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Contents (Continued):

Editorial –Internship Training

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The Goal of Medical Colleges is to produce Basic Doctors who have adequate knowledge, clinical and Communication skills, confidence and competency to work independently in community. "Internship is a phase of training wherein a graduate is expected to conduct practice of medical and health care and acquire skills under supervision so that he /she become capable of functioning independently." (Medical Council of India)

Medical Council of India has prescribed the various clinical departments, the period of training and the skills to be learnt during Internship and Intern should keep of record of work done during Internship (Logbook) to be certified by the Head of each department. MCI has recently revised this Internship by including some departments and duration of internship in each department.

The objective of this training is to provide a hand on training to a fresh medical graduate, who has knowledge but inadequate practical experience to make him competent and confident to treat the patient. Fresh graduates acquire skills under supervision of expert teachers in various clinical subjects and also good communication skill. Internship shapes the personality of fresh graduates and converts them into finished product. All specialty participating in Internship Training would agree that "Internship Training is far from satisfactory" in most of the Medical Colleges.

What are the problems and where they lye?

Interns: It is worth to note what the fresh graduates, for whom the training is designed, mean about this period. Medical students after passing the final professional University examination become free from burden of studies, attending classes and clinics, look happy and cheerful. To these students Internship period would mean; thinking of Post graduation, preparing for PG entrance examination, to do some work in OPD / Wards in hospital, period of relaxation, period of engagement and marriage, to earn money by providing services in private sector during Internship. They are less motivated and perhaps have less clear idea about the need of internship. This stormy period (just like adolescent period) need to be handled carefully and can be made productive by proper guidance, motivation, supervision and monitoring. It is our responsibility to see that period should not go waste and to make efforts to make it meaningful.

College and department: Batch of unmanageable number of Interns, over lapping of batches adding to the above problem, inadequate and less inclined staff in the department, movement of Junior and middle cadre staff (transfer / promotion / changing institute for better salary) poor facility (transportation, clinical materials), poor facility at Rural Health training Centers and Primary Health center (transportation, Para-medical staff, accommodation, laboratory, poor patient attendance etc) Internship at Primary Health Centers / Community Health Centers is not useful as Most of the Medical Officers do not have idea of Internship training and practicing Medical Officers do not like the presence of Interns at centers, Lack of supervision by Medical College has facilitated this situation. poor supervision and monitoring system at department and college level, lack of prescribed protocol for Interns training in the department. It is also observed that Interns get transferred Internship (except Rural health and community Medicine posting) at the Institute of choice where manage to get completion certificate easily.

Following are some measures, which may help improving quality of interns training programme.

- Medical Education department of the state should take the lead to prepare a uniform interns training protocol and implement it sincerely.
- A strong desire and commitment at college and department level for meaningful and fruitful internship to help college to achieve its goal and Interns to acquire skills.
- Identify motivated and committed teachers in each department.
- Preparing list of skills (which the basic doctor should have) to be acquired by Interns in the subject.
- Prepare protocol or Internship training in the department and to follow it sincerely.
- Logbook should contain the items which the Intern should know and can practice.
- Proper supervision and monitoring of Internship at all levels.
- Review meeting once in a week in the department and once in two month at college level.
- Periodic assessment of the skills-clinical and communication and making entry in logbook.

Internship training has various aspects, of which only few are focused here to stimulate teachers to redefine Internship Training.

We, the Teachers of all disciplines of medical fraternity, should join hands to make honest attempts to improve internship training to fulfill social obligation.

Continuing Medical Education : Qualitative Research

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QR Methodology learning and its application to the field of public health/community medicine research and practice has been comparatively a recent phenomenon. It has been a bastion of Social science. Our increasing acceptance of ever increasing influence of socio-behavioural factors on health and health related issues, have led us to accept the use of QR methodology to examine some of it in the research settings. Unfortunately, so far, neither the correct training in this field of research methodology is available uniformly everywhere, nor its relevance and use is fully appreciated across the Medical colleges, in the state.

Among medical researchers, it appears to be growing under the shadow of Quantitative research (QtR) methodology and therefore, suffers from being viewed with an inappropriate "Quantitative Lens" with a lot of misgivings about the robust methods and its relevance and application. In order to initiate understanding create health acceptance of Qualitative research Methodology; let us first examine what this methodology is not!

It is not a tool to be used conveniently by those who are no good at managing large data set and statistical analysis. We are trained to count only that which is counted! We are trained to count trees and miss the woods in the process! QR methods teach us to develop insight, take into consideration "outliers" and account for it. It teaches us how and why of the need to answer "why" more than "how many".

It is not a quick, short-cut to be employed by any untrained researcher. Qt R methods are well defined and as it has been in the curricula, it is taught, practiced and assessed regularly. Similarly, now the need has emerged to treat QR with equal academic respect. It is not a science without measurable methods and their analysis. Indeed, QR has theoretical basis, has its own set of methods and means to check and analyze the research data.

"It is not objective" is the comment QR receives. Yes, of course, it is not meant to be objective; however, it does not mean it is biased! Validity and reliability are equally important to QR methods. In fact, it permits inference with insight. It deals with "subjects" as they are and not mere "objects" made available for scrutiny. Researcher here in QR is part of the process.

"A good QR will ask:

Why, how and under what circumstances things occur
Seeks depth of understanding
Views social phenomenon holistically
Explores and discovers
Provides insight into the meanings of decisions and actions
Uses interpretive and other open-ended methods
Is iterative rather than fixed
Is emergent rather than pre-structured"[1]

With HIV related research and upcoming interest in hitherto forgotten Adolescents, need for QR is appreciated more acutely. We have programmes for Anaemia control among women and adolescents for over 3 decades, biochemistry of Iron is well understood for over 20 years and still we do not have the answers to why we have over 70% Iron def. anaemia in these groups. Perhaps, QR will help delineate the reasons why Iron does not reach where it should have reached a long back. We do not know why Exclusive breast Feeding rates are so low, in populations where breast feeding otherwise is considered very natural.

Since, most of us are trained in Quantitative Research methods, after proper training in QR, it is also possible to consider using Mixed Method approach where QR may come as a preliminary study to help QtR or QR may follow QtR to explain properly ,some of the findings of QtR ,not fully explained.

I end with a quote from the statistician J W Tukey who pointed out, "far better an approximate answer to the right question ... than an exact answer to the wrong question."

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Original Article

Knowledge and needs about various aspects related to adolescent health in school going Adolescents

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Abstract:

Adolescents have their specific problems and needs. This cross-sectional study was conducted among 187 students of class X-XI. About 51 (43.2%) boys and 43 (62.3%) girls were aware about the components of the Female Reproductive System. Only 1 (0.8%) boy and 1 (1.4%) girl were aware about the components of the Male Reproductive System. Total 89.8% adolescents were aware that HIV/AIDS is a STD. Nearly 50% of the respondents thought that they were given adequate sex education. A total of 48.9% of the respondents were aware about the different forms of violence which included physical, mental and sexual abuse.

Keywords: adolescents, reproductive health, violence, psychosocial health

Introduction

WHO defines adolescents as young people in the age group of 10 -19 years.[1] They form a special group in society and have their own specific needs. Adolescence has become a more clearly defined developmental stage in human life and there is currently a greater recognition of this group biological, psycho-social and health needs than before[2]. Exploration and experimentation, the hallmark of adolescent behavior, often propel adolescent towards risk taking, exposure to unwanted pregnancy, STD infections, substance abuse and unintended injuries[3]. At the same time adolescents often face constraints in seeking services including their own misperceptions about their needs, having to deal with shame and embarrassment in disclosing their problems and provider's attitudes[4]. To overcome these constraints to care seeking behavior, it is imperative to develop specially designated services for adolescents. The adolescents in class X and XI may have different issues due to hormonal and physical changes as well as due to the stress of study

as going through board examination (Class-X) and upcoming major board examination in the class- XII (Class-XI). So, it was decided to take this age group for the study.

Objectives:

1. To assess the health awareness, knowledge and health needs of the adolescents.
2. To study the factors associated with health, reproductive aspect, psychosocial aspect and violence of the adolescents.

Methodology:

It was a cross-sectional study conducted in M.K. higher Secondary School, Ahmedabad. The study was done among all students of class X-XI. Thus total 187 students participated in the study. The information was collected through pre-tested questionnaire. After taking the oral consent, all students were explained about the questions and the responses given in the questionnaire. The anonymity was maintained. The study was conducted in June 2009.

Observations and Results:

Total 187 students participated in the study. All the students were in the age group of 14 – 16 years. Total 118 (63%) male and 69 (37%) female students participated.

Reproductive health:

51 (43.2%) boys and 43 (62.3%) girls were aware about the components of the Female Reproductive System. Only 1 (0.8%) boy and 1 (1.4%) girl were aware about the components of the Male Reproductive System.

It was found that more common sources of information in males were television and books while parents and friends were main sources in females.

Table – 1: Main sources of information about Reproductive Health

Main Source of information regarding Sexuality*	Male (N=118)		Female (N=69)		Total (N=187)	
	No.	%	No.	%	No.	%
Friends	73	61.9	46	66.6	119	63.6
Television	83	70.3	22	31.9	105	56.1
Books, Magazines, Newspaper	79	66.9	36	52.2	115	61.5
Parents	37	19.8	65	94.2	102	54.5

* Multiple responses hence percentages may add up to more than 100

Awareness about contraception:

Table – 2: Awareness about contraception

Contraceptive methods known	Male (N=118)		Female (N=69)		Total (N=187)	
	No.	%	No.	%	No.	%
Condom	95	80.5	61	88.4	156	83.4
IUD	68	57.6	52	75.4	120	64.2
OCP	83	70.3	49	71.0	132	70.6
Vasectomy	60	50.8	47	68.1	107	57.2
Tubectomy	59	50.0	50	72.5	109	58.3

* Multiple responses hence percentages may add up to more than 100

The adolescents were aware about various contraceptive methods as 80.5% males and 88.4% females had written about condom as the contraceptive method. The other methods like IUD, OCP and permanent sterilization like tubectomy and vasectomy were also mentioned as the methods of contraception.

Awareness about STDs:

Table – 3: Awareness about STDs

STDs Known	Male (N=118)		Female (N=69)		Total (N=187)	
	No.	%	No.	%	No.	%
HIV/AIDS	107	90.7	61	88.4	168	89.8
Hepatitis B	51	43.2	32	46.4	83	44.4
Cancer	60	50.8	39	56.5	99	52.9

* Multiple responses hence percentages may add up to more than 100

Total 89.8% adolescents were aware that HIV/AIDS is a STD. About 44.4% of total students knew that Hepatitis B can be transmitted sexually. Surprisingly, 50.8% males and 56.5% females believed that cancer can be transmitted sexually.

Psycho-social aspects:

Out of 187 respondents, 52 (27.8%) thought that boys and girls are treated differently in their families. Out of these 52 respondents, 29 (55.8%) thought that boys are treated better than girls. More than 90% of the students believed that they get satisfactory love and care from their parents. When asked about cigarette smoking and alcohol consumption, 166 (88.8%) of the students did not think that smoking or drinking helps handle stress or anger or enhances one's personality. It was also found that male students were facing less difficulty in communication

with the individuals of the opposite sex as compared to their counterparts. On the other hand, speaking in front of a group or on stage was easier for girls as compared to boys.

Health needs:

Nearly 50% of the respondents thought that they were given adequate sex education while the rest disagreed. 122 (65.2%) believed that they require further sex education.

Although only 17 (9.1%) of total students were not happy with the way their body looks, 52 (27.8%) wanted to lose weight while 33 (17.6%) wanted to gain weight.

Out of total 69 girls, 56(81.2%) were told about menstruation before menarche. 75.4% girls experienced problems during their menses and the major problems were stomach ache, body ache, tiredness and laziness.

Problems related to sexual development have been rated as the most common problems faced by the adolescents and most preferred person for information related to sexual development and sex education was teacher for boys while was mother for girls followed by doctor and friends.

Females had more awareness about issues related to puberty, infertility, sexual intercourse, incest, abortion and homosexuality; whereas males had more awareness about masturbation, safe sex, impotency and sexual abuse.

About 148 (79.1%) students felt that specialized adolescent clinic should be established for solving adolescent problems. When asked about the most suitable place for establishing a special adolescent clinic, 71.2% considered government health centers as the most suitable place, followed by government hospital, school/colleges, private clinics and community center.

Violence:

Many acts of violence are never recorded because they do not come to the attention of authorities / parents. A total of 48.9% of the respondents were aware about the different forms of violence which included physical, mental and sexual abuse.

Table –4: Places suitable for specialized adolescent clinic

Place	No.	% age
Government Health Centre	133	71.1
Government Hospital	115	61.5
School / College	109	58.3
Private Doctor	107	57.2
Community Centre	57	30.5

* Multiple responses hence percentages may add up to more than 100

Majority of boys and around 67% girls admitted that they were involved in the act of violence. Majority acts of violence inflicted or suffered include minor brawl or fights including slapping, beating and verbal abuse with friends or siblings and 74% of injuries inflicted and 64% injuries suffered required nothing. Very few required either first aid at the school medical room or help of a doctor. 4 (2.1%) required hospitalization of the victim.

Discussion:

It was found that knowledge about the reproductive health was inadequate. Only 1 boy and 1 girl knew about components of Male reproductive system. The sources of information were not appropriate as friends, printed materials and mass media (Television) has been found to influence majority. Lack of communication with parents, teachers or other health professionals including counselors may contribute to their ignorance. Awareness about barrier method (Condom) is more prevalent (83.4%) as compared to other contraceptive methods. 89.8% students knew about HIV/AIDS and were aware about the transmission of the disease.

About 29 respondents thought that boys are treated better than girls. More than 90% were satisfied about the love and care received from their parents. 122 (65.2%) believed that the sex education was unsatisfactory and they wanted further sex education preferably from teachers in

case of males and from mothers in case of their counterparts, followed by doctor and friends. Requirement of specialized adolescent clinic was felt by the respondents and government health centre was most preferred suitable place for such clinic followed by government hospitals.

Limitations:

The study was conducted in the age group of 14 -16 years so, the results can not be generalized to all the adolescents. The study was carried out to find various health related issues of adolescent appearing in the board examination or are about to appear next year.

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Original Article

Awareness and knowledge of mothers of under five children regarding immunization in Ahmedabad

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Abstract :

Research question: What is the level of knowledge of mothers of Under Five Children, attending the Immunization centre of Postpartum Unit , VS General Hospital, Ahmedabad regarding immunization? Objective: To assess the awareness & knowledge of mothers of Under Five children regarding Immunization. Study Design: Cross sectional descriptive study. Study Area/ Setting: Immunization centre of Post Partum Unit, VS General Hospital, Ahmedabad. Participants & Sample size : 100 mothers of Under Five children were studied from March 2009 to May 2009. Results: Mean age of the respondents was 28.4 years. 72% of the respondents were housewives & 65% of them were Hindus. 83% of the literate mothers had some knowledge about VPDs. 85% of the respondents knew about poliomyelitis & only 15% knew about Hepatitis B. 80% of respondents had no knowledge about Vitamin A. Main sources of information of mothers about VPD's was Anganwadi Worker 47% & Television 35%.

Key words: Under Five children, Immunization, Vaccine Preventable Diseases.

Introduction:

Immunization is one of the most effective, safest & efficient Public Health Interventions .While the impact of Immunization on childhood morbidity & mortality has been great , it's full potential has yet to be reached. Thousands of children still die from Vaccine-Preventable diseases each year. [1] VPDs contribute significantly to Under five mortality. In India Under five mortality is 68.8/ 1000 [2] Routine immunization is one of the most cost effective public health interventions & was 1st introduced in India in 1978. Yet despite the concrete efforts of government & other health agencies, a large proportion of vulnerable infants & children in India remain unimmunized. India has the highest no. (approx. 10 million) of such children in the world. National Family Health Survey (2005-2006) reports that only 43.5% of children in India

received all of their primary vaccines by 12 months of age[1]. Main reasons identified for poor coverage includes inadequacy of community participation in Routine Immunization & IEC activities.[3] Therefore the study was carried out to assess the level of knowledge and attitude of mothers of Under Five children regarding VPDs & routine immunization & at the same time mothers can be motivated by updating their level of knowledge regarding the importance of immunization, as the mothers of Under Five children are very receptive to advice given by doctors & para-medical staff regarding the health of the child.

Materials & Methods:

The study was conducted amongst 100 mothers of Under Five Children attending the Immunization Centre of Post Partum Unit, V.S General Hospital, Ahmedabad. The average attendance of the centre is 20 children per day. The timings of the centre is 9:00am to 1:00 pm everyday except holidays. The respondents were tested by exit interviews with a pretested pre-designed proforma from March 2009 to May 2009 by the Under Graduate students of Smt. NHL Municipal Medical College, Ahmedabad .

Results:

A total of 100 mothers between age group of 21 to 50 years were assessed. Among these assessed, 73 % were in age group of 21-30 years. Mean age of the respondents was 28.4 years. 72% of the respondents were housewives and 65% of them were Hindus. (Table 1)

Knowledge of mothers about Vaccine Preventable Diseases was assessed as per their educational status. Those mothers who could name at least one Vaccine Preventable Disease were considered as having knowledge & those who could not even name a single Vaccine Preventable Disease were taken as not having any knowledge in each educational status. The knowledge of women in all educational strata was compared with that of Illiterate women There was a highly significant difference with all educational stratas indicating that those who were educated had some knowledge about VPD's (Table 2)

As far as the knowledge of mothers about all VPD's is concerned, knowledge about Poliomyelitis was highest as 85 (85%) of women could tell that it is a VPD. Knowledge of women regarding Hepatitis B & Pertusis was lowest, 15 (15%) & 10 (10%) repectively. When

the knowledge of women about Poliomyelitis was compared with knowledge about all other VPD's separately, it was observed that there is a highly significant difference indicating that knowledge about Poliomyelitis is statistically significantly higher in the group. (Table 3)

Table 1 : Profile of Women

Sr. No.	Socio-demographic variable (n=100)	Number	%
1	Age group (years)		
	21-30	73	73
	31-40	20	20
	41-50	7	7
2.	Religion		
	Hindu	65	65
	Muslim	30	30
	Others	5	5
3	Occupation		
	Housewives	72	72
	Labourers	20	20
	Service	8	8

Table 2 : Association between Educational Status & Knowledge about VPD's

Education	Knowledge about VPD		Total	Z value	P value
	Yes	No			
Illiterate	5	17	22	1	--
Primary	20	4	24	5.17	< 0.01
Secondary	25	4	29	5.78	<0.01
Higher Secondary	20	5	25	4.78	<0.01
Total	70	30	100		

Table 3 : Knowledge of Mothers of Under Five children regarding VPD's

Sr. No.	Diseases	Knowledge		Z value	P value
		Yes	No		
1	TB	35 (35%)	65 (65%)	8.39	<0.01
2	Diptheria	20 (20%)	80 (80%)	12.12	<0.01
3	Pertusis	10 (10%)	90 (90%)	16.08	<0.01
4	Tetanus	45 (45%)	55 (55%)	6.53	<0.01
5	Measles	40 (40%)	60 (60%)	7.42	<0.01
6	Poliomyelitis	85 (85%)	15(15 %)	1	--
7	Hepatitis B	15 (15%)	85 (85%)	13.86	<0.01
	Total	100(100%	100(100%)		

* Figures in the parenthesis indicate Percentages.

Most (80%) of the respondents had no knowledge about Vitamin A. (Table4)

Table 4 : Knowledge of Mothers of Under Five Children regarding Vitamin A

Sr. No.	Response	No. of Mothers	%
1	Yes	20	20
2	No	80	80
	Total	100	100

Regarding the source of knowledge of respondents about VPD's , Anganwadi Worker was the main source of information 47 (47%). When Anganwadi Worker as source of knowledge of women was compared with all other sources of knowledge separately, it was observed that there is highly significant difference from other sources of information i.e Radio, Neighbours & Other sources; significant difference from sources such as Health Workers & Hospitals but there was no significant difference between Anganwadi Worker & TV as source of information (Table 5)

Table 5 : Information regarding the Source of Knowledge of Mothers of Under Five Children regarding VPD's

Sr. No.	Source of Knowledge	Number	%	Z value	P value
1	Health Worker	33	33	2.04	< 0.05
2	TV	35	35	1.74	> 0.05
3	Radio	5	5	7.71	< 0.01
4	Anganwadi Worker	47	47	1	--
5	Neighbours	15	15	5.21	< 0.01
6	Hospital	30	30	2.51	< 0.05
7	Others	10	10	6.36	< 0.01

Discussion :

In the present study , mean age of mothers was 28.4 years while it was 27.3 years in study conducted by D. Adeyinka et al [4]

Majority of mothers (65%) were Hindus in our study which was in contrast with the study conducted by D. Adeyinka et al.[4] where majority of respondents (61.8 %) were Muslims. In our study, 72 % of respondents were housewives as against 5.6% in study conducted by D. Adeyinka et al.[4]

In our study, maximum number of respondents (85 %) knew about Poliomyelitis while measles & Tuberculosis was known to 40% & 35 % of respondents, while in the study conducted by Rahul Sharma & Sanjiv Bhasin [5] maximum number of respondents (61 %) knew about measles followed by tuberculosis (52.5%). Knowledge about Hepatitis B was very less & at par in both studies. In our study, source of knowledge about Vaccine Preventable Diseases was Anganwadi Workers in 47 % of respondents & T.V. in 35 % of respondents while in the study conducted by D. Adeyinka et al.[4] 65.7 % of the respondents got information about Vaccine Preventable Diseases from Antenatal clinics & role of media was only 4.8%

Conclusions & Recommendations: Many mothers don't come regularly for vaccination of their children. As a result they miss the due date of vaccination. Low literacy level of mothers is a matter of worry. Some of them don't know about the diseases for which their child is being immunized .Although many mothers don't know the timings of vaccination but some of them follow the Immunization card & come accordingly. So there is a dire need to arrange for health education program sessions for mothers of Under five children with main emphasis on importance of vaccination & Vaccine Preventable Diseases (VPDs). Anganwadi workers and Television were the two most important souces which can be used for spreading health education messages.

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Original Article

Awareness and practice about preventive method against mosquito bite in Gujarat

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Abstract

Mosquito born diseases are major public health problem in India. Gujarat is endemic for malaria and other mosquito born diseases. Anopheles, Aedes and Culex are commonly seen in Gujarat. Therefore the efforts have been consistently made to educate the citizens of state on danger of mosquito bites. The present study was conducted to assess the awareness and practices of mosquito bites prevention methods among households of Central Gujarat district Vadodara. Total 311 families have participated in study from UHTC area of Medical college. The door to door visit was conducted to visit the all households. The study was conducted in the month of June 2009, which is observed as Anti-Malaria month in state Gujarat. The pilot pre-tested structure questioner was used to collect the data. Study respondents were 57% male and 43% female. Almost 99% had knowledge about breading places of mosquito, but poor knowledge about biting time (20%). 71% of participants knew that mosquito bite causes malaria. 39% 0f house holds were using mosquito net against protection of bite. But only 10% were using insecticide treated bed net. There is need of increasing use of insecticide treated bed net use and continuous updating of knowledge about various aspect of mosquito bite.

Introduction

Mosquito born diseases are major public health problem in India. Gujarat is endemic for malaria and other mosquito born diseases. Anopheles, Aedes and Culex are commonly seen in Gujarat. *Anopheles* specie bites transmit the malarial (*Plasmodium*), *Aedes aegypti* and some other specie bites transmit yellow fever and dengue, while both *Anopheles* and *Culex* have been incriminated for the transmission of lymphatic filariasis[1]. Therefore the efforts have been

consistently made to educate the citizens of state on danger of mosquito bites. The motivation is the effective control of the infectious diseases transmitted by the insect particularly mosquito[2].

Government of India is working for control of mosquito transmitted diseases. The National Malaria control programme has been launched in 1952 and it has been renamed as National Vector Born Disease Control Programme in 2003 [3]. Studies have reveled that human knowledge, attitude and practice of various methods of personal and household protection against mosquito bites vary in different endemic regions of tropical countries [3-8]. There are many personal protective measures are suggested to prevent mosquito bites. They are mosquito net, screening, repellents, vaporizers and anti mosquito coils. Under National Vector Born Control programme, Government has introduced Insecticide Treated Nets (ITN) for community. They are doing social marketing for ITN in country. Study reveled that Insecticide Treated Nets have proved effective against vector borne diseases especially malaria[9].

One of important component of Vector born disease control programme is to impart awareness about mosquito bite prevention in general community. The present study was conducted to assess the awareness and practices of mosquito bites prevention methods among households of Central Gujarat district Vadodara.

Methods:

The community based study was conducted in malaria and dengue endemic district Vadodara, Central Gujarat. It is located on 22^0 18' north and 73^0 12' east. The population of the city Vadodara is 1.5 million.

It was decided to cover all households of Urban Health Training Center catchment area of department of Community Medicine, SBKS Medical institute and Research center, Piparia, Dist Vadodara. Thus cluster of 311 families were selected to represent the study area. It was a cross sectional study. The door to door visit was conducted to visit the all households. The study was conducted in the month of June 2009, which is observed as Anti-Malaria month in state Gujarat.

The pilot pre-tested structure questioner was used to collect the data. The questioner consists of various aspect of mosquito bite, breading places of mosquito, prevention of mosquito bite measures, diseases transmitted by mosquito bite and service utilization for diseases. After

taking permission of institutional ethics committee, the data collection was conducted. The internee doctor of Department of Community Medicine have been trained for interview and data collection from household. The informed consent was taken before taking interview. The questions were asked in local language and collected in questioner. Thus collected data was coded in Microsoft excel and analyzed.

Results:

Three hundred and eleven houses were visited for study and 177 male and 134 female were interviewed for study. The detail demographic profile is shown in table -1.

Table – 1 Demographic profile of study population

Sex	Study participant (n)	Literacy	No	Mean age	Range	Median
Male	177	Literate	168	39.6	15-72	39
		Illiterate	9	47.5	21-76	46
Female	134	Literate	112	36	18-80	36
		Illiterate	22	45.5	29-70	45

The various aspects about knowledge of mosquito breading, biting time and disease transmitted by mosquito bite were asked and their responses are shown in table-2.

Table -2 Knowledge and myths about mosquito and disease transmission

Various aspect	Male (n=177)	Female (n=134)	Total (n=311)
1. Knowledge about breeding places of mosquito	174 (98.3%)	133 (99%)	307 (98.7%)
2. Garbage is the mosquito breading site	36 (20.3%)	24 (17.9%)	60 (19.3%)
3. Knowledge about malaria caused by mosquito bite	129 (72.8)	92 (68.6%)	221 (71%)
4. Knowledge about dengue, chickangunia transmitted by mosquito	72 (40.6%)	49 (36.5%)	121 (39%)

Almost 97% of study participants were using one or other personal protective measures against mosquito bite. The commercial product like coil, repellent and mat were used more among literate household compare to illiterate families (odds ratio = 2.32). But mosquito net use

was almost same among literate and illiterate families (odds ration= 1.4). Only 10% of study participants were aware about insecticide treated bed-net.

Table -3 Protective practices against mosquito bite

Practices	Number of household	%
Mosquito net	121	38.9
Mosquito coil	167	53.7
Repellent	29	9.3
Mosquito killing by racket	14	4.5
Traditional way like burning Neem leaves	14	4.5

Major source of knowledge about mosquito bite prevention was television 77.5% and second was newspaper-magazine 35%.

Table-4 Source of knowledge about mosquito and diseases:

Source of knowledge	N=311	%
Television	241	77.5
Newspaper-magazine	108	34.7
Radio	70	22.5
Friends-relative	56	18
Hording-banners	48	15.4

Discussion:

The wide spread knowledge about mosquito breading places among study population reflects the impact of effective IEC by government (table-2). Sharma SK et al[11] reported in their study in 1993 that majority of Bastat district of Madhya Pradesh did not know the mosquito breeding places. But it was long time back and poor state of India. Gujarat state now comes in well developed state. But still 20% of study population had myths that the garbage is the breeding place for mosquito. This needs to take care in future IEC programme.

Almost 71% of study population had knowledge about mosquito bite is the cause for malaria but only 39% of study participant had knowledge about dengue, chickangunia, kala-azar

transmitted by mosquito. Surendren SN[4] had reported from war-torn northern Sri-lanka that 71% of study participants were able to name at lest one disease transmitted by mosquitoes. Tyagi P[11] reported from New Delhi in 2005 that 100% of study participants knew that mosquito bites transmit malaria.

About practice against bite of mosquito was considered in study. It was observed 97% of study participants were using one or other personal protective measures against mosquito bites. Similar observations, 96% of study participants were using any personal protective measures against mosquito bite, reported by Suredren SN[4] from Sri Lanka and Babu BV[5] reported from Orissa that 99% of urban households; 84% of rural households were using at least one measures against mosquito bites and Snehlatha KS[8] from Pondicherry reported that 99% and 73% of urban and rural respondents in study were found to use some persona protection against mosquito bites. But study from Madhya Pradesh, Panda R[7] et al reported that about 55% of study participants did not take any measures to prevent mosquito bites. Thus the mosquito bite prevention activity is varying place to place but people are using some or other. The knowledge and use of personal protective measures had significant association with literacy status (odds ratio=2.32). Literate people were using more commercial product than illiterate.

Mosquito coil, mosquito mat, repellent, mosquito net and traditional Neem leaf burning were the various methods of personal protective measures among the study participants. Most popular one was the mosquito coil (57%) and 39 %were using net. Snehlatha[8] et al reported in their study that most popular method was mosquito coil in urban and rural area; Babu BV[5] from Orissa reported 76% of urban and 58% of rural household were using untreated bed net. This reflects that the high malaria endemic districts has more use of bed et compare to lower endemic districts.

Only 39% of study participants were using Bed Net for mosquito bite prevention. But none of any stud participant had use insecticide treated bed-net(ITN). There is poor knowledge about ITN in study population. Similar poor usage of ITN bed-net was observed by Snehlatha KS[8] et al, Ziba C[6] et al +and Babu BV[5] et al. The source of knowledge about various aspect of mosquito bite was asked to study population. It was observed that Television is the main source of awareness for community. Other was newspaper, radio, friends and hording but not the doctor or health staff.

Conclusion:

The study revealed that there is good knowledge about mosquito breading places and malaria caused by mosquito bite but some myths are still prevalent. There is need to increase focus on other mosquito born diseases. In last few years Chinkengunia, Japanese Encephalitis, Kala Azar, dengue are increasing. There is urgent need to implement the integration am of National Vector born Disease prevention programme. Insecticide treated bed-net is the good weapon to fight against mosquito bon disease. There is need of strong social or commercial marketing of such product. The television is the best source of acquiring knowledge and programme should target same medium for Information, education and Communication.

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Original Article

PPTCT services and interventions - coverage and utilization – a cohort analysis in Gujarat, India

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Abstract

Background & Objectives: Risk of vertical transmission (largest source of HIV in children) reduces from 33% to 3% with effective PMTCT interventions. NACP III has got an objective of testing all pregnant women for earliest linkage with PMTCT. Study was carried out to find out PPTCT service coverage, drop-outs, interventions efficacy with other determinants. Methods: At ICTCs, registered ANCs are counseled and tested for HIV. HIV+ve ANCs are additionally linked to services and followed-up for institutional delivery, sdNVP, nutrition and children testing. HIV+ve ANCs since 2005 subsequently delivered till June 2008 and their exposed children in Gujarat's category A, B districts constituted study cohort. Results: 259622 pregnant women registered, 72.1% were counseled pre-test, 83.4% of them tested, 74.4% received post-test counseling. 541 ANCs were detected HIV+ve. 45.5% delivered institutionally, 12.8% were unregistered. 12.1% were caesarian section and 66% delivered vaginally. 96.8% were live births, 92.13% mother-baby pair received sdNVP. 35% children could be traced till 18 months, 89% were alive. 90% were tested, 3 were found HIV+ve. Of them, none received MB Pair. 2 were delivered vaginally, 2 received mixed feeding, 2 children's mothers were not linked with ART.

Conclusions: PMTCT services – counseling and testing should be provided to all ANCs. EDD-based tracking, institutional deliveries, postnatal counseling to be encouraged along with complete MB pair coverage, capacity building of concerned staff regarding delivery of HIV+ve ANCs and exposed children tracking.

Key words - PMTCT, MB Pair, HIV Testing of pregnant women, HIV in exposed children

Introduction

Mother to child transmission (MTCT) is the largest source of HIV infection in children below the age of 15 years. [1] According to National AIDS Control Organization (NACO), about 30,000 infants are estimated to acquire HIV infection each year. [2]

Infection to newborn is transmitted by mother perinatal, however, considering the role of male partner in transmission of infection to woman, in India it is appropriately called parent to child transmission (PTCT).

Gujarat HIV Sentinel surveillance (HSS 2007) covering 9517 pregnant women (ANCs), showed the median positivity rate of 0.46% HIV infection among ANCs.[3]

In absence of intervention, rate of vertical transmission is estimated to be around 30-33% which drops down to around 3% with effective antenatal, intranatal & postnatal PPTCT interventions. Intrapartum Ante-Retroviral Treatment (ART) prophylaxis (Nevirapine -NVP), viral load-based ART to ANCs, mode of delivery and infant feeding are factors considered to be determinant for seropositivity in children born to these women (exposed children).[4]

National AIDS Control Programme - phase III (NACP III) has got a long term objective of testing of 22 million by 2012 inclusive of testing of all ANCs.[5]

Latter is being done with purpose of putting seropositive ANCs on ART as soon as possible in order to derive its maximum benefit to prevent opportunistic infections (most importantly Tuberculosis) and to provide single-dose NVP (sdNVP) as an ART regime to both mother and baby to prevent vertical transmission.

In Gujarat, ANC testing was started in 14 Integrated Counseling and Testing Centers (ICTCs) in 2005-'06 which is now scaled up to 400 centers including 289 Stand-Alone and 111 Facility-Integrated ICTCs (58 24x7 PHCs and 53 Public Private Partnerships). Estimated annual pregnancies for Gujarat are estimated to be around 14 lakh out of which 55% deliveries are taking place in public sector **[6].** Strategy being followed in NACP-III is to make district, the unit of intervention.

Present study has been carried out with following objectives:

1. To find out the coverage of PPTCT services and owing to its complex service delivery system to assess the drop-outs at several levels.

2. To find out efficacy of these interventions in terms of reducing transmission rates in exposed children in accordance with other determinants seropositivity.

Method

ANCs registering at various health facilities, are given pre-test counseling at ICTCs in groups with an average of 3 women duration being 20-40 minutes average. With obtained verbal consent, they are tested for HIV by three rapid tests and results whether positive or negative are shared by the ICTC counselor along with individual post test counseling.

While seronegative ANCs are counseled on HIV prevention and risk reduction behavior, HIV seropositive ANCs are additionally provided psychosocial support on disclosure issues and spousal testing, linkage to TB testing and ART services, importance of institutional delivery and intrapartum sdNVP, postpartum follow-up and infant feeding.

During the delivery of these seropositive ANCs, sdNVP regime of ARV, (200 mg Tab.) is given to the woman at the onset of labor and NVP syrup (2 mg/kg of body weight) is offered to the babies within 72 hours of the birth.[7]

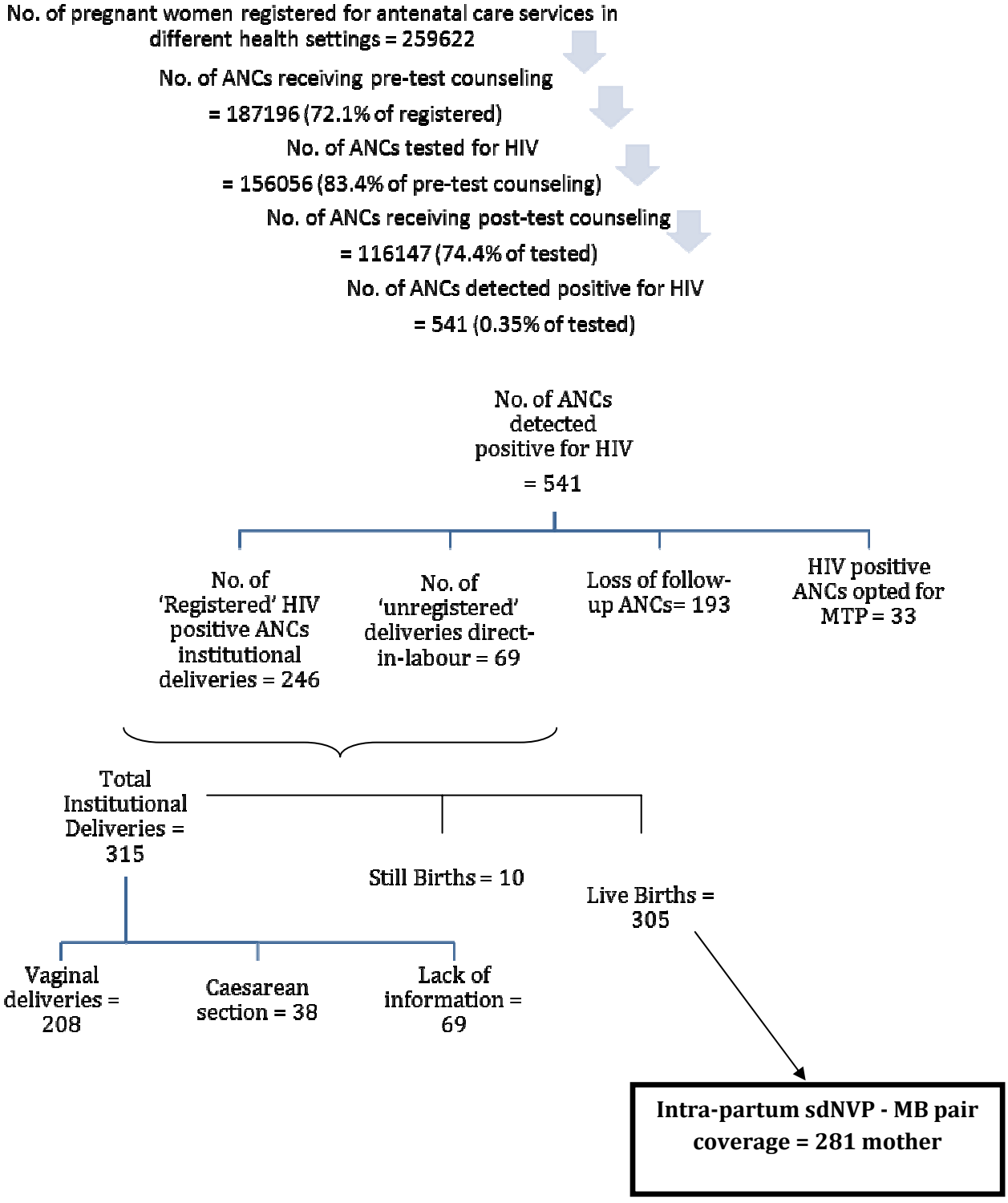
Exposed children are tested at completion of 18 months through HIV rapid tests for seropositivity confirmation.[4]

In Gujarat, 10 districts fall in category A & B as per the categorization (2006) based on results of surveillance for last three years[8] therefore, the seropositive ANCs detected since inception of services (2005) and subsequently delivered till June 2008 in these 10 districts constituted the cohort for study objectives. Babies born to them were followed up till 18 months for confirmation of their seropositivity status.

Result

Since 2005 till June 2008, in 10 category A & B districts of the state, 72.1% ANCs out of all registered were counseled before HIV testing; out of them, 83.4% were tested for HIV. 74.4% such tested women were given post-test counseling before leaving the health setting including all seropositive pregnant women (Diagram I). Total 541 ANCs were detected positive for HIV, sero-prevalence being 0.35% and were further tracked down as per Diagram 1.

Diagram 1:
PPTCT - Counseling and testing services and Cohort of follow-up of the HIV positive ANCs:



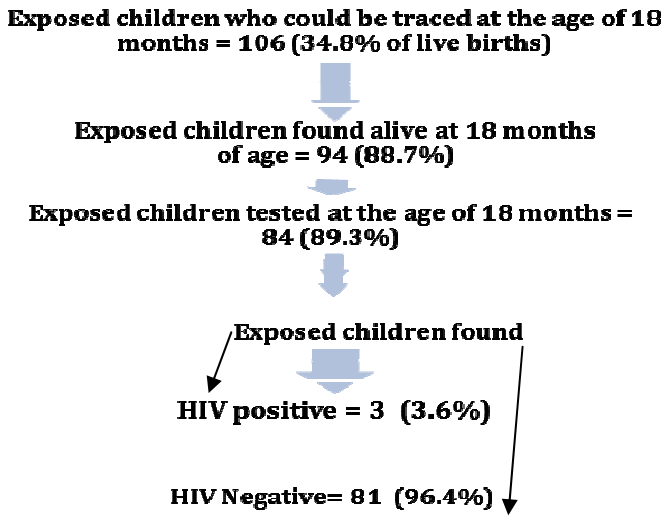
Gap between ANC registrations versus receipt of pre-test counseling was significant in some districts, service uptake being 54.3% (Vadodara), 68.6% (Rajkot), 72.3% (Surat) and 72.5% (Surendranagar). In Rajkot, 57.5% ANCs counseled pre-test were actually tested for HIV.

Post-test counseling was not given to all tested pregnant women (74.4%) in these districts, significant districts being Surat (59.4%), Bhavnagar (68.9%) & Vadodara (70.9%) in terms of service uptake (Table 1).

Table 1: Counseling & Testing services under PPTCT & seropositivity detection

Sr. No	District	Cat.	Registered ANCs [1]	ANCs received Pre-test counseling [2] (% of 1)	ANCs tested for HIV [3] (% of 2)	ANCs received Post-test counseling [4] (% of 3)
1	Banaskantha	A	5978	4690 (78.5%)	3997 (85.2%)	3558 (89.0%)
2	Dahod	A	4821	3937 (81.7%)	3768 (95.7%)	2851 (75.7%)
3	Mehsana	A	6186	5851 (94.6%)	5392 (92.2%)	4465 (82.8%)
4	Navsari	A	8429	7530 (89.3%)	6848 (90.9%)	5986 (87.4%)
5	Surat	A	62879	45484 (72.3%)	33504 (73.7%)	19897 (59.4%)
6	Surendranagar	A	10746	7786 (72.5%)	6605 (84.8%)	4595 (69.6%)
7	Ahmedabad	B	71683	55230 (77.0%)	53854 (97.5%)	42325 (78.6%)
8	Bhavnagar	B	14181	10797 (76.1%)	9098 (84.3%)	6264 (68.9%)
9	Rajkot	B	37254	25554 (68.6%)	14683 (57.5%)	13226 (90.1%)
10	Vadodara	B	37465	20337 (54.3%)	18307 (90.0%)	12980 (70.9%)
	Total		**259622**	**187196 (72.1%)**	**156056 (83.4%)**	**116147 (74.4%)**

Diagram 2:
Follow-up of the cohort of exposed children
(Children born to HIV positive mothers=exposed children)



106 out of 305 live births – exposed children could be traced till the age of 18 months (34.8%). Tracing followed as per Diagram 2.

Among these exposed children tested for HIV, 9 children did not receive sdNVP-MB Pair out of which 3 were tested seropositive. Out of 49 vaginal deliveries, 2 children were tested seropositive while while 1 out of 35 caesarean sections turned out to be positive. No seropositivity was reported among exposed children on exclusive replacement feeding while 1 child out of 42 on exclusive breastfeeding and 2 out of 8 children on mixed feeding were reported seropositive. 1 out of 5 children was reported to be seropositive whose mother was receiving ART during pregnancy at the time of delivery while 2 out of 15 children whose mothers were recommended ART during pregnancy but were not on ART, reported to be seropositive (Table 2).

Table 2:Seropositivity status of exposed children at 18 months in association with sdNVP Prophylaxis, Mode of delivery, Breastfeeding & ART to the ANC:

Factors			HIV seropositivity status in exposed children	
			Total	**HIV seropositive**
SdNVP (MB Pair)		Received	75	0 (0.0%)
		Not received	9	3 (33.3%)
	Total		84	3 (3.6%)
Mode of delivery		Caesarean section	35	1(2.9%)
		Vaginal delivery	49	2(4.1%)
	Total		84	3(3.6%)
History of Breastfeeding		Exclusive Breastfeeding	42	1(2.4%)
		Exclusive Replacement Feeding	34	0(0.0%)
		Mixed Feeding	8	2(25.0%)
	Total		84	3(3.6%)
Mother receiving ART during the time of delivery	ART Recommended	Mother on ART	5	1(20.0%)
		Mother not on ART	15	2(13.3%)
	ART not recommended		64	0(0.0%)
	Total		**84**	**3(3.6%)**

Table 3: Combined Analysis of determinants for all 3 seropositive children

Child No.	MB Pair	Mode of delivery	Breastfeeding history	Mother on ART
Child 1	Not received	Cesarean Section	Mixed feeding	Mother not on ART despite of recommendation
Child 2	Not received	Vaginal Delivery	Mixed feeding	Mother on ART in accordance with recommendation
Child 3	Not received	Vaginal Delivery	Exclusive Breastfeeding	Mother not on ART despite of recommendation

Presence of one or more risk factor was found in each seropositive child. Role of breastfeeding and mode of delivery in association with sdNVP intervention in the vertical HIV transmission among the uninfected babies may be explored further on a larger cohort of seropositive children.

Table 4:

Year-wise PPTCT service utilization

Sr. No.	Year-wise Service Delivery & Utilization	2005-'06	2006-'07	2007-'08 & till June 2008	Total
1	Number of Seropositive pregnant women detected	117	159	265	541
2	Institutional Deliveries	62	75	178	315
	2A. Caesarian Section	6	5	27	38
	2B. Vaginal Delivery	30	44	134	208
	2C. Lack of information	26	26	17	69
3	Number of live births	60	74	171	305
4	MB pair coverage with ARV Prophylaxis	59	70	152	281

Discussion

PPTCT services in Gujarat started in the form of ICTCs since 2005. Initially, the services were available at medical colleges and district level health facilities, within two years; there was a steady upscale of the service delivery model. There has been a massive increase in number of ICTCs covering all CHCs of Category A and B districts. This makes the program unique in the sense that it offers the services package to all those women who access the government hospitals at the block level. At the same time, mechanisms involved are complex liasioning amongst the key service providers like the counselors, medical officers, staff nurses, laboratory technicians and outreach workers (ORWs) who individually come in contact with the ANCs at different phase of service delivery.

Despite having similar service delivery model in all 10 districts, inter-district variations were found in terms of drop-out of ANCs at various stages of counseling and testing services.

ICTCs are considered to be the entry point for ANCs to the healthcare system and HIV seroprevalence in ANCs represents the severity of epidemic in general population, hence all ANCs should be tested for HIV. In districts like Vadodara, Rajkot, Surat and Surendranagar, huge gaps were reported among ANCs registering at the health facilities and those receiving pre-test counseling at ICTCs. These are the districts with high industrial development, labor migration, and existence of surrounding tribal areas. Linkage of all registered ANCs to the ICT services thus is imperative by close district-specific monitoring.

In Rajkot, only half of the ANCs counseled pre-test were actually tested for HIV (57.5%) suggesting the imperativeness of quality of counseling, referral systems, ready availability of testing facilities and simple and quick reporting channels apart from strengthening the internal coordination within the health facility.

Post-test counseling is considered to have an essential role in bondage, subsequent follow-up and finally institutional delivery of ANC within the health setting, quality of same mainly depends upon skills and motivational levels of ICTC counselor. Cumulatively for all 10 districts, it was provided to only 3/4th of the pregnant women (74.4%) tested for HIV and districts with problems were mainly Surat, Bhavnagar & Vadodara.

Thus, not even 2/3rd of all registered ANCs (60.1%) were actually tested for HIV and only about half of all registered ANCs (44.7%) actually received exclusive ICT services. These variations and gaps in various ANC drop-outs can be taken into considerations for subsequent district monitoring and evaluation.

HIV is believed to be concentrated in urban areas and earlier the services also focused only the urban areas, hence the seropositivity happened to be 0.46% of total testing which has come down gradually year by year and corroborate with the subsequent findings of HIV sentinel surveillance in the state.

Out of all 541 detected Seropositive ANCs, 12.8% ANC were detected only at the time of delivery (direct-in-labor cases) which shows the immense need to test not only the registered ANCs but also the unregistered emergency cases before delivery in order to provide prophylactic sdNVP in due time. This also points at the need to identify and plug the gaps in the RCH and other government health programmes so that detection and linkage to care, support and treatment can be done earlier.

While 6.1% seropositive women opted to terminate pregnancy in first trimester, more than 1/3rd of seropositive ANCs (35.7%) were not reported delivering institutionally which may be a case of delivering domestically or in private sector or lost to follow-up. Institutional delivery is the mainstay of PPTCT services especially in context of intrapartum sdNVP interventions and further postpartum counseling. Such gap would contribute to sustainment as well as increase in HIV seropositivity in the society.

Vaginal was the predominant mode among all reported institutional deliveries (66%) while information regarding mode of delivery was not available in case of 22% ANCs. Elective caesarean is the preferred mode of delivery in seropositive ANCs which again is possible only by effective antepartum follow-up.[9] Predominance of vaginal deliveries silently suggests the need for sensitization of involved staff.

Simplicity, low-cost & efficacy are the reasons of the sdNVP prophylaxis to mother and infant why it's being widely used in resource-constrained settings for PMTCT programs globally as well as in India.[7, 9] Coverage of sdNVP to both mother and baby was reported in 92.13% of the live births which ideally should have been 100%. Nevirapine only to mother or only to baby is considered to be resulting into decreased efficacy of intervention. MB pair coverage thus was found to be only about half (51.9%) against detected seropositive ANCs, which highlight the immense need and channelized efforts to improve institutional deliveries of seropositive ANCs.

Maternal antibodies are expected to be present in the baby at least till the age of 18 months and hence rapid tests detecting antibodies are designated for 18 months.[10] The follow-up of babies after their birth in order to get them tested at 18 months is a difficult task in the rural settings considering migration and other social factors. Just like ANCs, drop-out in service utilization was observed among exposed children also. Only about 1/3rd of the exposed children (34.8%) could be traced till the age of 18 months which again shows the weak follow-up. 11.3% children had died by then. 10 children were traced successfully but could not be tested for various reasons which again shows a worrisome drop-out.

HIV seropositivity among the tested children was found to be 3.6% and none of the 3 seropositive children had received sdNVP - MB Pair. Srijayanth Parameshwari et al in their study in Tamilnadu reported 2 infants turning out to be positive out of 46 live births (4.35%).[11]

Two seropositive children were delivered vaginally and 2 had received mixed feeding. In case of 2 positive children, mothers were not on ART despite of recommendations. In case of seropositive ANCs, elective caesarean section is preferred as well as mixed feeding is never recommended.[9] Outcome of child's sero-status is dependent upon these factors also and inter-dependency of each of these in positive children is further described in Table 3.

Given the resources spent after PPTCT services and the role of intrapartum MB Pair sdNVP administration, cornerstone of successful programme implementation remains to be institutional deliveries of seropositive ANCs. Year-wise analysis of PPTCT services (Table 4) indicates improved rate of institutional deliveries of seropositive ANCs from 53% (2005-'06) to 67.2% (by June 2008). Simultaneously, rate of MB pair coverage in live births has dropped down from 98.3% to 88.9%. Marked improvement is seen in quality of data keeping at ICTCs for the seropositive ANCs.

Conclusion

In order to improve access and reduce various gaps and drop-outs, PPTCT services which are feasible in government hospitals should be made available to all ANCs with necessary awareness campaigns especially in rural areas which constitute a major chunk of the population. Presence of a gynecologist or doctors thus trained in all such settings is bare minimum.

Continuous capacity building of the ICTC counselor and concerned staff, effective BCC and more involvement of PLWHAs in order to improve quality of services thus become essential.

Every ANC visiting the health facility should go for HIV counseling first and then to the doctor in order to improve the access of PPTCT services. Suitable mechanism may be developed centrally as well as locally.

ANC testing gaps and sdNVP-MB pair, post-test counseling gaps, liasioning with existent RCH systems and linkages with other services are indicators of the counselor's strengths

or weaknesses. Effective counseling and testing services with promotion of institutional deliveries, interventions can successfully be made available to all seropositive ANCs. Post-test counseling with apropos tracking and follow-up of every seropositive ANC based on her EDD should be ensured with better utilization of ORWs. Maintenance of line-list of such cases may prove immensely beneficial in terms of their institutional deliveries.

Lack of MB pair coverage despite of institutional delivery of seropositive ANC is also an area of concern. Drug unavailability in the health setting, absence of adequately knowledgeable staff etc. areas can be dealt with centrally and locally.

Postnatal counseling is a badly neglected area which results in faulty feeding practices which can be improved by combined efforts of counselors, PLWHA and ORWs.

Nil seropositivity in all exposed children who received MB pair shows the efficacy of sdNVP MB Pair; however, when it is pursued as the case study mentioned here, the other factors are also pertinent. Though, simple intervention strategies like sdNVP can go a long way in reducing the vertical transmission and pediatric HIV infection significantly in the country.

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Original Article

Application of Epidemiology and Statistical method in understanding disease aetiology-study on Vitiligo.

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The disease results from the interaction between the person's genetic make up and his outer environment.[1] The proportionate role of both the factors varies from disease to disease. There are some diseases with unclear aetiology; Vitiligo is one of them.

The purpose of this paper is to show the application of Epidemiology and the statistical methods to understand the disease causation.

The epidemiological study of skin conditions among school children in Urban and Rural areas of Surat district carried out by the author [2,3] brought out following observations.

(A) Epidemiological observations:

1) Vitiligo affects both sexes
2) Multiple cases of Vitiligo seen in some families (sharing common gene pool and common home environment)
3) Prevalence of Vitiligo varied insignificantly in various home environments (It may be presumed that role of environment is proportionately very low in causation of Vitiligo)
4) Significantly higher proportion of affected students had outwardly normal (apparently unaffected) parents (suggesting effect of environment)
5) Cases of Vitiligo were seen more commonly in certain communities (castes) (as most of the marriages are within the caste, this indicates that there could be genetic base)

The above observations suggest the genetic base in Vitiligo. **How to test it?**

(B) A **case-control study** can help to understand this. It is an inquiry in which groups of individuals are selected in terms of whether they do (the cases) and do not (the controls) have the disease of which the aetiology is to be studied, and the groups are then compared with respect to existing or past characteristics judged to be of possible relevance to the aetiology of the disease. [4]

The cases may be selected from the hospital or detected through survey and their controls are selected from the same administrative area, hospital patients, relatives or associates (class-mate, work-mate) of the cases depending upon the feasibility.

Various studies [5,6,7] attempted to explore the aetiology of Vitiligo and ultimately concluded that the disease results from the interactions of genes and environment. However, the relative importance of genes and environment could not be judged.

1) School children from the urban (15350) and the rural (4425) areas of Surat district were screened for the detection of Vitiligo cases.
2) The Dermatologist of Civil Hospital Surat confirmed cases of Vitiligo.
3) The control for each Vitiligo case was selected preferably from the same class in the school. The criteria used for matching were age, sex, religion and caste, Socio-economic status, home sanitary condition, residence and the duration of stay in the area. The control student should match Vitiligo cases in at least 4 / 6 criteria in addition to home sanitary condition. More than one control students were selected for each Vitiligo case to compensate the drop out.
4) Home visits were paid to each Vitiligo case and its control spending equal time to elicit the required information During home visits attempt were made to examine all available family members. Enquiry was also made to know the occurrence of Vitiligo in non-available family members and in the previous generations. Thus, a comprehensive family history of three or four generations was obtained. Based on this Pedigree of each case and its control was prepared, analysed and findings are presented here.
5) In this study. 56 families of each of the Index Vitiligo case and control were studied.

OBSERVATIONS:

Familial aggregation:

Total 9.7 % of the relatives of Index Vitiligo cases had Vitiligo as compared to 5.0 % relatives of the controls students. The difference observed was significant at 0.001 level (d=4.87).

As the home sanitary condition was matched in cases and controls, this observation strongly suggests the genetic basis of Vitiligo.

This is further supported by the findings that significantly higher percentage of FIRST Degree relatives of Index cases were affected (11.9 %) as compared to SECOND Degree relatives (5.72 %) (d=3.2, p <0.002) while no such difference was observed

between FIRST and SECOND Degree relatives of the control students. (d=1.74, p > 0.05). (Table: 1)

1) Number of amilies studied	= 112
a) With affected student index case	= 56
b) With unaffected student as control	= 56
2) Number of affected index students with Outwardly normal parents	= 40 (71.4 %)
3) Number of affected index students with Either of the parents affected	= 16 (28.6 %)

Table No: I

Distribution of affected individuals according to the degree of relationship with cases of Vitiligo (Index case) and Control students.

	Percentage of affected individuals	
	Index case	**Control**
All relatives	9.77 (47 / 1504)	5.0 (63 / 1260)
FIRST Degree relatives (parents, brothers, sisters, sibs)	11.9 (40 / 336)	2.3 (7 / 304)
SECOND Degree relatives (First cousins, uncles, grand parents)	5.72 (52 / 909)	4.23 (34 / 804)

(a) Pedigree analysis to determine the nature of Inheritance:

i) Sex linked inheritance can be ruled out because (a) Vitiligo affects both sexes and females are predominantly affected (b) Father-son transmission, which is absent in sex-linked inheritance, is observed in Vitiligo.

ii) In autosomal dominant conditions, the disease tend to manifest early in life and tend to be more severe.[8] Vitiligo is not a serious condition and manifest between the age 6-15 years in a majority of the cases.[5] The possibility of autosomal dominant inheritance can, therefore be ruled out.

iii) In the present study, out of 56 Index Vitiligo cases, 40 cases (71.4 %) had apparently normal (outwardly normal) parents. This observation suggests the autosomal recessive nature of inheritance.

(c) **Statistical Test to support Autosomal Recessive Inheritance:**

In autosomal recessive conditions the heterozygous parents (outwardly normal) will have one fourth (1 / 4 = 25 %) of their offspring homozygous and affected. However, in human genetics, such families are ascertained only through the occurrence in them of at least one affected member (in the present study the affected student i.e. index case). Since we do not have any means to recognize the outwardly normal heterozygous parents whose children are fortunate to escape this condition, a collection of sibship containing at least one affected child is a biased sample. In these ascertained families, we found more affected children than expected one fourth (25 %) (in the present study it was 28.72 %) Table: I.

So it is necessary to prove whether the deviation of the observed value (28.72 %) from the expected value (25 %) is significant or not. For this, a Statistical test " Bias of Ascertainment" [8] is applied. This test is shown step by step in Table: II Expected number of affected children and variance for each size of sibship are calculated by multiplying the figures in the columns (a x d) and (b x c) respectively. The square root of such variance (22.838) will give the Standard Deviation (SD) (4.78)

Since the observed value (i.e. observed number of affected children-56) falls within the range of 2 SD from the expected number of affected children (65.3166), the deviation is not significant. Similarly X^2 square statistics applied to the observed number and expected number of affected children in each size of sibship was found insignificant ($X^2 = 4.518$, d.f. = 6, $p > 0.05$). Therefore our hypothesis of Autosomal Recessive nature of Inheritance in Vitiligo is supported. So the observed proportion of affected children (28.72 %) in the ascertained sibship in the present study does not deviate significantly from the expected proportion of 25 %.

In light of the present observations, it is concluded that Genes primarily decide Vitiligo. However, delayed phenotypic manifestation of Vitiligo in susceptible individuals may be related to some environmental factors, probably microenvironment, which may be identified by a prospective study.

Table No: II

Sibship size	Proportion of affected children in ascertained sibship (a)	Variance of affected children (b)	Number of sibship included in present study (c)	Number of sibs in the present study (d)	Affected children		Variance of affected children in the present study (b x c)
					Observed	Expected (a x d)	
1	1.0000	0.000	-	-	-	-	-
2	0.5714	0.122	-	-	-	-	-
3	0.4324	0.263	8	24	9	10.3376	2.104
4	0.3657	0.420	12	48	13	17.5536	5.040
5	0.3278	0.502	8	40	10	13.1120	4.016
6	0.3041	0.776	4	24	6	7.2984	3.104
7	0.2885	0.970	5	35	11	10.0975	4.850
8	0.2778	1.172	2	16	6	4.4448	2.344
9	0.2703	1.380	1	9	1	2.4327	1.380
Total			**40**	**196**	**56**	**65.3166**	**22.838**

The predicted and the observed values of affected children according to their sibship size-

Statistical testing of Recessive Hypothesis. SD = $\sqrt{}$ 22.838 = 4.78

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9. Note: Values stated in Column number (a) and (b) are taken directly from the Book " Human Genetics" by Mc Kushick,[8] page No: 138

CONFERENCE ANNOUNCEMENT

XVIII Annual conference of Indian Association of Preventive and Social Medicine Gujarat Chapter

XVIII Annual conference of Indian Association of Preventive and Social Medicine Gujarat Chapter is to be hosted at PramukhSwami Medical College, Karamsad on January 22nd 2011. The Conference would be preceded by a Pre-Conference workshop on 21st January. Theme for the conference is "Advancing child survival in Gujarat – Community Based Approach" and for the pre-conference workshop is "Building a career in public health management and research" For more details visit web http://iapsmgc.org and contact Dr. Uday Shankar Singh, Organizing Secretary iapsmgc18@charutarhealth.org and iapsmgc18@gmail.com

Original Article

A cross-sectional study of physical spousal violence against women in Goa

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Abstract

Background: Spousal violence against women is very common, yet reliable data concerning its magnitude is lacking. Objectives: To study the prevalence of physical spousal violence and the help-seeking behavior of its victims with respect to certain sociodemographic variables, in the three months preceding the survey. Material & Methods: A cross-sectional study consisting of face to face interview of 379 married women, during September to December 2008 was undertaken in Tiswadi taluka of Goa, India. Results: Spousal violence was reported by 26.6% of the respondents. Factors predisposing the women to victimization included early years of marriage, poor educational status for men and women, working women (OR=3.3; 2.1,5.5), and alcohol consumption by the husband (OR=7; 4.2,11.8). Women with higher monthly income compared to their husbands seemed to be protected (OR=0.28;0.16,0.48). Majority of the victimised women preferred to be silent sufferers. The help seeking behaviour was not proportionate to the severity or the duration of violence but seemed to be influenced by the variables like women's employment, education and income. Conclusion: The study emphasises the role of social factors in perpetuating domestic violence by intimate partner. Change in the social attitude that permits and legitimizes such acts through awareness is the only long lasting panacea.

Keywords: physical violence against women; spousal violence; domestic violence

Introduction:

Violence against women, often referred to as gender-based violence, evolves largely from the women's subordinate status in society[1]. Contrary to the violence against men which is often caused by strangers, women are usually victimised in their own house by their intimate partners

(usually husband in Indian scenario). Intimate partner violence (IPV) challenges the usual belief of home being the safe haven, as for many women it is place of humiliation and pain.

IPV has a far deeper impact than the immediate harm caused. In addition to the risk of physical injury it exposes its victims to a wide range of somatic and stress-related illnesses, chronic pain syndromes, depression, posttraumatic stress disorder, and substance abuse disorders, thereby compromising the mental and reproductive well-being[1-4]. Domestic Violence (DV), which was till lately considered as a prerogative of law and welfare, is thus now recognised as a major public health problem[5].DV hinders women's participation in public life and undermines the economic wellbeing of the societies[1]. Further the consequences do not confine themselves to the woman but also affect the mental wellbeing of the children as evident from the potential for intergenerational transmission of DV[6,7].

States have a duty to exercise due diligence to identify, prosecute and prevent DV, and the estimate of the magnitude of the problem is an essential pre-requisite. The women may not want to divulge the confidential matter for reasons of shame, fear, guilt or simply because they do not want to be disloyal to their partners. A review of over 50 population based studies from 30 countries has reported the lifetime prevalence of IPV between 10%-52%[1].The WHO multi-country study[2] on DV estimated that the lifetime prevalence of physical IPV varied from 13% (Japan) to 61% (Peru) with the current prevalence (last year) of IPV varying between 20% and 33%. The National Family and Health Survey-3 (NFHS-3) observed the estimates of physical IPV among Indian women varying from 6% in Himachal Pradesh to 59% in Bihar with national average of 37%.[6]

Despite the fact that DV has been a focus for research since 1970s there has been a scarcity of information on its prevalence and the underlying factors precipitating DV in the developing countries[7]. It has been shown that the focused studies on violence against women tend to give a higher and correct estimate of violence compared to health surveys (like NFHS) in which only a small number of questions on violence are asked[2]. The other sources of data in Goa being the cases of violence reported at the women's police station and the Goa State Commission for women which only represent the tip of the iceberg. A need was therefore felt for a community based study focussed on DVAW to gather data that would improve our understanding of this *sleeping giant*[8] of the Indian health. This study was undertaken to estimate

the current prevalence (last three months) of DV and the underlying factors among the women, and to study the help-seeking behaviour of the victims.

Method:

The study was conducted in Caranzalem ward of Tiswadi taluka in the state of Goa during the period June–November 2008. Four hundred and sixty women aged 18-49 years were selected by systematic random sampling based on the latest voters' list to obtain a minimum sample of 345 married women Upon visit to the household the purpose of the visit was explained to the family members and the female researchers engaged the selected woman in the face to face interview, after she consented for participation. In case the sampled woman was not at home at the time of visit the next visit was scheduled after prior telephonic appointment. The interview was held using semi-structured questionnaire consisting of the background information including age, marital status, education, occupation, income, and the questions related to the domestic violence as per WHO ethical and safety guidelines for domestic violence research.[9] The interview lasted for 30-45 minutes depending on the women's experiences. The interview was held within the maximum possible limits of privacy and the women were asked if they were victimised by their husbands in the three months preceeding the survey and the details thereof. Domestic violence was defined as per the Protection of Women against Domestic Violence Act, 2005.[10]

Statistical Analysis: The data was processed in Microsoft Excel workbook, and analysed using the hand-held scientific calculator. The magnitude is expressed as percentage (Standard Error). Association between the socio-demographic factors and DV was tested in bivariate analysis using the Chi-square test for difference between the two proportions at 5% level of significance, and the strength of association expressed as odds ratio with 95% confidence interval calculated by Wolff's method.[11]

Results:

All the sampled women consented to participate in the study providing cent percent response rate. Of the 460 women 379 (82.4%) were in the currently married relationship, and hence eligible to be the respondents. None of the respondents reported an extra-marital intimate relationship during the time frame of preceeding three months of the study. The proportion of

women who reported physical violence by the spouse was 26.6% (SE 2.2). The middle-aged women were at a higher risk of abuse compared to the ones at the extremes of age groups (Table I).

Table I: Age Distribution of the Study Participants and the Victimized Women

Age group	N	Physical Violence (Current)
18-24	12	3 (25.0%)
25-29	82	30 (36.6%)
30-34	79	28 (35.4%)
35-39	84	16 (19.0%)
40-44	63	8 (12.7%)
45-49	59	5 (8.5%)
Total	379	90 (23.8%)

Table II details the socio-demographic correlates of the reported instances of IPV. The prevalence was higher among Muslims and in joint families, but the association was statistically not significant. The risk of abuse was maximum in first 7years, and declined with the increasing duration of marriage ($P<0.01$). Education was found to have protective influence on the prevalence of IPV, with higher educational grades being associated with lesser risk. The prevalence was up to 4-times more (OR=4.1;2.2,7.9) among the illiterate women compared to those who finished their graduation. Also, the graduated men were up to two and a half times (OR=0.18;0.08,0.38) less likely to harm their wives. Employed women carried at significantly higher risk of physical abuse compared to the unemployed (OR=3.3;2.1,5.3), and its association with the level of women's income seemed to be statistically insignificant. It was, however, found that the women having monthly income more than their husbands were reasonably protected against spousal violence (OR=0.28;0.16,0.48).

Table II: Factors Associated With Domestic Violence in the Preceding Three Months

Correlates of DV	N	DV+ (%)	χ^2	*P**
Religion				
Hindu	252	58 (23.0)		
Catholic	110	27 (24.5)	2.565	>0.1
Muslim	17	5 (49.4)		
Family Type				
Nuclear	260	59 (22.7)	1.77	>0.1
Joint	119	31 (26.1)		
Duration of marriage				
< 7 year	86	34 (39.5)	33.61	<0.001
7-14 years	156	43 (27.6)		
>14 years	137	13 (9.5)		
Women's Education				
Illiterate	108	37 (34.3)	22.04	<0.001
up to 4th	41	14 (34.1)		
up to 10th	110	26 (23.6)		
up to graduate	120	13 (10.8)		
Women's Employment				
Unemployed	159	26 (16.4)	8.27	<0.01
Employed	220	64 (29.1)		
Women's Income pm				
<5000	145	45 (31.0)	1.007	>0.1
5000-10000	62	15 (24.2)		
>10000	13	4 (30.8)		
Husband's Income pm**				
More than wife	176	58 (32.9)	6.36	<0.05
Same as/less than wife	44	6 (13.6)		
Husband's Educational				
Illiterate	51	23 (45.1)	21.72	<0.01
Primary	99	27 (27.3)		
Secondary	110	25 (22.7)		
Graduate	119	15 (12.6)		
Alcohol				
Yes	105	54 (51.4)	61.3	<0.000
No	274	36 (13.1)		

* $P<0.05$ is significant

Table III: Triggers for Domestic Violence in the Preceeding Three Months*

Reasons	N (90)	%
Objected to husband's alcohol consumption	41	45.5%
Suspicious about wife	19	21.1%
Dowry related	12	13.3%
Disrespect towards in-laws	9	10.0%
Argumentative nature of wife	9	10.0%
No child	6	6.7%
To prove his superiority	4	4.4%
Children's misbehaviour	3	3.3%
Male Child	2	2.2%

*Multiple responses possible

Table IV: Reasons Cited by Women as Justifiable for IPV*

Reasons	N(35)	%
Extra marital affair	33	94.3
Neglecting the children	28	80.0
Not informing the husband before leaving the House	11	31.5
Disrespect to in-laws	10	28.6
Not accompanying the husband in bed	1	2.9

*Multiple responses possible

Table V: Women's Response to DV*

Response	N (90)	%
Maintain silence	67	74.4%
Talk to relative/close friend	28	31.1%
Approached legal aid cell/NGO	4	4.4%
Fight back	3	3.3%

*Multiple responses possible

The reasons cited by the victimized women for the assault they suffered in the preceeding three months are mentioned in Table III. Of the 90 women physically abused by their husbands 36(40%) did not perceive it as victimization and accepted it as a social norm. On being asked if they thought wife beating was justified under any circumstances, 9.2%(35/379) opined that it could be justifiable under some circumstances (Table IV),but none of these supported the idea of hitting their husband on similar grounds. The prevalence of IPV among those who thought it was justifiable under some circumstances was 94.3 % (33/35), compared to those who condemned it in any circumstances (54/341). The potential for intergenerational transmission of DV was obvious with 90%(81/90) of the victimized women reporting having witnessed similar instances

among their parents, while only 14.2%(41/289) of the never victimized women reporting the same.

For most women the study was the first opportunity to talk about the DV, only a few women had talked to their relatives or close friends (Table V). Overall, the use of formal helpdesks was meagre. A minority of women took charge of the situation and fought back against the perpetrator either physically or by verbal warnings. Of the 68 women who preferred not to speak or seek help 63 did so in anticipation of change of husband's behavior with time, primarily to maintain the integrity in family, while 41 thought that disclosure would cause distress, shame to their parents. A sizeable number of 30 remained quiet accepting it as a social norm, and 28 were held back on account of reason of security of children's' future. It was a combination of one or more of these reasons which compelled the women to continue in the abusive relationship.

It was noteworthy that women's response was not in tune with the severity of DV as one would expect a severely/repetitively hit woman to approach the formal systems or fight back. The instances wherein the women fought back or approached third party intervention were the first of its kind in the women's life, and not severe enough even to demand medical attention. Moreover, the women involved in these scenarios were holders of post-graduate qualifications, professionally employed and earning an average of about Rs.23000/- per month.

Discussion

None of the respondents in the study reported an extra-marital intimate relationship during the preceeding 3 months; hence the prevalence estimate may be referred to as the prevalence of intimate partner violence (IPV). The other studies in India have provided the estimates ranging from 26% to 61%[12-16], which are coherent with the different study settings, method of interviewing, inclusion criteria, and the socio-demographic factors prevailing in the local communities.

The prevalence is higher among the women 25-34 years of age, and in the early years of marriage. This may be attributed to the comparatively late age at marriage in Goan females; the median age at marriage in Goa being 24 years[6]. The observation on age distribution is similar to that in a study in Turkey[17]. A study by *Vickerman KA & Margolin G*[18] has confirmed reduced rates of physical aggression with the increasing duration of marriage as observed in this study. Higher level of education, for men as well as women, protects against IPV. The observation has been supported through other studies worldwide[6,17,19]. A well-educated woman is most likely to

have a better/equally qualified husband and also more autonomy in partner selection which minimises her risk of IPV. Much has been said about empowering women in prevention of DV, but the studies worldwide have shown a mixed picture[19-22]. Although many equate women empowerment to employment and economic independence, we observed that the benefits are not extremely obvious. It has been discussed that IPV evolves from the women's subordinate social status, and any transgression from the expected behaviour in the form of excessive social involvement or any situation which endangers the male supremacy in the family is likely to invite violence[2].

Role of alcohol in potentiating IPV is notorious.[6,23] The husbands who came home drunk had 40% more tendency to victimise their wives then the non-alcoholics (OR=7.0;4.2,11.8). Most women in our study cited that objecting to husband's alcohol consumption was the major trigger for IPV. It was surprising that dowry related demands were an important instigating factor for IPV in a socio-demographically advanced state like Goa. This was also evident from higher prevalence of IPV in early years of marriage.

Women who witnessed IPV among their parents were more likely to accept it as a 'normal' behaviour, and were more likely to be victimised. There were women in the study who justified wife-beating under certain circumstances, but none could favour IPV against husbands for similar circumstances. The prevalence of IPV was more among the women who did not perceive it as violence and justified it in any circumstances. This may be due to the violent experiences teaching the women that violence is acceptable, and has been referred to as intergenerational transmission of violence.[6,7] Qualitative research worldwide has suggested that IPV is higher in communities where the behaviour is normative, and where the belief, especially among women, is that marriage grants men unconditional autonomy over their wives.[2]

Conclusion: Domestic violence is a pervasive medical-social problem. The societal outlook towards the overall problem and the socio-cultural beliefs that shape women's attitudes thereby justifying IPV and making it acceptable, appear to legitimise and permeate violent behaviour, in addition to influencing the help-seeking behaviour of the women. A social panacea in the form of awareness that IPV is condemnable under any circumstances, together with compulsory schooling for both men and women is likely to positively affect the societal attitude. This should be coupled with better social support system for aggrieved women who have to continue in the violent relationship just because of the financial dependence. A similar study among men to

explore their attitude and perception of the overall problem is likely to fill the gaps in the social pathology of IPV.

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Original Article

Morbidity profile of Brick Kiln workers around Ahmedabad city, Gujarat

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Abstract

Brick workers are known for poor health and poor access to health care. They are prone to specialized group of diseases. The present study was undertaken with objective to study the morbidity pattern among brick workers working around Ahmedabad city. It was a cross-sectional study. There were 2545 brick kiln's workers examined for various morbidities. They have one or more morbidity during examination. The musculoskeletal symptoms, respiratory and digestive system related symptoms were the major morbidity. There were other illness also observed, they were fever, malnutrition and skin diseases. The majority of workers were in age group of 15-44 years age group. The limitation of study was that it is the camp based approach. There is need to plan community based house to house study among brick workers.

Keywords: Brick kiln worker, morbidity, camp approach,

Introduction

Brick is a very important building material for a developing country, especially like India to improve infrastructure. The majority of new buildings use bricks, and construction is the symbol of improvement in the urban sector. However, the reality is that people, who work with this rough material, will never be able to own a development themselves; sometimes they don't even have enough money for a meal. They earn money on the amount of bricks they shift, rather than hourly, which encourages them to work from dawn till dusk; the workers are treated as machines as the more the labourers[1]. The Indian brick industry is the second largest in the world after China, employing large numbers of migrant workers including men, women and even children[2]. Most of the labourers of the brick field come from the tribal area. In Gujarat also the picture is same that majority of brick workers are coming from tribal areas to work near by cities in brick industry. Ahmedabad is the upcoming metro city of Gujarat. The city is the one of main

important economic as well as culture center of Gujarat. There are lots of brick making units around the city.

The brick kiln's workers are living in poor environment near to brick making units. They have poor access to the health care. They are at risk to various types of illnesses. It is very surprising that the first response on falling ill is to come back home. Thus the outcome is loss of job and the earning. Work related illnesses are very common. The present study was under taken to find out the morbidity pattern among the brick kiln's workers.

Methods

The study was conducted in and around city Ahmedabad. It was estimated that around 50000 brick kiln's workers working in area. It was decided to include 5% of workers to examine for present study. It was a cross-sectional study. The series of health check up camps, at multiple location around city Ahmedabad, were organized to encourage morbid people to attend health services. The doctors with supportive staff had conducted health camp near by brick industry. The workers were asked to attend camp and take diagnostic and treatment services. The pre-tested questionnaire was used to collect morbidity information. The doctor has been asked to take at least 10 minutes for examination and treatment, whenever possible health education was also imparted for prevention of minor elements. This paper intends to provide the morbidity profile of brick kiln workers based on the analysis of case paper.

Thus the team of doctor, case recorder, trained person for medicine with driver had conducted series of camp for data collection in the month of February – March 2009. Thus collected information was entered in Excel sheet and analyzed with the help of EpiInfo software for morbidity pattern.

Results

A total of 2545 patients were examined during study period. The sex distribution of workers is shown in table -1.

Table – 1 Sex wise distribution of Brick worker (patients).

Sex	Frequency	%
Male	1545	60.7
Female	984	38.7
Not recorded	16	0.6
Total	2545	100

Majority of the patients were male (61 %) compare to female (39 %). This may be because of less proportion of female workers or lack of female doctor in some of the camps.

Table – 2 Age wise distribution of patients who attended camp

Age in yrs	Percent
0- 1	4.8 %
1-5	12.1 %
6 – 14	12.1 %
15-29	29.6%
30-44	29.1%
45-59	8.6%
60-74	3.3%
75-90	0.4%

Almost 88 % of patients were young – less than 45 years of age. Out of total patients 29 % patients were children below the age of 15 years.

Out of total 2545 patients, examined 14.9 % had minimal complaint or no complaint & hence they are grouped under others. Where it was not possible to interpret the illness they are also grouped under the others.

Although there were multiple complaint per patient in many cases, for simplicity of analysis we have considered only more significant one, which brings the patients to doctor. Also it was a camp approach and denominator is not available, the morbidity is expressed as proportions.

Mainly 3 type of morbidity was observed in study population. They were musculoskeletal disorders, respiratory disorders and digestive disorders. Their contribution was more than 50 % of morbidity. (See table -3)

Musculoskeletal system (19.6 % + 5.3 % Bodyache) = 24.9 %
Respiratory System = 17.1 % &
Digestive system = 12.7 % .

Table – 3 Distribution according of Morbidity	Frequency	Percent
Respiratory	435	17.1%
Body ache	135	5.3%
Musculoskeletal	499	19.6%
Digestive	324	12.7%
Dental	29	1.1%
Fever	166	6.5%
Ear	36	1.4%
Malnutrition	119	4.7%
Eye	37	1.5%
Others	379	14.9%
Skin	141	5.5%
Weakness	65	2.6%
Headache	35	1.4%
Injury	27	1.1%
Endocrine	2	0.1%
Bleeding	5	0.2%
Nervous	20	0.8%
Infections	12	0.5%
Pica	20	0.8%
Reproductive	5	0.2%
Circulatory	14	0.6%
Gynec disorder	6	0.2%
STDs	1	0.0%
Surgical	16	0.6%
urinary system	17	0.7%
Total	2545	100.0%

All these problems are preventable mainly by using knowledge of ergonomics, providing safe drinking water and use of face mask with reduction of air pollution by engineering methods.

Respiratory system includes cough, cold, TB, asthma & other cases. Digestive system includes acid-peptic disease, diarrhea and pain in abdomen & worm infestations. Musculoskeletal system included backache, joint pain, pain in lower limb, body ache etc.

Although according to analysis malnutrition is seen as only 4.7 %. Other significant illnesses which were seen includes Fever (Respiratory infections & Malaria), skin disorders (Abscess, boils, scabies, dermatitis itching etc), Injury, surgical cases, conjunctivitis, bleeding problems, Urinary stone & urinary infection, ear infection, dental problems etc. Few cases suggestive of STD & Gynec disorder requires further exploration to really rule out or confirm cases of STDs.

Out of 2545 patients 3.5 % (88 patients) were referred for specialist care. Referral places were community health centers and near by medical college affiliated institutions.

Discussion

Almost 88 % of patients were young – less than 45 years of age. Out of total patients 29 % patients were children below the age of 15 years. This suggests that children are also in need of health care. Of course we do not know at present the denominator i.e. age wise break up of population comprising of families of brick kiln workers.

Respiratory system, musculoskeletal and digestive system related symptoms were the major morbidity among study population. Joshi SK[3] from Nepal has also observed that respiratory discomfort was the major morbidity among brick kiln workers. Thus there is high morbidity among the brick workers. But the limitation of study is that it is the camp based data collection. There is need to make systematic community based cross sectional study to understand the actual morbidity rate among brick workers.

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Original Article

Socio-demographic profiles of the delayed diagnosed patients in RNTCP Anand District.

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Abstract

Background: It would be worth to consider socio-demographic characteristics of the patients on DOTS (Directly Observed Treatment Short course), as the therapy requires a long term adherence. **Material & Methods**: **Design:** Cross-sectional study, **Participants**: 100 diagnosed TB patients on DOTS, from all TB units (25 from each TU) of Anand District, who had reported 3 weeks or later to health care center, after the onset of symptoms of TB. Information was filled up in a pre-tested questionnaire and the data was analyzed. **Results**: Among 100 TB patients (68 males and 32 females), 75% of the subjects had an education below 9th standard. 46% of subjects were laborer. 65% were self-dependent. Most of the respondents (75%) preferred government facility. **Conclusion**: The socio-demographic characteristics of DOTS patients are found to be of such levels that could have a pivotal role in the treatment success. They also need to be addressed under the program in such a manner that those characteristics don't prove to be a barrier to treatment success.

Introduction

Tuberculosis is a strange disease because of its varied clinical presentation, host response, chemotherapeutic response, etiology and social implications. Indirectly, every year more than 17 crore work-days are lost due to tuberculosis at the above cost of Rs.12, 000 crore per year.[1] The socio-demographic profile of the patients could have an impact on treatment success of DOTS (Directly Observed Treatment Short course), considering the long term nature of the therapy.

The objective of the present study is to assess the major socio-demographic characteristics of the patients on DOTS attending government facility in Anand district.

Method

A cross sectional study was carried out among 100 diagnosed TB patients on DOTS, taking treatment from one of the four TB units of Anand district, namely Petlad, Khambhat, Anklav & Sarsa. The study period was for in total of about a year during 2008-09. A random selection of 25 patients each from all the four TB units was made, to make it to the sample size of 100 (purposive sampling, a type of non-probability sampling technique). A pre-tested questionnaire was filled up per subject.

Study population: After the approval of the project from the institutional review committee, four TB units in the district were approached. From each TB unit, 25 patients were identified, who had diagnosed 3 weeks or later to the health centre, they were considered delayed diagnosed. The patients were visited at their residence to provide appropriate privacy and time for the interview. Consent of the subject regarding their participation in the study was obtained before head. The data were analyzed by making frequency tables and using test of significance.

Results

The study shows that among total 100 patients taking DOTS, 68 were male and 32 were female. The mean age was 34.59 years (8.21- 60.93 years). The minimum age was 15 and maximum 70 years. The educational status of all the patients was as given in Figure 1, with highest frequency of the subjects who had an education between standards 1 to 9 (46%).

Table 1: Educational level of participants in %

Maximum level of Education	**Frequency (%)**
Graduate	6 (6)
Secondary /Higher secondary	19 (19)
Primary/High school	46 (46)
Illiterate	29 (29)
Total	100 (100)

The occupation distribution of the patients surveyed was as below [Figure 2] with almost half of them being laborer. From a total of 100 subjects, 65% depended on their selves for livelihood and 8% depended on parents. The distribution is given in Figure 3.

Table 2: Distribution of types of occupation among DOTS patients

Type of occupation	Frequency (%)
Agriculture	6 (6)
Dairy worker	1 (1)
Home based work	16 (16)
Office service	14 (14)
Laborer	46 (46)
Lawyer	1 (1)
Unemployed	14 (14)
Salesman	2 (2)
Total	100 (100)

Table 3: Type of dependency (%)

Type of Dependency	**Frequency (%)**
Self	65 (65)
Parents	8 (8)
Children	3 (3)
Spouse	14 (14)
Others*	10 (10)
Total	100 (100)

*Includes Uncle, Grandson, Distant relatives

Most of the respondents (75) preferred government facility, for treatment. This may be due to their education, occupation and economic condition. Only 16 of them preferred private facility and 9 preferred visiting Bhuva (a traditional quack). For getting DOTS, the patients were inspired mainly by their family members (36%) or health care workers (32%). [Figure 4]

Table 4: Source of inspiration (%)

Source of Inspiration	**Frequency (%)**
Self	18 (18)
Family member	36 (36)
Health care worker	32 (32)
Neighbors	14 (14)
Total	100 (100)

The problem of social stigma affected only 10% of the respondent.

Table 5: Gender wise distribution of social stigma among subjects (p>0.05)

	Social Stigma		Total
Gender	**Yes (%)**	**No (%)**	
Male	6 (60.00)	62 (68.89)	68 (68.00)
Female	4 (40.00)	28 (31.11)	32 (32.00)
Total	10 (100)	90 (100)	100 (100)

Discussion

The study focuses on various factors; demographic, social or cultural of patients on DOTS. Tuberculosis and DOTS have been known for more than a decade now in India, but still a lot many barriers prevent the success of the program in all corners of the society. The possible reasons have been evaluated in many developing countries like China, Thailand etc. [2-6]. The mean age (34.59%) is quite comparable for a disease like TB.

The study shows that 75% of the patients enrolled in the study had not reached beyond 9th standards (including 29% of illiterate subjects). It can be assumed that treatment seeking for such may not be up to the mark, especially considering long term nature of DOTS. A good proportion

(46%) of subjects was laborers by occupation, while 14% were unemployed. Regular income has been associated with high treatment success rates, as revealed by a study in Bangkok by Okanurak and co-workers [7]. His study also said that the level of education and knowledge was also significantly associated to treatment success. A study has also showed that unemployment is associated with a longer patient delay [8].

The source of inspiration has largely been either health care provider or the neighbors; while a small proportion (18%) has reported by self. The study reveals the prevalence of social stigma among study subjects was 10%. Although India has entered to development era, such social issue still persists. A study conducted by Quereshi and others among TB patients of Pakistan, showed that the prevalence was on higher side (27%). The differences may be due to the level of socialization between the two countries [9]. The present study identifies many characteristics of the patients that could have an effect on treatment adherence and success. The present study has got certain limitations, like use of non-probability sampling and inclusion of patients seeking only government facilities for DOTS. Although the impact of the above socio-demographic characteristics on the treatment success of the current study subjects is not evaluated in this study, it could have been achieved by future large scale studies taking appropriate large sample size using probability sampling.

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View Point

Public Health needs modified strategy

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MEDICAL SCIENCE is a fast changing field. In fact, the whole concept of diagnosing and treating a patient is modifying rapidly. Benchmarks of the medical progress are continually changing: infectious/communicable diseases ravaged mankind for centuries but the dramatic decline in infectious/communicable diseases, during mid 19th century due to improvements in sanitation, nutrition and general living conditions among affluent countries has changed the picture. But due to re-emergence of certain infectious/communicable diseases the World Health Report 1996 declared that infectious/communicable diseases have not only become the world's leading cause of premature death, but they also threaten to cripple social and economic development in developing countries[1]**.** And here we are living in the twenty-first century still bewildered and confused by infectious/communicable diseases despite the availability of vaccination, latest diagnostic facilities, chemotherapy and above all well-trained medical professionals. What makes the scenario particularly tragic is that most infectious/communicable diseases are easily treatable; the failure is operational one. We have the means to control and eradicate these diseases; but we are not applying them properly. Hence to me, the appalling global burden of infectious/communicable diseases during new millennium is a blot on the conscience of mankind. Coupled with this cardiac diseases and cancers are claiming more lives in most parts of the world. Depression, diseases related to old age and obesity (considered as mother of all diseases) are becoming more prevalent in many countries. The greatest difficulty in applying the policies against infectious/communicable and non-communicable diseases is the shortage of funds in many countries, precisely those countries with the greatest proportion of infectious/communicable diseases per inhabitant and which are generally lacking in resources and India is one of them. But we Epidemiologists and Public Health persons, above all, who are aware of these issues, and secondly those people in Government sector, must persuade ourselves that in order to control these diseases, funds are necessary and without them we will continue to fail.

In our Country too many people die as a result of no access to even the most Basic Health Services. Our goal should be that not a single individual feels in any way less of human being. That means by making it possible for every person to receive good health through developed Public Health System.

To me it is ridiculous that in the 21st century we are living with and scared of Dengue, Tuberculosis (TB), Malaria and Dengue in developed urban areas and metros. Although we are not lagging behind, from any Nation in the world; for example, one-third of NASA scientists are Indians, 30,000 Indian doctors are working in USA, 5000 Indian Professors are working in USA Colleges, India has largest English speaking manpower throughout the globe, Information Technology sector of India is second one in the world, Pharmaceutical sector of India is the fourth largest in the world, and so on.

Few more issues merit attention.

1. Hepatitis B virus is more dangerous than Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) but the HIV/AIDS combating campaigns are commanding titanic share and now every one is milking HIV/AIDS in epidemic proportion and no more paying attention to Hepatitis-B. Although I agree that mankind has never faced a threat as brutal and as dangerous as the HIV/AIDS epidemic but Hepatitis-B, a deadly scourge that is killing more persons in India than AIDS. Worldwide over 2 billion people have been infected with Hepatitis B virus infection and prevalence of Hepatitis B in India ranges between 2-7%[2]. Every year around 100,000 Indians die from Hepatitis-B viral infection. An estimated 40 million of Indians are already permanent carrier of virus. Like AIDS, Hepatitis-B can also be spread through sex or intravenous drug use. But it is hundred times more infectious than AIDS and can also be transmitted simply by kissing or sharing a toothbrush. But the most shocking aspects of the Hepatitis-B's continuing spread is that it is preventable through highly effective vaccine and unlike HIV/AIDS it is available. People need to be educated about this silent killer. Number of people living with HIV/AIDS (Dec 2002) are estimated to be 42 millions. Sub-Saharan Africa is worst affected as it is home for 29.4 million of HIV/AIDS cases, South and Southeast Asia contributed 6.0 million with Indian share 4.0 million that is second after Sub-Saharan Africa[3,4]. These figures based on trend analysis

that is a very poor way of predicting the actual burden. So for me the actual assessment of burden of HIV/AIDS and the identification of factors associated with it are important for the control and prevention of HIV/AIDS. To acquire AIDS one has to exhibit a high-risk social behavior; in India, studies documented that mostly HIV/AIDS spreads through heterosexual route. It is our duty to inform the youngsters through awareness programs. The message should be, "Good sex is the right way to better health. It does not matter if you do it seven times a day or once in seven days (week) but it should be good. Sex is a fun but for God's sake stay with one". Studies have documented that urban population is generally aware of how the disease HIV/AIDS transmitted, prevented and treated but there is such lack of knowledge among dwellers of urban slums and villages so it is our duty to inform the inhabitants of our 640,000 villages and umpteen number of urban slums about prevention, safe practices and available health services.

2. Most dengue outbreaks have been documented in urban areas where growth has not been accompanied by well-managed water supply system. Root causes of Dengue fever are the mosquito-breeding sites (stored stagnant water in the over tanks, under ground tanks, containers, drums, jars and waste water sites in and around the household. If Government plans for 100% availability of potable water of each and every household daily then there is no need to store water and in turn no mosquitoes.
3. India has lowest ratio of doctors for its immense population. Although infrastructure of hospitals and dispensaries is good but in principle they are lacking from trained medical personnel. Around 80% of doctors and hospitals are located in urban areas where only 35% of population of India residing. Of this nearly half of the population lives in urban slums that are devoid of basic facilities such as sanitation, adequate drinking water and health care facilities.
4. The syndrome of eating late, sleeping late and getting up late is taking up epidemic proportion especially in urban areas and for this syndrome appropriate measures are badly needed.
5. Epidemiological evidence links cancers and cardio-respiratory end points to outdoor air pollution. Hence respiratory diseases (asthma, bronchitis, and allergic rhinitis) are on rise in cities because of pollution created by industries or vehicles (auto rickshaws) and dust or pollens[5]**.** Coupled with this newly built residential societies / areas are lacking in

network of pucca roads hence aggravating the allergic conditions further because of dusty kacha roads. Although some builders are ready to construct pucca roads but their hands are tied due to government policies.

6. Various reports from family physicians have documented that certain forms of cancers are on rise in and around industrial areas. So new industries should be set up at adequate distance from residential area and also no accommodation facilities should be provided in and around the industries to the employees.
7. Drugs have increased the prevalence of diseases by increasing the survival period for example drugs for Cancer, diabetes, and hypertension and in turn are increasing the misery of person's life. And also because of different genetic make up of our diverse population drugs work only 25 to 30% of cases.
8. Literature reveals that more important thing for a woman is money, I mean cash income and next is her children and there is no place for health and education. So more emphasis should be given to health and literacy of women. We believe that knowledge can lead to social transformation. If you train a woman, you have trained a house and in turn you have trained a society.
9. Perinatal deaths are largely the result of poor maternal health due to poor nutrition, low socioeconomic conditions and inadequate care during pregnancy, delivery and immediate post-partum period[6,7].
10. With the advent of new technologies, especially sonography, it is now possible for couples to know the sex of their unborn child, and in many cases, have an abortion if it is a girl. Coupled with this in some instances because of prevalent social practices by killing the girl child through doodh peeti tradition (of drowning infant girl in milk prevalent in Saurashtra) or by putting a sandbag on her face or by throttling her; happens without any hindrances. The situation is further complicated by Government population policies that encourage the couples to limit themselves to two children. In our country the gender ratio has gone awry dropping to a dismal 933 females per 1000 males. But some States of India are experiencing grave situations like Gujarat (878), Punjab (874), Haryana (861), and Delhi (821). Within two decades, there will be umpteen numbers of Indian men who will be unable to find a girl for marriage. If a large number of young males are unable to settle down in marriages, then there might be rise in social problems including increased

prostitution and also rise in crime rates. To prevent the severe social consequences of an imbalanced gender ratio, we should launch a programme to curb a wide-spread practice of sex-selective abortion and infanticide.

During 18th and 19th centuries health conditions of UK and other western affluent countries were same as for most developing countries including India facing right now in 21st century. But by simply improving standards of living, sanitation and nutrition now look where they stand. Hence I am strongly suggesting and recommending that the public and private organizations should pay more attention on 100% accessibility of potable water and also make sure that water should be supplied break free to every household. In my point of view the worst enemies of India are illiteracy, inadequate water and sanitation, precarious and subhuman living condition and poverty and they are also parents of all human miseries. There is also an imperative need for community based epidemiological studies, as infectious/communicable and non-communicable diseases are major health problems claiming thousands of lives each year. The public and private health authorities and various funding agencies like WHO, UNICEF, UNDP, DIFD etc seem to be preoccupied with combating the various epidemics of communicable and non-communicable diseases and are funding various health programmes to control and/or eradicate diseases, while ignoring to manage the root causes. If these measures should be given due attention and taken properly and adequately then I think there is no need of any well-organized National health program in our country. The western countries did not need any family planning drive to decrease growth rate; general development, economic advancement, gender parity, universal education; high living standard took care of it automatically. Keeping in view the above-mentioned issues Public Health Strategies should be redefined accordingly.

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Innovation in Field of Health

Anemia – A simple community based diagnostic tool

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Anemia is the most common morbidity worldwide. World Health Organization has defined anemia as "a condition in which the hemoglobin content of blood is lower than normal as a result of deficiency of one or more essential nutrients regardless of the cause of such deficiency". Hemoglobin is necessary for transporting oxygen from the lungs to other tissues and organs of the body.

WHO has also given guideline for diagnosis of anemia. It is said that if hemoglobin level is less that define level as per age and sex, it is diagnosed as Anemia. (table-1)

Table – 1 Cut of level for diagnosis of Anemia

Age/Sex	Gram/dl (venous blood)
Adult male	13
Adult female	12
Adult female pregnant	11
Children 6 months to 6 years	11
Children 6 to 14 years	12

There are many causes of anemia. One of the most common causes is the nutritional deficiency of mineral iron and vitamin folate or vitamin B12. This nutritional anemia is worldwide prevalent and more seen is developing countries. It is estimated that worldwide more than two billion people are anemic. In India, the incidence of anemia is highest among women and children, varying between 60-70 percent.

Effect of Anemia

Anemia has detrimental effects on the health of women and children. It is an underlying cause of maternal mortality and perinatal mortality among women. India, the maternal mortality rate is still very high. In India 20-40% of maternal deaths were found due to anemia. Conditions like abortion, premature births, post-partum hemorrhage and low birth weight baby are specially associated with low hemoglobin during pregnancy.

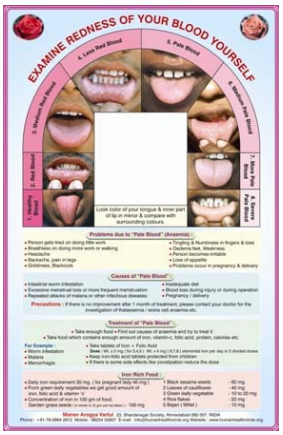
Anemia also impairs the immune response and function of body. Thus such individual is susceptible to infection. Not only they get frequent infection but the severity of infection is also high in anemic cases compare to non-anemic.

The economic point of view, anemia is also affection the work capacity of individual. It is said that anemia (even mild anemia) causes significant impairment of maximum work capacity. The more severe the anemia, that means the greater reduction in work performance of individual and therby productivity. This has significant impact on country economic output.

Diagnosis of Anemia

The most popular diagnostic tool for anemia is blood hemoglobin level as said in table. This is most commonly use in community where prevalence of anemia high. There are many other specific blood examination test available for diagnosis. But in all such test, one has to take blood and check for same.

Every time to take blood for anemia is not feasible, particularly in case of children and pregnant women. There are also disadvantages of blood taking from technique to waste disposal. To minimize all such disadvantages and errors Dr. Rajesh Mehta has developed tool “MUKTA” (Freedom from Anemia). He has developed this tool many years back and many people are using in filed.



MUKTA looks as shown in figure. It is a simple hardboard mount Poster. The center of poster has mirror and surrounding to mirror there are photographs of tongue and inner side of lip. These photographs are showing severe anemia to normal person’s tongue and lip. The person himself/herself can look in mirror and diagnose his/her condition. Instead of mirror worker can put patient’s tongue in hole at mirror site and can diagnose the anemia of people. The lower part of poster contains the remedial measure against anemia. The foods which contain higher iron are written.

In the words of Dr. Rajesh Mehta, MUKTA means Multipurpose, Universal applicable, knowledge sharing instrument, Treatment tacker and Affordable by all. The MUKTA is the Gujarati word that means the freedom.

Advantages & uses of the instrument:

1. Detection of anemia by self examination.
2. Low cost.
3. Avoids repeated pricks & thereby reducing chances of HIV/hepatitis etc.
4. Progress of anemia status can be measured regularly.
5. Easy to carry in field.
6. Good instrument to start talk in groups even in unknown field practice area.
7. Inter-observer bias, time bias , instrument bias etc. can be avoided.
8. Person can use it for personal use - as mirror
   - Detection of caries
   - Watching progress for jaundice
   - To teach self examination of personal hygiene.
9. Small scale research on various intervention for anemia.
10. Anemia control - as it gives detail message on symptoms & causes of anemia as well as hints on treatment of anemia along with list of food articles which are rich in iron.
11. In dessert it is useful for sending signals/messages. (Common use of mirror)
12. It prevents mal practices of certain doctors who link with path lab to give particular results.

Looking to large number of uses and advantages of this simple instrument, this is the best appropriate technology for field setup situation in developing countries and difficult areas like tribal and hilly areas. One of the principle of primary health care is appropriate technology. The primary health care document defines the appropriate technology is “the technology that is scientifically sound, adaptable to local needs and acceptable to those who apply it and those fro whom it is used and that can be maintained by the people themselves in keeping with the principle of self reliance with the resources the community and country can afford”.

Scope of instrument:

The simple tool of anemia detection can be kept any places like school, college, Anganwadi, Primary health center, Dispensary, clinics, Railway station, Bus-stop, waiting places etc. As our last National Family Health survey reported that more than 50% of our country women are anemic at any time, this is the high time to think in such line. There is need to change behavior of community, just imparting knowledge is not enough. India has completed three National Family health survey and all showing that the country has not improved anemia situation in last two decade. So this is high time to use simple but effective tool.

Obituary

`The fraternity of Community Medicine in Gujarat would like to pay its tribute to

DR CHITRA SOMASUNDARAM,
PROFESSOR OF P & SM
WHO LEFT FOR HER HEAVANLY ABODE
ON 8 AUGUST 2010 AT 8:30 AM

She served the State of Gujarat as a sincere, knowledgeable and ever friendly teacher, guide and friend for nearly 30 years. She has left behind a bereaved husband and two children. The pleasant face of Chitraben can never be forgotten and she has a special place in the heart of every one with whom she had acquaintance, professionally or personally.

LET US ALL JOIN TOGETHER IN PRAYING FOR ETERNAL PEACE FOR HER SOUL

News & Events

Minutes of the meeting of 17th annual conference of IAPSM –GC, Rajkot

Venue	**Chauki Dani, A beautiful resort near Rajkot**
Date	**22nd January 2010**
Total attendance	**135 members**

- **The following issues were discussed during the proceedings:**

1. **Representation of IAPSM in Health Department**, Govt. of Gujarat. Active involvement & Participation of association in Health Department. - Subject expert should involve in Project Implementation Plan.
2. "**One man one post**" – a letter was drafted in GBM and approved by GBM to represent the matter effectively to Govt. of Gujarat. Secretary, IAPSM-GC has to write the same letter to Government of Gujarat on behalf of IAPSM-Gujarat Chapter.
3. **The proposal to continue the Website of IAPSM-GC**- and maintained with yearly expenses being borne by the chapter was approved. Active involvement of Dr. Niraj Pandit and Dr. Atul Patel should be there to develop the website.
4. All health publications should reach in all P.S.M. departments and needful should be done by concerned persons in this connection.
5. **Retired teachers of the subject should be felicitated** and the registration fee should be waived for them. This proposal was approved in GBM. (The "retired teachers" would mean those who are not working in any medical college.

6. **Next conference venue** – The decision was postponed to a later date.

7. **IAPSM membership drive** – President and Secretary requested all the senior Professors to motivate the P.G. residents to become IAPSM life member.

8. **NINAD Oration** – will be continued next year also. Professor & Head, PSM, Government Medical College, Surat and Secretary- IAPSM- Gujarat Chapter will make do the needful to identify the next NINAD orator.

9. **Health line journal** - Dr.G.P.Kartha to be editor for next issue.

10. **It was decided to conduct an account audit** of last 3 years

11. **It was advocated to form a Research committee** for IAPSM-GC for project bid and technical assistance to members.

12. **Research methodology workshop** for Post Graduate students – under the banner of IAPSM- GC. The senior faculty members from state will work as facilitators. Their travelling expenses and accommodation expenses will be reimbursed as per Government of Gujarat norms. which will be borne by P.Gs themselves. PDUMC, Rajkot has agreed to organize the first workshop under the banner of IAPSM-GC.

13. **Dr.C.K.Purohit had** donated Rs.11000 as fixed deposit. From the interest accrued, ` 200 will be awarded for best paper presentation in State conferences to concerned main author, ` 500 will be awarded to the best paper published in National Journal. The winners will be finalized by a Committee comprising of Professors of Community Medicine from various medical colleges in the State. Certificate of excellence will be awarded during the Annual Conference of IAPSM-GC.

14. **Training in Epidemic Investigations** for all residents would be organized- Field based epidemiology training could be organized by BJMC, Ahmedabad.

15. **Eligibility Criteria for various** posts of the Association was decided as follows:
    a. President: 15 years of IAPSM membership
    b. Secretary:10 years of IAPSM membership
    c. Vice President:10 years of IAPSM membership

d. Executive Members:3 years of IAPSM membership

16. **TA/DA should be paid to IAPSM-GC representative** to attend national conference-GBM decided that Dr. Purani, President of the chapter will attend the national conference and ask for TA/DA to national body. And he will present the state chapter issues to national body.

17. **State share for members**: GBM decided to represent the matter to national level body.

18. New executive body was formed without election.

19. Further points of discussion included

- Definition of source of income for IAPSM –GC
- An amount of Rs 10000/- would be given by the Association towards initial expenses to the Organizing Secretary of each annual conference.
- The organizing Secretary will refund this amount to the Association at the end of the Conference for onward transmission to next organizer
- An increase of Rs 50/- per head towards the healthline journal share from next conference to 100Rs per registration.
- State share from National headquarters and 20 % of interest on fixed deposit at National Association level.
- Health line advertisement income to be generated to make it self- sufficient.
- Fixed deposit of Rs. 60,000 of IAPSM –GC.
- Formation of Committee for year 2010-2011(1st April 2020-31st March 2011)
- Two CMEs in year will be conducted under the banner of the Association for which MCI will be approached for contribution.

NINAD ORATION – 2009-10 : 22 January 2010 Chokidana, Rajkot

EPIDEMIOLOGY LENSES : A PRESENTATION

Prakash V. Kotecha
Senior Technical Advisor:
A2Z, The US Aid Micronutrient Prtoject

Contact: PVKOTECHA@YAHOO.CO.UK, PVKOTECHA@AED.ORG

The presentation started with his nostalgic memory with Professor NR Mehta, Professor DH Trivedi and Professor AK Niyogi with whom he had the opportunity to work as a student and then as a colleague. He refreshed his memory as warden of Dr. Jivraj Mehta Hall where his predecessors were Prof NR Mehta and Professor DH Trivedi and he remembered to be the first time examiner with Prof. Niyogi who was examiner with him for the last time in his career

He also fondly remembered his nostalgic memory for Rajkot where he was borne and brought us and done his primary schooling.

He then explained why he choose "Epidemiological lenses" as the subject for his oration that distinguishes the discipline from other disciplines and adds real value to the expertise of the subject. He mentioned that he would give certain example of ways to look at the data critically and would look forward to interactions from the members

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Child Mortality & Nutrition

- **Of total 9.2 million children dying under five every year globally (update from 10.5 million), India contributes to nearly 2 million (21%)**

This amounts to 5480 children in India everyday dyeing and that amounts to be nearly 4 children under five years of age every minute, three of them are likely to be infants

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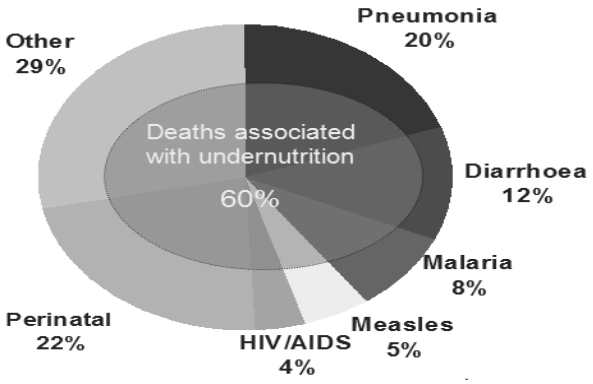
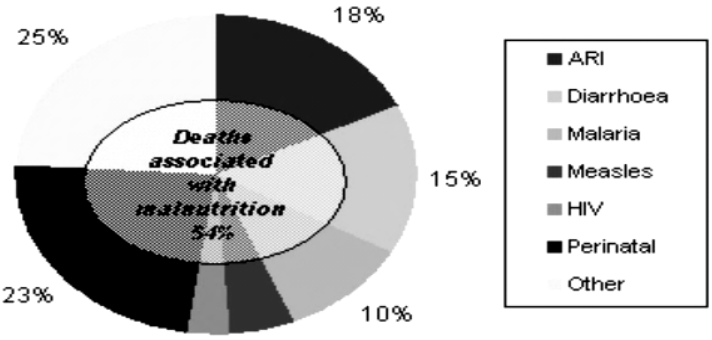
Major Causes of Death among Children around the World



He began with presentation global data on child mortality and disproportionately large contribution by India towards child death. These figures do not make any sensation; however using pocket calculator when the data were converted in to deaths per minute in India, it made all the difference to the audience and they could perceive the sensation. He mentioned that it is always useful to understand the audience and make best use of the data that appeals the audience the way they perceive the data

Proportional Mortality Among Under Fives, Yr 2002, World



Sources:
For cause-specific mortality: EIP/WHO
For malnutrition: Pelletier DL, et al. AMJPublicHealth 1993, 83: 1130-3

Quoting the reliable reference from EIP/WHO he then stressed that under nutrition was accounting for 60% of total deaths in children and still it was not visible clearly. So if malnutrition was to be controlled, deaths would reduce by 60%.

He further pointed out that while the total deaths did not change in number, contribution of the under-nutrition for total death declined from 60% to 54% and this is not by intervention but by better application of model.

He then paused a question, what sort of epidemiological data would answer, "what proportion of total deaths can be attributed to under nutrition?" He then explained the difficulties of data interpretation that everyone would like to have a simplified way of presentation.

However these data are generated from complex models and that has potential limitations. So data needs to be reviewed more critically and recommended to keep up sense of critical review to the data always on.

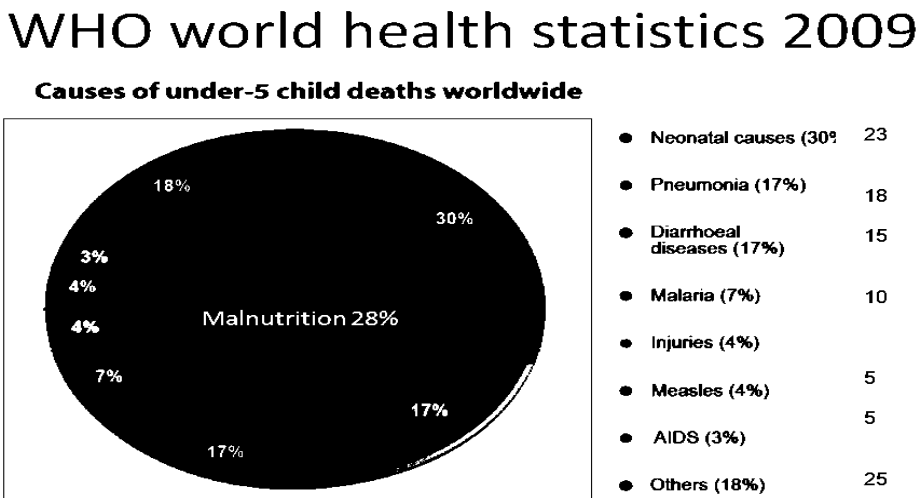
Newborn: Vadodara....

	Day	U5 Child deaths
594	By 7th day	29%
974	By 28th day	48 %
1570	By 1 year	78%
2014	By 5 year	100 %

Newborn deaths: India

Day	U5 Child deaths
1st day	20%
By 3rd day	25%
By 7th day	37%
By 28th day	50%

Of the total deaths under five years of age, more than half were occurring in less than one month of age. He then questioned that if this is true and if malnutrition sets in after six months of age, how is that possible that it is underlying cause for over 50% or child mortality? He doubted the model and critically followed the data for some years



He could demonstrate that the doubt in his mind turned out to be true and the refined model now has been more realistically claiming only 28% of the child deaths under five attributed to malnutrition. This was as shown in earlier slide was at 60%. This is not shift in time, since total deaths continued to be around 9-10 million deaths. Skepticism followed scientifically and with the background knowledge that epidemiology pays rich dividends

Then he went to another area for critically using his epidemiology lenses for vitamin A related data. WHO in 1998 quoted to reduce deaths from measles by 50% and overall mortality by 25% with vitamin A supplementation. He mentioned that while training for biannual rounds most of the department staff used these data provided by WHO in the good faith of child survival actions. How would Vitamin A reduce deaths? The explanations included improved immunity, particularly for mucus membrane and so less chances of infection and so less ARI and diarrhea and so less deaths due to these diseases. He again mentioned the possible difficulties in quantifying the deaths.

Improving the Vitamin-A status of children:

A) Increases their chances of survival:

- **Reduces death from measles by 50 %**
- **Reduces death from diarrhoea by 40 %**
- **Reduces overall mortality by 25 %.**

(WHO 1998)

B) Reduces the severity of childhood illnesses:

- **Less strain on clinic and outpatient services**
  Fewer hospital admissions
- **Contributes to the well-being of children and families.**

Assumptions in this hypothesis

- **Population is deficit in Vitamin A level**
- **Diet is not able to provide adequate vitamin A**
- **Hygiene is poor and therefore risk of diarrhea and infection is high**
- **Diarrhea and infection contributes to child mortality to reasonably large extent**

Lancet Paper MCH Undernutrition

- **Vitamin A supplementation in children 6-59 months reduced child mortality by 24% from pooled studies (RR=0.76 with CI 0.69-0.84)**
- **It did not show any effect on morbidity from infectious diseases**
- **A pooled analysis of studies from south Asia showed reduction of 21% for children less than six months with neonatal VAS (RR=0.76 with CI 0.65-0.96)**

He noticed some thing unusual about the inferences drawn in the Lancet series of article which mentioned that while child mortality was reduced by 24%, there was no reduction of child morbidity. His earlier assumptions shown in the previous slide did not match the findings and found that this issue needs to be flagged for consideration and further discussion

Wide variation of reduction in mortality and pointed out that some studies in Inida did not show any reduction at all and 24% reduction was derived from pooling of eight trials from different countries and different level of factors which he referred to as underlying assumptions

Community-based randomised and/or placebo-controlled trials of vitamin A (1986-93): deaths

Year & Country	Author	RR	95% CI
1986, Indonesia	Sommer,	0.66	0.44-0.97
1990, India	Vijayaragavan,	1.0	0.65-1.55
1990,India	Ramathulla,	0.46	0.30-0.71
1990, Nepal	West,	0.70	0.56-0.88
1992, Nepal	Daulaire,	0.74	0.55-0.99
1992, Sudan	Herrera,	1.06	0.82-1.37
1992, Ghana	Arthur,	0.30	0.12-0.75
1993, Ghana	Vast	0.81	0.68-0.98
1986-93	EIGHT Trials	0.77	0.70-0.85

He then gave the background of a huge study done in Uttar Pradesh State of India that covered more children than all the studies done prior to this study

Six-monthly vitamin A
from 1 to 6 years of age

DEVTA: cluster-randomised trial in 1 million children in North India

DEVTA: cluster-randomised trial
8000+ villages in 72 clusters

36 blocks **36 blocks allocated open CONTROL**

6-monthly **Also, visit all villages 6 monthly to get mortality**

VITAMIN A **(25,000 child deaths recorded)**

DEVTA: mortality results (ages 1-6)

Mean probability that a 1.0-year-old would die by age 6.0 years,

36 vit A vs 36 control blocks:

24.9 vs 26.0 per 1000

2p = 0.24, not significant

(comparing 36 vs 36 blocks)

The study noted both morbidity and mortality and also had a randomized controlled design. The study design had inherent flows but overall study had strength and weaknesses both that he high lighted. No difference in morbidity and mortality with vitamin A supplementation in this study done longitudinally for five years covering 10 lakh children and over 25000 child deaths follow up

Interpretation was simple accepting the study protocol without doubts:

Vitamin A did not reduce morbidity or mortality among young children according to this study.

DEVTA Study Interpretation

- **A large study involving more than 1 million children, a follow up for five years showed that VAS does not decrease morbidity and mortality among children 6-59 months in Uttar Pradesh, India**
- **Study did not show any significant change in morbidity of infectious diseases**

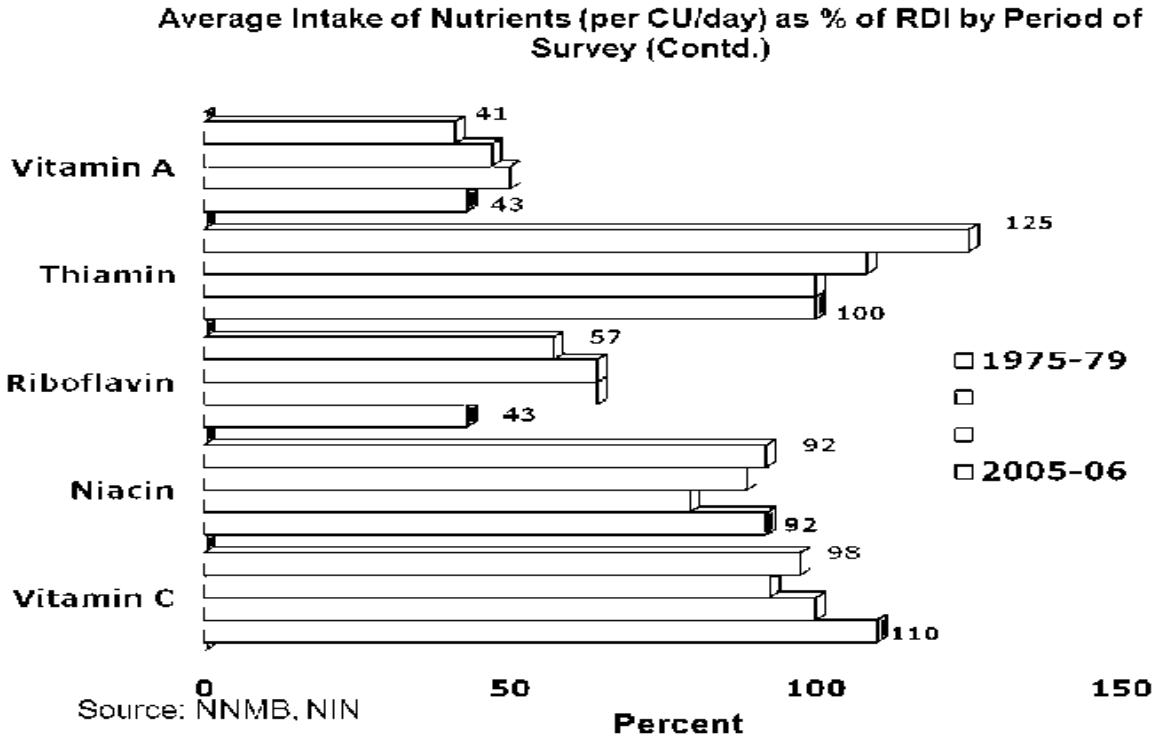
He then poised the question that in the background of this study and WHO recommendation, should India continue to provide vitamin A to young children. The answer to question by most of the delegates present was that 'probably not'

What is Vitamin A National program's objective?

At any stage in India, program runs be control vitamin A deficiency and not to reduce child mortality. That, if true is an added benefit. But the program is to control clinical and subclinical vitamin A deficiency. Does that exist?

DEVTA:
vit A vs control mortality ratio, RR = 0.96
(99% CI 0.88-1.05)

- **Should we continue Vitamin A supplementation in the community if evidence for the child survival claimed is doubtful from recent and large set of data from India…?**



Last 25 years of data from National Nutrition Monitoring bureau (NNMB) from NIN that vitamin A intake has been consistently less than 50% of RDA for over 25 years and we have not been able to improve in take !

So it is then realized that data of child survival relate issue should not distract us from the main focus of the program with which it was initiated.

Idea of giving this example is to keep our mind open, have a rationale approach, understand the public health importance, not get governed by sentiments and come to logical, data based, public interest focused decision making in the community as epidemiology experts !

The fact remains that Vitamin A supplementation helped in reducing vitamin A deficiency.

Distribution (%) of 1- 5 Yr. Children with Blood Vit. A Levels of < 20 μg/dL, Median Dietary Intake of Vit. A (as % RDA) and

Extent of Coverage for Suppl. of Massive Dose Vit. A – By State

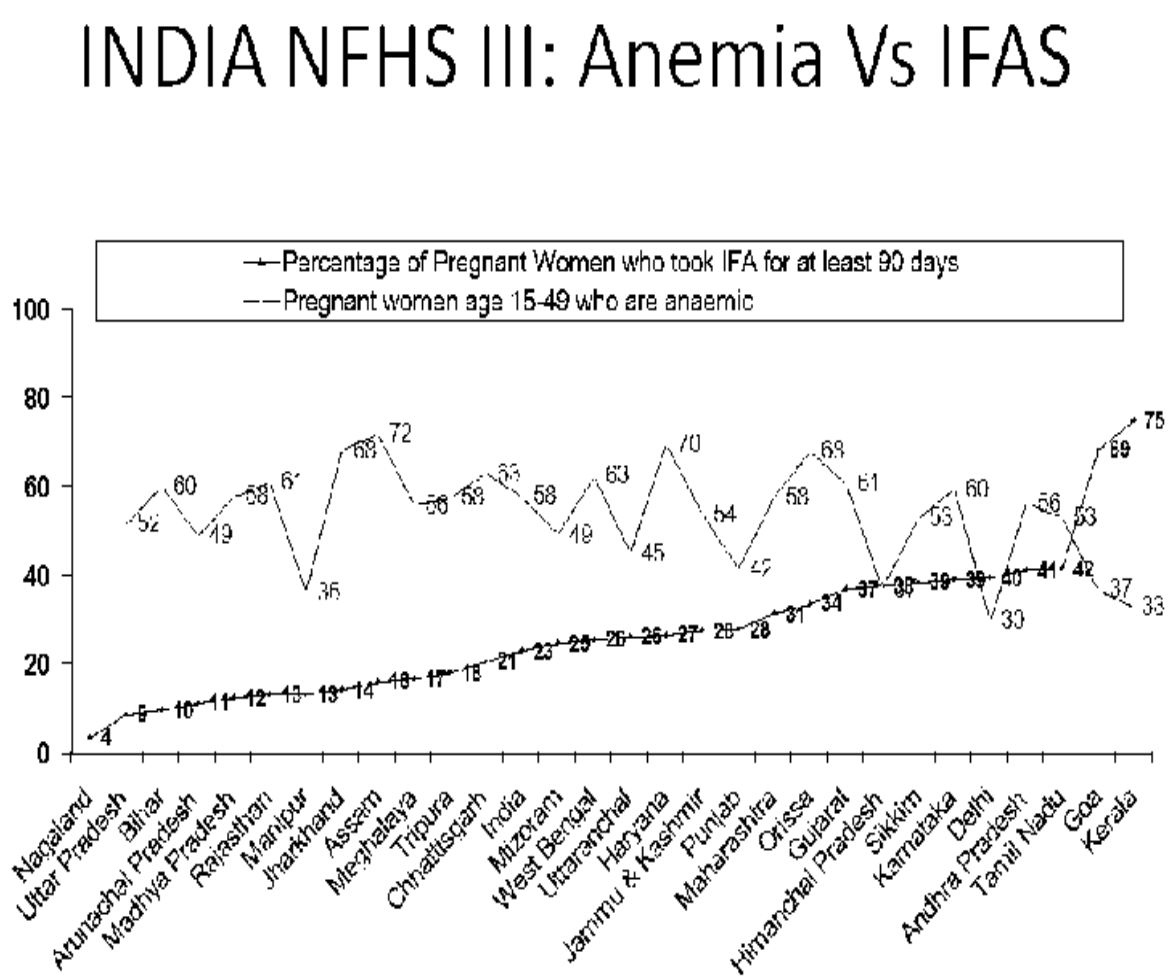
STATES	Blood Vitamin A < 20 μg/dL	Dietary Intake of Vitamin A < 50% of RDA	Receipt of Massive Dose Vitamin A		
			1 or 2 Doses	No. of Doses	
				One	Two
Kerala	79.4	91.8	38.5	28.4	10.1
Tamil Nadu	48.8	81.9	50.6	20.2	30.4
Karnataka	52.1	90.4	56.6	42.1	14.5
AP	61.5	92.9	49.3	14.2	35.1
Maharashtra	54.7	88.8	52.1	29.4	22.7
MP	88.0	87.4	52.3	19.1	33.2
Orissa	57.7	77.5	80.0	38.8	41.2
West Bengal	61.2	80.6	50.6	46.8	3.8
Pooled	61.8	86.3	55.4	30.3	25.1

Another simple logical approach is control of anemia in pregnancy.

Anemia in Pregnancy

- **Iron deficiency is the main cause**
- **Adequate ANC (3 ANC) and proper IFA supplementation (90/100 IFA) will reduce anemia in pregnancy**

If IFA supplementation coverage is better anemia should be less. Data from four countries failed to show such relationship and despite wide variation of 0-37% IFA coverage, anemia was high all through four countries

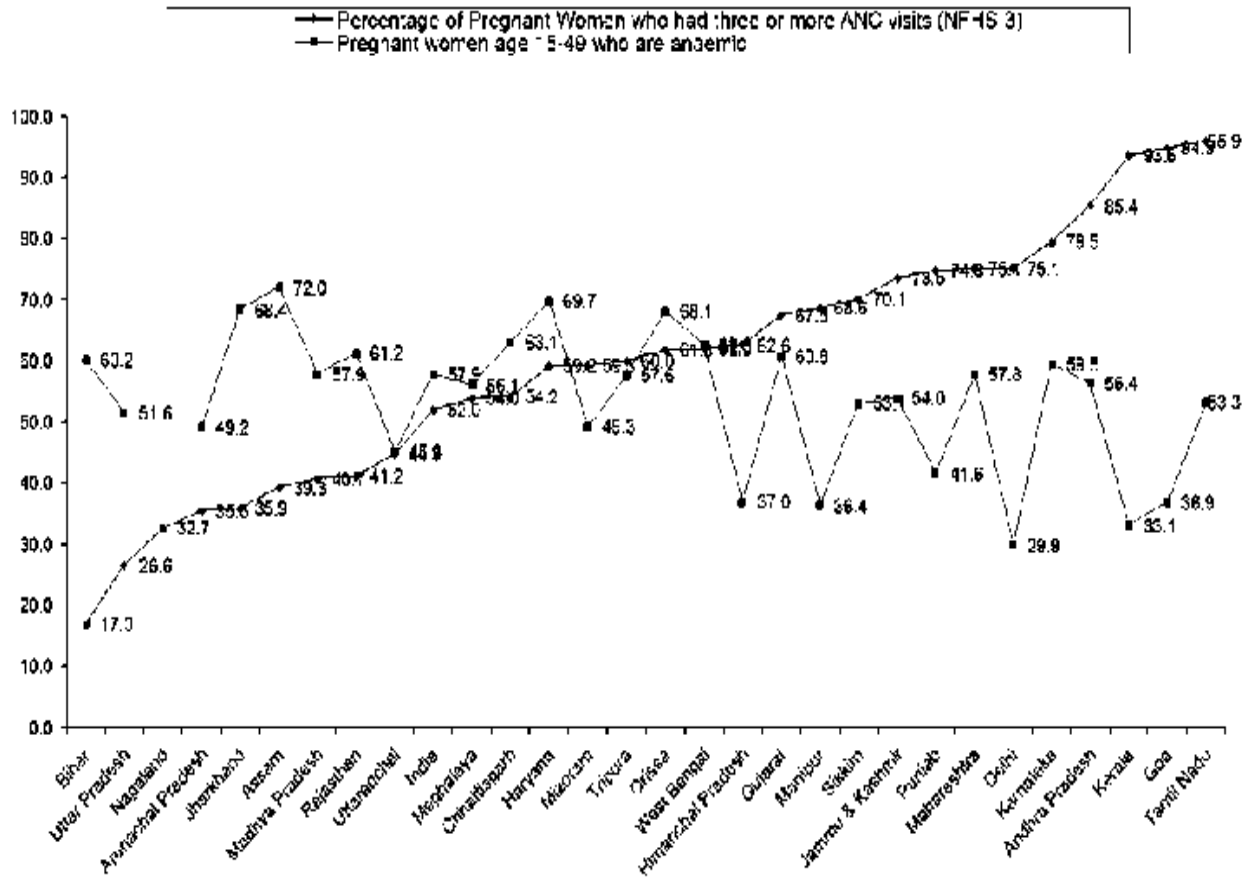


It could be because of different courtiers and different data source. He used NFHS III data and for all the states of India. IFA supplementation data failed to show relationship with anemia prevalence.

Similar expected ANC coverage and anemia prevalence also failed to show relationship. He asked the possible explanations for not being able to see what looked most logical

One can review this with epidemiology lenses

INDIA NFHS III: Anemia Vs 3 ANC



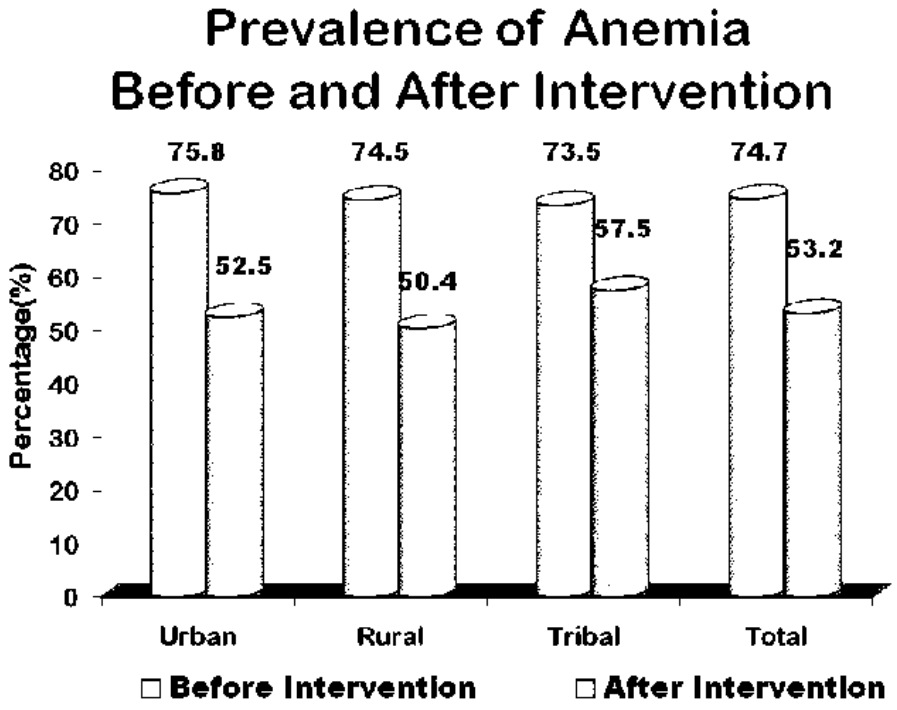
He gave example of adolescent anemia related data in which he was involved. The program has been scaled up and is a successful model

Research Data

- **With UNICEF support we launched adolescent girls anemia control program in Vadodara district for school going girls**
- **Intervention was IFA supplementation once a weekly targeting to reduce iron deficiency anemia**

Program rated as successful and scaled up to entire Gujarat State now covering

1 million + girls



He used epidemiology lenses, and becoming devil's advocate and asked why only 23% reduction? Why not more? Is this suggesting success?

He explained then the difference in anemia reduction against iron deficiency anemia prevalence reduction. Since we do not have the data to quantify proportion or iron deficiency

By these simple and logical and familiar data and going beyond data, he encouraged young students and faculty to utilize epidemiology skills as best as possible. This is one expertise that differentiates PSM experts from others.

He then differentiated between knowledge and information. Use of skepticism and use of epidemiology skills skill he strongly recommended and called them as "epidemiology lenses"

Philosophy of Epidemiology

- **Information is not knowledge**
- **Information used with correct judgment and epidemiological skills is…**
- **Skepticism is preferred in epidemiology**
- **Epidemiology lenses give you insight to the data.**
- **We need epidemiology skills and rationale and logical thinking to combine with the observed data.**
- **PSM Experts HAVE this expertise**

Applied Epidemiology

Knowing is not enough; We must apply....

Willingness is not enough; We must do…..

Epidemiology Knowledge is Power

- **Knowledge can potentially generate arrogance**
- **Position can also generate arrogance**
- ***Vidya vinaya thi shobhe***
- **Let us all**
  - **Contribute to science and society**
  - **Be polite and friendly to our colleagues and students always….**

While stressing the importance of epidemiology in particular and overall knowledge in general, he called the knowledge as power. He recommended to improve further and making oneself knowledgeable, he suggested politely to senior staff to not become 'arrogant' with this knowledge.

He mentioned the importance of remaining humble and open and approachable to all the community at large as public health person and to the students and staff always as a senior teacher. As public health persons, as technical experts, we are accountable to the community and we need to contribute to the science and society for improving the scenario for good.

Instruction to authors : healthline

healthline, the Journal of Indian Association of Preventive & Social Medicine, Gujarat Chapter publishes original research work focusing on community health, primary health care, epidemiology, bio-statistics, public health administration, health care delivery systems, health economics, health promotion, medical sociology/anthropology, social medicine, preventive medicine, and family medicine; and invites annotations, comments, innovation, job opportunity and review papers on recent advances, editorial correspondence, news and book reviews.

healthline is committed to an unbiased, independent, anonymous and confidential review of articles submitted to it. Manuscripts submitted to this Journal, should not have been published or under consideration for publication in any substantial form in any other publication, professional or lay. All manuscripts will become the property of the healthLine – The Journal.

Submit article typed in double space (including references), with wide margins as electronic copy through email to iapsmgc2008@gmail.com. There is no need to send a hard copy. For any query contact editorial office at healthLine, Department Of Community Medicine, Government medical College, Bhavnagar, Gujarat, INDIA. iapsmgc2008@gmail.com

Preparation of manuscript:

American spellings should be used. Authors are requested to adhere to the word limits. Editorial/viewpoint should be about 1500 words, and continuing medical education/review articles should be limited to 4500 words. Original articles should limit to 3000 and short articles to 1500 words, letters and book review should be limited to 750 and 500 words respectively. This word limit includes abstract, references and tables etc. Authors must mention the word count on the main article file. Articles exceeding the word limit for a particular category of manuscript would not be processed further. Uniform Requirements for Manuscripts (URM) submitted to Biomedical Journals should be consulted before submission of manuscript (http://www.icmje.org). All articles should mention how human and animal ethical aspect of the study was addressed. Whether informed consent was taken or not? Identifying details should be omitted if they are not essential. When reporting experiment on human subjects, authors should indicate whether the procedures followed were in accordance with the Helsinki Declaration of 1975, as revised in 2000. (http://www.wma.net).

Each of the following sections should begin on a separate page. Number all page in sequence beginning with the title page.

Title Page:

This should contain the title of the manuscript, the name of all authors, a short title (not more than 40 letters) to be used as the running title, source of support in the form of grants, equipments, drugs etc., the institution where the work has been carried out and the address for correspondence including telephone, fax and e-mail. One of the authors should be identified as the guarantor of the paper who will take responsibility of the article as a whole. Word count of the abstract and main text, number of references, figures and table should also be mentioned in the title page.

Abstract:

This should be a structured condensation of the work not exceeding 250 words for original research articles and 150 words for short articles. It should be structured under the following headings: background, objectives, methods, results, conclusions, and 5-8 keywords to index the subject matter of the article. Please do not make any other heading.

Text:

It must be concise and should follow the IMRAD format: Introduction, Material And Methods, Result, Discussion. The matter must be written in a manner, which is easy to nderstand, and should be restricted to the topic being presented. If there is no separate paragraph of conclusion, the discussion should end in conclusion statement. Each Table and Figure should be on separate page and should be given at the end of the manuscript. Please do not insert tables etc within the text.

Acknowledgment:

These should be placed as the last element of the text before references. Written permissions of persons/agency acknowledged should be provided.

Conflict of interest:

A brief statement on source of funding and conflict of interest should be included. It should be included on a separate page immediately following title page.

Contribution of Authors:

Briefly mention contribution of each author in multi author article.

References:

In citing other work only reference consulted in the original should be included. If it is against citation by others, this should be so stated. Signed permission is required for use of data from persons cited in personal communication. ANSI standard style adapted by the National Library of Medicine (NLM) should be followed.

Consult http://www.nlm.nih.gov/bsd/uniform_requirements.html . References should be numbered and listed consecutively in the order in which they are first cited in the text and should be identified in the text, tables and legends by Arabic numerals as superscripts in brackets. The full list of reference at the end of the paper should include; names and initials of all authors up to six (if more than 6, only the first 6 are given followed by et al.); the title of the paper, the journal title abbreviation according to the style of Index Medicus.

(http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=journals), year of publication; volume number; first and last page numbers. Reference of books should give the names and initials of the authors, book title, place of publication, publisher and year; those with multiple authors should also include the chapter title, first and last page numbers and names and initials of editors. For citing website references, give the complete URL of the website, followed by date of accession of the website. Quote such references as - author name, title of the article, the website address, and date of accession.

Journals: Mehta MN, Mehta NJ. Serum lipids and ABO Blood group in cord blood of neonates. Indian J Pediatr. 1984; 51:39-43.

Book: Smith GDL. Chronic ear disease. Edinburgh: Churchill Livingstone; 1980.

Chapter in the Book: Malhotra KC. Medicogenetics problems of Indian tribes. In: Verma IC, editor. Medical genetics in India. vol. 2. Pondicherry: Auroma Entrprises; 1978. p. 51-55.

Papers accepted but not yet published should be included in the references followed by 'in press'. Those in preparation, personal communications and unpublished observations should be referred to as such in the text only.

Illustration:

These should be of the highest quality, submit glossy black and white photographs. Graphs should be drawn by the artist or prepared using standard computer software. Number all illustrations with Arabic numerals (1,2,3….)

Legends:

A descriptive legend must accompany each illustration and must define all abbreviations used therein.

Tables:

These must be self–explanatory and must not duplicate information in the text. Each table must have a title and should be numbered with Arabic numerals. Each table should be typed in double space, on a separate sheet of paper. No internal horizontal or vertical lines should be used. All tables should be cited in the text.

Abbreviation:

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