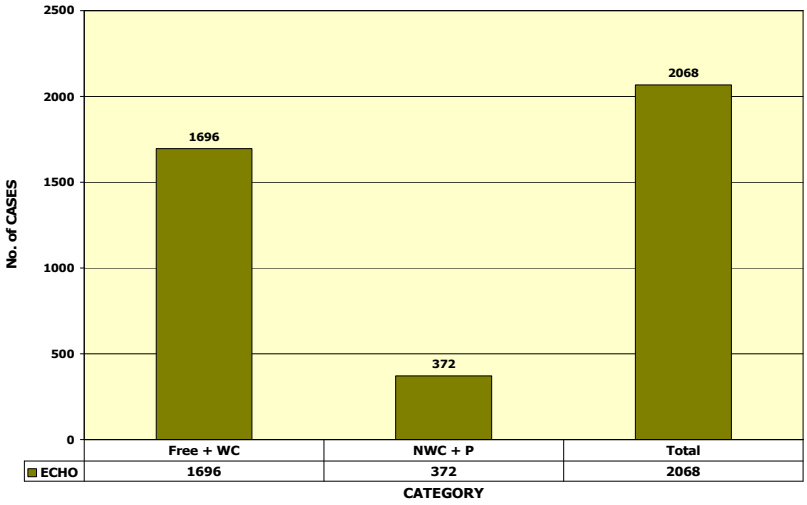


Figure 3
Disease Classification

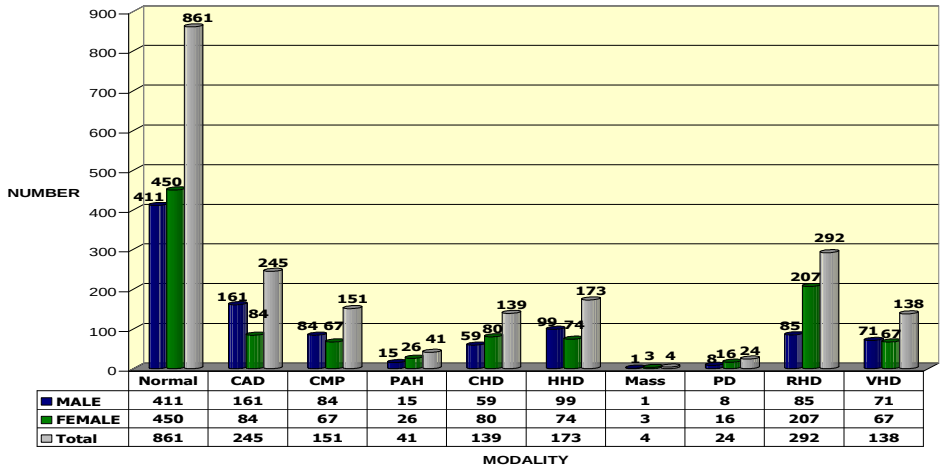


Figure 4 - Outcomes of the Positive Study

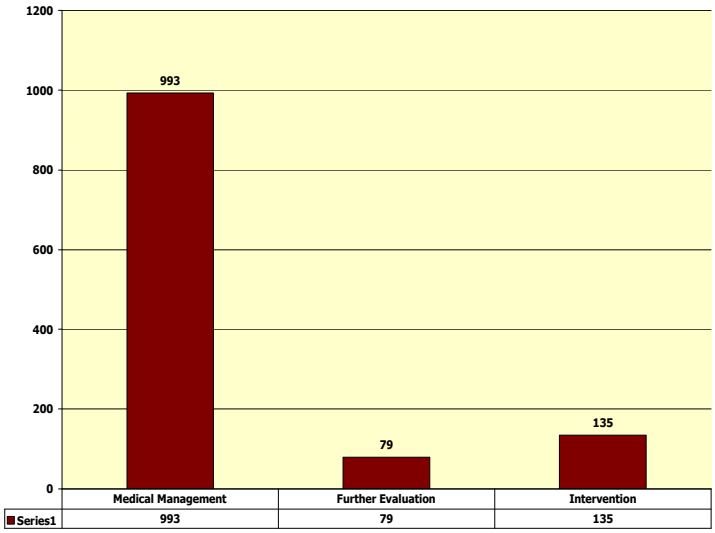


Figure 4 gives an overview of the patients who were medically managed and those who needed further investigation/interventions. Out of the 1207 positive studies as shown in Figure 2, 993 (82%) of them were medically managed without their travel to city, 79 (7%) of them needed further evaluation for confirming treatment and 135 (11%) of them needed immediate interventions Figure 4. The patients of the first category derived maximum benefits as they had necessary cardiac care without going to any tertiary care centre. The patients and their attendees of the next two categories were benefitted because they were provided a complete picture of all the procedures and outcomes that they were likely to go through. The level of mental preparedness helps to buffer the patients both psychologically and financially for any eventuality which would have been lacking if they would have needed to travel to a distant tertiary centre.

TABLE 1
COST ANALYSIS

Category	No. of patients	TMC cost (Rs)			Cost outside TMC(Rs)		
		Per patient	Total	Account head	Per patient	No. of patients	Total
Free + WC	1696	300	508800	Test	900	2068	1861200
NWC + P	372	600	223200	Travel	200	2068	413600
				Food	200	2068	413600
Total	**2068**		**732000**				**2688400**
Saving in cost	**2688400-732000 = 1956400**						

Table 1 lists the costs involved in getting the same tests done at any private centre in the city as compared to this methodology. A conservative assumption was made for the costs involved in travel, food and miscellaneous expenditure. The categorisation of patients based on cost is given in Figure 1a.

TMC: Tele-medicine Centre. Free: it denotes cases where the patients are given free consultation with no charge levied on them.

White Card: These patients have a ration card (below poverty line) issued to them by the government.

NWC+P: The non-white card and private patients are of the higher economic echelons that are capable of paying for the diagnostics and consultation.

CONCLUSION

Echocardiography has been a primary cardiac diagnostic tool for very long. The use of this tool as a diagnostic mechanism for patients at a distance, especially in remote regions where patients have little or no knowledge of health care prevention and cure, has been the greatest measure of success for the CARE Tele-medicine set-up. However, one of the limitations of the study is that there was no satisfactory follow-up of the patients who visited the centre. This is important to assess the effectiveness of the programme in real life situation.

The study emphasized that tele-medicine was effective in the delivery of quality health care both in terms of accessibility and associated costs involved. An invaluable advantage of tele-medicine is the availability of timely diagnosis by specialists, which in turn empower the physicians at the district hospital. It is well known that the distance decay effects[1], i.e. distance in terms of cost and distance acting as a deterrent to people consulting is one important factor that tele-medicine overcomes. The programme also ensures an increase in the general awareness of good health across the region due to the availability of affordable investigations and specialist opinions.

Cost benefits make up one important aspect of tele-medicine; however, the project has also aided in lending myriad social benefits. The patients who visited the tele-medicine unit were given first hand opinion by the specialist at CARE. The complete epidemiological database of archived patient information over a period of five years could facilitate a study of disease trends over this period.

The set-up attracted patients in need of medical care not only from the existing regions but also from various nearby villages. This project has assisted masses, especially of the lowest economic strata who earn their livelihood as daily wage labourers, from missing out their essential bread earning activity.

Delivery of quality health care through tele-medicine assures affordable solutions, and this study has been the first step in developing self-sustaining model to cater to people at remote centres.

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SETTING UP SOCIAL CLUBS FOR ADOLESCENTS LIVING: A POTENTIAL TOOL TO IMPART HIV/AIDS EDUCATION

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ABSTRACT

This paper deals with a youth club for adolescents living in an urban slums of Ujjain city, India. The youth club incorporates the strategy of life-skill-based education and its potential as a tool for creating HIV/AIDS awareness among adolescents. The study indicates that establishment of social club is feasible with the available local resources, because the social club activities are need-based for the community members. Further, the study reveals that the AIDS education organised through the social club had an impact on the knowledge and attitude of the adolescents.

The authors conclude that the social clubs seem to have potentials to improve HIV/AIDS awareness among adolescents to adopt a healthy lifestyle and can be utilized to address various issues related to adolescents.

Key Words: Adolescents, HIV/AIDS, Social Club, Vocational Training

Globally half of the new HIV/AIDS cases are among the age group of 15 to 24 years and the greatest hope for changing the course of epidemic lies with the same age group[1]. Within this age group, adolescents are more vulnerable to HIV infection as they do not have access to appropriate information or awareness of the dangers of high risk behaviour. Moreover, social norms often forbid discussion on sexuality, despite the evidence that information prevents untoward effects[2]. As far as the research is concerned information about adolescents' high risk behaviour is sparse in India. As a consequence the issue of structuring interventions for adolescents remain unaddressed.

The United Nation's Millennium Development Goal-6 targets-7 states that 'HIV infection should be halted by 2015' and strongly insists on the 'Behavior Change Communication (BCC)' but the conventional methods based on didactic messages are inadequate to achieve the desired behaviour change. Presently several information disseminating interventions are on-going to enhance HIV/AIDS awareness world-wide especially among adolescents through school education, most of which focus on factual information and lack dialogue. Especially interventions for slum adolescents, who are often uneducated having dropped out of school, employed in an unorganized sector at low wages and economically underprivileged[3], need to be accompanied by the dialogue based inter-personal communication. Therefore, community youth clubs and associations are possible alternatives for reaching such young people and to establish a dialogue with them. Recently the Ministry of Youth Affairs and Sports in India in consultation with National AIDS Control Organization (NACO) has prepared a five-year plan called YUVA (Youth Unite for Victory on AIDS) and has incorporated the youth

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clubs as part of its strategy to reach out youth[4]. Keeping this in mind a youth club to create HIV/AIDS awareness among adolescents was established by the Department of Community Medicine, R.D. Gardi Medical College, Ujjain, India, under a Government of Madhya Pradesh funded project. The present paper describes the establishment of social club (a youth club for adolescents) and its potential as a tool for creating HIV/AIDS awareness among adolescents in the slum of Ujjain.

MATERIALS AND METHOD

The present study was conducted in the Ujjain city; Madhya Pradesh, India, from December 2003 to November 2004. Urban slums of Ujjain city in the close vicinity of urban health centre run by the Department of Community Medicine of R.D.Gardi Medical College, Ujjain, were purposively selected. The study area consisted of nine geographically contiguous slums. The research team from the medical college carried out a household survey to identify adolescents in the age group of 15-19 years. Anganwadi workers (women workers of government crèches located in the slums) were contacted to facilitate access to the local community and the adolescents. The population in this area was served by nine anganwadis. The anganwadi workers helped to make contact with local community for identification of one adolescent boy and one adolescent girl in their respective areas. These adolescents further helped the research team for identification of their peers.

Informal group discussions (IGD) were held out separately with groups of boys and girls to know their views on the establishment of social club and it was found that adolescents were interested in vocational training. The areas of interest for girls were sewing, embroidery, toys making, jewellery making and beautician course. While boys were interested in courses related to motor winding, typing, repairing of electrical appliances, computer and mechanical work. They were also interested in some recreational activities. Therefore, the activities of social club were thus planned into three categories viz.HIV/AIDS education, vocational training and recreational activities.

Entry to social club was not open to all adolescents in the area due to limited resources so as to keep the focus on evaluation of the social club by working on selected adolescents. Assuming a 30 per cent prevalence of knowledge on HIV/AIDS, 95 per cent confidence interval and 5 per cent allowable error, the calculated sample size was 323 adolescents. They were selected by a simple random sampling method from a total of 1426 adolescent population in the study area.

In all, 334 adolescents (142 boys and 192 girls) were enrolled in the social club. All the selected adolescents were free to participate in anyone or in all the three categories of activities. A school building in the local area was rented to run the club at a concessional rate as the cause was perceived to be useful by the local community members.

Depending on choice and duration of the vocational training course ranging from 2 to 12 weeks, adolescents were divided into batches. The vocational training courses offered for girls were sewing, embroidery, toys making, jewellery making, beautician course and mehndi (patterning designs on the palms and feet with a herb, henna, usually done to celebrate important occasions). The boys had training in motor winding work. The vocational training to adolescents was provided with the support of Jan Shikshan Sansthan, Ujjain.

The Vocational training class was immediately followed by HIV/AIDS education everyday for about an hour duration so each adolescent attended educational activities at some point of time during the study period. A combination of education methods including lectures, question answer sessions, TV shows and printed materials were used to impart HIV/AIDS education. Experienced health educators and specialists from the Department of Community Medicine provided AIDS education.

Facilities for recreational activities were also made available as and when desired by adolescents. Recreational activities included sports and library for participants. Parameters to test the potentiality of social club as a tool to impart HIV/AIDS education were improvement in factual knowledge, participation of adolescents in the social club activities (% joined vocational training, % attended AIDS education and recreational activities) and their experiences and contribution in creating HIV/AIDS awareness in the community (did they talk about HIV/AIDS to their family or neighbourhood or with peers and what was their experience?).

To study the improvement in factual knowledge, baseline and end line assessment of knowledge on HIV/AIDS was conducted among the adolescents. The assessment was carried out with the help of a self-administered questionnaire which included questions on routes of transmission, misconceptions about routes of transmission, preventive measures and their attitude towards HIV/AIDS patients. Baseline assessment was carried out initially and endline assessment was carried out at the end of their tenure of vocational training course in the social club using the same questionnaire used for the baseline assessment. Among the selected adolescents who were illiterate or had difficulty in reading the questionnaire were helped by the members of the research team who read the questionnaire and filled their responses to each question.

Attendance records provided information on participation of adolescents in the club and 129 adolescents were separately interviewed by the investigators using an open-ended schedule to record their experiences and contribution in creating HIV/AIDS awareness in the community at the end of the study.

FINDINGS

Background Characteristics of the Study Population

The total population of the study area was 10267 people residing in 1969 households. Majority (79.6%) belonged to scheduled caste or other backward castes. 67 per cent of the population was either illiterate or educated not more than primary level. Most of the men folk were labourers and daily wage earners while women worked from home (making incense sticks) or were housemaids in the city. Sanitary conditions of the area were poor.

A total of 1426 adolescents, 748 boys and 678 girls were identified from 1969 households of the study area. 15 per cent of adolescents were married and the percentage of married girls was even higher (26%). Half of the adolscents were educated upto primary level. Girls left school, either to assist in household chores or family members did not allow them to continue schooling for ‘safety’ reasons.

Improvement in the Factual Knowledge of Adolescents

Overall, 303 adolescents participated in both, baseline and end-line assessment for HIV/AIDS knowledge and attitude. The mean age of adolescents was 17 ± 1.5 years. Table 1 shows that the knowledge of adolescents about ‘routes of transmission and preventive measures’ was fair but they had some misconceptions about it. Their attitude towards HIV/AIDS patients, HIV/AIDS testing and HIV/AIDS education was favourable. The endline assessment showed further improvement in their knowledge and attitude. Adolescents were significantly more aware of the possibility of transmission of HIV/AIDS through unprotected sex with an infected person and from a positive mother to the child. There was a significant reduction in the misconception about the disease being transmitted by sharing utensils. Also, their attitude towards the positive patient was changed and significantly less believed in separation of the patient.

Participation of Adolescents in Social Club Activities

Out of 334 enrolled adolescents in the social club, 54 per cent participated in vocational training courses (79% girls and 21% boys) and also they participated in

recreational activities and AIDS education sessions. The remaining (46%) participated only in recreational activities and attended AIDS awareness sessions.

Data presented in Table 2 reveal the participation of adolescents in AIDS awareness sessions organised by the social club. Participation in AIDS awareness sessions by the adolescents was considerably high. 94 per cent of adolescents attended more than 75 per cent of educational sessions held while 6.0 Per cent attended only 50 to 75 per cent of AIDS awareness sessions.

TABLE 1

KNOWLEDGE OF ADOLESCENTS REGARDING HIV/AIDS

Knowledge and Attitude	**Baseline N (%)**	**Endline N (%)**	**$\chi 2$**	**P Value**
Routes of Transmission				
Unprotected sex with HIV positive	258 (85.0)	284 (92.8)	11.8	0.001*
Blood transfusion	277 (91.4)	286 (93.5)	2.02	0.2
Needle/sharps used by HIV positive	260 (85.8)	278 (90.8)	5.4	0.02*
HIV positive mother to child	220 (72.6)	262 (85.6)	17.8	0.000*
Misconceptions				
using utensils of patient	47 (15.5)	14 (4.6)	19.8	0.000*
Using common toilet	30 (9.9)	25 (8.2)	0.5	0.57
Mosquito bite	47 (15.5)	41 (13.5)	1.33	0.5
Preventive Measures				
Using condom	224 (73.9)	252 (83.2)	7.67	0.007*
Single sex partner	200 (66.0)	238 (78.5)	11.9	0.001*
Blood test for HIV	245 (80.9)	260 (85.8)	2.67	0.127
Injection safety	217 (71.6)	244 (80.5)	6.61	0.013*
Attitude				
Separation of AIDS patient	83 (27.4)	25 (8.2)	37.9	0.000*
Ready for HIV testing	274 (90.4)	279 (91.2)	0.5	0.56
Agree for AIDS education	281 (92.7)	292 (95.4)	3.8	0.07

Significant P<0.05

TABLE 2

PARTICIPATION OF ADOLESCNTS IN AIDS AWARENESS SESSIONS

Attendance	***Adolescents attended awareness sessions*** **N (%)**
<50%	00 (00)
50%-75%	*20 (6)*
>75%	*314 (94)*

Assessment of Social Club

Data presented in (Table 3) reveal that vocational training motivated the adolescents (62.02%) to join social club. Further, data in (Table 3) highlight that HIV/AIDS education was one of the activities, the adolescents (55.03%) liked the most. The methods of education preferred by the adolescents were T.V shows (48.06%) interactive methods (37.98%) and print materials (13.95%). It is also clear from (Table 3) that the adolescents (86.05%) share the information on HIV/AIDS with others and 41.08 per cent of the people listened to them very carefully. However, 17.05 per cent each became 'angry' and made 'fun out of it'.However, 10.0 per cent of the people neglected the issue related to HIV/AIDS.

TABLE 3

ASSESSMENT OF SOCIAL CLUB

1. What motivated you to join social club?		**N (%)**
	Vocational training	80 (62.02)
	AIDS education	18 (13.95)
	Both	9 (6.98)
	Other	22 (17.05)
2. Which activity did you like most?		
	Vocational training	27 (20.93)
	AIDS education	71 (55.03)
	Recreation	9 (6.97)
	Other	22 (17.05)
3. What is the preferred method of education?		
	Interactive methods	49 (37.98)
	TV shows	62 (48.06)
	Print materials	18 (13.95)
4. Did you tell people about AIDS?		
	Yes	111 (86.05)
	No	18 (13.05)
5. How people react when you tell them about AIDS?		
	Listen carefully	53 (41.08)
	Angry	22 (17.05)
	Make fun	22 (17.05)
	Neglect	13 (10.07)
	Not Applicable	19 (14.73

N= 129

DISCUSSION

Reaching the target population and motivating them to participate in the study was a challenge as adolescents were from slums with a poor background. Another challenge was to run the social club activities with the available limited resources, hence, local resources were identified to support the establishment. The anganwadi workers and adolescents, who volunteered to assist in the household survey in their respective slum areas proved helpful to contact the target population for establishment of social club.

The idea behind the project was to associate the adolescents with social club for some time so as to help them to acquire vocational skills and provide them an opportunity to interact with other youths. Vocational training was the biggest attraction for the adolescents to join the social club as most of them belonged to

poor families and vocational training offered them some possibility to become economically independent in the future. The response to social club was positive. The social club can be run on a more continuous basis to allow more youths to participate in all it's activities until all adolescents in the area have had a chance to become members of the club. The investigators had resources for a fixed duration and they are looking for additional resources for more support.

The countries which heavily invested in AIDS education and awareness initiatives have got significantly reduced rates of new infections[1.] Also, positive impact of education on HIV/AIDS awareness activities has been well documented in Indian studies[5-8].

High level of awareness among adolescents in baseline assessment in the present study has been observed which may have been due to the existing awareness campaigns launched especially through mass media. The level of awareness revealed by studies in India ranges from 21 per cent to 89 per cent[9.] The variations reported by various studies indicate a need for redesigning the education programme, keeping in view the diverse population groups and their knowledge and attitude towards HIV/AIDS. However, information alone is not enough to produce sustained behaviour change[1]. There are studies reporting no change in behaviour despite knowledge of HIV/AIDS[10,11]. Educational programme provide mainly factual information which needs to be reinforced to bring about desirable changes in the behaviour. Awareness is the pre-requisite to reduce the risk but effective approaches need to be identified to change the behaviour of target population. Effective approaches for young people and children can be life skill-based education which will promote the adoption of healthy behaviour[1]. Keeping this approach in mind, the social club was established and it exerted a positive impact on HIV/AIDS awareness among adolescents. The vocational training helped to maintain interest in the adolescent to visit the social club. Vocational training to adolescents ensures economic independence, which in turn enables them to acquire stronger life skills like decision-making, negotiations and assertiveness. The adolescents equipped with the knowledge also worked as HIV/AIDS messengers in the community. In most 'conventional' educational interventions the target group remains passive but the social club served as a platform to the adolescents to express themselves openly in a comfortable environment and may be utilized further to address other major adolescent issues.

Youth clubs in Nicaragua, under a bilateral project between Germany and Nicaragua, have been proved effective in lowering the risky behaviour in adolescents in Nicaragua[12]. Similar programmes have been tested in other parts of the world where HIV/AIDS education was combined with vocational training and recreational activities with a view to empower youths with skills to deny risk behaviour and to make healthy choices[13].

RECOMMENDATION

It is recommended that AIDS education programmes should be based on participatory methods, incorporating a specific life skill-based approach for adolescents in school and out of school to achieve sustainable results.

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SOCIO-DEMOGRAPHIC FACTORS CAUSING ANAEMIA IN ADOLESCENT GIRLS IN MEERUT

RITA SINGH*

ABSTRACT

A cross-sectional sample survey of 556 adolescent girls (10-18 years) was covered by house-to-house visit in an urban area of Meerut which is the field practice area of Department of Community Medicine, L.L.R.M. Medical College, Meerut. In this particular study, socio-demographic factors causing anaemia in adolescent girls were studied. Results showed a significant difference in prevalence of anaemia in adolescent girls in relation to caste, socio-economic status, father's occupation and mother's education. Reverse association was seen between socio-economic status and the prevalence of anaemia in adolescent girls. Lower the socio-economic status, higher the prevalence of anaemia i.e. maximum (47.6%) in class V and minimum (29.1%) in class I and II. Fathers who were professionals had least prevalence of anaemia in their adolescent daughters.

Key Words: Adolescent Girls, Anaemia, Socio-Demographic Characteristics, Education.

Adolescence is a period where significant growth changes occur necessitating optimum nutritional requirement. The main nutritional problems affecting adolescent population include under-nutrition and iron deficiency anaemia besides other factors. During adolescence, growth in height accelerates and is faster than at any other time in the individual's post-natal life except the first year[2]. Out of 523 studies reviewed for WHO on anaemia, only 39 included adolescents.[3] Hence, this study focussed on prevalence of anaemia in adolescent girls.

OBJECTIVE

The objective of the present study is to study the prevalence of anaemia in adolescent girls in relation to their socio-demographic characteristics in an urban area of Meerut.

MATERIALS AND METHOD

The present cross-sectional study was carried out in urban population of Meerut City registered at urban health training centre, Department of Community Medicine, L.L.R.M. Medical College, Meerut. Out of 1530 families covered through house-to-house visit during the survey, 556 adolescent girls aged 10-18 years of age were studied. An optimum sample size of 576 girls for the study was obtained by an estimated anaemia prevalence of 40 per cent in adolescent girls with relative precision of 10 per cent at 95 per cent confidence interval.

To have an effective completion of study, a house-to-house survey was done from locality-to-locality till the desired study sample size was covered. During home visit, members of the family were listed and eligible persons i.e. adolescent girls

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aged 10-18 years were interviewed and examined and the rest 20 (3.5%) could not be covered due to their non-cooperative behaviour. Detailed information was collected on a predesigned and pretested proforma about socio-demographic characteristics and contributory factors in relation to anaemia by orally and supplemented by physical examination and haemoglobin estimation was done by Sahli's Haemoglobinometer. Anaemia was assessed by WHO criteria of anaemia.[4]

FINDINGS

Among 556 adolescent girls covered in the study, 203 were found to be anaemic with a prevalence of 36.5 per cent. The prevalence of mild, moderate and severe anaemia in adolescent girls was 19.4 per cent, 14.9 per cent and 2.2 per cent respectively.

The prevalence of anaemia was 49.2 per cent among the adolescent girls in scheduled castes as against 36.7 per cent in other backward class and 31.4 per cent in savarna Hindus ($p < 0.02$) (Table 1).

TABLE 1
CASTE-WISE DISTRIBUTION OF ADOLESCENT GIRLS AND PREVALENCE OF ANAEMIA

Caste Group	No. of Adolescent Girls	Anaemia Cases	Prevalence (%)
Savarna Hindu	312	98	31.4
Scheduled Caste	124	61	49.2
Other Backward Class	120	44	36.7
Total	556	203	36.5

$X^2 = 8.94$, df = 2, $p<0.02$

TABLE 2
PREVALENCE OF ANAEMIA IN ADOLESCENT GIRLS ACCORDING TO SOCIO-ECONOMIC STATUS

SES	PCI (Rs)	No. of Adolescent Girls	Anaemia Cases	Prevalence (%)
I Upper	> 1600	55	16	29.1
II Upper Middle	1000-1599	110	32	29.1
III Lower Middle	500-999	175	59	33.7
IV Upper Lower	200-499	151	65	43.0
V Lower	<200	65	31	47.6
Total		556	203	36.5

$X^2 = 10.8$, df = 4, $p<0.05$

The prevalence of anaemia was maximum in class V (47.6%) and significantly decreased with the rise in socio-economic status. The prevalence of anaemia being minimum in class I and II (29.1% each) ($p < 0.05$) (Table 2).

The prevalence of anaemia was found to be maximum 48.1 per cent in adolescent girls whose father's worked as labourers while it was 41.8 per cent in private service, 27.5 per cent in business, 38.4 per cent in government service and minimum 17.8 per cent in professionals ($p < 0.005$) (Table 3).

The prevalence of anaemia was maximum in adolescent girls whose mothers were educated upto primary level (53.6%) and prevalence progressively decreased with an increase in educational status of mother, being minimum, in adolescent girls whose mothers were graduate and above (25.2%) ($p <0.005$) (Table 4).

TABLE 3
PREVALENCE OF ANAEMIA IN ADOLESCENT GIRLS ACCORDING TO FATHER'S OCCUPATION

Father's Occupation	No. of Adolescent Girls	Anaemia Cases	Prevalence (%)
Labour	54	26	48.1
Private Service	160	67	41.8
Govt. Service	169	65	38.4
Business	145	40	27.5
Professional	28	5	17.8
Total	556	203	36.5

$X^2 = 14.2$, df = 4, $p<0.005$

TABLE 4
PREVALENCE OF ANAEMIA IN ADOLESCENT GIRLS ACCORDING TO MOTHER'S EDUCATION

Mother's Education	No. of Adolescent Girls	Anaemia Cases	Prevalence (%)
Illiterate	44	19	43.2
Just Literate	46	19	41.3
Primary	56	30	53.6
Middle (JHS)	98	40	40.9
High School	112	43	38.4
Intermediate	89	24	27.0
Graduate and above	111	28	25.2
Total	556	203	36.5

$X^2 = 19.55$, df = 6, $p<0.005$

DISCUSSION

The prevalence of anaemia in the age group of 15-18 years was 37.6 per cent as compared to 35.4 per cent in the age group of 10-14 years. Misra et al (1995)[5] in a study on adolescent girls of urban poor found that moderate to severe anaemia increased from 13.8 per cent to 22.7 per cent as the age increased from 9 to 18 years. Kocak et al (1995)[6] in their survey on the prevalence of anaemia, iron deficiency and hemoglobinopathies, found the overall rate of anaemia as 16.9 per cent with a high prevalence of 16.3 per cent in 14+ age group. Verma et al (1998)[7] in an urban school children at Punjab found that clinical pallor was detected in 44 per cent of children, however, as per haemoglobin estimation overall prevalence was 51.5 per cent. Girls had a significantly higher prevalence of anaemia except at 5 years and 10-12 years of age. More menarchical girls had anaemia as compared to non-menarchical ones. Agarwal et al (1998)[8] report on anaemia among adolescent girls indicates that incidence of anaemia increases from 10 years onwards and continues to remain high till 18 years of age.

The National Pilot Programme on Control of Micronutrient Malnutriton launched in 1995 by the Ministry of Health and Family Welfare (2000)[9] reported point prevalence of anaemia in various age groups and found to be high in both sexes. In adolescents, the prevalence rate of mild and moderate anaemia was also very-very high i.e., 65.8 per cent in boys and 81.3 per cent in girls with severe anaemia of boys 3.8 per cent and girls 6.0 %.

In the present study, the overall prevalence of anaemia was 36.5 per cent in adolescent girls, which is higher than the prevalence (34.5%) reported by Rawat et al (2000)[10] among adolescent girls in rural area of Meerut. But it is reported to be low as compared to 73.7 per cent reported by Misra et al[5] and multicentric study in 3 regions of India (Mumbai, Gujarat and Delhi)[11] which showed anaemia prevalence as 62-65 per cent, 57-65 per cent and 48-50 per cent

respectively in adolescent girls. The prevalence of mild, moderate and severe anaemia among adolescent girls was 19.4 per cent, 14.9 per cent and 2.2 per cent respectively in the present study while Rawat et al[10] reported 19.0 per cent mild, 14.1 per cent moderate and 1.4 per cent severe anaemia.

Table 1 shows high prevalence of anaemia in scheduled caste community, which could be due to lack of money, either due to poverty or more number of children in the family and lack of knowledge about child care practices. The prevalence of anaemia was 49.2 per cent among the adolescent girls in scheduled castes as against 36.7 per cent in other backward class and 31.4 per cent in savarna Hindus which is comparable to the study by Rawat et al[10] on adolescents girls in rural area of Meerut.

Reverse association was seen between socio-economic status and prevalence of anaemia in adolescent girls; lower the socio-economic status, and higher the prevalence of anaemia, being maximum (47.6%) in class V and minimum (29.1%) in class I and II. Thavraj and Reddy (1985)[12] noted iron deficiency among 20 per cent of healthy non-anaemic high income group children. Hence it is evident that a significant proportion of the apparently healthy children belonging to the higher socio-economic class suffer from overt anaemia and may have latent iron deficiency anaemia if not anaemic. The possible reason for this could be the poor bio-availability of iron in Indian diet. Kapoor and Aneja (1991)[13] noted prevalence of anaemia in 47 per cent of adolescent girls belonging to high socio-economic group and 56 per cent in lower middle class. In a study by Vasanthi et al (1994)[14], it was found that mean Hb showed a rising trend with improved socio-economic status and most of the children belonging to lower socio-economic status were anaemic. This may be because of better availability of high quality of food for children with better socio-economic status.

In a study by Verma et al (1998)[7] it was found that most of the children belonging to lower socio-economic group were anaemic. The striking finding was that 38 per cent of children of upper and upper middle class had anaemia. The prevalence of anaemia was high (71.5%) in the undernourished children but among well nourished group nearly half of the children (47.6%) were also anaemic. Even the mean Hb of both these groups was lower than WHO standard for the age. Rawat et al (2000)[10] in a study on anaemia in adolescent girls in rural Meerut found prevalence of anaemia to be more in class V (50.5%) and significantly decreased with the rise in socio-economic status.

As evident in Table 3 that fathers who were professionals had least prevalence of anaemia in their adolescent daughters, probably because they were able to give better quality of food to the adolescent girls. Rawat et al[10] observed anaemia in 44.0 per cent of adolescent girls whose fathers are labourers. Anaemia in 43.2 per cent of adolescent daughters of illiterate mothers was also observed in this study. Rawat et al[10] also reported that the prevalence of anaemia was more in adolescent girls who are illiterate (42.2%) and just literate (40.3%) mothers as compared to educated mothers. It shows a significant correlation between the level of parental education and girl's education. Particularly, the education of mothers is a significant factor for girl's education.

RECOMMENDATION

Extensive basic health and nutrition education about the following may be included in school curriculum:

- Importance of regular and adequate amount of iron rich foods or foods fortified with iron in the household diet.
- Use of traditional practices of cooking in iron vessels.
- Emphasis on regular consumption of vitamin C rich foods along with meals.
- Drinking tea and coffee at least half an hour before or after meals.

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IMPORTANCE OF SPIRITUAL HEALTH IN PUBLIC HEALTH SYSTEMS OF INDIA

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ABSTRACT

Health, today, cannot be conceived without including the dimension of spirituality in it. Today suicides, stress, anxiety, alienation, purposelessness and extreme levels of aspirations have become the style of life. Now formidable pressure is being felt to redefine the meaning of and interventions in public health in India. Empirical evidence is available in India and other countries to show a direct relation between spirituality, positive health and well being. This paper presents a review of existing literature on meaning of spiritual health, its measurement tools and bearing of spiritual thought and behaviour of patients in clinical practice. Rooted in the conceptual ideas in the available current literature, an operational definition of spiritual health has been worked out. Indicators of spiritual health functioning at cognitive, affective and behavioural levels have been determined. Suggestions for inducting spiritual health in the public health systems of India have been given at the end.

Body and mind are inseparable. A sound mind in a sound body and vice-versa is true. Health of the two is interlocked. Balance between the two is not only a sufficient but also a necessary condition for healthy and meaningful life. The WHO way back in 1958, defined health not merely as the absence of illness but as physical, mental and social well being as well. All these dimensions have to operate in harmony. There is a craving for peace and freedom from agonies of the life. In spite of the glaring progress on all fronts, be it medicine, surgery, science and technology, infrastructure, economic prosperity, access to tremendous material comforts, there exists a lag. Restlessness and purposelessness are widely discerned. Futility syndrome prevails heavily. What for? What after? Suicides are the regular feature in National Dailies. Whether public health? It is a major challenge. A formidable pressure is discerned to redefine the meaning and interventions of public health in the country.

In the present era, spiritual health assumes significant dimensions since anxiety and emotional discomforts are on rise.

There is a great need to heal one of resentment, jealousy, anger, ego,agony of existence and death anxiety to focus on higher dimension of work and healthful living. While as science depends on objectivity, spiritual health delves on inner self, consciousness, intuition and subjective factors. All these have a direct impact on physical health. 'Science gets us physical comforts, spirituality brings us

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mental calm'. (Dalai Lama 2006)[7]. Positive values, attitudes, beliefs and strength that one acquires through spiritual health practices contribute to the sense of well being, health and happiness. Empirical evidence is available to indicate a direct relation between religious involvement, spirituality and positive health outcomes. Spiritual health practices have a positive correlation with survival, low blood pressure, less remission time from depression, less number of cigarettes smoked per day per week, less severe medical illness, better quality of life, cooperativeness, lower Inter- Lukine-6 levels, etc. (Bansal et.al 2003)[4]. Researches suggest a positive relation between spiritual well being/practices and positive health outcomes, like greater self-confidence, assertiveness and fewer symptoms of anxiety and depression.

Evidence shows that spiritual well-being that positively related with self ratings of physical health and vitality. Spiritual health/ wellness is positively related with adjustment to dialysis treatment, cancer induced pain, but negatively to hypertension (Edward 2002)[8]. Studies in USA indicate that patients and physicians would like to consider spiritual health factors in the medical care and its assessment too. Studies in USA indicate a positive correlation between patients' spiritual/religious commitments and health outcomes and would also like physicians to consider these factors in their medical care practice. Subsequently, they have suggested spiritual health assessment as a first step in including patients' spirituality in medical care practice. A formal tool called HOPE has been designed for the purpose. Here H stands for sources of hope, comfort, strength, meaning, peace, love connections; O stands for role of organized religion for the patients; P stands for personal spirituality and practices; and E stands for effects on medical care(Anandarajah, G. et.al 2001)[2].

Lately much thought and attention has been given in academic and intellectual circles ***towards introducing spiritual health in the community.*** Improving spiritual health may not cure a disease but it does help one feel better, assume the role of a preventive measure and act as coping mechanism to deal with varied problems and challenges of healthful life.

What does Spirituality Mean?

Research studies have indicated that there is a 'God Spot' in human brain. It is a natural spiritual centre placed in neural connections in the temporal lobes. Special scans have revealed that these neural areas are lightened whenever the experimental group is exposed to interaction on spiritual issues. This indicates that there is an inbuilt craving for larger meaning Ramachandran (2000)[12]. Further Singer (2000)[14] study has revealed that a specific neural process exists in the brain which unifies and attaches meaning to our experience. These 'unifying neural oscillations' indicates a third type of thinking Unitive Thinking, dealing with the questions of meaning. Initially only two types of"brain neural organizations were recognized: One for IQ and another for EQ. "For IQ where serially connected neural tracts allow the brain to follow rules, to think logically and rationally step by step; for EQ, our emotion driven habit building intelligence ,where bundles of up to hundred thousand neurons are connected in a haphazard fashion to other massive bundles."

It has been realized that there is a difference between spirituality and religion. Religion is associated with formal organization whereas spirituality does not depend on institutional affiliation. Religion and spirituality are not same. Religion indicates an organized way to relate to the divine, situations, events and people. It focuses on controls and morals. Spirituality operates in private. It is intrinsic and chosen, though religion may sometimes act as a driving force. Religion is accessible at church/mosque/gurdwara or temple . Spirituality is a personal way of relating to the Divine, self, people and the world. Spirituality offers autonomy from institutions and provides an open ground to explore. In religion, people have difficulty in interactions - 'my way is right'. Craving for ego, power, control, prestige and arrogant authoritarianism may act as underlying currents of religion. Spiritual people have a common communication

flow. The words might vary in terms of individual, time, place and socio-economic set-up, yet acceptance is same in terms of distinctiveness of the people. Spirituality lies in the kind of religion about which Swami Vivevakananda (1993)[16] says; 'religion is not in doctrines, in dogmas, nor in intellectual argumentation; it is being and becoming'.

Operationally Defining Spiritual Health (SH)

There is no standard definition of *spiritual health* since it is relative and experiential. Nevertheless, an operational definition can be certainly evolved.

Mental health concerns the sense of well being and freedom from depression and mental illness. Good mental health indicates a harmony between cognitive, affective and behaviour domains---a balance between thinking, feeling and action.

Emotional health is the language of the state of Mental Health (MH) at affective domains. Through emotional health (EH) one expresses and understands the feelings of others and self and manages them constructively. EI also helps in directing strong feelings like love/hate towards inner being. It contains destructive feelings by using positive feelings like love, anger constructively and demonstrates the ability to laugh, relate and enjoy.

Spiritual Health (SH) does include mental health and emotional health but goes further. It also focuses on self-fulfillment, self-actualization, enlarging consciousness, unleashing creativity, wanting to go beyond 5 senses. Intuition is highest. These are more than thoughts, memories, emotions and other mental faculties. Spiritual people are at peace with themselves and focus on transcendental issues rather than obsession for material possessions. Dedication, devotion, faith in oneself, dealing easily with issues of death and death anxiety, faith, compassion, purity, charity, forgiveness, sharing , not hurting or harming, sacrificing for others, helping the needy, joint prayer, reflection prayer, yoga/meditation, laughter, music, lyrics are part of spiritual practices. Considering oneself as expression of higher reality leads to creativity, fearlessness, strength, setting new norms, and healing of resentment. Neither all spiritual people are religious, nor all religious people are spiritual.

Spiritual Health (SH) means Spiritual Intelligence or Spiritual Quotient (SI/SQ) put into practice. LI (Logical Intelligence)/or IQ is about rational, logical, rule bound thinking. EI (Emotional Intelligence)/EQ is about associative, habit bound, pattern recognizing, emotive thinking. *Spiritual Intelligence (SI)/spiritual quotient (SQ) "is about creative, insightful, rule making, rule breaking, transformative thinking" (Zohar and Marshell 2000)[17]*. Zohar and Marshall (2000)[17] mentioned nine(9) characteristics of SQ/SI : Self-awareness, vision and values led, the capacity to face and use adversity, to be holistic, diversity, field Independence(Courage) , the tendency to ask Why?, the ability to reframe and spontaneity.

Spiritual Intelligence (SI) is 'the ultimate intelligence'. *Spiritual Intelligence* could be said to operate at three levels for making it simpler to understand: *cognitive, affective and behavioral.*

1. COGNITIVE

It involves search for fundamental questions of existence, seeking answers for existential issues, meaning and purpose of life; and working beyond self. It also includes thinking of unrealized possibilities and transcend the given situations, events and people.

2. **AFFECTIVE**

It explores the issues related to peace and cheerfulness, compassion, empathy, fearlessness, love for nature, emotionally gratifying practices like active listening , getting healed of jealousy, ego anger and death anxiety and engaging in music , lyrics , laughter, art, painting, sculpture and dance.

3. **BEHAVIOURAL**

Seeks and does activities like yoga/meditation; practices forgiveness, truthfulness, altruism, uses suffering as an opportunity for growth, optimistic perspective, limiting obsessive material desires, moving away from rigid systems and practicing preventive health measures.

Available Assessment Instruments

Many scales and instruments are available for assessment of spiritual health;

A. Spiritual Well Being Scale (SWBS)

It was devised by Craig Ellison (2002)[6] in New York and has been widely used in various settings like universities, clinics, hospitals, clubs and federal prisons to assess diverse group like professional women, nursing and military personnel, atheist, elderly and others. The scale consists of 20 items within its two sub-scales: (i) Religious well-being reflecting on one's perception and feeling of God; (ii) Existential well- being focusing on one's sense of meaning and purpose in life. SWBS is reported to have a reasonable correlation with the Personal Orientation Inventory (POI). This inventory assesses self-actualization.

B. Spiritual Assessment Scale (SAS)

This scale was devised by Hamilton Beazley (2002)[5] at George Washington University involving 30 items. Spirituality in this scale has been defined as 'a faith relation with the Transcendent' referring to the spiritual qualities in organizational situations, like 'honesty', 'humility' and service to others.

C. Spiritual Assessment Inventory (SAI)

Johon Hell and George Edwards (2002)[10] designed it with the objective of measuring spiritual maturity. It is scored on a five point scale, including 43 items. It measures spiritual maturity and quality of life but the approach is limited in terms of Judeo-Christian emphasis.

D. Index of Core Spiritual Experiences (INSPIRIT)

This index was developed by Leon Kass in 1991 [(11)] in the area of mental health. It assesses two core elements of spirituality: one, experiences of an individuals which drives him to think that God is really there, second, one's feeling that God lives within him.

E. Myers-Briggs Type Indicator (MBTI)

In MBTI Peter Richardson (2002)[13] essentially assesses some workplace dimensions. However, it has an inbuilt potential for spiritual health assessment and planning. It is comprised of four (4) Jungian types. Each has a 'specific orientation or journey in life'. These are:

- The journey of unity (NT)
- The journey of devotion (SF)
- The journey of works (ST)
- The journey of harmony (NF)

'The first, the journey of unity, is that of the intuitive thinker (NT), comprising 12 percent of the population and exemplified by Buddha and Albert Schweitzer- along with the vast majority of theology professors. The second, the Journey of Devotion, is that of the sensing feeler (SF), comprising 38 percent of humanity and represented by Muhammad and St. Francis of Assisi. The third, the Journey of works, is that of the sensing thinker (ST), making up 38 percent of the population and typed is that of the intuitive feeler (NF), making up 12 percent of the population and exemplified by Jesus of Nazareth and the Indian writer Rabindranath Tagore.

Richardson contends that each type has a particular spiritual emphasis contemplation, compassion, social action, or self-actualization.

Suggestions for Inducting Spiritual Health in Public Health Systems of India

Many advances towards the physical health interventions both in terms of measurement and treatment as well have been made. India is no exception to that.

Efforts are also enormous in containing and treating mental illness and morbidity. But very little has been done by health scientists and health professionals on spiritual health of people which concerns their quality of life.

India, being a seat of spiritual thought, literature and practice, must take a lead in adopting a proactive approach to initiate spiritual health in the public health system. At present, spiritual health is mainly the domain of religious leaders in India. It is the high time that it should be urgently looked into by health professionals. There is an urgency to generate research and learning materials for the purpose which could enrich Indian and oriental philosophical thought; and evolve mechanisms to integrate spiritual health in public health systems of India. 'It is unfortunate that allopathy does not define spirituality while spiritual health should be a part and parcel of normal health'. "The time is ripe for us, the white apron community, to get exposed to the scientific aspects of Eastern philosophy, shift our approach from body to body mind and soul and start using it in our daily practice"(Aggarwal, 2008)[1]. 'One could be physically ill but still be mentally happy and content. In fact physical pain can be subdued by mental calm' (Dalai Lama, 2006)[7]. Yoga which has its roots in India 5000 years back could be inbuilt in formal and informal health systems and practice in India. Experimental physiological studies conducted show the prophylactic, promotive and curative potentials of yoga. Yoga strengthens the parasympathetic tone and stability of autonomic equilibrium and the stress responses are optimized in the process. Physical performance at sub-maximal level of work and cognitive function also improve through regular yoga practice. It has demonstrated therapeutic value in control and management of hypertension, coronary-artery diseases and diabeties. (Selvamurthy 2007)[15].

An effort towards definition, measurement and training in spiritual health has been made by Bansal and Sharma (2003)[4] in their study. They have made an attempt to quantify spiritual health in terms of biochemical measurements, quality of life parameters and religious activity parameters. NCERT has introduced the concept of spiritual health in the curriculum for school going children. A cross-sectional study was carried out at Government. Medical College and Hospital of sector (32), General Hospital of sector (16), in Chandigarh and Community Health Centre, Manimajra. (Goel et.al 2006)[9]. The results revealed that out of 150 health personnel, 72.4 percent believe strongly to very strongly that spiritual dimension exists, 24 percent of doctors and 16 percent of paramedics believed that spiritual dimension is the first priority in maintenance of health. About 73.34 percent doctors and 50.7 percent paramedics expressed the view that spiritually healthy person can cope better with illness. Similar results were revealed in a North Uttar Pradesh Study wherein 90 percent of the doctors felt the same. This also matches with the findings of two USA studies where 70 percent physicians reported that spiritual dimension is important in healthy subjects, diseased or terminally ill patients.96 percent of physicians expressed the view that spiritual well-being is important for health.(Goel et.al 2006) [9].

Since the onset of spiritual health in India, a few professionals have already made the humble beginning. We may take this opportunity to delve into the matter more profusely. A profound focus needs to be given in the following directions:

1. Evolve definition and indicators of spiritual health (SH) through empirical interventions.
2. Develop a Spiritual Health Assessment Scale (SHAS). Many such scales are available in USA and other countries. None is available in India.
3. Evolve strategies for introducing spiritual health in Indian health and community in India.
4. Evolve methods of integrating spiritual health with general health and medical care practice.
5. Suggest mechanisms, for orienting health professionals and key persons in spiritual health training.

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PATTERN OF SUBSTANCE ABUSE AMONG THE UNDERGRADUATE STUDENTS IN A MEDICAL COLLEGE HOSTEL

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ABSTRACT

This survey was carried out to study the pattern of substance abuse and the factors influencing its use by the undergraduate medical students staying in hostel. All the 266 hostel students were asked to answer, on voluntary basis without revealing their identity, to a self-administered, semi-structured question specially prepared for this study. As many as 235 students (88.3%) answered the questionnaire. Only 3 girls out of 71 had used alcohol on an experimental basis. Remaining girls reported that they had never used alcohol or any other substance anytime in their life.

Out of 164 boys, 68 (41.5%) reported to have used alcohol, 64 (39%) had smoked tobacco and 47 (28.7%) had used cannabis (Ganja or Bhang) at least once in their lifetime. 3 boys accepted that they had used opium, while one boy had experimented with Amphetamines and LSD. None of the students had used cocaine. It was also observed that the number of students using these substances increased with an increase in their seniority and students coming from extended joint families and students having a history of substance use in their siblings were at a higher risk of using these substances. Though, many of the regular users had tried to quit these substances, they had failed due to what they described as `lack of will power'.

Key Words: Substance Abuse, Medical Students, Hostel, High Risk Population

Substance abuse assumes a special significance among the medical students as they are the future medical practitioners and have a potential role in treating and counselling the patients of substance abuse disorder. This point is well emphasized by a number of studies conducted on this subject in different countries[1,2,3,4,5,6,7,8,9] So far, sparse data, are available for the substance use amongst medical undergraduates in the city of Mumbai where life is stressful and culture is more westernized. Studies conducted in other cities have shown that substance use is more prevalent in students staying in hostel[5, 6].

The information about the substance use in students can be useful in devising effective educational programmes for preventing the development of substance abuse disorder in this high-risk population[10, 11, 12].

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** RIMS, Ranchi

The present survey was conducted to gather information on the frequency and type of substance abuse, contributory factors and the attitude towards substance abuse among the medical students staying in hostel.

MATERIALS AND METHOD

The present cross-sectional survey was conducted among the undergraduate medical college students staying in the new hostel of LTMMC, Sion, Mumbai, during 2001. A pre-tested questionnaire was prepared; including information on socio-demographic characteristics (age, sex, type of family, native place and academic year,), pattern of substance abuse (type, frequency and age of onset) and attitude towards substance abuse (reasons for using, perceived ill effects and attempts to quit).

The substance abuse was operationally defined as follows:

(i) Never used – I have never used the substance.
(ii) Experimental users – I have not used the substance on a regular basis but have tried it once.
(iii) Occasional users – I used the substance few times in a year.
(iv) Frequent users – I used the substance few times in a month.
(v) Regular users – I used the substance few times a week.
(vi) Daily users – I used the substance almost daily.
(vii) Life time user-Includes users and those who have experimented with it.

The questionnaire was administrated to all the 266 students staying in the hostel, including 185 boys and 81 girls. Out of 266, only 235 students (88.3%) answered (164 boys and 71 girls). For the purpose of statistical analysis the students were divided into two groups viz. (i) Non-users (Never Used and Experimental Users) and (ii) Users (Occasional, frequent, regular and daily users).

The collected data were analyzed with the help of computer software for statistical analysis (SPSS). The odds ratio of substance abuse according to the seniority, urban/rural status, type of family and history of substance abuse in parents and siblings were calculated using multiple logistic regression analysis by simultaneously controlling for the potential confounding factors.

FINDINGS

The study population consisted of 235 students. The age range was 17–26 years. The mean age was 20.57 years. Only 3 girls (4.2%) out of 71 reported to have used alcohol on an experimental basis. Remaining girls reported that they had never used alcohol or any other substance anytime in their life.

Out of 164 boys, 68 (41.5%) reported to have used alcohol, 64 (39%) had smoked tobacco, 47 (28.7%) had used cannabis (Ganja or Bhang) and 30 (18.3%) had tried chewing tobacco at least once in their lifetime. 3 boys accepted that they had used opium while one boy had experimented with Amphetamines and LSD. None of the students had used cocaine (Table 1).

It is also evident from Table 1 that 49 (29.9%) students were using alcohol, 43 (26.2%) students were smoking tobacco and 23 (14%) students were consuming cannabis a few of times a year or more frequently (Students were grouped as `users': occasional, frequent, regular and daily users).

TABLE 1

TYPE AND FREQUENCY OF SUBSTANCE USE AMONG BOYS (N=164)

SUBSTANCE	NEVER USED	JUST TO EXPERIMENT	OCCASIONAL USE	LIGHT USE	MODERATE USE	HEAVY USE	TOTAL LIFE-TIME USE
	NON-USERS		USERS				
Cigarette	100 (61.0%)	21 (12.8%)	11 (6.7%)	7 (4.3%)	8 (4.9%)	17 (10.4%)	64 (39.0%)
Smokeless Tobacco	134 (81.7%)	18 (10.9%)	10 (6.1%)	1 (0.6%)	1 (0.6%)	0	30 (18.2%)
Alcohol	96 (58.5%)	19 (11.6%)	19 (11.6%)	24 (14.6%)	5 (3.0%)	1 (0.6%)	68 (41.5%)
Cannabis	117 (71.3%)	24 (14.6%)	14 (8.5%)	6 (3.6%)	2 (1.2%)	1 (0.6%)	46 (28.5%)
Heroin	161 (98.2%)	2 (1.2%)	0	1 (0.6%)	0	0	3 (1.8%)
Cocaine	164 (100%)	0	0	0	0	0	0
Amphetamine	163 (99.4%)	1 (0.6%)	0	0	0	0	1 (0.6%)
L.S.D	163 (99.4%)	1 (0.6%)	0	0	0	0	1 (0.6%)

FIGURE 1a

DISTRIBUTION OF BOYS ACCORDING TO SUBSTANCE ABUSE

Experimental users	25
Users	67
Never used	72

Table1a shows distribution of boys according to substance abuse (N=164). 72 boys never used substances, 25 tried just for experiment and 67 boys were users of substances. Thus, 92 boys were life-time users

.

FIGURE 1

TYPE AND FREQUENCY OF SUBSTANCE ABUSE AMONG LIFE-TIME USER BOYS (N=92)

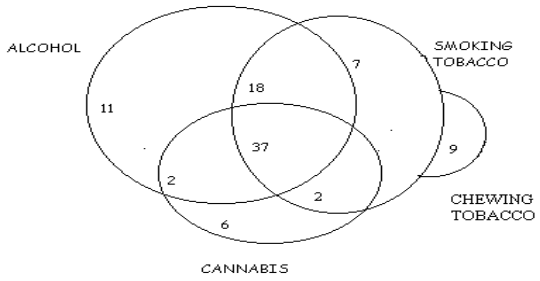

Figure1 shows the overlap of substance abuse among the boys. Out of 164 boys in all, there were 92 (56.1%) boys who had used one or more substances at sometimes in their life. 37 of these 92 boys (40.2%) had used all the three substances; alcohol, cannabis and tobacco (smoking) at least once in their lifetime while 55 of them had indulged in alcohol ingestion and smoking tobacco.

Out of 164 boys in all, there were 67 (40.9%) boys who were grouped as 'users'. 18 of these 67 boys (26.9%) had used all the three substances; alcohol, cannabis and tobacco (smoking), while 34 (50.7%) of them had indulged in alcohol ingestion and smoking tobacco.

The odds ratio of substance abuse among the students who were grouped as 'users' according to their seniority, urban/rural status, type of family and history of substance abuse in parents and siblings were calculated using multiple logistic regression analysis by simultaneously controlling for the potential confounding factors.

TABLE 2

THE ODDS RATIO OF SUBSTANCE ABUSE N=67 (INCLUDE USER AMONG BOYS)

Variables	Number of Students	% Users	Odds Ratio	Significance (P Value)
Academic Year				
1ST MBBS	46	15.2	1	
2ND MBBS	30	20.0	1.423 (0.398-5.087)	0.588
3RD MBBS	112	32.1	3.439 (1.292-9.154)	0.013*
Internship	47	38.3	3.859 (1.276-11.670)	0.017*
Rural/Urban Status				
Rural	17	35.3	1	
Urban	218	28.0	0.942 (0.284-3.125)	0.922
Type of Family				
Nuclear	163	25.2	1	
Joint	23	21.7	1.119 (0.366-3.416)	0.844
Extended Joint	49	42.9	2.729 (1.290-5.773)	0.009*
History of Substance Use Parents				
Absent	194	27.8	1	
Present	41	31.7	0.974 (0.427-2.225)	0.951
Siblings				
Absent	219	25.6	1	
Present	16	68.8	5.587 (1.765-17.687)	0.003*

(Figures in parentheses are 95 percent confidence intervals)
*Significant (P<0.05)

It is observed that the risk of substance abuse increased with an increase in seniority and was significantly greater in 3rd year MBBS students and interns. The risk was also found to be greater in students coming from extended joint families and in students having history of substance abuse in their siblings.

TABLE 3

THE REASONS CITED FOR SUBSTANCE ABUSE IN MEDICOS (N = 95)
(BOYS = 92, GIRLS = 3)

Reasons	Number of Students (%)
1. Curiosity	61.1
2. Celebrate Occasion	56.8
3. Company Sake	30.5
4. Relieve Tension	18.9
5. Escape Boredom	15.8
6. To be Sociable	13.4
7. To Kill Time	12.6
8. Peer Pressure	10.5
9. Show Off	10.5
10. Broken Affair	06.3

*Multiple responses possible

The students cited a variety of reasons for using these substances. The most common ones included `for curiosity', `for celebrating some occasion' and `for the sake of company'. Majority (75.3%) of the students reported that easy availability of these substances increased the frequency of substance abuse. Friends were the commonest source of introduction to all of the substances, the commonest place of use being the hostel room. Of the 'users' majority of the students reported that they started using the substance for the first time after joining the hostel.

TABLE 4

ILL EFFECTS OF SUBSTANCE USE PERCEIVED BY MEDICOS (N = 95)
(BOYS = 92, GIRLS = 3)

Perceived ill effects of the substance	Number of students (%)
1.No ill effects	53.6
2.Problems in physical health	20.0
3.Problems in academic performance	10.5
4.Problems in mental health	08.4
5.Problems in social relationships	06.3
6.Problems in family relationships	02.1

Majority of the students did not feel that the use of these substances would have any ill effects. Only less than 10 percents of the students thought that it can have undesirable effect on their mental functioning and family and social relationships.

TABLE 5

ATTEMPTS AT QUITTING THE USE OF SUBSTANCES (N=46)

Reasons for attempts at quitting	**Number of students (%)**
1. Do not enjoy	45.7
2. Effects on health	41.3
3. Cost	26.1
4. Messiness	21.7
5. Family pressure	8.7
Methods used for quitting	
1. Just stop	78.2
2. Gradual decrease	28.3
3. Set a date	10.9
4. Along with friend	10.9
Reasons for failure to quit	
1. Lack of will power	69.6
2. Stress	21.7
3. Not sure how to quit	17.4

Out of the 67 students, grouped as `users', 46 had made some attempts at quitting the use of these substances. They wanted to quit as some of them did not enjoy it and some were worried about the effect of these substances on their health. Majority of them had tried to quit the use by suddenly stopping it without any guidance or medical or psychiatric help. They attributed their failures to `lack of will power'.

DISCUSSION

The frequency of substance abuse found in the present study among the medical students staying in hostel was relatively low as compared to other similar studies.

In a study on substance abuse in medical students, the reported rate of substance use at least once in their lifetime was found to be 82.3 per cent in boys and 29.6 per cent in girls as opposed to 56.1 percent in boys and 4.2 percent in girls in the present study[8, 9].

Use of alcohol at least once in lifetime was found to be 30.2 per cent (71/235) ((41.5%)(68/164) in boys, and 4.2 per cent (3/71) in girls in the present study as compared to 89 per cent (Webb et al, 1996)[13], 57.8 per cent (Ponnudurai et al, 1984)[7], and 58.4 per cent (Singh, 1979)[8] in other similar studies.

Even the frequency of daily cigarette smoking was found to be only 7.2 per cent (17/235) in the present study as opposed to 30 per cent (Melani et al, 2000)[14], 11 per cent (Hussain et al, 1995)[4], and 30.8 per cent (Tandon et al, 1990)[15] in other studies.

The reported frequency of cannabis use at least once in lifetime in the present study was found to be 20.0 per cent (47/235) and in previous literature it varies from as low as 0.9 per cent (Zulfikar Ali and Vankar, 1994)[6] to as high as 23.2 per cent (Singh, 1979)[8] and 49.2 per cent (Ashton and Kamali, 1995)[16].

The wide variation in frequency of substance abuse among medical students observed in the literature and marked difference in frequency observed in the present study may be attributed to differences in population characteristics, socio-cultural background and differences in study methodology.

It was also interesting to note that students from extended joint families and students having history of substance abuse in siblings were at a higher risk of using these substances.

It was disturbing to note that more than half of the students (53.6%) did not perceive any ill effects of substance abuse; many continued their substance abuse though they did not enjoy it; none of them had ever sought a medical or psychiatric help for their substance abuse and most of them failed in their attempts to quit and attributed it to `lack of will power'.

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