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KNOWLEDGE, ATTITUDE AND BEHAVIOUR TOWARDS PRE-MARITAL SEX: A STUDY AMONG YOUTHS FROM TWO CITY-SLUMS IN INDIA

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ABSTRACT

Knowledge, attitude and behaviour towards pre-marital sexuality among 469 unmarried youths living in two city-slums (255 in Delhi and 214 in Lucknow) were assessed using a semi-structured interview schedule. It was observed that only 17 percent of the youth population was aware of safe-sex and 22 percent had the prior knowledge that even a one/first-time intercourse may lead to pregnancy. The prevalence of pre-marital sex among youths in Delhi slums was almost double (23.1%) than that found in Lucknow (12.1%). in both the cities, however, a higher percentage (75.3) of these youths were engaged in sexual activities albeit with a single partner. On an average, only 3.5 percent from both the cities admitted to have had sex with multiple partners. Need for sex education for youths was felt by 46 percent of the study population. The present findings, therefore, indicate that there is an urgent need for programmes on the aspects of practicing safe-sex targeting not only the youths from these areas but also their peers and parents who would be able to guide them properly in this direction.

Keywords: Pre-marital sex; Knowledge, attitude and behavior, Youths, City-slums, Sex-education.

Throughout the human history and in almost every society and culture across the globe, there exists the mutual sexual attraction between sexes, which takes its peak during adolescence. It has its own potential risks in the form of social, demographic, economic and health implications. Currently, in many societies, unmarried, single youths are sexually more active than what is commonly realized. Adolescents also maintain sexual relationships, even though cultu[r]al values in countries like India do not permit this.

There are several factors which encourage the pre-marital sexuality in cities; such as higher mobility and migration of younger people to towns and cities in search of jobs, massive urbanization resulting proliferation of slums, growing population, unemployment, influence of modern mass-media and information technology, better life-style, changing modes and erosion of traditional customs and social norms etc. The increase in pre-marital sexuality is also influenced by several other supportive developments. Improved nutrition and better health care brings puberty to

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begin at an early age. In general, girls enter puberty between the age 8 and 13 and reach menarche (first menstruation) early, while boys enter puberty between the age 9 and 14[1]. In contrast, age at marriage has gone-up considerably, especially in big cities, thus widening the gap between sexual maturity and marriage. Due to high cost of living in urban areas, the need for early employment among youths also provides more opportunity for long interactions between adolescenl males and females. As a result of staying outside their residences for prolonged working hours, females especially, in these areas, also get exposed to the risk of sexual exploitation.

There are other factors, which predispose premarital sexuality among adolescents These include children being left alone due to working status of both the parents and congestec housing with less privacy to couples resulting in unexpected early exposure to sex or sexua activities. Unmarried youths living in the slums are not well-educated and have poor knowledge or contraceptives and their proper use. These youths who indulge in pre-marital, unprotected sex with one or more than one partner are at a higher risk of HIV/AIDS or other Sexually Transmitter. Diseases (STDs) and unwanted pregnancy too.

Like many other married couples, unmarried youths do have negative attitudes of misleading information about contraceptives. While studying adolescent sexual behaviour, similai views were also reported by S. J. Jejeebhoy. This worldwide concern on pre-marital sexuality probably justified for the fact that it is a global crisis and appropriate strategies at the local leve need to be formulated to provide unmarried youths the access to necessary information, educatior and services for the practice of safe-sex. The present study was therefore initiated to find out the knowledge, attitude, awareness and practice of pre-marital sex among the unmarried youths in twc slum localities of New Delhi and Lucknow with the intention that appropriate intervention measures, i necessary, could be formulated and implemented.

MATERIALS AND METHOD

The data presented form a part of a larger study conducted by NIHFW during Octobe 1996 to September 1997. All unmarried male and female youths belonging to the 15-24 years age group were included in the study as per the standard definition of adolescents adopted by Work Health Organization (WHO).

Five slums each from Delhi and Lucknow were randomly selected for this purpose from the lists of slums supplied by respective slum wings of Delhi Development Authority (DDA) and Municipa Corporation of Lucknow. 50 youths were again selected from each of the five selected slums frorr each city using systematic random sampling protocol. Following scrutiny, incomplete schedules were not considered for final analysis. Focus group discussions (FGDs) were also conducted in the selected slums. In total, a random sample of 469 youths from slums of both the cities was selected for the study. The distribution of respondents against their sex and city of location is shown in Table 1.

TABLE 1
DISTRIBUTION OF RESPONDENTS BY SEX AND CITY LOCATION

Sex / City	Male	Female	Total
Delhi	**178**	**77**	**255**
Lucknow	**143**	**71**	**214**
Total	**321**	**148**	**469**

FINDINGS AND DISCUSSION

Knowledge and Awareness on Reproductive Health and Contraception

Awareness about sexual health remained patchy and misconceptions were common amongst the adolescents in these areas. Many young people believed that women cannot just become pregnant at one sexual debut; symptoms of infection would subside on their own; one can clearly identify STD infected persons by their appearance; pregnancy can occur through physical embrace/hugging; or infections can be prevented by good personal hygiene.

Their knowledge on the use of condom, human reproduction, safe-sex practices and other related issues are presented in Table 2. The process of menstruation in females is a physiological phenomenon and it occurs at regular intervals. Regular menstruation is the prerequisite for pregnancy to occur and this knowledge regarding menstrual cycle was assessed amongst the respondents. Only 37.3 percent of the respondents found to have correct knowledge of the menstrual cycle.

There were several myths regarding sex found prevailing among the youths. It was reported by some of the youths that pregnancy is not possible till both the partners have orgasm. During FGD, some expressed that conception depends on the forcefulness of penetration. To the question, "Whether first act of sex can cause pregnancy?" only 21 percent of the youths could answer it correctly. Youths from Delhi were better educated on the knowledge of safe sex (29%) as compared to their counterparts in Lucknow (13.6%). Knowledge of early symptom of pregnancy was also found to be very minimal among the respondents. Youths described the change in style of walking in females as one of the symptoms of pregnancy.

Replying to the question "Can sex during menstruation cause pregnancy?" only 38.8 percent of the respondents (41.6% in Delhi, 35.5% in Lucknow) responded negatively indicating their poor knowledge on the matter. When asked to comment on the fertile period of a normal woman, it was found that only 6.6 percent could answer it correctly. Youths in Delhi were found to be more aware (10.6%) than their counterparts in Lucknow (1.9%) on this aspect.

Respondents were asked about the concept of safe sex as lack of adequate knowledge on this aspect may expose them to the risk of unwanted pregnancy and infections from sexually transmitted diseases and even HIV/AIDS. It was found that only 17.1 percent of the total youths could explain that safe-sex means prevention of unwanted pregnancy and also sexually transmitted infections (STIs) while only 20 percent of the youths had the correct knowledge on the dual benefit of using condom and 34 percent had only a theoretical knowledge on either of its uses

(Table 2). About 16 and 17 percent of the subjects expressed that condom use prevents only pregnancy or only STD/AIDS respectively.

Assessing the knowledge and awareness about HIV/AIDS, it was found that 47.8 percent of the youths knew that AIDS cannot spread by kissing and 63 percent knew that it is neither caused by holding hands or through physical contact. One-third of the youths (33.3%) were aware of the fact that AIDS is not curable and the ultimately death. Longer hospitalization (16.3%), huge expenses involved in the treatment (15%), social stigma(14.4%) were some of the other consequences mentioned by the respondents. About 38 percent of the total respondents were unaware of its consequences (Table2). Similar findings were also reported by Rangaiyan et al.

TABLE 2
KNOWLEDGE ON SELECTED ASPECTS IN REPRODUCTIVE HEALTH AND CONTRACEPTION

City / Knowledge	Delhi		Lucknow		Total	
	N (255)	%	N(214)	%	N (469)	%
About basic use of condom	53	20.8	22	10.3	75 80	16.0
a) Prevents pregnancy	58	22.7	22	10.3	99	17.1
b) Prevents STD/AIDS	68	26.7	31	14.5	.218	21.1
c) Both	76	29.8	139	65.0		46.5
d) Don't know						
Regarding menstrual cycle	83	32.5	92	43.0	175	37.3
That sex during menstrual cycle can't cause pregnancy (right knowledge)	106	41.6	76	35.5	218	60.0
Regarding fertile period	27	10.6	4	1.9	31	6.6
That even first time intercourse can cause pregnancy	74	29.0	29	13.6	103	22.0
Regarding safe sex (i.e. sex which is free from the risk of unwanted pregnancy and STD/AIDS)	48	18.8	32	15.0	80	17.1
That AIDS doesn't spread by	159	62.4	65	30.4	224	47.8
a) Kissing	204	80.0	94	43.9	298	63.5
b) Holding hands						

N ()- Number in parentheses indicate the number of subjects

Attitude and Behaviour towards Pre-mairtal Sex

Respondents were asked whether kissing, caressing and dating among youths are common and do they feel anything unusual abjout it. A total of 31.3 percent youts expressed that there is no harm indulging in kissing; caressing and dating while 23 percent disagreed on the isse. A large majority, however, remained undecided.

When asked to respond,"Whether they approve sex before marriage?" It was found that only 19.4 percent of the youths approved it in contrast to 37.3 percent disapprovals. Again, amoderately high percentage (43.3%) were found undecided on the issue(Table 3)

While replying to the question whether contraceptives should be provided to unmarried youths, about 44 percent of youths in Delhi and only 20 percent in Lucknow replied in affirmative. In total, around one-third (32.8 %) of slum youths observed that contraceptives should be made available to unmarried youths too.

While there is widespread consensus that adolescents need adequate (better quality) sex education, there is often controversy over what content is appropriate for dissemination at different ages, and who are to be targeted for optimal delivery of this information. Almost every country in the world has initiated sex education programmes, mainly in school and college settings, but youths often describe these programmes as unresponsive to their concerns. Moreover, many young people are not in the schools for countries like India and therefore the reach and impact of such programmes have remained limited. Non-governmental organizations (NGOs) have taken up this challenge in big way and introduced many innovative sexuality education strategies throughout India, such as; community-based education, counseling centers that offer services individually or in groups, and by correspondence, telephone hotlines, anonymous letter-boxes, peer-led activities, mass media and web-based activities etc.

When respondents were asked to comment on the sex education and the age at which it may be introduced, 46.1 percent of the total youths favoured the introduction of such a programme (56.1% in Delhi, 34.1% in Lucknow). More than fifty percent (55.1%) of the youths recommended the appropriate age for providing sex education to be between 15 to 18 years, which alternatively can be initiated from high school onwards (Table 3). The issue has been widely discussed and appropriately agreed in the working paper series on reproductive health prepared by Verma et al. Sathe also expressed similar views on the introduction of sex education in the schools.

It was brought out during Focus Group Discussions that due to the poor financial conditions, youths (boys and girls) start working in factories and other unorganized sectors. Sometimes they work together for longer hours which make both sexes to come closer emotionally and as a result sexual relations also develop. It emerged that boys start experimenting with sex when they earn money while in job and girls from poor families sometimes fall prey to the lure of money and suffer from sexual exploitation by their employers at the place of work. Opinions from male and female respondents on this aspect are shown in Table 4.

Almost 11 percent of the total respondents from both the cities admitted to indulge in kissing/caressing while a large percentage of youths, 48.2 percent (Delhi-34.9%, Lucknow-64%) preferred not to respond. This group might be consisting of people suspected to be involved in such practices but due to some reasons or other they did not come out in the open. If we combine both "Yes" and "No Response" categories, the percentage climbs up to 59 percent, which may be considered as alarming. Those respondents who accepted to have been involved in kissing/caressing with the friends of opposite sex, 72 percent (82.3% in Delhi, 60.9% in Lucknow) opined that they were on their way to develop sexual relations with female friends. This has implications for making condoms and other contraceptives easily available in these areas so that unwanted pregnancies are prevented.

TABLE 3

ATTITUDE/OPINION OF YOUTHS TOWARDS PRE-MARITAL SEX AND CONTRACEPTION

City / Opinion regarding **PMS**	Delhi		Lucknow		Total	
	N (255)	%	N (214)	**%**	N (469)	**%**
Contraceptives should be provided to unmarried youths	111	43.5	43	20.1	154	32.8
Kissing, caressing and dating among youths is common and nothing unusual about it						
Agreed	104	40.8	43	20.1	147	31.3
Disagreed	59	23.1	49	22.9	108	23.0
Undecided	92	36.1	122	57.0	214	45.6
Approved sex before marriage						
Agreed	52	20.4	39	18.2	91	19.4
Disagreed	104	40.8	71	33.2	175	37.3
Undecided	99	38.8	104	48.6	203	43.3
Sex education should be given to unmarried youths	143	56.1	73	34.1	216	46.1
Age recommended for sex education (years)						
<11	01	0.7	00	0.0	01	0.5
11-14	10	7.0	15	20.5	25	11**.6**
15-18	79	55.2	40	54.8	119	55.1
18+	49	34.3	18	24.7	.67	31.0
No response	04	2.8	00	0.0	04	1.9

TABLE 4

PRACTICE OF PRE-MARITAL SEX AMONG YOUTHS in THE SLUMS OF DELHI AND LUCHNOW

City / **Sexual Behaviour**	**Delhi**		**Luchnow**		**Total**	
	N (255)	**%**	**N(214)**	**%**	**N (469)**	**%**
Ever had kissing and caressing with friend(s) of opposite sex						
Yes	27	10.6	23	10.7	50	10.7
No	139	54.5	54	25.2	193	41.2
No response	89	34.9	137	64.0	226	48.2
If yes, are you in the way to develop sexual relations with this/these friend(s)						
Yes	22	82.3	14	60.9	36	72.0
Ever Involved in pre-marital sex						
Yes	59	23.1	26	12.1	85	18.1
No	120	47.1	97	45.3	217	46.3
No response	76	29.8	91	42.5	167	35.6
If yes, who are usual partners						
Same gender	16	27.1	02	7.7	18	21.2
Opposite gender	42	71.2	22	84.6	64	75.3
Multiple partners	01	1.7	02	7.7	03	3.5

When respondents were asked whether they ever had sex, nearly 18 percent of them replied in affirmative. It was found that more youths in Delhi (23.1%) compared to Lucknow (12.1%) were involved in pre-marital sex. Again, a very high percentage of youths (35.6%) preferred to abstain from giving any response to this question. Assuming that this group has concealed facts, then the prevalence of pre-marital sex among slum youths might be as high as 53.7 percent and surely is a cause of concern. The use of condom during such sexual contacts was also reported less than one-fifth in aggregate.

Maximum number of youths (75.3%) admitted to be engaged in sex with a single partner of opposite sex. It was higher in Lucknow (84.6%) than in Delhi (71.2%). But even then this does not exclude the group from the risk of contracting STDs and AIDS because it may be the individual respondent who is involved with only one partner but the same may not be true for the opposite partner. Further, 21.2 percent of the youths was found to have engaged in homosexuality, a relatively high percentage and needs to be addressed accordingly. 27.1 percent in Delhi and 7.7 percent of the respondents in Lucknow reportedly admitted their indulgence with the same gender sex, mainly male-to-male. Only 3.5% of the youths admitted that they are indulged in sex with more than one partner, higher in Lucknow (7.7%) than in Delhi (1.7%).

The above findings justify the need for programmes that apprise parents and peers to guide adolescents' life style and sexual health needs while at the same time equipping adolescents to make informed, safe and wanted choices in their sexual behaviour.

Recommendations and Policy Implications:

The above findings tend to suggest that in slums, opportunities do exist for sexual exploitation, sometimes with adverse consequences for young people's health and lives. Liaisons tend to be secretive and awareness of safe sex and the use of condoms are limited. Parental perceptions and their confidence to control and protect their adolescent children from dangerous relationships are clearly unfounded as opportunities unfold for increasing interactions among young people. Indeed, interaction and intimacies between boys and girls occur quite frequently and adolescents report a host of opportunities available to them for such sexual exploitations. The following are the recommendations based on the study findings:

- Special programme for awareness generation in slums may be organized at a large scale. The government may create more recreational and sports facilities on a community basis, thus diverting youth's attention in other healthy areas and keeping them constructively busy in mind and spirit.
- Programmes aimed at reproductive/sexual health awareness among youths should also address the importance and influence of peer-pressure in such activities The strategy of educating peer groups in reproductive health programme looks very promising and should be promoted in the slums. The related research, policy and programmatic issues in this area are well documented (Peter Xenos, 1993).
- To cater to the reproductive health needs of youths adolescent clinics and counseling centers near slums may be opened up with the help of State Government, Municipal Corporations or NGOs.

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एक पूर्व–निर्मित साक्षात्कार प्रश्नावली की सहायता से दो शहरों की मलिन बस्तियों में रहने वाले 469 (दिल्ली 255 और लखनऊ 214) अविवाहित युवाओं में विवाह–पूर्व यौन संबंधों के बारे में उनके ज्ञान, व्यवहार एवं आचरण का आंकलन किया गया था। अध्ययन से यह देखने में आया कि केवल 17% युवा सुरक्षित यौन संबंधों के प्रति जागरूक थे और 22% को यह ज्ञात था कि प्रथम ⁄एक बार सम्भोग करने से गर्भ ठहर सकता है। दिल्ली की मलिन बस्तियों में रहने युवाओं में विवाह–पूर्व यौन संबंधों का प्रचलन लखनऊ (12-1%) की अपेक्षा लगभग दुगना (23-1%) पाया गया था। किन्तु दोनों शहरों में अधिकतम युवाओं (75-3%) के एक ही सहभागी के साथ यौन संबंध थे। दोनों शहरों में औसतन 3-5 % युवाओं ने यह माना था कि उनके यौन संबंध कई सहभागियों के साथ थे। अध्ययन मेंशामिल युवाओं में से 46% द्वारा यौन शिक्षा की आवश्यकता महसूस की गई थी। अतः अध्ययन से प्राप्त निष्कर्ष न केवल इन क्षेत्रों के युवाओं के लिए बल्कि उनके माता–पिता तथा सहयोगियों कव लिए सुरक्षित यौन संबंधी पहलुओं के बारे में गहन कार्यक्रम चलाने की आवश्यकता की ओर इशारा करते हैं।

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AN EPIDEMIOLOGICAL ANALYSIS OF OUTBREAK OF MEASLES IN A MEDICAL RELIEF CAMP

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ABSTRACT

Measles outbreak in April 2002 at the Godhra Medical Relief Camp, Gujrat, was analysed through epidemiological information collected from wards of children with measles or suffering from acute febrile illness with or without rashes. Out of the 1070 persons staying in the camp, 339 (32%) were children below 14 years. As per the District Health Officer's report, a total of 46 cases of measles were reported by 25 April 2002. From the 34 cases studied at the camp site, 19 (56%) were boys and 15 (46%) were girls with age ranging from 7 month to 5 years (mean 2.1 years). Only 3 children were observed to have received some vaccination at 9 months of age. Complications in 30 affected children were mainly due to malnutrition, anaemia and respiratory infections. None of the children at the camp reportedly suffered from diarrhoea and not a sjngle death was reported due to measles or measles-related complications. These findings substantiate the fact that disturbed social conditions, close contacts at the camp, low nutritional and immunization status among children are the factors which probably influenced the rapid transmission of the virus at campsites and near by areas. Further, the study recommends the need for improvement in the immunization coverage among children up to 5 years of age and a repeat dose of the vaccine in the form of MMR to all children above 15 months of age in such areas.

Keywords: Measles outbreak, Relief camp, Epidemiology, Mortality, Two-dose vaccination.

Measles, one of the vaccine preventable diseases, continues to be an important cause of morbidity and mortality worldwide. The recent measles outbreak in UK (London), Australia (Victoria), Japan (Tsu), India (Orissa, Chandigarh) and other places highlights the worldwide rise in measles infection and the challenge to meet the goal of Atlanta Declaration for reducing the disease and disease associated mortality by half (from estimated 30 million cases of measles and about 90,000 deaths each year due to measles) by the year 2005 and ultimately trying to eliminate the measles infection. The chances of such disease outbreak among children in a relief camp are very high due to close contacts of people living in the camp and dynamics of the moving populace coupled with the risk of importing organisms by visitors and other persons. The mortality due to measles is also reported to be more during such outbreaks.

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Measles outbreak at Godhra (Gujarat) medical relief camp was studied in the present work with the objective of analysing the epidemiological information on the cases of measles through an on-the-spot evaluation of children (for diagnosis, disease manifestation and complications) and to formulate guidelines for a better management of such outbreak in future.

MATERIALS AND METHOD

In the month of April 2002, communal riots broke out in Godhra (Ahmedabad) and nearby areas. As a result, a large number of people shifted to the relief camps for safety. Medical relief work was provided in these camps by the Indian Red Cross Society, State Health Services and by a team of doctors from the Central Health Services stationed at the National Institute of Occupational Health (NIOH), Ahmedabad.

Following the measles outbreak, a team of paediatricians, coordinators and local health administrators visited the Godhra Camp on April 27 2002. All the reported cases of measles available at the time of visit were evaluated at the campsite. In addition, children who were suffering from acute febrile illness with or without rashes were also examined in detail. The information regarding camp organization, children at the campsite and their problems with respect to the infection and related illness, immunization status of children, availability of drugs and the provisions of emergency care were also evaluated. The diagnosis of the measles was based on the history of acute febrile illness, coryza and appearance of skin rashes on the body including the face on the 4th/5th day of illness followed by post-exanthematus skin staining. The data were recorded on a pre-designed proforma and subsequently analyzed at the National Institute of Occupational Health.

FINDINGS

Camp Organization: Godhra town is situated about 150 Km away from the State capital Gandhinagar. The Godhra Camp No.1, where the researchers visited, was situated at Iqbal High School Plan Bazaar, Godhra. The camp started functioning on 7 April 2002. There were six main sections of the Camp, namely- (i) residential section, (ii) dispensary area with two beds and provision for I.V fluid/drug administration, (iii) separate provision for Kitchen and dining, (iv) sanitation area with mobile type of latrines, (v) store and (vi) chlorinated water storage area. Each area was thoughtfully designed keeping in mind with the problems of the summer season. The camp was divided into small cubicles by curtains for the purpose of maintaining individual privacy. However, children were allowed to mix freely with each other especially during the meal times. The camp was managed with the help of doctors and paramedical staff of the State Services and volunteers from the local area. Ambulance services were also available at the campsite round the clock.

Population Survey: As on 27 April 2002, a total of 1070 people were staying at the camp. 339 children (32%) were less than 14 years of age; 107 (32%) were <5 years and 232 (68%) were between 5 and 14 years of age (Table 1). This was the floating population registered at the camp. The in and out movement of the people was solely at their discretion and without any restriction.

TABLE 1
AGE AND SEX DISTRIBUTION OF CHILDREN AT THE CAMP

AGE GROUP (years)	MEASLES		OTHERS		TOTAL
	boys	girls	boys	girls	
0-1	1	1	9	8	19
1-5	18	22	25	23	88
>5	6	1	114	111	232
Total	25	24	148	142	339

Measles and Related Illness at the Camp: The District Health Officer reported a total of 46 cases of measles till 25 April 2002 at the campsite. Thirtyfour of them were available for clinical evaluation on the day of the visit. Following examination, 3 cases were excluded, one on account of diagnosis of chicken pox and two for other illnesses not related to measles, as confirmed by no post-exanthematus staining and the illness lasting only for 3 days. After screening the rest of the children, six cases of active measles were detected on 27 April 2002. Of the thirtyfour cases that were clinically evaluated at the campsite, 19 (56%) were boys and 15 (46%) were girls. Their age ranged between 7 months to 5 years, with a mean age of 2.1 years. The children with measles belonged to nearby 15 villages of Godhra, Panchmahal and Kheda Districts. Most of the children were from Natapur, Randikpur and Salia villages.

Immunization Status: The record of immunization was not available for evaluation. On parental questioning, it was found that most of the children were either partially immunized or not immunized at all against vaccine preventable diseases prior to entering the camp. There were only three children who had received some vaccination when they were 9 month-old. The process of immunization against measles was started on 12 April 2002. As per the policy, it was decided to immunise all the children between 9 and 59 months of age. There were 5 children between 6 and 9 months of age who were not immunized. However, they were also immunised subsequently in view of the outbreak. A total of 107 children under 5 years of age (6-59 months) had received the measles vaccine by 27 April 2002 (Fig.1). Measles, EZ Strain, 1000 cc vaccine was used for immunisation. The vaccine vials were stored at the District Headquarters and were taken to the campsite in cold boxes with ice packs on the day of vaccination.

Complications and Treatment: On clinical evaluation, 30 children were found to have developed measles-related complications. Malnutrition and respiratory complications were most frequent (Table 2). No death was reported due to measles or measles-related complications. All cases with bronchopneumonia were treated with Cefotaxime and Amikacin injections intravenously administered by paramedical staff/doctors. Children with other infections were treated with oral antibiotics. Most of the drugs were made available at the campsite. All the children with measles were also given a single oral dose of Vitamin A, 1-2 lakh units.

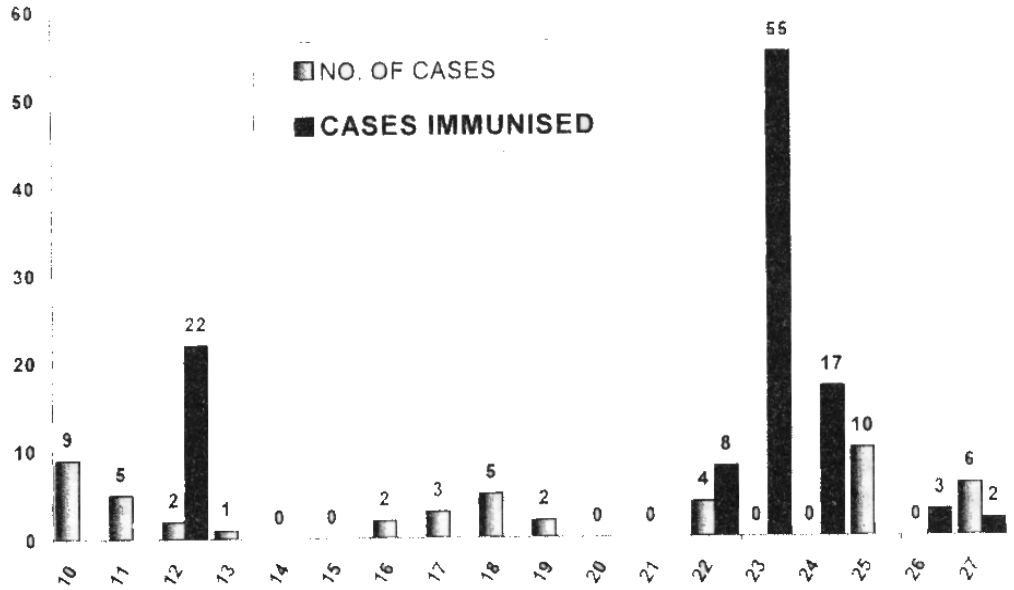

Fig.1: Distribition of measles cases and the number of children immunised during 10-27 April 2002

TABLE 2

MEASLES-RELATED COMPLICATIONS IN CHILDREN AT THE GODHRA RELEIF CAMP

Complications	No. of children (34) and %
Undernutrition	27 (79%)
Bronchopneumonia	17 (50%)
Otitis media	05 (14.7%)
Persistent rhinitis	09 (26.5%)
Anemia	06 (17.6%)
Vit. A deficiency	05 (14.7%)
Diarrhoea	Nil
Conjunctivitis	02 (5.9%)

DISCUSSION

Because of the disturbed social conditions, a large number of children with low nutritional status who were either partially immunized or not immunised lived together in close contact at the camp setting. Usually, onset of summer increases the number of measles cases. Thus, the prevailing conditions of the children and the summer conditions were probably enough to start a chain reaction for such a outbreak. In such a setting, it was not practically possible to either isolate the affected children or the families. The susceptible hosts were not from the Godhra (Panchmahal District) locality alone but also from the adjoining geographical areas and even from the nearby districts of Gujarat such as Dahod and Kheda. The families were forced to flee from their houses to reside in the camp because of the disturbed circumstances.

When the cases of measles were brought to the notice of the health authorities, steps were taken to control the outbreak. By 27 April 2002, all the 107 children below the age of 5 years were immunized. However, on close examination of the immunisation process at the camp, it was found that the 72 children who were immunized on 23 and 24 April 2002, could have been immunized before which would have helped in reducing the number and spread of measles cases. Five children who were in the age group of 6-9 months should have also been provided vaccination at the time of entry to the camp. Though as per the National Immunization Schedule, measles vaccination is recommended at 9 months of age, in a high-risk situation prevailing at the camp site with children residing in close contact to each other, immunization of children even between 6 and 9 months of age is also reportedly recommended.

More than 80 percent of the children had measles related complications, commonest being the respiratory infections. In India, median value of fatality ratio for measles has been reported to be 2.5 percent, which increases only during outbreaks. No death was reported due to measles or measles-related complications in the current outbreak. Also, not a single case of diarrhoea among children was reported from the camp. This strengthens the fact that effective management steps were indeed taken at the camp during the outbreak of the disease.

More than 90 percent immunization coverage is absolutely necessary for the prevention of measles virus transmission in the community. In India, the reported measles immunization coverage ranges from 13.3 percent in Bihar to 95 percent in Goa with a National Average of 64.2 percent for the year 2000-2001. As reported, the country is yet to achieve the immunisation coverage of more than 90 percent[8]. The inadequate vaccination coverage seems to be the main reason for such outbreaks. However, even after achieving the target 90 percent, it may not be possible to avoid such outbreaks with one dose strategy presently adopted, due to high contact rate and a higher infectivity of the disease. During 1985 to 1988, many outbreaks were reported from the schools in USA, even though the immunisation coverage was reportedly more than 90 percent for measles. Therefore, it may be wise to use a two-dose strategy of immunisation with a repeat dose of vaccination in the form of MMR to all children beyond 15 months of age.

This on-the-spot rapid assessment report of measles cases at Godhra and nearby areas highlights the urgent need for improvement of immunization coverage in children up to 5 years of age and makes a case for consideration to switch to a two-dose measles vaccination strategy which may provide a better protection to children during such outbreaks.

Lkkjk'k

गुजरात में गोधरा मेडिकल राहत कैम्प के बाल–वार्डों में अप्रैल 2002 के दौरान खसरा रोग से प्रभावित अथवा चकत्ते सहित/रहित गंम्भीर ज्वर से प्रभावित बच्चों के बारे में एकत्र सूचनाओं का विश्लेषण किया गया था। कैम्प में रह रहे 1, 070 व्यक्तियों में से 339 (32%) बच्चे 14 वर्ष से कम आयु के थे। जिला–स्वास्थ्य अधिकारी द्वारा दी गई रिपोर्ट के अनुसार 25 अप्रैल 2002 तक खसरे कव 46 केस देखे गए थे। केम्प–स्थल पर अध्ययन में शामिल 34 केसों में से 7 माह से 5 वर्श की आयु (मध्य आयु 2.1 वर्ष), – 19 (56%) लड़के थे और 15 (46%) लड़कियां थी। यह पाया गया कि 9 माह की आयु के केवल 3 बच्चों को कुछ टीके लगे थे।

प्रभावित 30 बच्चों में मुख्यतः कुपोषण, रक्ताल्पता एवं श्वसन संबंधी संक्रमण के कारण समस्याएं देखी गई थी। कैम्प में कोई भी बच्चा अतिसार रोग से पीड़ित नहीं था और खसरे या खसरे से संबंधित समस्याओ से एक भी मृत्यु नहीं हुई थी। अध्ययन से प्राप्त निश्कर्शों से इस तथ्य की पुष्टि होती है कि कैम्प–स्थल और आस–पास के क्षेत्रों में संभवतः वायरस के तीव्र संक्रमण के मुख्य कारक अशान्त सामाजिक स्थितियां, बच्चों में पोषण और प्रतिरक्षण के निम्न स्तर हैं। इसके अतिरिक्त रिपोर्ट में 5 वर्ष से कम आयु के सभी बच्चों के टीकाकरण के कवरेज में सुधार की आवश्यकता और इन क्षेत्रों में 15 माह से ऊपर की आयु के बच्चों को एमएमआर टीके की खुराक दुबारा दिए जाने की सिफारिश की गई है।

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HEALTH-RELATED QUALITY OF LIFE (HRQOL) AMONG THE ELDERLY IN NORTHERN INDIA

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ABSTRACT

Aging is a universal phenomenon associated with deteriorating socio-psycho-physiological changes. Absence of information on health-related quality of life (HRQOL) among the Indian elderly is mainly due to lack of an appropriate health-related index covering comprehensibly both the basic concept and definition. The present study was, therefore, undertaken to develop a HRQOL measure (scale) and to test the same among the Indian elderly populace (>60 yrs) with respect to various socio-demographic factors and against the standard validation obtained through parameters on health scale and morbidity status. A cross-sectional survey chosen by a cluster sampling technique consisting of 200 elderly subjects (100 each from rural and urban areas) was carried out from July 1999 to April 2000 in the urban and rural areas of Chandigarh city. The mean HRQOL score among the study population was 70.1 ± 14.1. Almost 62 percent of the elderly had HRQOL score above a median of 69. A majority (52 %) of the subjects categorized as 'distressed by the perceived health inventory (PHI) scale were also fated as poor by HRQOL instrument developed for the purpose. Psychological well-borng (0.85), disability (0.82) and social support (0.71) were found to have almost identical influence on HRQOL score. The correlation of HRQOL with morbidity score (assigned by a physician following clinical examination of the elderly) was r=0.62, df--198, p<0 01. In univanate analysis, a better HRQOL was seen among those in the ;ower age group, literates, urban residents end those with high personal income and living in large households. In multivariate analysis, HRQOL was found significantly associated with age (b value- 0.22, at 95% confidence interval 0.003-0.51), sex (b value- 6.3, at 95% confidence interval 1.32-11.46) and occupational status (b value-1.68, 95% confidence interval 1.06-2.31). The reproducibility and validation of the measure was found to be satisfactory. The HRQOL measure developed here will be helpful for those engaged in making policy and programme strategies for improving the quality of life among the elderly population.

Keywords: Quality of life, Elderly, HRQOL, Socio-demographic variables.

The number of elderly in the developing world is increasing due to demographic transition, whereas their condition is deteriorating as a result of fast eroding traditional family system coupled with rapid modernization and urbanization'. These changes are expected to affect

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the quality of life of the elderly. Chronic disabling conditions that often accompany aging are associated with increased prevalence of social and psychological disturbances. Hence, factors such as health status, extent of disability, perceptions about illness, available social support and psychological well-being are considered as important in determining the quality of life of elderly.

Health and quality of life (QOL) are inter-linked. WHO has defined health as a dynamic state of physical, psychological, social and spiritual well-being and not just an absence of infirmity. This is a new holistic perspective, but unfortunately, such an approach has not been applied pragmatically. Though the basic definition of quality of life is undisputed, the key dimensions and domains still elude many working in the field[3]. The World Health Organization describes QOL as a broad-ranging concept that incorporates individual's physical health, psychological state, level of independence, social relationships, personal beliefs and their association to salient features of the environment. There is still a need for well-constructed quality of life instruments that address a broad range of concepts, populations and conditions. The WHO HRQOL tool has limitations of having a lengthy scale and has not been validated countrywide.

Based on these concepts, efforts have been made to develop measures for assessing health status and quality of life of elderly. There are a number of instruments available to measure health related quality of life (HRQOL). Most researchers agree on the multidimensional nature of the construct of QOL, yet there is considerable debate whether outcome measures should have a multidimensional structure. There are two approaches to the development of QOL measures. The psychometric approach attempts to provide separate measures for many dimensions of QOL, while the decision theory approach attempts to weigh the dimensions of health in order to provide a single/unitary expression of health status.

Most studies have assessed the health status of elderly persons in terms of physical dimensions alone. Absence of information on health-related quality of life among Indian the elderly is due to the absence of an appropriate QOL measure that would cover the basic concept and definition of health comprehensibly. It is, therefore, felt that for proper programme planning, health-related quality of life needs to be evaluated in holistic terms and various factors that influence the 'Quality of Life' in elderly populations needs to be elucidated in a systematic manner. In the present study, therefore, it was decided to prepare a scale that could measure HRQOL in all dimensions, and to evaluate the same among elderly from rural as well as urban areas.

METHODOLOGY

Sample Population

This cross-sectional study was carried out among elderly above 60 years of age, in urban and rural populace of Chandigarh city. With the help of a cluster sampling technique, a sample of 200 subjects was included in the study population.

From the total 56 sectors, 5 sectors were selected randomly in the Chandigarh city. From each of the four parts of the sector, one house was selected. Starting from the first house, every next nearest house was surveyed till five subjects were enrolled. Similar procedure was applied in remaining parts of the sector. In this way, 100 subjects were enrolled from 5 sectors. To enroll 100 subjects from the rural area, one district of Haryana was selected close to Chandigarh City. Five

villages were chosen randomly from one of the sectors of Rani Community Development Block, Raipur. With the help of village key informants, sampled villages were geographically divided into four parts. From the center of each geographical part, a direction was chosen at random. All houses in the chosen direction were given numbers. One house was chosen randomly and starting from this house, every next nearest house was surveyed till five subjects were enrolled for the study. Same procedure was repeated for selecting subjects from other geographical parts of other villages

HRQOL Scale preparation

The development of the scaie basically involved incorporation of standardized questions with some modifications from rapid disability rating scale-2, psychological well-being inventory and social support inventory (Table 1). All items of rapid disability rating scale-2 were incorporated as such. Part A of the scale has dealt with activities of daily living (ADL); walking, mobility, bathing, dressing, toileting, grooming, adaptive tasks, and eating and Part B which assessed the degree of disability as a result of natural process of ageing; basically in communication, hearing, sight, diet, locomotion, continence and physical health making a person dependent on medication, mental efficiency and psychological well-being with a combined score ranging from 18 to 72 To measure structure of psychological distress and well-being, twelve items were chosen and adopted from the psychosocial well-being inventory having a possible score range of 12 to 48. From the social support inventory,10 items were chosen and adopted to measure the social support available to an elderly from within the family, outside the family in different situations and at times of distress This inventory has a possible score range of 10 to 40. All the items in the 3 scales were scored on a four point rating scale, where 1 means that the subject needs no assistance in ADL or has no disability, psychologically well-adjusted and receives a good social support; while 4 means the person who has to be fully assisted by others in performing activities of daily living or a person who is totally disabled with speech, senses, bladder/bowel functions, physical and mental functions, psychologically poorly adjusted and has a poor social support. Finally, a scale was constructed combining disability, psychological and social well being parameters to assess HRQOL with a score range of 40 to 160

TABLE 1

CORRELATION MATRIX: CORRELATION COEFFICIENT AMONG VARIOUS SCALES

	RDRS-**2**	PWBI	SSI
RDRS-**2**		0.56	0.32
PWBI			0.49
SSI			

(For all values $p < 0.01$, RDRS-2: Rapid disability rating scale-2, PWBI: Psychological wellbeing inventory, SSI: Social support inventory)

Reliability and Validity of HRQOL Scale

To see whether various parts of HRQOL scale, i.e., disability, psychological and social well-being have any relationship with each other, a correlation matrix has been prepared so that the scores obtained in various parts of the scale can be logically added, to compute a composite

score called HRQOI. Score Table 1 shows correlation between various scales used in assessing HRQOL. Inter-scale correlation shows that each scale is positively correlated with the other two scales ($p<0.01$). The correlation coefficient ranges from 0.32 to 0.56. it shows only iow to moderate degree of overlap, justifying their relative independence, meaning thereby that they cannot be substituted or replaced by other scales or items in spite of having some commonality among each other. Thus, they all contribute to quality of life of the elderly.

To validate the findings of HRQOL, a standardized perceived health inventory (PHI) developed by Wig and Verma[9] was used. This inventory basically measures perceived health and has the ability to differentiate 'distressed' from 'non-distressed'. It also measures symptoms that are actually perceived by the subjects and are recognized by the doctors. It has an added advantage that it can be used with illiterate, unsophisticated population and also has high internal consistency, reliability and validity. It consists of 38 items divided into two parts, part A (physical) having 16 items with a possible score range of 0 to 16, and part B (mental) having 22 items with a possible score range of 0 to 22, both with yes/no responses. According to PHI scale, a perceived health score of more than 9 infers that either the subject suffers from some form of physical distress or psychological distress or both, indirectly meaning that either the subject perceives his health as good if the score is less than or equal to 9 and bad if the score is more than 9. Based on the PHI scores, elderly are divided into two groups, i.e., those having PHI score of more than 9 and those having less than or equal to 9. In order to find out the validity of the HRQOL scale, the scores in these two groups were compared along with the morbidity parameter.

Data Collection

The eligible subjects were interviewed at their residence by a physician between July 1999 and April 2000. After recording their socio-demographic data, their perceived health status was assessed with the help of Perceived Health Inventory. A general physical examination was also carried out to determine their morbidity status. The HRQOL questionnaire was then administered. Four subjects refused to participate in the interview without giving any specific reason.

Analysis

For computing the HRQOL, all the scales were scored in such a way that higher the scores achieved by elderly, the poor is the HRQOL. The ranges, mean, S.D and median were computed. A frequency distribution of HRQOL score according to sex and locality was also tabulated. A correlation matrix was prepared to measure the strength of the association between various parts of the HRQOL scale, i.e., disability, psychological well being and social well-being. Relationship between various socio-demographic factors and HRQOL score was tested using analysis of variance (ANOVA). Further, a multivariate analysis was carried out to determine those variables that were independently associated with HRQOL after controlling the confounding factors. Chi-square test was used to test the significant difference in categorical variables and unpaired *t* test was used to test the significance in quantitative variables. Statistical analysis was carried out using SPSS computer software package.

FINDINGS

Socio-demographic Characteristics

Socio-demographic profile of the study population is presented in Table 2. The mean age of the sample was 70.7 years. Fortynine percent of the subjects were male. Thirtyone percent were leading a widowed life, 2.5 percent were unmarried and only one subject was found divorced. Majority belonged to upper castes. Sikhs and Christians were relatively in greater proportions in urban areas compared to Hindus and Muslims in rural areas ($p<0.001$). Majority of the females were housewives. Significantly higher proportions of men were in retired category in urban compared to the rural area ($p<0.001$). Seventy percent of the subjects were illiterate in the rural compared to 19 percent in the urban area. In the urban area, majority (37%) of the subjects had a personal earning source through the service pension scheme. In contrast, a majority (55%) of the rural populace was obtaining income support with the help of an old-age/widow pension scheme The mean income of families in the urban was higher compared to the rural area ($p< 0.001$).

Assessment of Health-related Quality of Life (HRQOL)

The mean HRQOL score was 70.1 ± 14.1 with a median score of 69. The score ranged from 42 to 116. Most of the subjects (27.5%) had HRQOL score in the range of 61 to 70, followed by 25 percent in a score range of 51 to 60. A majority (62 %) of the elderly was above the median score (Table 3). Sex and locality wise differences in the HRQOL scores were net found to be significant. The effect size statistics association of various determinants influencing quality of life, with HRQOL score showed that psychological well being (0.85), disability (0.82) and social support (0.71) almost had identical influences on HRQOL.

Table 4 shows the relationship of the HRQOL score with socio-demographic factors As the age of the subjects increased, their HRQOL deteriorated ($p<0.01$). On the basis of caste and religion, difference in HRQOL score was not found significant. Poor HRQOL was seen among those who were workers (skilled and unskilled), and those unable to work. Subjects with low education or illiterates were found to have a low HRQOL compared to the literates ($p<0.001$). While correlating the personal income with HRQOL score, it was shown that the lower the personal income of the subjects, the poor was the HRQOL ($r = 0.19$, $df = 198$, $p < 0.05$) score. As the household size increased, the social support to the elderly person also increased, which in turn improved the HRQOL of subjects ($p<0.05$). Univariate analysis findings showed that socio-demographic variables like age group, occupation, education; personal income and size of household have significant association with the HRQOL of elderly subjects. Using multiple regression analysis, it was found that variables like age, sex and occupation were strongly associated with HRQOL (Table 5).

TABLE 2

SOCIO-DEMOGRAPHIC PROFILE OF ELDERLY ABOVE 60 YEARS OF AGE

Socio - demographic characteristics	**Urban n =** 100		**Rural n =** 100	
	Male (49)	**Female (51)**	**Male (49)**	**Female (51)**
Age group (years)				
61-64	11 (22.4)	22 (43.1)	6(12.2)	19(37.2)
65-69	14 (28.5)	8(15.6)	10 (20.4)	14(27.4)
70-74	7(14.2)	9(17.6)	12(24.4)	3(5.88)
75-79	9(18.3)	3 (5.8)	10(20.4)	7(13.7)
80-84	3(6.1)	5 (9.8)	7(14.2)	3(5.8)
85-89	3(6.1)	2 (3.9)	4(8.1)	2 (3.9)
90+	2(4.0)	2 (3.9)	0	3 (3.8)
Marital Status				
Unmarried	1(2)	0	4(8.2)	0
Married	35(71.4)	28(54.9)	36(73.5)	33 (64.7)
Widowed/Divorced	13(26.5)	23 (45.1)	9(18.4)	18(35.3)
Caste				
Schedule Caste/ tribe	6(12.2)	8(15.7)	13(26.5)	12(23.5)
Other backward caste	11(22.4)	7(13.7)	5(10.2)	9(17.6)
Upper caste	32 (65.3)	36 (70.6)	31 (63.3)	30 (58.8)
Religion				
Hindu	34 (69.4)	39 (76.5)	44 (89.8)	47 (92.2)
Muslim	1(2)	1(2)	2(4.1)	2 (3.9)
Sikh	12(24.5)	10(19.6)	3(6.1)	2 (3.9)
Christian	2(4.1)	1(2)	0	0
Occupation				
Household work	4(8.2)	40 (78.4)	2(4.1)	39 (76.5)
Cultivator	0	0	19(38.8)	1(2)
Service	9(18.3)	2 (3.9)	3(6.1)	1(1.9)
Worker	0	0	5(10.2)	1(1.9)
Business	3(6)	0	0	0
Retired	27 (55.1)	0	4(8.2)	0
Unable to work	6(12.2)	9(17.6)	16(32.7)	9(17.6)
Education				
Illiterate	4(8.2)	15(29.4)	24 (49)	46 (90.2)
Informal education	0	12(23.5)	5(10.2)	1(1.9)
Primary (1-5)	3(6.1)	8(15.7)	6(12.2)	2 (3.9)
Middle (6-8)	10(20.4)	8(15.7)	11 (22.4)	0(0)
Matric(9-10), Secondary(11-12)	22 (44.9)	8(15.7)	3(6.1)	2 (3.9)
Graduate/ Professional	10(20.4)	0	0	0
Family				
Nuclear	12(24.5)	12(23.5)	9(18.4)	6(11.8)
Joint	35 (71.4)	38 (74.5)	39(79.6)	45 (88.2)
Alone	2(4.1)	1(2)	1(2)	0
Personal Income (Rs.) Mean (S.D.)	3837.7 (3357.8)	681.7 (1721.8)	570.3 (814.99)	141.1 (143.07)
Family income (Rs) Mean (S.D.)	12473.4 (9756)	12450.9 (7063)	3746.9 (4046.5)	2998 (3169.6)

Figures **in** parentheses are in percentage or SD)

TABLE 3
FREQUENCY DISTRIBUTION OF HRQOL SCORES AMONG THE ELDERLY

HRQOL Score	Male (n= 98)	Female (n = 102)	Urban (n= 100)	Rural (n =100)	Total (n = 200)
41-50	4	4	5	3	8 (4.0)
51-60	29	21	31	19	50 (25.0)
61-70	26	29	27	28	55 (27.5)
71-80	19	I 28	24	23	47 (23.5)
81-90	11	10	4	17	21 (10.5)
91-100	5	4	5	4	9 (4.5)
101-110	2	6	3	5	8 (4.0)
111-120	2	0	1	1	2 (1.0)

(Figures in parentheses are in percentage)

DISCUSSION

Assessment of quality of life in population surveys has challenged investigators to develop an index for its measurement. Various surveys for assessing the quality of life of elderly population often include a wide range of generic health status scales that have served as the basis for many subsequent public health and epidemiological studies. A consensus is now developing to include broader measures of health with implications on social and psychological dimensions.

The method of assessment of HRQOL applied in our study is quite unique and different as compare to other studies[1011]. Various studies have assessed HRQOL using a single scale i.e., SF-36, WHO QOL-100, Geriatric Quality Of Life questionnaire[10] (GQOL) etc that covered different dimensions of health. Due to specific disadvantages of these scales of either being too long or having a cultural mismatch for trial in our our community, a scale was developed here to overcome these drawbacks and at the same time logically arriving at a conclusion to assess HRQOL covering all the dimensions of health. The GQOL often fails to show any advantage in testing either responsiveness or validity through the existing generic instrument. Many other areas of concern like effects of various disabilities, social factors etc, are also not covered in this instrument.

A generic instrument was, therefore, prepared to measure HRQOL by combining the disability, psychological well being and social well-being scale covering all the basic dimensions of health. Part of the instrument, culturally and language-wise, was adopted with item reduction to eliminate redundant or inappropriate items while relevant ones were maintained preparing psychological well-being inventory and social support-inventory. This helped to improve the face validity of the scale and to make it more user-friendly to administer to the elderiy subjects. The instrument prepared was validated against a standard instrument, i.e., Perceived Health Inventory (PHI) having a high reliability, validity and reproducibility which classifies subjects, on the basis of their well-being, either physically and psychologically distressed or not. The distress occurring in a subject refers to his/her health state, which basically arises as a result of the undergoing pain, anxiety, depression, reaction to illness or disability, which would directly or indirectly, have an impact on the HRQOL of the subjects. Table 6 shows that 105 subjects were having a PHI score of more than 9 while 95 subjects had a score less than or equal to 9.

TABLE 4
RELATIONSHIP OF HRQOL SCORE AMONG* THE ELDERLY WITH SOCIO- DEMOGRAPHIC VARIABLES

Socio-demographic Factors	N	Total score Mean (SD)	p value
Age group (yrs)			
61-64	58	66.2 (10.7)	*
65-69	46	67.5 (12.5)	
70-74	31	69.7 (12.6)	
75-79	29	73.9 (14.4)	
80-84	18	72.5(17.3)	< 0.01
85-89	11	80.6(11.1)	
90+	7	82.2 (28.9)	
Marital Status			
Unmarried	5	67.4 (13.6)	
Married	132	68.6(12.8)	<0.05
Widowed / Divorced	63	73.4 (16.2)	
Occupation			
Household work	85	67.0(10.4)	
Service (PvL/Govt.)	15	63.8 (8.4)	
Worker	6	80.0(12.6)	
Farmer	20	62.8(10.0)	< 0.01
Business	3	54.3 (2.0)	
Retired	31	67.7(14.8)	
Unable to work	40	83.9(14.6)	
Education			
Illiterate	89	75 2(13.4)	
Informal education	18	67.3 (8.8)	
Primary	19	67.4 (14.6)	
Middle	29	65.6(10.7)	< 0.01
Matric to Secondary	35	64.5(12.4)	
Graduate / Prof.	10	75.3(17.8)	
Personal Income (Rs)			
No income	64	68.8(11.0)	
1-500	68	77.2(15.2)	
501 -1000	13	62.2(12.9)	
1001 -1500	6	64.1 (12.0)	< 0.01
1500+	49	64.6(12.7)	
Household size			
1-5	86	68.7(12.8)	
6-10	88	72.7(15.1)	< 0.029
11-15	20	68.8(13.3)	
16 +	6	55.3 (7.2)	

TABLE 5

MULTIPLE REGRESSION ANALYSIS OF HRQOL SCORE WITH SOCIO-DEMOGRAPHIC VARIABLES

Socio-demographic variables	B value	95% CI B	p value
Age (years)	0.22	0.003, 0.51	<0.05
Sex	6.30	1.32,11.46	<0.05
Residence	2.30	-2.33,6.94	0.32
Martial status	0.41	-3.58,4.42	0.83
Caste	-0.41	-2.07,1.24	0.62
Education	-0.81	-1.98,0.35	0.16
Occupation	1.68	1.06,2.13	<0.001
Religion	-0.24	-2.88,2.38	0.85
Personal income	-3.59 E-04	-0.001,5.99 E-04	0.46
Family size	0.16	-0.36,0.69	0.54

Subjects with PHI score of more than 9 but having a poor perceived health also had poor health-related quality of life. The difference between these two groups was found to be statistically significant ($p< 0.001$) (Table 6). Physical and mental part of the PHI scale correlated very well ($r=0.70$, $p<0.05$) with different parts of the HRQOL scale. HRQOL score among elderly strongly correlated with morbidity ($r = 0.62$, $df = 198$, $p<0.01$). As a part of validation process, opinion of a psychiatrist and psychologist was also considered. It may be concluded that the instrument designed and used in this study to assess HRQOL is a valid instrument. It is brief containing 40 items, simple to use and also reflects the person's priorities and preferences as outlined by Ray et al.

TABLE 6

HEALTH RELATED QUALITY OF LIFE (HRQOL) VERSUS THE PHI SCORE

PHI Score	Subjects	HRQOL Score	
		Mean	SD
0-9	95	61.7	9.9
>9	105	77.7	13.0

(Kruskal - Wallis H test = 76.11, df = 1. $p < 0.001$, PHI- Perceived health inventory)

Casado J. et al showed that HRQOL among the elderly women significantly deteriorated with increasing age as compared to elderly men. These included people who either lived alone or without partner and also those who had more number of chronic diseases In our study, similar findings were observed except that women did not show significantly poor HRQOL compared to men.

Most elderly persons in the rural area, both skilled and unskilled workers, had non-salaried employment. As most of them had a poor family background and lived in poverty, they continued working as long as they can for the need to generate money to support their family. Continuous long hours of work accompanied with onset of new morbidity in old age have a deleterious effect on the health status associated with poor nutritional intake. This, in turn causes

physical and psychological distress associated with onset of disabilities, leading to the decline in the HRQOL of elderly subjects. Those belonging to 'unable to work' category, either due to chronic debilitating illness, physical disabilities or mental illnesses were found to be housebound or bed ridden. Poor physical health and dependency compromises the psychological well-being, thus affecting a decline in the HRQOL of elderly subjects. Burstrom et al[13] have shown that after controlling for age, sex and disease, HRQOL is found to be lower in manual than in non-manual groups.

It is obvious that elderly having a poor economic support will be unable to maintain their heath. With new morbidities and a poor physical health, these elderly would show a deteriorating HRQOL score. However, it is not felt that with the rise in the personal income, the HRQOL would also improve. This is because of the fact that whatever the elderly earn, they are likely to spend it for supporting their family keeping themselves in a disadvantaged position. Our findings are similar to studies by Michelson et al. in which adults aged 18-79 years with multiple chronic health problems showed a significant reduction in the HRQOL score. The increase in the number of health problems was also associated with age. Low income and unemployment were found to be associated with greater decline in HRQOL with respect to an increasing number of health problems among the respondents.

As the size of the household increases, the number of caregivers and supporters of the elderly also increase, thus allaying their loneliness, depression and thus improving their psychological well being. Increase in the number of caretakers improves the nursing care to the elderly, which in turn, positively effects HRQOL. Similar findings were reported by Tseng et al in a study among elderly wherein social support from families, frequency of family interaction and social support from nursing aides had a significantly positive effect on quality of life. Finally, with regard to other socio-demographic variables, it was noted that the sex was not significantly associated with HRQOL as per univariate analysis. But, after controlling for the confounding factors and using a multivariate analysis, it was found to be significantly associated with HRQOL (b value-6.30, 95% CI, 1.32-11.46). Age was found to have significant association with HRQOL both in uni- and multivariate analysis (b value-0.22, 95% CI, 0.003-0.51). Other variables like marital status, caste and religion did not show statistically significant association with HRQOL in elderly subjects ($p > 0.05$).

Garrison in a study of quality of life of rural families showed that socio-economic-demographic variables such as gender, race, marital status, employment status, residence, age, family income and household size differentially affected the quality of life sub-scales. He showed that household size was the most important predictor of subjective well being. In contrast, the present study also noted that most important predictors of HRQOL were age and occupation. Tseng et al[15] observed that activities of daily living, social support from family and nursing aids; physical function and socio-economic status were significant predictors in quality of life with an extent of variance of 39.5 percent.

Helping users to interpret HRQOL scores has been a recent research activity as the meaning of these scores is not entirely related to biology nor it is particularly intuitive. Meaning must be understood through knowledge as to how the scores relate to familiar measures or to other clinically or socially relevant variables. Ware and Keller have proposed several strategies that are related to validation techniques and include content, construct, and criterion

approacnes as well as use oi normative information. Disliibulion-based interpretation considers the means and standard deviation of changes observed in a study and compares them to the means and standard deviation of a reference population. Anchor based interpretation suggests that scores on HRQOL measures must be compared to other clinical changes or to population norms. Our study used a distribution-based interpretation approach in interpreting and understanding HRQOL. The strategy to analyze the scales basically relies on the rating and scoring of the items in increasing severity so that the scores obtained in different scales for each subject can be added together and mean and median scores for the total sample size may also be easily obtained.

Limitation of the study is the administration of the schedule, which requires trained personnel. Also the instrument that attempts to be comprehensive (globally) may also fail to assess adequately a dominant symptom or preoccupation[21]. The quality of life assessment is a complex measurement because of its dynamic nature. In other words, a person's attitude towards a particular component of a HRQOL measure may change through such psychosocial phenomena of adaptation, coping or expectation. If this occurs, it is difficult to disentangle the real change from that arising due to a change in attitude or standards.

Strength of our study is that the results are obtained directly from the community and also the HRQOL of elderly subjects is assessed by personal interviews with broader measures, i.e., functional disability and psychological and social support. Compared to this, most other studies were conducted on elderly in Institutions, Senior Citizen Centres or Old-age Homes or conducted by phone, postal survey mode and not covering all the dimensions of HRQOL. Since our data is directly from the community it can be used as a basis for planning and for conducting subsequent epidemiological studies. The reproducibility, validity and responsiveness of schedule were tested successfully and the discriminative and evaluative properties of the schedule were again confirmed.

The problems of the elderiy are highly individualistic and vary from region to region with changes m the socio-cultural milieu. It is recommended that more database on health status, morbidity, disability, quality of life and existing pattern of care for the aged should be collected and evaluated from different areas, for proper programme planning and policy interventions in order to improve the HRQOL of elderiy.

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वयोवृद्धि, बिगड़ते सामाजिक–मनोवैज्ञानिक–शारीरिक परिवर्तनों से जुड़ी एक नैसर्गिक प्रक्रिया है। भारतीय वृद्धों के जीवन संबंधी स्वास्थ्य गुणवत्ता के बारे में सूचनाओं का मुख्य कारण है, वयोवृद्धि संबंधी बुनियादी अवधारणा तथा परिभाषा आदि सहित स्वास्थ्य संबंधी उपयुक्त सूचकांक का उपलब्ध न होना। इसलिए वर्तमान अध्ययन का संचालन जीवन के बारे में स्वास्थ्य संबंधी गुणत्ता का मानक विकसित करने के लिए तथा इस मानक का भारतीय वृद्ध जनंसख्या

(> 60 वर्ष) से जुड़े विभिन्न सामाजिक–जनांकिकीय पहलुओं के बारे में परीक्षण करने के लिए और स्वास्थ्य मानक तांम रूग्णता स्तर संबंधी पैरामीटरों के माध्यम से प्राप्त मानक वैधता के संदर्भ में जांच करने के लिए किया गया था। चण्डीगढ़ के ग्रामीण क्षेत्रों में जुलाई 1999 से अप्रैल 2000 के दौरान 200 बुजुर्गों (ग्रामीण और शहरी क्षेत्रों में प्रत्येक से 100) पर क्लस्टर सैम्पलिंग तकनीक द्वारा यह अध्ययन किया गया था। अध्ययन से शामिल जनसंख्या की जीवन की स्वास्थ्य संबंधी गुणवत्ता का औसत स्कोर 70.1± 14.1 था। लगभग 62: प्रतिशत बुजुर्गों की जीवन की स्वास्थ्य संबंधी गुणवत्ता का माध्यिका स्तर 69 था। उपलब्ध स्वास्थ्य सूची (पीएचआई) स्केल के आधार पर अधिकांश बुजुर्गों (52:) जिन्हें 'पीड़ित' श्रेणी में वर्गीकृत किया गया था, को इस अध्ययन के उद्देश्य से विकसित जीवन की स्वास्थ्य संबंधी गुणत्ता प्रणाली के आधार पर कमजोर पाया गया था। मनोवैज्ञानिक कुशलता (0.85), अपंगता (0.82) और सामाजिक समर्थन (0.71) का जीवन की स्वास्थ्य संबंधी गुणवत्ता स्कोर पर एक समान प्रभाव पाया गया था। जीवन की स्वास्थ्य संबंधी गुणवत्ता के साथ रूग्णता स्कोर का सह संबंध (बुजुर्गों की डाक्टरी जांच के बाद) R = 0-62, df= 198, p< 0-01 पाया गया था। एकचर विश्लेषण में पाया गया गया कि निम्न आयु वर्ग और शिक्षितों, शहरो में रहने वालों और उच्च व्यक्तिगत आय तांम बड़े परिवारों में रहने वाले बुजुर्गों के जीवन की स्वास्थ्य संबंधी गुणत्ता उच्चतर थी। बहुचर विश्लेषण में यह देखा गया कि जीवन की स्वास्थ्य संबंधी गुणवत्ता का संबंध उल्लेखनीय रूप से आयु से (b value- 0.22 at 95%] विश्वास अंतराल 0.003–0.51), लिंगभेद (b value- 6.3 at 95%] विश्वास अन्तराल 1.32. 11.46) और व्यावसायिक स्तर (b value-1.68, 95%) विश्वास अन्तराल 1.06–2.31 था पुनरूपादनीयता और वैधता मानक संतोशजनक पाये गये थे। जीवन की स्वास्थ्य गुणवत्ता संबंधी विकसित मानक बुजुर्गों का जीवन स्तर सुधारने के लिए नीति एवं कार्यक्रम रणनीति निर्माताओं के लिए सहायक सिद्ध होगा।

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KNOWLEDGE, ATTITUDE AND PRACTICE FOLLOWING DOG BITE: A COMMUNITY-BASED EPIDEMIOLOGICAL STUDY

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ABSTRACT

Rabies, which is mainly caused by dog-bites, is always fatal and has no cure. But data on dog-bites and people's knowledge, attitude and practice related to such cases are not properly studied at the community level. The present work is a cross-sectional study of the rural community residing in 3 randomly selected villages attached to a Primary Health Centre- Dayalpur, under the Central Rural Health Scheme (CRHS) Project, Ballabgarh, a rural field practice area of the Centre for Community Medicine (COM), AIIMS, New Delhi. Households (10%) were selected randomly and interviewed for incidence and KAP regarding dog-bites. The dog-bite rate in the area was 25.7/1000 population per year. Two-third of the cases were in the 5-45 age group and there was a rise in the rate of dog bites with increased age. Bites in males were more than females. Half of the bites were reported in summer months. However, 40 percent of such cases did not seek any prophylaxis treatment. Half of them used chili powder to the affected parts immediately after the bite. 80 percent of the bites were found categorized as ciass II or III. Bites on legs were the commonest. Majority knew that dog bites could cause death but did not have the right knowledge of the incubation period of the virus. Most of them knew that injections were available to prevent Rabies at the District Hospital. Fifty percent of those interviewed replied that they would visit the Hospital for treatment after the dog bite. Most of them preferred to kill the dog after being bitten. About 25 percent had the wrong notion thai treatment for rabies is available. Equal number of bites was reported both from the pet and stray dogs. Around 50 percent of those affected, received at least one dose of Tetanus Toxiod. Out of these, only half had sought treatment for prophylaxis. Of those receiving prophylactic treatment, 70 percent received nerve tissue vaccine and 30 percent purified chick embryo vaccine on a self-purchase basis. There were only 2-reported rabies deaths in these villages with a population of 12,080. The findings of the present study clearly indicate the fact that knowledge on various aspects of the disease is limited among people. The attitude and practice still continue to be primitive and therefore, the treatment options presently available are not property utilised.

Keywords: Dog-bite; Knowledge, attitude and practice (KAP); Prophylactic treatment, Anti rabies vaccine (ARV), Immunoglobulins,

Rabies is a deadly disease but mostly preventable. Most of the deaths are due to ignorance and lack of access to affordable services. It is reported that at least 87 countries are at

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risk of rabies covering a 2.4 billion population, mainly in the developing countries. Globally, the number of human deaths due to rabies is estimated to be 40,000 to 70,000 annually and estimated 10 million people require post-exposure treatment. Yet, it dose not attract as much attention as it should either from the government or from the public.

India is positioned in the tvgh incidence category with approximately 30,000 deaths a year. As per the rural survey of cause of death (1997), 19,147 deaths would occur due to rabies in 1997 out of the total Indian population of 973 million. Dog-bites are considered responsible for 99 percent of rabies cases. Though costly and painful, potent vaccines are available to prevent such deaths. But there is no accurate data regarding the magnitude of dog-bites anywhere in the world except a few based on hospital data. Similarly, to the best of our knowledge, there were no community level studies on the knowledge, attitudes and practice (KAP) related to dog-bites and those reported were mainly from cases admitted to hospitals for treatment of rabies.

OBJECTIVES

The objectives of the present study were to:

- find out the knowledge, attitudes and practices related to dog-bites in a rural population and
- analyse the magnitude of the problem and the actual practices following such bites.

MATERIALS AND METHOD

A cross-sectional study was carried out in the rural areas covered by the Primary Health Centre (PHC)- Dayalpur under the Central Rural Health Scheme (CRHS) Project, Ballabgarh, a rural field practice area of the Centre for Community Medicine (CCM), AIIMS, New Delhi. This study was carried out in January 2002. Three villages were chosen from different strata (PHC village, sub-center village and non sub-center village) by random sampling. 10 percent of the houses In these villages were again selected by systematic random sampling method. An interview was concocted with one available adult member of the family against a semi-structured, pre-tested interview schedule and the information on knowledge, attitudes and practices related to dog-bites was collected. Non-cooperative persons or those not available on two occasions were excluded from the study. Once a house was excluded, next adjacent house was selected as a replacemenl to the one excluded.

A detailed interview schedule to determine actual practices was administered to persons affected by dog-bites during the last one-year preceding to the period of study.

FINDINGS

There were 1,260 houses in the villages selected from a population of 12,088. A total o' 132 families with 970 persons were surveyed to collect information on dog-bites. The age and se> distribution of the survey population and the actual respondents are shown in Tables 1 and 2 respectively. Among the respondents, 55 (42%) were males and 77 (58%) were females. / majority of the study subjects were in the age group of 15-44 followed by 5-14 (Table 1). A large percentage of the subjects (31.1%) was, in fact, in the age group of 30-44 followed by those in the 15-29 age group (28.8%) (Table 2).

TABLE 1

DISTRIBUTION OF THE SURVEYED POPULATION (%) ON THE BASIS OF AGE AND SEX

Sex	AGE						
	<5	5-14	15-44	45-59	>60	Total	Percentage
Male	52	130	236	63	45	526	54.2
Female	41	93	207	57	46	444	45.8
Total	93	223	443	120	91	970	100.0

(Total Families surveyed=132, Total, Total House= 1260, Population= 12,088)

TABLE 2

DISTRIBUTION OF RESPONDENTS (%) ON THE BASIS OF AGE AND SEX

Age	Male	Female	Total	Percentage
15-29	17	21	38	28.8
3044	**13**	28	41	31.1
45-59	15	20	35	26.5
60-74	7	6	13	9.8
75-89	3	2	5	3.8
Total	55	**77**	132	100.0

Knowledge, Attitude and Practice towards Dog-bites

Out of the 132 respondents representing one from each family, 84 percent felt that a dog-bite might lead to death. The major reasons for death due to dog-bites were stated to be the spread of poison in the body (41%), insanity (33%), and absence of treatment (7.6%). Most of them (82%) expressed that it takes about 6 months to one year to become insane after a dog-bite. A majority of them (92%) knew that injections for dog bite are available at the district hospital, but only (91) 69 percent knew that it is available free of cost. Seventyeight percent (103) of respondents were prepared to buy the injections, if it is found not available in the hospitals. As per the respondents, on an average Rs. 515 (rupees five hundred and fifteen only) is very much required to meet medical expanses in case of a dog-bite. After a dog bite, (70) 53 percent preferred to visit a health facility, while (56) 42.4 percent relied on household treatments like putting chilly on wound preferably procured from the house of the dog owner. Those with a knowledge that dog-bite may also lead to death preferred to visit a doctor more frequently than those who do not (61.4% Vs 33.3%: p = 025). Ninety-seven (73.5%) respondents replied that they would prefer to kill the dog to prevent future such attacks to others. A quarter of the respondents believed that rabies could be treated by injections (15.2%), medicines (5.3%) and by local healers (0.8%).

Magnitude of Dog-bites and Actual Practices following the Bite

In the preceding one-year of the study period, there were 25 cases of dog bites in a population of 970 indicating an alarming rate of 25.7 bite cases per 1000 population per year (Table 3). The bite rate was found gradually increasing with the age of the persons and about 66 percent of cases were in the 5-44 years age group (Table 4). The rate of bite was 34.0 in case of males and 15.8 in case of females. The nature of bites was class I, II and III in 20 percent (5), 48 percent (12) and 32 percent (8) of cases respectively as per the WHO classification. The site of

bite was in head and neck 8 percent, hands onl 16 percent(4), Legs only 72 percent (18) and 4 percent (1) in other areas. Bleeding from wounds was reported in 72 percent (18) of cases. About 56 percent (14) of the bites were reported in summer but the rest 44 ercet in other three seasons combined together. Two- thirds (68%) o the bites were apparently by normal looking dogs. Approximately equal number of bites was from pet and street dogs. A majority (64%) of such bites were reported in the village itself. No significant difference I bites occurring at different times of the day was observed. About half (48%) of the cases were treated a at home by household remedies doctors like registered medical practitioners (RMPs), we provided stitching and bandages as part of the treatment 52 percent(13) of the dog-bite cases wass given one dose of tetanus toxoid and a majority 77 percent(10) from them received also a second dose. About half of the bite cases (13) preferred to visit a health facility and ten of them (77%) were given anti-rabies treatment in the form of a vaccine but no serum or anti-rabies immunoglobulins. Out of those receiving the vaccine, 20 percent were classified as class I bite (1/5), 50 percent class II (6/12) and 37 percent as classIII nervous tissue vaccine. After the bite, about 28 percent (7) had spent more tha onethousand households but two deaths (56 year & 12 year old males) due to rabies were recorded in these villages. This was basede on the reported symptom complex of hydrophobia by respondents and a verval autopsy filed by the health worker.

TABLE 3

CLASSIFICATION OF TREATMENTS RECEIVED AFTER DOG-BITE

Class of bite	**Antirabies Treatment**	**Treatment of Local Doctor**	**Household Treatment or Nothing**	**Total**
I	1(20%)	2(40.0%)	2(40.0)	5
II	6(50%)	1(8.0%)	5(42.0%)	12
III	3(37.5%)	0	5(62.5%)	8
Total	**10(40%)**	**3(12.0%)**	**5(48.0%)**	**25**

TABLE 4

MAGNITUDE OF REPORTED DOG BITES IN DIFFERENT AGE GROUPS

	Age Group					
	<5	5-14	15-44	45-60	>60	Total
Cases (per 1000)	2(21.5)	6(26.9)	11(24.8)	3(25.0)	3(32.9)	25(25.7)
Population	93	223	443	120	91	970

DISCUSSION

The magnitude of dog bites in the villages included for the study was 25.7 cases per 1000 rural population. Based on Hospital data, Sachs et al estimated an incidence of 18 dog bite cases per 1000 population in USA. Change et al reported 5.89 bites per 1000 population in Pittsburgh in 1993 bases on capture recapture methods. However, in a study in Tanzania 104 bites/1000 population was the highest reported. These variations may be explained on the basis of

different methods used for such calculations. If extrapolated on the basis of the present results of the study population compared to the total population of a Primary Health Center (PHC), approximately 514.771 cases of dog-bites cases would occur in a year in the area of Primary Health Center with a population of 20,000-30,000. Every PHC would receive approximately 2 new cases per working day for anti-rabies treatment. Such statistics highlights the magnitude of the problem and the issues related to the production of vaccine and development of control methods. On the basis of this data, there would be 26.4 million cases of dog-bites per 1027 million population in a year which is cause of concern for a country like India.

All these cases would require anti-rabies treatment (as in most of the cases, dog is not identified or cannot be traced). The cost of treatment for these would be Rs.8.7 billions for providing correct post-exposure prophylaxis to all based on the existing market rates (Rs.300/- per injection of Rabipur, Rs.2500 - 5600/- for 2-5 ml of antirabies immunoglobulin (ARIG) for class III bites and Rs 5/- for syringe and needle). The cost of nerve tissue vaccine is not taken into account here; the calculations are primarily based on the price of Rabipur (purified Chick embro-cell grown vaccine) that is commonly available in the market. If Human Diploid Cell vaccine is considered, it would be three times more costly (Rs.26.2 billions). One way to reduce the cost is to adopt the strategy of intra-dermal administration of anti-rabies vaccine (ARV) of 0.1 mi per dose with ARIG only in class III bites[7]. The cost of ARIG is very high and most cannot afford.

There is also a need to control the dog population from the estimated 25 million, either by killing which is not ethical or by vaccinating or castrating the male dogs. The other modern method of canine control is to use oral rabies vaccine baits that are commonly used in wild canine control programmes. These sometimes have the risk of self replicating entities and moreover, currently are not available in India. Thus the recourse is to bring down the price of ARV and make it available to all.

Two deaths were reported in a population of 12,088. Extrapolated to the country's population, it would be 1,69,920 deaths which may represent an over-estimate as the present data are based on a very small sample population. But based on rabies related deaths for 1997 in rural population (Registrar General), 19,147 deaths might have occurred in the country during that period. Based on predicted death rate of 4.9/100.000 as reported in Tanzania, it may reach as high as 47677 Compared to this, the reported data on the number of dog-bite cases (12,575 cases with 566 deaths) as given out by the Central Bureau of Health Intelligence (CBHI, DGHS, MOHFW) represents probably a gross under-reporting.

There are deficiencies in knowledge regarding management cases of dog bites and rabies. Sixteen percent did not know that dog bite might cause death. This results in not seeking correct post-exposure prophylaxis, which may lead to rabies in some cases. 80 percent of such cases have been reported not receiving the last exposure prophylaxis in rabies cases admitted to a hospital in Delhi.

The knowledge of the respondents on the incubation period of 6 months or more for the rabies virus is erroneous. Most of the rabies cases had an incubation period of less than 3 months as reported by Dhaliwal et al. About 30 percent of the respondents had no knowledge of free availability of ARV at the District Hospital and this may be the reason for almost 50 percent of such

affected cases not visiting the district hospital. Similar findings were reported for Tanzania where only 8.3 percent of such bites reported for prophylaxis.

The average cost of treatment was reported at Rs. 515/- which is probably the cost of travel and incidental expenses visiting the district hospital 20 kms away for 7 to 14 days in spite of the fact that the place is accessible by bus service and vaccine being provided free of cost, if available.

Almost 42 percent preferred to use household treatments of chili application on wound as is locally practiced. The reason for this may be due to the past experience that many dog bites do not result in rabies and usually rabies are rare in domestic dogs. The knowledge that dog bite can cause death leads many of them to visit the hospital and therefore, there is a need for imparting education in this regard on the deadliness of the disease.

Most of the people preferred to kill the dog so as to prevent such attacks to others. It is definitely not a good practice as many dogs may not be suffering from rabies. Similar practice was also reported by Dhaliwal et al.

About 20 percent revealed that rabies is treatable with injections or drugs. This belief is dangerous as many may visit the hospital only after a period of delay and at a stage of infection that cannot be treated. This is supported indirectly by the fact that most rabies cases admitted in the hospital did not reveal any post exposure prophylaxis.

Though most of the people knew that injections against rabies were available at district hospitals, only half of the surveyed population preferred to visit the hospital. Many others visited either a local doctor or a private qualified doctor for management. Though only 40 percent following the dog bite received the anti-rabies treatment compared to those visiting the health facility (53%). This is even worse for the country like Tanzania where 8.3 per cent of bites were reported td prophylaxis.

More than Rs. 500/- is needed for the treatment which is beyond many people's reach in rural areas. This accounts mostly for the transport to get the free nervous tissue vaccine compared to Rs. 1,500/- is needed for one course of Rabipur to be procured from the local market. Government may consider providing the anti-rabies vaccine at PHCs as it would reduce the cost of travel to the district hospital every quarter and reduce the mortality due to rabies. As facilities to keep the vaccines are available at PHC, the storage of rabies vaccine would not require any additional equipment. A case of dog bite requires 7-50 ml of nervous tissue vaccine per course depending on type of wound and the age of the patient. On an average, a 60 ml of vaccine may be needed per working day and this may be updated and replaced with modern vaccines.

Among the families surveyed, 60 percent did not receive any anti rabies treatment. No death was reported from these families. This may be due to the fact that most of the dogs may not be rabid. Many other factors influence occurrence of rabies; like i) class of bite, ii) bites above clothes, iii) unprovoked bites, iv) bites by immunized dogs, v) post-exposure prophylaxis against rabies, vi) interval between bite and vaccination and vii) completion of vaccination schedule etc. As reported by Jagveer Singh et al, 78 percent cases of rabies were never immunized and 22 percent received inadequate immunizations and only 1 percent received anti rabies immunoglobulin.

Bites were more common in males during summer season. This may be due to the free mobility enjoyed by males compared to females. The present analysis of knowledge and actual practices among people show that there were deficiencies on management of dog bite cases. Many people are relying on household treatments rather than anti-rabies prophylaxis.

There is a need for intensified education regarding management of dog bite and providing post-exposure prophylaxis treatment in such cases at PHC level to prevent rabies related morbidity and mortality effectively. The recent efforts of Government of India to produce verocell vaccine at Coonoor and by the Indian Dairy Development Corporation Production facility at Abhayrab seem to be in the right direction. This would not only help to bridge the gap between the demands and supply (based on the present findings of this study 135 million doses per year are required) but also contribute in the vaccine availability at very competitive rates. There is also an urgent need to educate people regarding the immediate benefits of wound management and need for ARV following dog bite besides making vaccines and immunoglobulins available at PHC level.

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अलर्क रोग (रैबीज) एक ऐसा रोग है जो मुख्यतया कुत्ते के काटे जाने पर होता है तथा यह रोग बहुत घातक है और इसका कोई उपचार भी नहीं है। कुत्ते द्वारा काटे जाने संबंधी आंकड़ों और इस प्रकार के मामलों में संबंधित लोगों के ज्ञान आचरण एवं व्यवहार के बारे में सामुदायिक स्तर पर ही ढंग से कोई अध्ययन नहीं किया गया है। इस अध्ययन का संचालन प्राथमिक स्वास्थ्य केन्द्र, दयालपुर से जुड़े तथा यादृच्छिक आधार पर चुने गये तीन गांवों कव ग्रामीण समुदाय के विभिन्न वर्गों में किया गया था। यह क्षेत्र केन्द्रीय ग्रामीण स्वास्थ्य योजना परियोजना, बल्लभगढ़ के अर्न्तगत अखिलभारतीय आयुर्विज्ञान संस्थान, नई दिल्ली के सामुदायिक औषधि केन्द्र का ग्रामीण क्षेत्राभ्यास क्षेत्र है। परिवारों का चयन (10%) यादृच्छिक आधार पर किया गया था कुत्ते के काटे जाने के बारे में उनके ज्ञान, अवधारणा तथा अभ्यासों संबंधी घटनाओं के बारे में उनके ज्ञान, अवधारणा तथा अभ्यासों संबंधी घटनाओं के बारे में उनसे साक्षात्कार किया गया था। इस क्षेत्र में कुत्ते द्वारा काटे जाने की घटनाओ की दर प्रति वर्ष 25.7 प्रतिहजार पाई गई थी। कुत्ते द्वारा काटे जाने की दो–तिहाई घटनायें 5–45 वर्ष की आयु वर्ग में पाई गई थी तथा आयु घटने के साथ साथ इन घटनाओं की दर में वृद्धि हुई भी पाई गई थी। कुत्ते द्वारा काटे जाने की आधी घटनायें गर्मी के महीनों में हुई पाई गई थी। किन्तु कुत्ते द्वारा काटे गये 40 प्रतिशत केसों में केसों में कोई रोग निरोधक उपसा नहीं कराया गया था। उनमें से आधे केसों में द्वितीय या तृतीय श्रेणी में वर्गीकृत किया गया था। कुत्ते द्वारा काटे गये 80% केसों को द्वितीय या तृतीय श्रेणी में वर्गीकृत किया गया था। कुत्ते द्वारा काटे पैरों में काटना एक आम बात थी। अधिकांश लोग जानते थे कि कुत्ते के काटने से मृत्यु भी हो सकती है लेकिन वायरस के उदभवन काल के बारे में उन्हें सही ज्ञान नहीं था। उनमें से अधिकतर को यह ज्ञात था कि अलर्क रवे को रोकने के लिए जिला अस्पताल में इन्जैक्शन उपलब्ध थे। साक्षात्कार किए गये व्यक्तियों में से 50% द्वारा यह बताया गया था कि कुत्ते द्वारा काटे जाने पर इसके इलाज के जिला अस्पताल जाएगें। कुत्ते के काटे जाने के पश्चात उनमें अधिकांश द्वारा कुत्ते को ही मार दिए जाने को वरीयता दी गई थी। लगभग 25% लोगों को अलर्क रोग के लिए उपलब्ध उपचार के बारे में गलत धारणा थी। पालतू और

आवारा कुत्तों द्वारा काटे जाने वालों की संख्या भी लगभग बराबर थी। प्रभावित लोगों में से लगभग 50% प्रतिशत द्वारा टीटी की कम से कम एक खुराक ली गई थी। इनमें से केवल आधे पीड़ितों द्वारा ही प्रोफीलैक्सिस इलाज कराया गया था। जिन्होने प्रोफीलैक्सिस इलाज लिया गया था। उनमें से 70% द्वारा नर्व टिश्यू वैक्सीन और 30% द्वारा प्यूरीफाई चिक एम्बियो वैक्सीन स्वयं खरीद कर लगवाया गया था। 12,080 की आबादी वाले इन गांवों में अलर्क रोग के कारण केवल दो की मृत्यु दर्ज की गई थी। अध्ययन से प्राप्त निष्कर्ष इस तथ्य की ओर इशारा करते हैं कि इस रोग के विभिन्न पहलुओं के बारे में लोगों का ज्ञान सीमित है। रूढ़िवादी आचरण एवं व्यवहार अभी भी प्रचलित हैं। इसलिए इलाज के उपलब्ध विकल्पों का सही उपयोग नहीं हो पा रहा है।

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AN ANALYSIS OF FACTORS INFLUENCING THE ACCEPTABILITY OF VASECTOMY IN ANDHRA PRADESH

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ABSTRACT

In order to determine the factors influencing the acceptance of vasectomy, a multi-stage stratified random sampling method and a 3-year reference period was used covering 900 subjects residing in 6 districts of Andhra Pradesh. Among others, the variables included socio-economic profile, knowledge and perceptions of sterilized couples about family planning methods, myths and misconceptions about vasectomy, reasons for choosing vasectomy, opinion about incentives etc. The study revealed that literacy was not a pre-requisite for undergoing vasectomy. Majority of the acceptors were poor and engaged in labour-oriented jobs. However, 50 percent of the subjects underwent operation only after 3 or more children. Knowledge and use of condoms among the vasectomy acceptors was high in the better performing districts compared to medium performing ones. No complications and a relatively easy method were the prime reasons of motivation towards vasectomy. However, incentives in cash and kind also played a role. Wives of subjects had no role in motivating husbands since majority of the subjects were 'self-motivated' and vigorously followed up by the revenue and other Government department Officials. IEC, motivational efforts and coordination among the different Government departments in promoting vasectomy were found to be good in high performing districts. One-third of the acceptors had a feeling of "anxiety and fear" preceding the vasectomy operation which forced them to consume intoxicants. Distribution of condoms and pre- and post-operative counselling were carried out properly with the exception of only one district. The camp approach was a success in conducting mass no scalpel vasectomy (NSV) operations. Nearly 50 per cent of the respondents in the high performing districts expressed that they preferred vasectomy to female sterilisation for the reasons that their wives were having one or other reproductive health problems. Based on the findings, the study has recommended new strategies to repopularise vasectomy operations in the country.

Keywords: No scalpel vasectomy (NSV), Motivational incentives, Camp-approach.

Among all contraceptive methods, sterilisation offers the longest continuation rate and the lowest failure rate, albeit with wide criticism that it is a permanent method. It is a one-step method with few side effects and most popular among couples who want to limit their family size. Ever since the inception of the family welfare programme in India, sterilisation received a major thrust in the programme strategy. Andhra Pradesh is no exception. The state has been doing extremely well in the sterilization performances since 1980's. It is one of the top five states in the

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country in the absolute numbers of sterilsations performed. However, the acceptance pattern seems to be biased towards female sterilisation. The acceptance rate of vasectomy has been steadily declining since 1977, while that of female sterilisation has been progressively rising. This pattern is not typical of Andhra Pradesh only but observed as well for the rest of the country. In Andhra Pradesh, among the total sterilisation acceptors, vasectomy accounted for about 75 per cent of sterilizations during the ten-year (1960-70) period. In the subsequent 7 years, i.e. between 1970 and 1977, the average share of vasectomies with respect to total sterilisations reduced to 60 per cent. The major thrust during the 'Emergency' period was on vasectomy. During that two-year period (1975-77), about 6.1 lakh vasectomies were performed in Andhra Pradesh only, more than the total vasectomies performed during the whole preceding decade (1960 - 1970)

Women groups argue that heavy bias towards female sterilization affects women's freedom of reproductive choices, as the procedure is not easily reversible. It is further argued that programmes that promote female sterilisation while ignoring vasectomy, discriminate against women and violate women's reproductive rights. For any family welfare programme to be effective and successful, men should actively participate in it, if they are sincerely concerned with the health and well being of their wives and families.

The famiiy planning programme suffered a setback during the post-'Emergency' period and the backlash effect from 'emergency' was more severely felt on vasectomy than on any other method During the later periods, a relative shift from vasectomy to tubectomy has occurred. The share of vasectomies out of total sterilisations declined steadily there after. In 1994-95, the share of vasectomies among the total sterilisations was 5.3 percent only. A comparison of data from NFHS-1 (1992)' -ind NFHS-2 (1999)[2] revealed that while female sterilisations rose Sharply from 38.5 to 53 per cent, the male sterilisation?-.leciined from 6.5 io 4 percent. It is paradoxical that the method which wa& once so popular has lost its significance with popularity declining in recent years. What is baffling is the large inter district variations in the performance of vasectomy in the State. Disaggregated district data on male sterilizations reveals that about eipnty per cent of the vasectomies from the total sterilizations conducted in the state come from the three or four districts of Andhra Pradesh. However, the reasons for such increased acceptance of vasectomy in these districts are poorly understood.

OBJECTIVES

The main objective of the study was to carefully examine the reasons for high performance of vasectomy only in some districts of Andhra Pradesh. In the process, the plan for revival of the vasectomy programme and the strategies to be adopted to popularize the method was also examined. The other objectives were:

* To study the socio-economic profile of vasectomy acceptors
* To assess perceptions of vasectomy acceptors on various aspects of family planning methods and services
* To identify the factors influencing acceptability of vasectomy
* To provide suggestions that will help policy makers and programme managers in developing appropriate strategies for increasing the acceptance for male sterilizations.

METHODOLOGY

To understand the factors influencing vasectomy acceptance or non-acceptance, it was decided to collect primary data from the field. The selection of districts for the study was carried out on the basis of the vasectomy performance of the districts. Data pertaining to total sterilizations as well as male sterilizations from all the districts of Andhra Pradesh were obtained for a three-year reference period (1995-98). Though the overall (State-wise) acceptance of vasectomy was found declining, district-wise data revealed that some districts were indeed performing very well. For the purpose of the study, the State was divided into three categories based on vasectomy performances; high, medium and low performance districts. In order to categorise the high, medium and low performance districts, State's average vasectomy performance as percentage of total sterilisations was calculated which was 6.2 percent during the three-year study period of 1995-98.

All the districts below this mean value were termed as 'low performance' districts, those districts between mean and 1 Standard Deviation (SD) were considered as medium and districts above 'mean + 1 SD' were categorized as 'high' vasectomy performance districts. Only two districts each fell under the categories of 'high' (Warangal and Karimnagar) and 'medium' (Visakhapatnam and East Godavari) vasectomy performance districts. On the other hand, there were other 19 categorized as 'low' vasectomy performance districts. Two districts viz., Chittoor and Anantapur from the low performance category were randomly selected for inclusion in the present study. It was a coincidence that Chittoor and Ananthapur happened to be the neighbouring districts.

A multi-stage stratified random sampling method was adopted for data collection. In the first stage, two high vasectomy performance districts, two medium and two low vasectomy performance districts were selected. PHC-wise vasectomy performances were obtained from the six selected study districts for the three-year study period (1995-98). All the PHCs in each of the sample districts were categorised as high, medium and low on the basis of achievement in percentages of male sterilisations out of the total cases of sterilizations. Those PHCs achieving 40 percent and above male sterilisations was categorised as high, between 20 to 40 percent as medium and below 20 percent as low. Two PHCs were selected from each of these three categories so as to include six PHCs from each district.

25 acceptors of vasectomy per PHC were selected randomly from the list of sterilisation acceptors and eligible couples kept in the PHC records. It was originally proposed to have a total of 900 respondents (150 each of the vasectomy acceptors, tubectomy acceptors and potential sterilisation acceptors) from each of the above-mentioned six districts during the specified reference period (1995-98). However, during the field study, it was realized that there was an acute paucity (only 75 Households) of vasectomy acceptors probably due to migration in the low performing districts. Only 31 acceptors (17-Chittoor, 14-Ananthapur) could be contacted in these districts. To avoid a low sample size vitiating the validity of the results, the expected 900 total vasectomy acceptors were scaled up by inclusion of additional respondents from the High (Warangal 248, Karimnagar 263) and Medium performance (Visakhapatnam 212, East Godavari 180) districts.

A total sample of 511 vasectomy acceptors were covered in the two high performance districts of Warangal and Karimnagar, while the number of samples covered was 392 in the medium performance districts of Visakhapatnam and East Godavari as shown in Table 1.

TABLE 1

DISTRIBUTION OF DISTRICTS BY THEIR PERFORMANCE

Sample Covered	**High Performance District**			**Medium Performance District**		
	Warangal	**Karimnagar**	**Total**	**Visakhapatnam**	**East Godavari**	**Total**
Vasectomy acceptors	248	263	511	212	180	392

Total number of vasectomy acceptors covered in the high performance and medium-performing districts was 904. As the number of respondents in the low performing districts i.e. Ananthapur and Chittoor was very less (below 50), the data were not included in the analysis as it could affect the final interpretation of results. Thus, the comparison of results was mainly drawn between High and Medium performance districts only.

Data Collection

Data was collected using structured questionnaire for each of the targeted groups. The information on socio-economic demographic characteristics like, age of the acceptors, age at marriage, no. of living children, literacy, income level (possession of the type of ration card), type of house and caste he belonged and type of work he was engaged were collected. Perceptions like acceptor's opinion about vasectomy, its advantages, was the acceptor afraid of the operation before entering operation theatre, whether he consumed any intoxicants before the operation and reasons for choosing male sterilization, type of problems after the operation, resumption of sexual life and normal work etc were examined.

Statistical Analysis: Chi-square test of association has been applied between High and Medium performance districts.

FINDINGS AND DISCUSSION

Profile of Vasectomy Acceptors [Demographic Factors]

Age: The mean age ofvasectomy acceptors in all the four districts was around 32 years. Similarly, the mean age of the spouses of the vasectomy acceptors was around 26 years.

The average age at marriage of wives of all the acceptors in the four districts was found to be below 16 years, which was at par with findings from earlier studies on the aspect of age at marriage in Andhra Pradesh. The figure for Vishakapatnam district was the lowest at 14.5 years. The average family size of five per household was recorded in all the four districts.

Caste: Caste composition of the acceptors was analysed to find out the possible involvement of a particular caste group among the vasectomy acceptors. The subjects in all the four study districts

predominantly belonged to backward classes (39%) scheduled castes (17%) and scheduled tribes (31%). There were a lot of inter regional and inter district variations with regard to caste composition in the sample population. While half of the sample population belonged to backward classes in high performance districts, scheduled tribes accounted for 50 per cent among acceptors in the medium performance districts. Scheduled castes as vasectomy acceptors constituted over 33 per cent in high performance districts as against just 1 per cent in the medium performance districts (Table 2).

TABLE 2

DISTRIBUTION OF VASECTOMY ACCEPTORS (%) BY CASTE

Districts	**Hindu**	**B.C.**	**S.C.**	**S.T.**	**Others**	**Total**
1. Warangal	1.6	40.7	33.5	22.2	2.0	100
2. Karimnagar	7.5	58.7	32.6	0.8	0.4	100
High performance (N=511)	**4.6 (24)**	**49.7(253)**	**33.0(169)**	**11.5 (59)**	**1.2(6)**	
3.Visakhapatnam	3.8	0.8	0.0	94.9	0.5	100
4. East Godavari	35.7	56.1	2.0	6.0	0.5	100
Medium performance (N=392)	**19.6 (77)**	**28.5(112)**	**1.0(4)**	**50.4(198)**	**0.5 (0)**	

One-fifth of the sample population belonged to forward classes in medium performance districts as against five percent in the high performance districts. Backward class population in Andhra Pradesh constitutes about 52 percent of the total state population (Muralidhar Rao Commission-1988)[3]. As per NFHS-II, other backward classes population in Andhra Pradesh accounted about 43.5 percent, scheduled caste, 20 percent and scheduled tribes, 5 percent[2].

Literacy: Data on literary was analysed to ascertain whether literacy is an important determinant for vasectomy acceptance as claimed by other studies. More than half of the respondents in all the four districts were illiterates indicating the fact that literacy is not a prerequisite for accepting male sterilisation. Majority of the acceptors in high performance districts (47%) and medium performance districts (51.2%) were illiterates (Table 3). On the contrary, 50 percent of the subjects in East Godavari district had either high school or intermediate level education. As per 2001 census, the total literacy rate in the study districts of Karimnagar is 53.3percent, Warangal, 58.4 percent, Visakhapatnam, 59.4 percent and East Godavari, 65.5 percent

TABLE 3

DISTRIBUTION OF VASECTOMY ACCEPTORS (%) BY LITERACY

Districts	**Illiterate**	**Primary School**	**Middle School**	**High School**	**Inter&Above**	**Total**
1.Warangal	52.8	14.8	8.0	17.2	7.2	100
2. Karimnagar	41.1	16.7	9.5	21.2	11.5	100
High Performance(N=511)	**47.0 (240)**	**15.8 81)**	**8.7 (44)**	**19.2(98)**	**9.3 (48)**	**100**
3. Viskhapatnam	68.0	20.2	2.0	5.0	4.8	100
4. East Godavari	34.3	12.7	3.5	25.5	24.0	100
Medium performance(N=392)	**51.2(202)**	**16.5(65)**	**2.7(10)**	**15.2(59)**	**14.4(56)**	**100**

A study conducted by Balakrishna argued that literacy has nothing to do with the acceptance of vasectomy. The findings of Baiakrishna's study indicated that 64 per cent of the men who underwent vasectomy were illiterate belonging to extremely lower income groups. However, that literacy was an important factor for acceptability of vasectomy was supported by many others too.

Similarly, a study conducted by Nigam et al.[5] in a hospital in New Delhi revealed that NSV seems to have attracted more educated men (63 %) compared to 46 per cent as reported in the National Vasectomy Programme. Similarly, compared to National Surgical Programme figure of 15.2 per cent, the current study revealed the percentage of literates among acceptors to be 11.3 per cent.

Occupation: Earlier studies revealed that people holding white-collar jobs by and large accept vasectomy. The present data was analysed to find out the influence of individuals occupation on vasectomy acceptance.

Contrary to the common misconception that vasectomised men cannot do heavy work, majority in all the four study districts, were engaged in hard labour, either tilling the land or engaged in construction or other labour oriented jobs. These findings dispelled the nagging doubts prevailing among many that vasectomy was not for the people who do heavy work. It also clearly indicated that illiteracy, low income, heavy work were not at all the barriers for acceptance of male sterilisationsas revealed in the four sample districts of Andhra Pradesh (Table 4).

TABLE 4

DISTRIBUTION OF VASECTOMY ACCEPTORS(%) BY OCCUPATION

District	**Agriculture Labourers**	**Cultivators**	**Labout (coolies)**	**Toddy Tappers**	**Others**	**Total**
1. Warangal	17.3	26.2	39.5	5.2	11.8	100
2. Karimnagar	11.5	22.2	26.4	9.2	30.7	100
High performance (N=511)	**14.4 (74)**	**24.2(124)**	**33.0(169)**	**7.2(37)**	**21.2(111)**	
3. Visakhapatnam	0.5	11.3	64.2	0.0	24.0	100
4.East Godavari	1.3	3.8	19.6	0.0	75.3	100
Medium performance (392)	**0.9(4)**	**7.6(28)**	**41.9(163)**	**0.0**	**49.6(194)**	

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Economic Status: Information on economic status and its association, if any, to the acceptance of vasectomy was examined. Possession of ration card was taken as the parmeter replacing individual income. In Andhra Pradesh, the Public Distribution System (PDS) is very strong and majority of the state's population is issued either white or pink ration cards depending on their economic status. People whose income is below Rs.11,600/- per annum i.e., below poverty line, are issued white ration cards. People with higher income group are issued pink ration cards.

More than three-fourths of the acceptors in all the four districts belonged to below poverty line possessing white ration cards. Pink cardholders representing middle and high-income groups, accounted nearly 15 percent in the medium performance districts as against 5.5 percent only in the high performance districts. Around 10 percent of the sample population did not possess any ration card in all the four districts (Table 5). Balakrishna, 1996, in his study indicated that majority of the vasectomy acceptors (64%) belonged to extremely low-income groups.

TABLE 5
DISTRIBUTION OF VASECTOMY ACCEPTORS (%) BY INCOME/ RATION CARD

District	Pink	White	Others	Total
Warangal	3.7	80.6	15.7	100
Karimnagar	7.2	86.7	6.1	100
High Performance (N=511)	5.5 (28)	83.6 (428)	10.9 (56)	
Visakhapatnam	2.4	89.6	8.0	100
East Godavari	27.6	61.3	11.0	100
Medium Performance (N=392)	15.0 (59)	75.5 (296)	9.5 (37)	

More than half of the acceptors in all the 4 districts have undergone operation only after three or more children. However, it is encouraging to note that more than 42 percent of the sample population, on an average, opted for male sterilisation after two children in all the four districts. A meagre three percent of the subjects were found to have accepted vasectomy immediately after one child in all the three districts.

Knowledge and Practice of Family Planning Spacing **Methods:** Information was collected to assess the knowledge of the acceptors about barrier methods like condoms and their use. The knowledge (91.2%) and practice (41.9%) of condoms among the vasectomy acceptors was indeed high in the high performing compared to the medium performing districts (69.5% & 19.2%) respectively (Table 6).

Among the high performing districts, it is interesting to note that almost all (97.7%) of the respondents in Karimnagar had prior knowledge about condom but 48 percent of them had only appropriate knowledge of its use. In the medium performing district of Visakhapatnam, there the gap was found widened between knowledge (74.5%) and use of condom (10.8%) among the sample population. Lack of knowledge of contraceptive methods was a major obstacle for their effective use. Even if people were aware of various contraceptive methods, their practice, barring tubectomy, was extremely low thus establishing the fact that there are large gaps between knowledge and practice of contraceptive methods in Andhra Pradesh. This has also been

substantiated by number research findings and the two successive National Family Health Surveys I and II in 1992-93 and 1998-99.

TABLE 6

DISTRIBUTION OF ACCEPTORS (%) BY KNOWLEDGE AND PRACTICE OF CONDOM

Districts	Oral pills		IUD		Condom	
	Knowledge	Practice	Knowledge	Practice	Knowledge	Practice
1. Warangal	**26.6**	**2.0**	**9.3**	**0.8**	**84.7**	**35.9**
2. Karimnagar	**40.7**	**2.7**	**11.4**	**3.0**	**97.7**	**47.9**
High performance (N=511)	**33.7 (172)**	**2.4 (12)**	**10.4 (53)**	**1.9 (10)**	**91.2 (466)**	**41.9 (214)**
3. Visakhapatnam	**33.6**	**1.4**	**10.4**	**0.9**	**74.5**	**10.8**
4.East Godavari	**19.8**	**2.9**	**44.8**	**8.8**	**64.5**	**27.6**
Medium performance (N=392)	**26.7 (105)**	**2.2 (11)**	**27.6 (108)**	**4.9 (19)**	**69.5 (272)**	**19.2 (75)**

(X^2 (Knowledge) 2df= 51.49; P<.001; X^2 (practice) 2df= 22.72, P<.001)

Fear and Anxiety before Operation: Unlike Tubectomy, male sterilisation is performed close to the male genitalia. This instills a fear psychosis among the men and tends to cause lot of anxiety. Since it has a direct bearing on the acceptance and non-acceptance of vasectomy, the anxiety factor prior to the operation was assessed among the respondents.

Unlike Tubectomy operation, which is carried out on the abdomen of the women, male sterilisation necessitates medical intervention on the scrotum (testicles) to locate the vas. Thus, amidst popular misconception that vasectomy is similar to 'Castration', more than one-third of vasectomy acceptors in all the 4 districts reported that they were in the grip of "fear and anxiety" just before the operation. Such "fear and anxiety" was associated with a strong notion that something was being done to their genitalia by surgical manipulation.

A comparison of four districts revealed that while "fear and anxiety" was low (27.6%) in the high performance districts it was relatively high (35%) in the medium performance districts. This indirectly established that better performance districts disseminated better and correct information to the respondents (Table 7).

TABLE 7

DISTRIBUTION OF VASECTOMY ACCEPTORS(%) ON THE BASIS OF FEAR/ANXIETY PRIOR TO OPERATION

Districts	Yes	No	Total
1. Warangal	33.9	66.1	100
2. Karimnagar	21.3	78.7	100
High performance(N=511)	**27.6(141)**	**72.4(370)**	
3. Visakhapatnam	65.1	34.9	100
4. East Godavari	3.9	96.1	100
Medium performance(N=392)	**34.5(135)**	**65.5(257)**	

The reasons for such a low percentage (4%) of the subjects reporting anxiety and fear in East Godavari district may be explained on the basis of the high literacy rate among the acceptors in this coastal district.

Consumption of Alcohol Just before the Operation: In order to overcome fear and anxiety prior to the operation, nearly one- fifth of the acceptors in all the 4 districts confessed to have taken some intoxicants. In fact, focus group discussion between the acceptors(who did not form the sample population) and health providers revealed that percentage of males consuming liquor (illict arrack before the operation was quite high.

Consuming alcohol prior to the operation was a common sight in Karimnagar vasectomy camps (Table 8). The beneficiaries during FGD conducted for the present study experessed that they were experiencing some king of "anxiety and fear" prior to the operation as it involved their reproductive organs. Although most of the beneficiaries consumed intoxicants, they were reluctant to go it on record for the reason that what they consumed was in fact "illegal alcohol". However, the FGD also revealed that the tribal population in Paderu of Visakhapatnam has the habit of frequently consuming locally-brew liquor regardless of the vasectomy or any other operation.

TABLE 8
DISTRIBUTION OF ACCEPTORS (%) ON THE BASIS OF ALCOHOL CONSUMPTION PRIOR TO VASECTOMY

Districts	**Yes**	**No**	**Total**
1. Warangal	29.8	70.2	100
2. Karimnagar	17.9	82.1	100
High performance (N=511)	**23.9(122)**	**76.2(389)**	
3. Visakhapatnam	66.5	33.5	100
4. East Godavari	22.1	77.9	100
Medium performance (N=392)	**44.3(174)**	**55.7(218)**	

Advantages of Vasectomy

It is noteworthy to mention that more than three-fourths of the respondents in all the districts considered vasectomy (be it conventional or No Scalpel) as either an 'easy method' or a method with no complication. This speaks of excellent IEC efforts coupled with quality of services rendered particularly in Warangal and Karimnagar districts resulting a high acceptance towards male sterilxations (Table 9.)

Problems after Operation

Around 34 percent of the respondents in all the four districts complained that they had problems following vasectomy operation. More than 40 percent of the respondents of Warangal (41.1%) and Visakhapatnam (44.8%) reported problems after the sterilization. The percentage of such problems in East Godavari and Karimnagar were 28.5 and 23.2 percent respectively (Table 10).

TABLE 9

DISTRIBUTION OF ACCEPTORS (%) ON THE BASIS OF THEIR PERCEPTIONS ON VASECTOMY

Districts	Easy Method	No Compli-cation	Can start work immediately	Tubectomy- a complicated method	Others	Total
1. Warangal	53.2	26.6	4.9	3.5	11.8	100
2. Karimnagar	79.4	14.4	3.7	2.1	0.4	100
High performance (N = 511)	**66.3 (339)**	**20.5 (105)**	**4.3 (22)**	**2.8 (14)**	**6.1 (31)**	
3. Visakhapatnam	88.2	1.4	0.0	1.2	9.2	100
4. East Godavari	85.6	2.8	0.6	2.8	8.2	100
Medium performance (N=392)	**86.9 (341)**	**2**.1 **(8)**	**0.3 (1)**	**2.0 (8)**	**8.7 (34)**	

($X^2$4df = 90.10, P< .001)

Type of Problems Reported after Operation: Majority of the acceptors complained of psychological problems like back pain and weakness after the operation. However, a negligible percentage (12%) complained of developing ulcers after the operation (Table 10).

TABLE 10

DISTRIBUTION OF ACCEPTORS (%) ON THE BASIS OF THEIR REPORTED PROBLEMS FOLLOWING VASECTOMY OPERATION

Districts	Fever	Back Pain	Ulcer	Weak-ness	Failure of Operation	Loss of Libido	Can't lift Weight	Can't say	Total
Warangal	1.9	45.1	12.6	30.6	2.0	2.0	4,8	1.1	100
Karimnagar	5.2	52.4	13.2	22.1	1.3	1.7	4.1	0.0	100
High Performance (N = 511)	**3.6 (26)**	**48.8 (249)**	**12.9 (66)**	**26.4 (135)**	**1.6 (8)**	**1.8 (9)**	**4.5 (23)**	**0.6 (3)**	
Visakhapatnam	3.1	46.6	12.0	34.1	1.1	2.0	1.1	*0.0*	*100*
East Godavari	2.2	62.8	11.7	21.2	0.0	0.0	2.1	0.0	100
Medium Performance (N = 392)	**2.7 (10)**	**54.7 (214)**	**11.9 (47)**	**27.7 (108)**	**0.6 (2)**	**1.0 (4)**	**1.6 (6)**	**0.0**	

($X^2$8df= 14.62; P<.05)

Reasons for Preferring Vasectomy as a Method: The present study also tried to examine the reasons among the acceptors for choosingvasectomy as a means of contraception.

Nearly 50 percent of respondents in the high performance districts expressed that they preferred vasectomy to female sterilisation because of their concern tar their wives suffering from one or other type of reproductive health problems (infection, ulcer in the cervix). This indicates that ill health of the partner was the main reason for opting vasectomy as a method of contraception. More than one-fifth of the respondents in the same districts, however, opined that they preferred vasectomy because it is a simple method. Another 14 percent blamed tubectomy for affecting women's health. The findings of the paper corroborate with the findings of NFHS-II, which states that more than 48 percent of the married women in Andhra Pradesh had one or other reproductive health problems (Table 11).

TABLE 11

DISTRIBUTION OF ACCEPTORS (%) ON THE BASIS OF REASONS PROVIDED FOR OPTING VASECTOMY AS A METHOD

Districts	Ulcer on Uterus	Simple Method	Tubectomy affects Women's Health	Wife Anaemic	Tubectomy affects women's work	Wife afraid of Operation	Others	Total
1. Warangal	47.5	19.4	17.1	2.8	6.3	2.0	4.9	100
2. Karimnagar	49.5	24.8	11.4	7.2	2.4	2.3	2.4	100
High performance (N = 511)	**48.5 (248)**	**22.1 (113)**	**14.2 (72)**	**5.0 (25)**	**4.3 (22)**	**2.2 (11)**	**3.7 (19)**	
3. Visakhapatnam	0.5	3.3	15.6	3.3	60.4	14.2	2.7	100
4. EastGodavari	27.4	15.8	32.9	6.8	9.4	6.6	1.1	100
Medium performance (N = 392)	**14.0 (55)**	**9.6 (38)**	**24.2 (95)**	**5.1 (20)**	**34.8 (136)**	**10.4(41)**	**1.9(7)**	

(X^2 7df = 250.54, P < 001)

Sexual Activity after Vasectomy

Majority of the acceptors in all the study districts had sex as early as more than one month after vasectomy, which was as stipulated in the male sterilisation guidelines, issued by Government of India. However, data on sexual intercourse after the operation provided interesting information. About five per cent of the vasectomised men in the high performance districts and two per cent in medium performance districts had sexual intercourse on the very first day of the operation. This was perhaps more psychological to make sure that the operation had not affected their sexual lives. Another 10 and 18 per cent of the sample population in the high and medium performing districts respectively had intercourse after two weeks of the operation (Table 12).

(Standards for Male and Female sterilisations developed by the Department of Family Welfare, Government of India, in the post operative instructions to Vasectomised acceptors recommend: "May have intercourse two weeks after surgery"). Majority (73 per cent) of the operated men in all the four districts had intercourse following one month of the operation.

TABLE 12

DISTRIBUTION OF ACCEPTORS (%) ON THE BASIS OF PERIODS OF ABSTINENCE AFTER VASECTOMY

Districts	1st day	1st Week	2nd Week	Above 1months	Total
1.Warangal	7.2	12.0	9.7	71.7	100
2. Karimnagar	2.2	8.7	11.5	77.6	100
High performance N=511	4.7(24)	10.4(53)	10.6(54)	74.3(380)	
3. Visakhapatnam	1.9	7.6	19.5	71.0	100
4.East Godavari	2.2	8.4	15.5	73.9	100
Medium performance (N=392)	2.1(8)	8.0(31)	17.5(69)	72.4(284)	

($X^2$2df= 13.50, p<.001)

Resumption of Normal Work after Operation

As per the male sterilization guidelines, work can be resumed after a week of the operation for vasectomy. Table 13 shows that half of the vasectomised men resumed their normal work after a period ranging from 1 to 30 days. The rest attended normal duties after one month and above indicating extra precautions taken by this group of acceptors.

TABLE 13

DISTRIBUTION OF ACCEPTORS (%) ON THE BASIS OF DURATION OF REST AVAILED PRIOR TO THE RESUMPTION OF NORMAL WORK AFTER VASECTOMY

Districts	1st day	1st Week	2nd Week	Above 1 months	Total
1. Warangal	8.5	17.3	18.9	55.3	100
2. Karimnagar	1.5	13.7	21.3	63.5	100
High performance (N=511)	5.0(25)	15.5(79)	20.1(103)	59.4(303)	
3. Visakhapatnam	0.0	13.7	39.7	46.6	100
4.East Godavari	2.5	16.2	29.1	52.2	100
Medium performance(N=392)	1.3(5)	15.0(59)	34.4(135)	49.3(193)	

($X^2$3df= 31.0, P<.001)

Motivation

A major factor influencing high acceptance of vasectomy seems to be motivation. More than 56 percent of the sample population in the high performance districts, expressed that they were motivated by different Governmental officials other than health functionaries" to volunteer for vasectomy operation . The percentage of self motivators was almost identical in Karimnagar and Warangal districts(Table 14). However, on further probing all these self motivators admitted that their cases were infact followed up by the different Government Staff other than those of the Health Department. This was much more evident in Karimnagar district in which all the departments including those of Revenue and Excise were actively involved in this motivation

exercise for family planning. This represents a well- organized and multi-sectoral approach. As a result, 20 percent of the acceptors in the medium performance districts were self-motivated. The percentage of cases"motivated" by the health staff was very high (62%) in the medium performance districts and 26.7 percent in high performance districts. Peer groups and friends seem to have played some role in motivating the vasectomy cases too in all the four of high and medium performing districts. Unlike female sterilizations, where males exert a greater role in decision-making, wives played a very little role in motivating their husbands for vasectomy operations in all the four districts.

TABLE 14

DISTRIBUTION OF VASECTOMY ACCEPTORS (%) ON THE BASI! THEIR MOTIVATION BY OTHERS

Districts	Motivators					
	By Govt. Staff other than Health Dept.	**Wife**	**Friends & Peer-groups**	**Health Staff**	**Others**	**Total**
1.Warangal	56.4	2.8	10.6	28.0	2.2	100
2. Karimnagar	56.2	0.0	16.6	25.4	1.8	100
[High performance (W"511)	**56.3 (288)**	**1.4 (7)**	**13.6(53)**	**26.7 (136)**	**2.0 (10)**	
3.Visakhapatnam	10.0	4.2	6.4	74.8	4.6	100
4. East Godavari	30.8	3.4	7.2	50.4	8.2	100
Medium performance (N=392)	**20.4 (80)**	**3.8 (15)**	**6.8 (27)**	**62.6 (245)**	**6.4 (25)**	

($X^2$4df= 156.87, P < . 001)

The FGD organized with government functionaries and community groups revealed that motivational and communicational efforts in the high performance districts, particularly Karimnagar district were intersive and well organized. Family Planning progtramme was on the top of the agendas of the district administration District Collectors accorded a lot of importance to Family planning programme in Andhra Pradesh so much so that they compete with each other with respect to the performance in the Family Planning programme. The State administration ha sinstituted a number of awards for the best performance districts, best performance doctor and the best paramedical for te highest number of sterilizations (both female and male) comducted in a financial year. However, in case of Karimnagar district, vasectomy, particularly non-scalpel vasectomy accounted for more than 50 per ent of sterilizations. The District Collector evinced keen interest to motivate people for vasectomies. The motivational efforts under the guidance of District Collector included formation of inter-departmental and blick level coordination committees Official. The committee members included a PHC doctor, a paramedical staff, a staff from Departments of women and child welfare, Rural Development , Education, Housing, Revenue, Civil supplies, etc. Clientele of each department were motivated by their respective department were motivated by their respective department officials and thus making the programme of family planning a joint responsibility.

The collector periodically reviewed the committees to take stock of the situation at the divisional level. The study indicated that efforts of motivation by all the government functionaries was better in the high performance districts, particularly in Karimnagar.

Opinion about Incentives

Approximately, 45 percent of the respondents in the high performing districts and around 34 percentin the medium performing districts observed that incentives are very important (Table 15.) However, around 12 percent of the respondents in all the study districts were categorical in saying that incentives are not that important for the promotion of male sterilization. Incentives given to the acceptors of sterilization, Andhra Pradesh provides Rs.500/- for the same. This was the trend for the last six years ever since the formation of Andhra Pradesh State Population policy. Andhra Pradesh is perhaps the first state in the country to come out with its own Population Policy in 1996 with an outlay of Rs.50 crores and large proportion of it is aimed at providing incentives to the benefidciaries. Suprisingly, these incentives to beneficiaries and medical staff are given liberally flouting the very norms of National Population Policy 2000, which encourages community incentives rather than individual incentives.

TABLE 15

DISTRIBUTION OF VASECTOMY ACCEPTORS (%) ON THE BASIS OF THEIR OPINION ON INCENTIVES

Districts	**Very Important**	**Some what Important**	**Not Important**	**Total**
1. Warangal	53.2	35.9	10.9	100
2. Karimnagar	37.2	50.5	12.3	100
High performance(N=511)	**45.2(231)**	**43.2(221)**	**11.6(59)**	
3. Visakhapatnam	37.3	49.5	13.2	100
4. East Godavari	31.3	52.3	16.4	100
Medium performance(N=392)	**34.3(134)**	**50.9(199)**	**14.8**	

($X^2$2df=50.64,p<.001)

Similar views on incentives were expressed in the study by Balakrishna, 1996 which revealed that a majority of (64%) of vasectomy acceptors is from low income groups and therefore economic considerations such as incentives have a major influence for people opting for vasectomuy operations.

Place of Operation

Place of operation also affects the acceptance rate as it is linked with facilities provided and the kind of quality of services offered. Camp approach for male sterilizations gained considerable populatirty in the high performance districts. These mega camps where over 5000 operations were conducted in a week's time were provided with all facilities including on the spot incintives, transport, food, rest roomsm, counseling and medicines. More than 100 massive vasectomy camps were conducted during the study period (1998-99) in Warangal district. On the

contrary, a significant percentage (76.4) of vasectomy operations in medium performance districts were conducted in their respective Primary Health Centres. The operations at the PHCs lacked many facilities to the acceptors that were otherwise available at the camps. However, one-third of the operations in high performance districts were conducted at Primary Health Centres only (Table 16).

TABLE 16
DISTRIBUTION OF ACCEPTORS (%) ON THE BASIS OF THE SITE OF VASECTOMY OPERATION

Districts	PHC	Camps	Urban FP Hospital	Area Hospital	Others	Total
1. Warangal	34.7	49.6	1.8	9.7	4.2	100
2. Karimnagar	25.5	69.8	1.1	2.6	1.0	100
High performance (N=511)	**30.1 (154)**	**59.7 (305)**	**1.4 (7)**	**6.2 (32)**	**2.6 (13)**	
3. Visakhapatnam	74.2	22.9	0.0	0.5	2.4	100
4. East Godavari	78.5	17.1	0.6	2.8	1.0	100
High performance(N=392)	**76.4 (299)**	**20.0 (78)**	**0.3 (1)**	**1.6 (6)**	**1.7 (7)**	

($X^2$4df=202.29,p<.001)

Counselling and supply of condoms are dependent on where the operation for vasectomy is conducted. As the study findings indicate, cjounseling was better in the high performance districts where the vasectomy operations were conducted in well organized camps. Each beneficiary was given spot counseling by the paramedical staff before and after the operation and was also provided with 15-20 condoms along with instructions on how tro use them. However, not all the beneficiaries get counseling to the acceptors was poor at PHCs, particularly in Visakhapatnam district. The medical staff was more concerned about the number of vasectomies performed rather than counseling. Unlike camps, a skeleton staff was only available in tribal PHCs o Visakhapatnam district. Even the supply of condom was equally poor. Whatever was supplied, majority of the acceptors in all the study districts followed instructions on the use of condom after throughout the country in the70's seemed to be the secret of success for vasectomies in Andhra Pradesh. The response to the camps scheduled for one week, was initially lukewarm. But when the satisfied acceptors spread the message across, it attracted huge num bers of volunteers. One of the prominent features of the camps is the new technique of vasectomy, No Scalpal Vasectomy (NSV) that attracted most of the acceptors.

Preference of Operation

No Scalpel Vasectomy (NSV) which does not involve any cut or stitch, evoked good response from the community in the high performance districts. Three out of four operations in Karimnagar districts were NSVs. However, conventional vasectomy dominated in the three remaining districts, namely-Warangal, Visakhapatnam and East Godavari districts. Normal vasectomy was quite popular in Warangal which has been consistently performing well in male

sterilisations right from the days of emergency and notwithstanding the switch over to the tubectomy wave' prevailing in rest of the country Karimnagar stands out prominently among the four districts with NSV accounting as high as 85.5 pecent (Table 17) and has the distinction of having the highest number of NSV cases in the country Only 24 percent of NSV cases are reported from Warangal followed by Visakhapatnam (18.2%). East Godavari District which has nearly 7 percent share in vasectomy operations in the entire state was also seen fast catching up with the new technique (32.1%).

It is significant to note that the conventional vasectomy was still very popular (75%) in the medium performing districts of Visakhapatnam and East Godavari compared to the high performing districts (45.2%). The notable feature was that conventional vasectomy dominates the three sample districts-Warangal (75 9%). Visakhapatnam (81.8%) and East Godavari (67.9%). As revealed by FGDs Programme Managers at these places were not pushing NSV mainly due to lack of NSV trained doctors in the three districts.

TABLE 17
DISTRIBUTION OF ACCEPTORS (%) ON THE BASIS OF TYPE OF VASECTOMY ACCEPTED

Districts	Normal Vasectomy	No Scalpal Vasectomy	Total
1. Warangal	75.9	241	100
2. Karimnagar	14.5	85.5	100
High performance (N=511)	**45.2(231)**	**54.8 (280)**	
3 Visakhapatnam	818	18.2	100
4. East Godavari	67.9	32.1	100
Medium performance (N=392)	**74.9(294)**	**25.1 (98)**	

(X^2 2df = 50 91 P< 001)

Post-operative Counselling and Complaints from the Acceptors

Pre and postoperative counselling and distribution of condoms play an important role in the success of male sterilization. More than half of the respondents of Warangal and Karimnagar districts were given counselling Dy the health staff as against one-fourth in the medium performing districts However a very high percentage of the acceptors did not receive any counselling after the operation in Visakhapatnam district, indicating a very poor follow up care by the health staff. Only one-fourth of the respondents in all the 4 districts received condoms after the vasectomy operation. Highest was in Karimnagar district and lowest was in Visakhapatnam. Three-fourths of the respondents on an average went home after the operation without receiving condoms in all the four districts. Strong motivational efforts in these districts were not matched with the follow up services particuiariy in Visakhapatnam

Vasectomy acceptors given no proper counselling and supply of condoms reflected a poor follow-up service by the health staff in the study districts particularly in the medium performing

districts (Table 18). Therefore, every acceptor needs to be counseled and supplied with at least 20 to 25 condoms for use after the operation as per the stipulations. Unlike female sterilisation contraceptive efficacy following vasectomy operation is not 100 percent immediately. The chances of failure will be high if the couple does not follow spacing methods for specified periods as instructed.

While more than 40 percent of the acceptors in high performing districts used condom following the vasectomy operation, the number of respondents in this category was around one-fifth in medium performing districts. This is in contrast to the low reports of condom use (06%) in Andhra Pradesh (NFHS II. 1998-99) .

Half of the respondents in all the four districts had little knowledge about the reversibility of the operation, though it is mandatory for the Health Staff to make the acceptor aware that it is a permanent method and the procedure is not easily irreversible

TABLE 18

DISTRIBUTION OF ACCEPTORS (%) ON THE BASIS OF COUNSELLING PROVIDED CONDOMS RECEIVED AND USED AND COMPLAINTS REPORTED AFTER THE VASECTOMY OPERATION

Districts	**Counseling received**	**Condoms Received**	**Condoms Used**	**Knowledge of Recanalisation**	**Reported Complaints after Operation**
1. Warangal	54.4	548	456	48.4	41**.1**
2. Karimnagar	56.7	62.0	47.4	48.8	28.5
High performance (N**=511)**	**55.6(284)**	**58.4(298)**	**46.5 (238)**	**49.1 (250)**	**34.8 (178)**
3 Visakhapatnam	12.0	13.2	9.6	46.2	44.8
4. East Godavari	46.4	49.2	28.8	61.4	23.2
Medium performance (N**=392J**	**29.2(114)**	**] 31.2 (122)**	**" 19^2(75)**	**53.8(211)**	**34.0 (133)**

"($X^2$4df= 137.98. P< 001)

New Strategy to Promote Male Sterilization

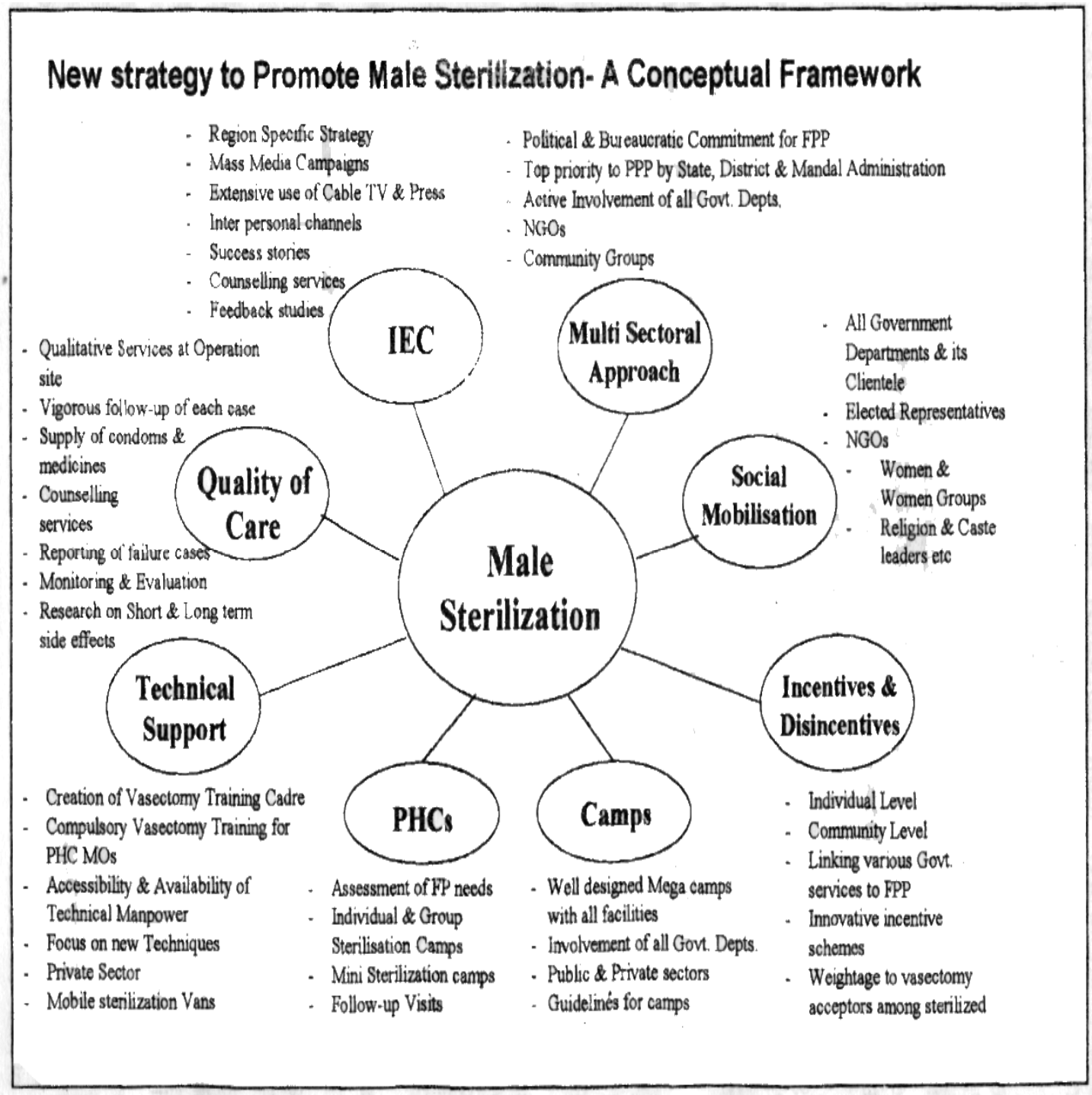
Based on the factors that have influenced the vasectomy acceptors in high performance districts, a new comprehensive strategy has been proposed for the policy makers and programme managers, with suitable modifications if any to promote male sterilization.

On the basis of the conceptual model given in the next page, following recommendations have been proposed.

Information Education Communication (IEC)

- There is an imperative need to launch a well-conceived IEC campaign with region specific and local specific IEC strategies creating a demand for male sterlisations.
- Emphasis should be laid on group, family couple and individual counseling on all aspects of male sterilization.
- Successful experiences of Karimnagar and Warangal should be highlighted through mass media particularly in the vernacular Press and Television medium because of their large influence and wide reach

IEC MODEL


New strategy to Promote Male Sterilization- A Conceptual Framework
- Region Specific Strategy
- Mass Media Campaigns
- Extensive use of Cable TV & Press
- Inter personal channels
- Success stories
- Counselling services
- Feedback studies
- Political & Bureaucratic Commitment for FPP
- Top priority to PPP by State, District & Mandal Administration
- Active Involvement of all Govt. Depts.
- NGOs
- Community Groups
IEC
Multi Sectoral Approach
- All Government Departments & its Clientele
- Elected Representatives
- NGOs
- Women & Women Groups
- Religion & Caste leaders etc
- Qualitative Services at Operation site
- Vigorous follow-up of each case
- Supply of condoms & medicines
- Counselling services
- Reporting of failure cases
- Monitoring & Evaluation
- Research on Short & Long term side effects
Quality of Care
Social Mobilisation
Male Sterilization
Technical Support
Incentives & Disincentives
- Creation of Vasectomy Training Cadre
- Compulsory Vasectomy Training for PHC MOs
- Accessibility & Availability of Technical Manpower
- Focus on new Techniques
- Private Sector
- Mobile sterilization Vans
PHCs
Camps
- Assessment of FP needs
- Individual & Group Sterilisation Camps
- Mini Sterilization camps
- Follow-up Visits
- Well designed Mega camps with all facilities
- Involvement of all Govt. Depts.
- Public & Private sectors
- Guidelines for camps
- Individual Level
- Community Level
- Linking various Govt. services to FPP
- Innovative incentive schemes
- Weightage to vasectomy acceptors among sterilized

Multi-sectorial Approach

- As followed in Kairmnagar, male sterilization programme should be on the top of the agenda of district administration backed up by multi-sectorial approach involving entire government machinery and non-government functionaries.

Community Participation and Social Mobilization

- Motivational teams should be constituted at the grass root level to promote vasectomy involving community groups, the self-help groups and people from government and nongovernment agencies.

Incentives

- Need to link up all welfare schemes to family planning programmes with emphasis on male sterilizations. Community incentives should be encouraged on a large scale while continuing individual incentives for some more time. Disincentives should be practiced to create consciousness among couples.
- Need to rope in private sector and business community to generate special incentives for couples opting for vasectomy during camp approach.

Camp Approach

- Well-planned Vasectomy camps with adequate infrastructure facilities like technical services, transport, food, rest rooms, pre and postoperative care, counseling, supply of medicines, condoms etc. should be organized frequently. Roles and responsibilities of personnel and agencies involved in the camps should be clearly defined.
- Staff from PHCs should take a lead in organising mini camps and vigorously follow up the post-sterilized cases.

Technical Support

- Need to create a cadre of doctors including master trainers particularly in NSV by setting up more training centers at the district level. Training in Vasectomy/NSV should be made compulsory for all the PHC medical officers regardless of gender.

Quality of Care

- Qualitative technical and non-techinical services be made available at operation sites particularly at Camps to enhance credibility and confidence among people. Periodic monitoring and evaluation should be initiated to check the side effects of such operations and follow-ups in failure cases.

Research

- Research should be initiated to identify factors influencing performance in the high performing districts.

CONCLUSION

Analysis of socio economic characteristics among acceptors revealed that majority of acceptors were illiterates belonging to lower strata of community. No positive correlation between socio economic development and vasectomy acceptance was observed. This may be due to the strenuous efforts made by the government functionaries in popularising vasectomy in selected districts i.e., Karimnagar and Warangal.

On analysing the perceptions of acceptors, it was found that contrary to the findings of many other studies, the misconceptions were for less in the high performing districts. This may be due to better IEC initiatives, which was one of the key factors responsible for high acceptance of male sterilizations in these areas.

The study has identified important factors like political and bureaucratic commitments, motivational strategies involving multi sectoral and social mobilisation approaches, patronising well-executed vasectomy camps popularising NSV operation, schemes with innovative incentives, counseling and follow up services rendering client satisfaction, etc which were probably responsible for high acceptance of vasectomy in Karimnagar and Warangal districts in Andhra Pradesh.

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नसबन्दी की स्वीकार्यता को प्रमाणित करने वाले सुनिश्चित करने के उद्वेश्य से आन्ध्र प्रदेश के 6 जिलों में रह रहे 900 लोगों पर अध्ययन किया गया था तथा अध्ययन के लिए बहुचरणीय स्तरित यादृच्छिक सैम्पलिंग प्रणाली का अनुसरण किया गया था और पिछले तीन वर्ष की अवधि को संदर्भगत रखा गया था। अध्ययन में अन्य घटकों के साथ–साथ सामाजिक–आर्थिक प्रोफाइल, नसबन्दी किए गए लोगों की परिवार नियोजन विधियों के बारे में जानकारी तथा अवधारणायें, नसबन्दी के बारे में भ्रम तांम गलत धारणायें, नसबन्दी का चयन करने के कारण, प्रोत्साहन आदि के उनके मत आदि घटकों को शामिल किया गया था। अध्ययन से प्राप्त निष्कर्षों से पता चला है कि नसबन्दी कराने के लिए शिक्षा एक पूर्वोपेक्षा नहीं थी। अधिकांश स्वीकारकर्ता निर्धन थे और मेहनत मजदूरी करने वाले लोग थे। 50% स्वीकारकर्ताओं ने 3 या अधिक बच्चों के बाद नसबन्दी आपरेशन कराया था। मध्यम निष्पादन वाले जिलों की अपेक्षा बेहतर निष्पादन वाले जिलों में नसबन्दी अपनाने वालों में निरोध के बारे में जानकारी और इसके प्रयोग की स्थिति बेहत्तर नसबन्दी पाई गई थी। नसबन्दी के कारण कोई समस्याएं न होना और यह एक सरल उपाय होना नसबन्दी के प्रति प्रोत्साहित होने का प्रमुख कारण थे। तथापि, प्रोत्साहन

के तौर पर नकद भुगतान और उपहार की भी महत्वपूर्ण भूमिका रही थी। नसबन्दी के लिए प्रोत्साहित करने में नसबन्दी कराने वाले पुरूषों की पत्नियों की कोई भूमिका नहीं थी, क्योंकि नसबन्दी कराने वाले अधिकांश पुरूश स्वयं ही प्रोत्साहित हुए थे तथा राजस्व एवं अन्य सरकारी विभागों के अधिकारियों द्वारा उनका प्रबल फॉलो–अप किया गया था। नसबन्दी को बढ़ावा देने के लिए सूचना, शिक्षा एवं संचार, प्रोत्साहक प्रयास और समन्वयन, उच्च निश्पादन वाले जिलों में अच्छे थे। एक–तिहाई स्वीकारकर्ताओं में ''उत्सुकता और भय'' की भावना थी, जिसके कारण आपरेशन कराने के बाद वे मादक पदार्थ लेने के लिए विवश हुए थे। एक जिले को छोड़कर सभी जिलों में निरोध का वितरण और आपरेशन से पहले और बाद में आवश्यक परामर्श आदि जारी था। नो–स्कालपल वैसेक्टॉमी आपरेशन अधिक संख्या में किए जाने के लिए कैम्प अप्रोच एक सफल विधि थी। उच्च निश्पादन वाले जिलों में लगभग 50% उत्तरदाताओं ने बताया था कि उनकी पत्नियों को कोई न कोई प्रजनन स्वास्थ्य समस्या थी। प्राप्त निश्कर्शों के आधार पर इस अध्ययन में देश में नसबन्दी, आपरेशन को पुनः लोकप्रिय बनाने के लिए नई रणनीतियां अपनाये जाने की सिफारिश की गई है।

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