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EDITORIAL

THE FACTS ABOUT NUTRITION AND HIV/AIDS

The Effect of HIV/AIDS on Nutrition HIV/AIDS affects nutrition in these ways :

Reductions in food intake - Reductions in food intake may be due to painful sores in the mouth, pharynx, and/or esophagus. Fatigue, depression, changes in mental state (sometimes due to specific nutrient deficiencies), and other psychosocial factors may also play a role by affecting a person's appetite and interest in food. Economic factors affect food availability and the nutritional quality of the diet. Side effects from medications - including nausea, vomiting, metallic taste, diarrhea, abdominal cramps and anorexia - also result in lower dietary intakes.

Nutrient malabsorption - Nutrient malabsorption accompanies frequent bouts of diarrhea commonly experienced by people with HIV/AIDS. In addition, some HIV - infected people have increased intestinal permeability and other gut defects, even when asymptomatic, that contribute to nutrient malabsorption[1]. It is believed that HIV infection of the intestinal cells may also cause epithelial damage and nutrient malabsorption. Malabsorption of fats and carbohydrates in common at all stages of HIV infection in adults and children. Fat malabsorption, in trun affects the absorption and utilization of fat-soluble vitamins further compromising both nutrition and immune status.

Metabolic alterations - Changes in metabolism may occur as a result of severely reduced food intake as well as from the immune system's response to HIV infection. Anorexia, fever, and the break down of muscle frequently accompany this response. When the body responds to invading pathogens, it releases pro-oxidant cytokines and other reactive oxygen species. This leads to the increased utilization of "anti-oxidant vitamins (vitamins A, E, C and beta-carotene) as well as utilization of several minerals that form anti-oxidant enzymes (such as zinc and selenium). Oxidative stress occurs when there is an imbalance between the pro-oxidants and anti-oxidants, causing further damage to cells, proteins, and enzymes. Oxidative stress is believed to increase HIV replication and transcription, leading to higher viral loads and disease progression.

Increased energy and protein requirements - The body's cytokine-mediated reactions to infection adversely affect metabolism. The result is an increase in energy and protein requirements of people living with HIV and AIDS. This increase ranges from about 10-15% for energy requirements among asymptomatic HIV-infected persons, to up to 50% for protein requirements[2]. This translates roughly into an additional 300 kcals and 25 g of protein per day, which could be met through snacks or an extra serving of the family meal.

In summary, the impact of HIV/AIDS on nutrition results in weight loss and the wasting that is common in people living with AIDS. During the early stages of HIV infection, weight loss is mainly associated with reduced dietary intake and secondary infections, particularly diarrhoea[3]. This weight loss may be addressed, and even reversed, by nutritional or dietary management. However, once the metabolic abnormalities begin to play a leading role, it becomes very difficult, perhaps impossible, to reverse the nutritional consequences of the disease.

The effect of nutritional status on HIV disease progression

Studies from both industrialized and developing countries have shown that HIV - infected individuals have decreased absorption, excessive urinary losses and low blood concentrations of vitamins A, B1, B2, B6, B12, C, E as well as folate, betacarotene, selenium, zinc and magnesium[4,5]. It is *not known* whether these deficiencies are independent markers of disease progression resulting from a compromised immune system, or whether they are causally related to HIV disease progession and mortality. This distinction is important in order to determine whether the nutritional deficiencies can be reversed, and whether nutritional therapy and management can slow or alter the course of disease. Randomized, controlled trials are required in order to assess a causal relationship between these nutritional observations and HIV outcomes. Relatively few such trials have been carried out.

The body of literature reporting on trials in Africa (mostly of vitamin A) and in industrialized countries (on vitamin B12, E, selenium and zinc) suggests that nutritional status affects HIV-related disease progression and mortality, and that improving nutrition status may improve some HIV-related outcomes. Current understanding of the potential impact of nutritional interventions is incomplete and there are issue to consider when extrapolating findings from research undertaken in North America and Europe to populations where malnutrition is widespread.

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BEHAVIORAL AND EMOTIONAL PROBLEMS OF ADOLESCENTS-RELATIONSHIP WITH ACADEMIC ACHIEVEMENT

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ABSTRACT:

Research Question :

Is there any relationship between the behavioral and emotional problems of adolescents and their academic achievement.

Objectives :

1. To estimate the prevalence of behavioral and emotional problems of adolescents.

2. To assess the effect of these problems on the academic achievement of adolescents.

Study Design : *Cross-sectional study*

Study Unit : *Adolescents (10-19yrs).*

Study Area : *Field practice areas of Department of Community Medicine, JNMC, Aligarh.*

Study Variables : *Behavioral problems, emotional problems and academic achievement.*

Statistical Analysis : *By Chi square test of significance.*

Result : *The prevalence of combined behavioral and emotional problems was 17.9%. Behavioral problems (educational difficulties, substance abuse and conduct disorders) were more prevalent in adolescents as compared to emotional problems (depression and anxiety). Both types of problems had an inverse relationship with the academic achievement of students. Students had multiple problems and the load of these problems was more (2.9 problems / student) in those doing poor in studies.*

Conclusion : *Significant proportion of male adolescents has behavioral and emotional problems that are often hidden and precipitate academic underachievement. Acute or chronic academic underachievement should be used, as a warning sign so that proper mental health services can be provided to such students at the earliest.*

KEYWORDS *- Behavioral and Emotional problems, Academic achievement*

Introduction :

Behavior problems in children and adolescents are classified into two major domains of dysfunction, namely externalizing behaviors and internalizing behaviors. Achenbach & Edelbrock, (1978)[1]. Impulsivity, aggression and antisocial features mark the externalizing behaviors. The internalizing behaviors are evidenced by depression, dysphoria and anxiety.

As general category labels, the term "behavioral disorders" versus "emotional disorders" are synonymous with "externalizing" versus "internalizing" conditions. Bhola & Kapoor (2000).[2]

Adolescents may suffer from the behavioral problems such as conduct disorders,

educational difficulties, substance abuse, hyperactivity etc and emotional problems like anxiety, depression etc. at one time or the other during their development. Many of these problems are of transient nature and are passed unnoticed.

Success in school is an excellent marker for general adolescent well being; school failure in adolescence is a powerful indicator of other high-risk behaviors, such as delinquency, substance abuse, and pregnancy. Reiff (1998)[3]. The causes of school failure are myriad and often multiple within individual students who are struggling academically. Social, behavioral, and emotional problems frequently lead to academic difficulties. Robert (2005)[4].

It is surprising to note that there are only few studies about behavioral and emotional problems and their relation with academic achievement of adolescents from India. The aim of the present study is to estimate the prevalence of psychosocial maladjustment of school going male adolescents and to assess their association with academic achievement.

Material & Methods :

The study was undertaken during 2002-2003, in the schools under rural and urban field practice areas of the Department of Community Medicine, JNMC, Aligarh. The total population of the male adolescents (10-19 yrs) for all schools was 2347, out of which a sample of 410 students (205 from the rural schools and 205 from the urban schools) were selected using Probability Proportionate to Size sampling (P.P.S) but analysis was done only on 390 students due to the rejection of forms having incomplete information.

The study was carried out in 2 phases. In phase 1, a detailed psychosocial history was obtained from all selected adolescents and a screening tool the youth report of Pediatric Symptom Checklist (Y-PSC) [6] was used to screen the psychosocial impairment. The sensitivity of Y-PSC is 95% in middle socioeconomic class samples compared with 80% in lower class samples and specificity ranges from 100% in the lower class compared with 68% in middle class samples and has been found to be valid & reliable tool for screening psychosocial problems in children and adolescents.

Academic achievement was assessed by the class teachers of the respective classes in terms of the average of three consecutive major school examinations on a 4-point Likerts scale (1- Excellent, 2- Good, 3- Average and 4- Poor).

In the 2nd phase, all those adolescents with suspected psychosocial problems were referred to the psychiatrist for specific diagnosis. The diagnosis was generated as per criteria laid down in ICD10 (WHO1993).[7] Statistical Analysis was done by using SPSS 11 pack for windows. Chi Square test (χ^2-test) was used for comparing groups.

Results :

Majority of the study population belonged to early (10-13 yrs) and mid teens (14-15 yrs) of predominantly Hindu religion and lower to middle socioeconomic status. **Table I**

Out of 390 students (200 from urban and 190 from rural schools), 82 students (38 from rural and 44 from urban) were found positive by screening test (Y-PSC). After psychiatric assessment by ICD-10 criteria, 70 (33 rural and 37 urban students) fulfilled one or more ICD-10 criteria for the behavioral and emotional problems giving an overall prevalence of 17.9%.

It was found that 82.1% of the study

population was free from any problem studied. Thus, the prevalence of the total behavioral and emotional problems was 17.9% among male adolescents with insignificant urban and rural difference. It is prominent that the prevalence of behavioral problems is greater in the male adolescents. **Table II**

Table - I

Distribution of the study population according to their socio-demographic variables.

Socio-demographic Variables	Place				Total	
	Urban		Rural			
	No.	%	No.	%	No.	%
Age Group						
10 - 13 yrs	54	(27)	111	(58.4)	165	(42.3)
14 - 15 yrs	99	(49.5)	40	(21)	139	(35.6)
16 - 19 yrs	47	(23.5)	39	(20.6)	86	(22.1)
Religion						
Muslim	156	78	14	7.4	170	43.6
Hindu	44	22	176	92.6	220	56.4
Social class*						
I	22	11	7	3.7	29	7.4
II	74	37	23	12.1	97	24.9
III	91	45.5	134	70.5	225	57.7
IV	13	6.5	26	13.7	39	10
Total	200	100	190	100	390	100

* Modified Prasad's Classification (1970) with All India Consumer Price Index (AICPI), 96

Table - II

Distribution of the psychosocial problems according to the place of residence of study population.

S.No.	Psychosocial problems	Adolescents with psychosocial problems †						Test of Significance (χ^2)
		Urban (n=200)		Rural (n=190)		Total (n=390)		
		No.	%	No.	%	No.	%	
	No problem	163	81.5	157	82.6	320	82.1	N.S

Behavior Problems							
1 Conduct Disorder	19	9.5	17	8.9	36	9.2	N.S
2 Educational difficulties	37	18.5	31	16.3	68	17.4	N.S
3 Substance Abuse	26	13	26	13.7	52	13.3	N.S
Emotional Problems							
4 Depression	7	3.5	5	2.6	12	3.1	N.S
5 Anxiety	9	4.5	6	3.2	15	3.8	N.S

N.S = Not Significant Mulitple Psychosocial Problems

Table-III

Distributions of the psychosocial problems according to the academic achievement assessed by the class teachers in the adolescents.

S.No.	Psychosocial problems	Adolescents with psychosocial problems: Academic Assessment by Class-Teachers I		II		III		IV		Total		Test of Significance (χ^2)
		N=4	%	N=20	%	N=319	%	N=47	%	N=390	%	
	No problem	4	100	16	80	27	84.9	29	62	320	82.1	15.33‖ df=2
	Behavior Problems											
1	Conduct Disorder	0	0	2	10	26	8.1	8	17.0	36	9.3	3.87‡ df=1
2	Educational difficulties	0	0	2	10	48	15	18	38.3	68	17.5	16.1‡ df=1
3	Substance Abuse	0	0	4	20	34	10.6	14	29.8	52	3.4	12.5‖ df=1
	Emotional Problems											
4	Depression	0	0	1	0.05	6	1.8	5	10.6	12	3.1	10.2§ df=1
5	Anxiety	0	0	0	0	8	2.5	7	14.9	15	3.9	17.6‖ df=1
	Total problems	0		9		122		52		183		
	Problems/Child			2.2		2.5		2.9		2.6		

† Multiple Psychosocial Problems. df = degree of freedom.
I=Excellent, II = Good, III = Averae, IV = Poor in studies.
‡=p<0.05, §= p<0.005, ‖ =p<0.001.

It is obvious from the **Table III** that the educational difficulties were highest (38.3%) among the behavioral problems in the students doing poorly in studies. Among the emotional problems, anxiety disorders (14.9%) were present in greater proportion of low achievers than the depressive illness (10.6%).

It is to be appreciated that the students graded as doing excellent in studies had neither behavioral nor emotional problems. The prevalence of these problems had an inverse relationship with the academic achievement of the adolescents. As the prevalence of psychosocial problems increase, the academic progress decreases. This difference in the prevalence of behavioral and emotional problems according to the academic achievement of the students is statistically highly significant.

It is also evident from the **Table III** that the students suffered from multiple problems and the load of problem per child is inversely associated to the academic achievement of the adolescents.

Discussion And Conclusion :

The present study assessed the prevalence of both behavioral (easily recognized to others) and emotional (difficult to recognize) problems. In this study, the estimated overall prevalence of both types of problems was 17.9%. Other researchers have shown a wide variation (10 40%) depending on the screening tool used in their study. (Singh et al

1983, Gupta et al 2001, Anita et al 2003)[8,9,10]

The significant inverse relationship of both the behavioral and emotional problems with the academic achievement was highlighted in this study. Significant associations have been observed consistently between academic achievement and externalizing problems and various studies have supported this view. (Spagna et al 2000, Grigorenko 2001)[11,12]

In contrast to the voluminous literature on the relation between behavioral problems and learning disabilities, little has been written about academic achievement and emotional problems. The statistically significant negative association was revealed between emotional problems in the present study. Other researchers have also supported this observation earlier Myklebust (1975)[13] and McGee et al (1988)[14].

Significant proportion of the male adolescents has behavioral and emotional problems that are often hidden and precipitate academic underachievement. Acute or chronic academic underachievement should be looked, as a warning sign so that proper mental health services can be provided to such students at the earliest.

The combination of ignored behavioral problems and the lack of mental health services in our country amplify the risk of precipitating academic underachievement and rising delinquent behavior in male adolescents. There is need to raise public awareness about the prevalence of these often "hidden" emotional disorders in Indian adolescents.

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KNOWLEDGE ATTITUDE AND PRACTICES AMONG FEMALE HEALTH WORKERS REGARDING REPRODUCTIVE AND CHILD HEALTH SERVICES IN RURAL MEERUT

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ABSTRACT :

Objective : *To assess the Knowledge Attitude and Practices among Female Health Workers regarding Reproductive and Child Health Care Services.*

Study design : *A follow up study*

Study Setting : *Department of Community Medicine, L.L.R.M. Medical College and Subharti Medical College, Meerut.*

Study Subject : *25 females health workers from 3 PHCs of rural Meerut.*

Study Period : *1996-97 and 2003*

Study Variables : *Knowledge Attitude and Practices among Female Health Workers regarding Reproductive and Child Health Care Services.*

Results : *There was improvement in the knowledge attitude and practices among female health workers regarding reproductive and child health care services over period of five years. The area of improvement and attitudes of female health workers were also identified.*

Introduction :

Provision of health care at the door steps of people is the national commitment and the nation of course has taken great efforts since the National Health Policy has been launched. Creation of subcentre was one step in this direction. But making of subcentre does not mean that objectives have been achieved. It is essential to know whether allotted services are being offered to the population or not, whether people are utilizing services as per their health need or not.

To measure the effectiveness of the subcentre, it is very important to evaluate the performance of female health worker. The skills of female health worker are combination of art and science. She play pivotal role in implementing all national health care programmes at community level. She is the one who requires positive attitude for decision making and for serving the health needs of the people. She also requires adequate knowledge for giving quality health care to the people.

Objectives :

The Present study was done with an objective to evaluate the performance of female health workers on the basis of their knowledge, attitude, practices in providing Reproductive and Child Health Care Services.

Material & Methods :

The present study was conducted at

three block level P.H.Cs., on randomly selected 25 female health workers, each providing health services through subcentre. A pretested and prescheduled proforma was prepared to know about the female health workers and also about her activities, which she was supposed to carry out under Family Welfare Programme. The Study was completed in two phases. In first phase (1998), a base line survey of knowledge, attitude and practices among female health workers was done. Each female health worker was visited at least thrice at her subcentre, mainly on the immunization and antenatal clinic days to elicit information by silent non participatory observation, followed by the an interview. The data collected was then tabulated, analyzed and compared. Performance of female health workers in the first phase was scored. In second phase (2003) similar survey was conducted on the same three blocks level P.H.Cs. selecting 25 same female health workers. The data thus collected in both the phase was compared by the test of significance.

Observation & Discussion :

The present study reveals the status of female health workers and level of knowledge attitude and practices regarding reproductive and child health care services, by assessing through a follow up study after five years. In the present study mean age of female health workers was found to be 43.6 years in first phase & 44.5 years in second phase. Which is comparable to findings (41.7years) of Sirohi et al[1] and much higher to findings (35.8 years) of Paul et al[2]. The higher mean age of female health workers could be because of long time gap in new entries for the post of health worker. Most of the female health workers were high school passed as in other studies.

Table - 1

KAP REGARDING REPRODUCTIVE HEALTH CARE AMONG FEMALE HEALTH WORKERS

Knowledge Attitude and Practice of Female Health Workes	Phase-I (1998) n=25	Phase-II (2003) n=25	X^2 P value
Antenatal Care			
a. Inquired about past pregnancy and BOH	8 (32.0%)	18 (72.0%)	8.01 <0.001
b. Blood pressure recorded	3 (12.0%)	2 (8.0%)	
c. Weight taken	7 (28.0%)	5 (20.0%)	0.444 >0.5
d. Checkup for Anemia and IFA tablets given	7 (28.0%)	25 (100.0%)	
e. Promoted institutional deliveries and high risk referral practice	14 (56.0%)	8 (32.0%)	2.92 >0.05
Family Planning Methods			
Complete Knowledge about family planning methods, their indication, contraindication and side effects.	14 (56.0%)	20 (80.0%)	4.67 <0.05
Post Natal Care			
a. Complete knowledge & practices about proper post natal care of women	7 (28.0%)	11 (44.0%)	1.39 >0.1
b. Most commonly asked symptoms were per vaginal bleeding and discharge	21 (84.0%)	25 (100.0%)	
c. Checking for uterus involution.	19 (76.0%)	25 (100.0%)	

Table no. 1 shows the status of knowledge attitude and practices of female health workers in provision of reproductive health care. It shows significant improvement (P<0.001) in practices of screening highrisk cases and bad obstetric history. But as far as referral to high risk cases to a centre and promotion of institutional deliveries, it was found to be apparently low. There was very high improvement in checking for anemia and giving iron tablets to all pregnant. The reason for this was 100% availability of iron folic tablets at sub cente. Study also reveals that cent percent female health workers in both the phases issued MCH card, gave TT injection, reminded of follow up visits and regular check up which was also seen by Sirohi et al[1]. During antenatal checkups the practices of taking blood pressure and weight was found to be apparently poorer in second phase. The reason informed was non availability of properly functioning equipments.

Regarding knowledge about contraceptives it was found that these was significant improvement in second phase. In post natal care there was apparent improvement in the knowledge attitude and practices of female health workers in comparison to first phase and also it was much higher than sirohi et al[1].

Table - 2

KAP REGARDING CHILD CARE AMONG FEMALE HEALTH WORKERS

KAP REGARDINGCHILD CARE	Phase-I (1998) n=25	Phase-II (2003) n=25
New Born Care		
a. Birth weight	0 (00.0%)	5 (20.0%)
b. Cord Care	4 (16.0%)	11 (44.0%)
c. Proper exclusive breast feeding initiation and methods promotion	13 (52.0%)	25 (100.0%)
Immunization Practices		
a. Proper use and maintenance of vaccine carrier	18 (72.2%)	25 (100.0%)
b. Use of single needle and single syringe	23 (92.0%)	25 (100.0%)
c. Proper disposal of left over vaccine	10 (40.0%)	15 (60.0%)
d. knowledge of vaccines and informing their side effects to clients	20 (80.0%)	22 (88.%)
Proper Case Management of Diarrhoea	14 (56.0%)	22 (88.0%)
Proper Case Management of ARI/ Pneumonia	2 (8.0%)	12 (48.0%)

Table - 3
FAVORITE ASPECT OF FEMALE HEALTH WORKER'S WORK

Favorite Aspect of Work	Phase-I (1998) n=25	Phase-II (2003) n=25
1. Immunization	25 (100.0%)	25 (100.0%)
2. Conducting deliveries	10 (40.0%)	10 (48.0%)
3. Clinical work	12 (48.0%)	20 (80.0%)
4. Antenatal clinic	13 (52.0%)	25 (100.0%)
5. Family Planning	25 (100.0%)	25 (100.0%)
6. Field work	4 (16.0%)	15 (60.0%)

Table - 4
PERFORMANCE BASED GRADES OF FEMALE HEALTH WORKERS

Percentage of performance of activities	Grades (Good, Average, Poor)	Phase-I (1998)	Phase-II (2003)
1. 85% or above	Good	2 (8.0%)	5 (20.0%)
2. 65% to 84%	Average	14 (56.0%)	18 (72.0%)
3. 40% to 64%	Poor	9 (36.0%)	2 (8.0%)

Table no.2 shows apparent improvement in kAP regarding child health care in second phase which is much higher than previous studies done[1&2]. Table no.3 shows that with time and repeated trainings the attitude of female health worker has improved to do the field work but in both the phases they had higher choice towards doing family planning work, antental and immunization clinics. The various activities to be carried female health workers, were counted and were marked as scores. Table no. 4 shows evaluation scores of the performance of female health workers. It shows improvement as better performing female health workers in second phase. The number of female health workers as excellent & good performer improved after five years follow up.

Conclusion :

The finding of study reveals that over a period of five years there is improvement in knowledge attitude & practices of female health workers regarding RCH. The major reason assumed was intensive orientation & reorientation training for RCH programmes.

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BLOOD PRESSURE PATTERN AMONG COMPUTER AND MOBILE PHONE USERS IN POPULATION AGED 13 YEARS AND ABOVE IN URBAN KANPUR

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ABSTRACT:

Background: *Hypertension has been identified as an established attribute in causation of cardiac problems. In light of certain reports, indicating induced mental stress by long-term computer use and chest - pocket placement of mobile phone interfering with pace makers and cardiac functions, the possible influence of such exposures on blood pressure opens a potential area of study.*

Objective : *To study the influence of varying degrees of exposure to computer and mobile phone use on blood pressure among adolescent and adult population of Urban Kanpur.*

Methodology : *Study group of people aged 13 years and above from Urban Kanpur was obtained by multistage sampling and community based data were collected by cross-sectional study on pre-designed and pre-tested schedule of interview and examination. A total of 2014 persons were obtained for study.*

Results : *38 .89% of study population was exposed to computer use. Almost 75% of the users, representing age group 13-30 and more than 50 years, did show higher mean blood pressure levels increasing in proportion to longer continuous hours of daily use. 42.35% of study population was using mobile phones. Out of the 261 male users, who kept mobile phones in chest pocket, 63% showed apparently higher mean blood pressure levels than those not keeping in chest pocket.*

Introduction :

In India, proportionate deaths due to cardiac causes contribute about 29.1% to all cause mortality. Hypertension is a established attribute in causation of cardiac problems and lifestyle an important determinant of hypertension. In recent years, varying degrees of exposure to computers and mobile phone among adolescents and adults has acquired a significant dimension in their lifestyle. In light of certain reports indicating induced mental stress by long-term computer use (Sharma et al, 2006) and chest-pocket placement of mobile phone interfering with pace-makers and cardiac functions (WHO, 2000), the possible influence of such exposures on blood pressure open a potential area of study.

Objective :

To study the influence of varying degrees of exposure to computer and mobile phone use on blood pressure among adolescent and adult population of Urban Kanpur.

Methodology :

Study group of people aged 13 years and above from Urban Kanpur was obtained by multistage random sampling. All the wards of Kanpur Nagar were divided into four groups of wards, one group in each of the four directions, i.e. north, east, south and west. At the first stage, one ward was selected randomly from each group. At the second stage, one mohalla was selected randomly from the each of the four selected wards. House to house survey was carried out in the selected mohallas, starting

from the first house on the left. All members of the families, who voluntarily agreed to participate, in the age of 13 years and above, were interviewed and examined on pre-designed and pre-tested schedule to obtain the required information. A total of 2014 persons were obtained for study. Data were analyzed using the software Microsoft Excel and SPSS 14.0 for Windows. Total period of study was about a year and a half, from February 2005 to November 2006, including development of study tools, collection of data, analysis and presentation of findings.

Results & Discussion :

Table - 1

DISTRIBUTION PROFILE OF COMPUTER AND MOBILE PHONE USERS IN THE STUDY POPULATION

Computer Use	Men		Women		Total (%)
	No. (%)	%	No. (%)	%	
Present	502 (51.65)	64.11	281 (26.97)	35.89	783 (38.89)
Absent	470 (48.35)	38.18	761 (73.03)	61.82	1231 (61.11)
Total	972 (100)	48.26	1042 (100)	51.74	2014 (100)
Mobile phone use					
Present	583 (59.98)	68.35	270 (25.91)	31.65	853 (42.35)
Absent	389 (40.02)	33.55	772 (74.09)	66.45	1161 (57.65)
Total	972 (100)	48.26	1042 (100)	51.74	2014 (100)

Of the 2014 study subjects, 783 i.e. 38.89% were found to be using computers. Among the users, approximately 64% were males and 36% were females. 42.35% (853) of the study population was using mobile phones. Among the users, approximately 68% were men and 32% were women.

Table - 2

EFFECT OF CHRONICITY OF COMPUTER EXPOSURE ON MEAN BLOOD PRESSURE LEVEL OF USERS (n=783)

Age (yrs)	Exposure (years)	No.	SBP(mmHg)		DBP(mmHg)		p-value	
			Mean	SD	Mean	SD	SBP	DBP
<20	Long term	29	105.45	6.33	64.62	5.57	0.153	0.343
	Medium	229	105.26	5.34	65.82	5.59		
	Short term	34	107.26	6.68	66.74	6.61		
Total		292						

Contd.

20-30	Long term	30	114.40	5.88	72.73	5.13	0.144	0.056
	Medium	177	112.56	6.16	72.08	6.45		
	Short term	29	111.21	7.17	69.03	5.72		
Total		236						
30-40	Long term	30	118.10	6.02	78.03	4.12	0.421	0.676
	Medium	46	120.30	8.03	78.80	4.88		
	Short term	4	118.75	1.89	77.25	4.86		
Total		80						
40-50	Long term	27	122.00	6.18	78.96	3.60	0.323	0.425
	Medium	69	123.64	9.59	79.16	6.53		
	Short term	16	120.13	9.43	77.00	6.55		
Total		112						
50-60	Long term	18	125.22	9.31	83.11	4.95	0.975	0.101
	Medium	25	124.80	6.70	79.80	5.49		
	Short term	10	124.60	6.98	80.40	3.73		
Total		53						
>60	Long term	2	132.00	0.26	80.00	0.00	0.348	0.418
	Medium	6	119.67	11.69	75.00	5.48		
	Short term	2	120.00	0.00	78.00	0.28		
Total		10						

Chronicity of computer exposure in terms of years of use, was classified as long term (>5 years), medium (1-5 years) and shortterm (< 1 year). It was observed that there was no significant difference in the mean blood pressure levels among the long term, medium and short term users in amy age froup (p>0.05).

Table - 3
EFFECT OF VARYING GRADES OF DAILY CONTINUOUS COMPUTER EXPOSURE ON MEAN BLOOD PRESSURE LEVELS OF USERS (n=783)

Age (yrs)	Exposure (hrs/day)	No.	SBP(mmHg)		DBP(mmHg)		p-value	
			Mean	SD	Mean	SD	SBP	DBP
<20	Heavy	4	109.00	5.77	69.00	5.77	0.000	0.000
	Moderate	41	109.10	5.18	69.37	6.07		
	Light	247	104.86	5.47	65.17	5.44		
Total		292						
20-30	Heavy	23	116.17	5.24	73.70	6.31	0.011	0.043
	Moderate	135	112.53	6.45	72.23	6.64		
	Light	78	111.74	5.99	70.46	5.38		
Total		236						
30-40	Heavy	16	116.44	7.98	76.44	5.19	0.171	0.148
	Moderate	53	120.28	7.47	78.92	4.56		
	Light	11	119.45	1.21	79.00	3.00		
Total		80						

Contd.

40-50	Heavy	13	123.00	9.33	78.62	5.85	0.547	0.492
	Moderate	66	122.02	7.38	79.44	5.56		
	Light	33	124.09	10.02	77.92	6.56		
Total		112						
50-60	Heavy	6	130.33	5.00	86.50	2.31	0.008	0.003
	Moderate	30	124.87	6.99	81.34	4.71		
	Light	17	123.06	7.29	78.88	4.60		
Total		53						
>60	Heavy	0	-	-	-	-	0.753	0.660
	Moderate	8	122.75	11.41	76.25	5.17		
	Light	2	120.00	0.00	77.50	0.08		
Total		10						

Daily continuous exposure was graded as heavy (>5 hours/day) , moderate (1-5 hour/day) and light (<1 hour/day). It was observed that in users of age groups <20 years, 20-30 years and 50-60 years, who constituted approximately 74% of the total users, the mean blood pressure levels increased with increasing grade of use, the difference being significant statistically ($p<0.05$). Sharma AK et al (2006) observed that mental stress was perceived by 35% of the computer users and it increased significantly in those who were working 5 hour or more per day on computer. Since mental stress has an established association with high blood pressure, the finding of the present study are perfectly coherent with that Sharma et al (2006). This area requires a deeper, methodical research, as computer use is now a part of lifestyle of people.

Table - 4

EFFECT OF CHRONICITY OF MOBILE PHONE USE ON MEAN BLOOD PRESSURE LEVELS OF USERS (n=853)

Age (yrs)	Exposure (hrs/day)	No.	SBP(mmHg)		DBP(mmHg)		p-value	
			Mean	SD	Mean	SD	SBP	DBP
<20	Long term	6	112.67	2.07	74.00	4.73	0.359	0.177
	Medium	34	110.14	6.14	69.47	6.32		
	Short term	20	112.00	4.65	69.60	4.00		
Total		60						
20-30	Long term	17	115.71	5.05	73.41	6.72	0.022	0.218
	Medium	233	111.80	6.20	70.93	5.93		
	Short term	56	113.23	6.82	71.82	7.53		
Total		306						
30-40	Long term	74	121.95	4.25	81.05	2.72	0.043	0.000
	Medium	39	118.68	7.72	77.27	5.40		
	Short term	8	118.38	5.90	75.75	5.37		
Total		121						

Contd.

40-50	Long term	55	126.13	7.42	81.84	5.33	0.001	0.001
	Medium	98	120.87	7.78	78.22	5.41		
	Short term	39	124.26	11.33	80.28	5.94		
Total		192						
50-60	Long term	31	124.06	9.13	80.58	5.40	0.476	0.465
	Medium	82	125.90	6.47	81.57	4.49		
	Short term	26	124.62	9.8	80.77	8.49		
Total		139						
>60	Long term	10	128.00	3.27	80.40	6.17	0.061	0.657
	Medium	19	120.74	7.59	78.58	9.41		
	Short term	6	130.67	15.13	82.00	8.17		
Total		35						

Chronicity of mobile phone use was classified as long term (>5 years), medium (1-5 years) and short term (<1 year). It was observed that in age groups <30 years, and > 50 years, who constituted approximately 63% of the user group, there no significant difference in mean blood pressure levels among the three categories of users, ($p>0.05$). However, in age group 30-50 years, significant differences were observed in the blood pressure levels of the three grades of users, ($p<0.05$). although no specific pattern could be elucidated.

Table - 5

EFFECT OF CHEST POCKET PLACEMENT OF MOBILE PHONE ON MEAN BLOOD PRESSURE LEVELS AMONG MALE USERS (n=583)

Age (yrs)	Placement of phone	No.	SBP(mmHg)		DBP(mmHg)		p-value	
			Mean	SD	Mean	SD	SBP	DBP
<20	Chest poc	8	115.75	1.58	72.75	3.49	0.011	0.843
	Others	31	113.39	3.70	72.45	4.50		
Total (%)		39 (6.69)						
20-30	Chest poc	50	117.84	2.65	76.30	3.97	0.000	0.003
	Others	110	115.72	4.39	74.11	4.87		
Total (%)		160 (27.44)						
30-40	Chest poc	48	121.82	6.48	79.67	4.85	0.637	0.654
	Others	47	121.26	4.83	79.26	4.04		
Total (%)		95 (16.30)						
40-50	Chest poc	83	125.65	9.14	81.73	4.74	0.044	0.008
	Others	67	123.06	6.53	79.55	5.10		
Total (%)		150 (25.73)						

Contd.

50-60	Chest poc	62	125.10	7.69	82.31	3.91	0.119	0.604
	Others	48	127.28	6.71	81.70	5.92		
Total (%)		110 (18.87)						
>60	Chest poc	10	129.50	11.81	78.40	11.54	0.156	0.941
	Others	19	123.26	7.89	78.11	5.78		
Total (%)		29 (4.97)						
Grand Total (%)		583 (100)						

Out of the 583 male mobile phone users, 261 (44.77%) kept their phones in their chest pocket. It was observed that in age groups >20 years, 20-30 years and 40-50 years, which harbored approximately 60% of the mobile phone users, chest pocket placers of mobile phone had significantly higher mean blood pressure levels than the non-placers, ($p<0.05$). This area is in urgent need of meticulous research so that the health risks of mobile phone use can be established and appropriate preventive measures taken.

Conclusion & Recommendations :

Computers use even for years together, per se, was not found to have any influence on blood pressure levels, provided daily continuous use was limited to lesser hours. Mobile phone use even for years together was not found to have any significant impact on blood pressure levels, in general, provided it was not kept in chest-pocket.

Precise and appropriately designed studies, aimed at eliciting the effect of computers and mobile phones which are now a part and parcel of our lives, on blood pressure, should be undertaken.

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STATUS OF ROUTINE IMMUNIZATION IN AN URBAN AREA OF MEERUT

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ABSTRACT :

Background : *Where "Pulse Polio Immunization" has gained significant success in mass immunization and reducing Poliomyelitis cases in India, "Routine Immunization" has failed to draw even half of the parents to such camps.*

Objective : *To access the immunization coverage of children of 1-5 years age in the community for BCG, three doses of DPT, OPV and Measles, and to find out the reasons for utilization / non-utilization of immunization services at the Urban Health Centre (UHC) - Field Practice area of Lala Lajpat Rai Memorial Medical College (LLRM Medical College), Meerut.*

Method : *400 mothers of children aged 1-5 years were selected using systemic random sampling and interviewed with a pre-tested questionnaire with multiple response options.*

Results : *93.25% of children in community were found to be completely immunized 5.25% parially immunized and only 1.5% non-immunized.*

Key Words : *Immunization, Urban Health Centre, Coverage.*

Introduction :

Infant mortality rate is considered to be the best indicator of health for the developing countries. In India, infant mortality has declined slowly from 204 during 1911-15 to 67 in year 2005.[1] Vaccine preventable diseases are again one of the important causes of infant mortality. Routine immunization services have received a set back after the advent of "Intensive Pulse Polio Immunization" activity. The vaccination of children against six serious diseases but preventable diseases has been a cornerstone of child health care system in India. Coverage levels have been variable from 11% in Bihar & 14-17% in Nagaland, Meghalaya, Assam & Rajasthan to 80% in Tamil Nadu, Himanchal Pradesh, Goa & kerala.[2,3] We are presenting a success story of routine immunization in an urban area of Meerut which can act as a model for health care delivery system in urban setup.

Material :

The present study was carried out in the Urban Field practice area of LLRM Medical College, Meerut with a total population of 9816 having 814 (8.29%) children in the 1-5 years age group.

Objectives :

The objectives of the study were to find out the present status of immunization in children of 1-5 years, to evaluate the services provided at UHC and to assess the factors for utilization of immunization services.

Methods :

A total of 384 children to be studied was estimated by finding out the sample size at estimated immunization coverage of 50% at a

relative precision of 10% at 95% confidence interval, but because of non-response and non-cooperative attitude of respondents, 400 children were studied. Out of 814 children, every second child was assessed by systemic random sampling. The factors which affect the immunization status like education of parents, faith of parents in the immunization system and reasons for non-covrage were studied by oral questionnaire method.

Results :

The study revealed complete immunization coverage of 373 children (93.25%), partial immunization coverage of 21 children (5.25%), and no immunization of 6 children (1.5%).

The study also revealed reasons / faith in the immunization services at the UHC, Field Practice area of LLRM Medical College, Meerut as well as relation with the education status of parents which can be seen in Tables 1 and 2.

Discussion :

In a country which claims 75% male literacy and 51% female literacy while only 42% children of 12-23 months of age are fully immunized, 44% are partially immunized for one or the other vaccine and 12% continue to be at the threat of perishing just because they were unable to spare few minutes of their lives for vaccination sittings.

A complete immunization of 93.25% was attained in the studied community, while Singh and Yadav had reported that in BIMARU states only 48% children were fully immunized.[5] The 5.25% children who were partially immunized were cases of negligence on parent's part. The reasons for the 1.5% children being non-immunized was enquired into and found that they were all migrants to the area from the eastern states and were unaware of need of immunization. Ughade et.al. have reported negligence (57%) and unawareness (22.7%) of parents as the major causes for improper utilization of immunization services.[6] Similar views have been expressed by Ray et.al. (2004).[7]

The study shows significant association of immunization status of children with the father's education (Fisher's exact p value < 0.05) and mother's education (Fisher's exact p value < 0.01). Ughade et.al. also reported significant association of delayed vaccination with paternal and maternal education.[6]

The provision of merely free vaccines will not help in increasing the vaccination coverage as only 45.92% of mothers felt this was one of the reasons to draw them to the centre for vaccination.

Any mother will not like her child to be laid in the hands of a health worker who has not been properly trained. While 80.4% of the mothers believed that they felt their children safe in the hands of trained doctors i.e. residents, 80.9% felt the need of a MOIC at the vaccination centres, and 82.7% believed that they felt free from the fear of any side effect at the centre.

The need for organizing these sessions very punctually at fixed places needs to be stressed upon as 83.0% mothers believed that they heavily relied in the fact that the vaccine and the vaccinators would be available at the specified time on the centre. Records reveal that during the past five years only 11% of the regular sessions on Wednesdays were missed due to public / gazetted holidays. Suresh and

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Discussion :

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Saxena have expressed their concern on falling vaccination coverage and suggested a similar way to improve this. They have called for organizing fixed immunization sessions at the community where low proportion of sessions is held.[8]

In the study, 79.1% mothers believed that they preferred the centre because they could get information regarding proper care of their children through the centre. In the past three years, more than 30 community meetings of the pregnant and lactating mothers have been held teaching them the importance of breast feeding, vaccination, growth monitoring, weaning, nutritional supplementation and family planing. This knowledge is imparted to the beneficiaries door to door by the interns as a part of their field work. All the children coming for vaccination are monitored for their growth statistics and a record is maintained which is used to tell the mother whether the child is growing normally, and if not, they are suggested ways to improve the growth. This helps in not only reducing the percentage of malnourished children form the community, but also a building up of faith in the health system leading to better utilization of the immunization services.

82.6% mothers believed that the less distance of the centre was one of the causes for coming to the centre. Ughade et.al. found significant association between proximity of the vaccination centre and delayed vaccination.[6]

Conclusion - Regular and timely immunization sessions, as well as properly trained workers having good knowledge regarding child rearing practices and organization of community meetings, and safe vaccination practices will go a long distance in improvement of immunization in urban areas /

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above. This figure can double by year 2025 if no action is taken against this threat.

Material and Method :

The present study was carried out in Baniyapur and Durgapur villages of Kanpur Nagar from March 2005 to July 2006 among 15 years and above persons. Minimum sample size was calculated to be 2177. The study population was selected by using *Multistage Random Sampling Technique*. In the first stage of sampling, all the 10 blocks were listed and one block, Kalyanpur, was randomly selected. In the second stage, all the villages in the selected block were listed down and one village, Baniyapur, was randomly selected to study the required sample unit. House to house survey was carried out. The detailed information was elicited and collected on a pre-designed and pre-tested proforma. Simultaneously, BMI (Body Mass Index) values of eligible persons i.e. aged 15 years and above were calculated using the formula : BMI = Weight in kg/ (Height in meter)2

TABLE - 1

Distribution of study population by their Body Mass Index (BMI)

BMI (Kg/m²)	Males (n=1148) No.	Males (n=1148) %	Females (n=1072) No.	Females (n=1072) %	Total (n=2220) No.	Total (n=2220) %
<18.5	286	24.9	198	18.5	484	21.8
18.5-24.9	820	71.4	816	76.1	1636	73.7
25.0---29.9	38	3.3	50	4.7	88	4.0
≥30.0	4	0.4	8	0.8	12	0.5
Total	1148	51.7	1072	48.3	2220	100.0

$\chi 2$ (BMI vs. Sex) =16.37 p<0.05

Table 1 depicts the sex wise distribution of study population according to their BMI status. It was observed that a total of 4.0% (3.3% males and 4.7% females) were overweight (BMI = 25.0-29.9 kg/m²) and 0.5% (0.4% males and 0.8 females) were obese (BMI ≥30.0 Kg/m²). It was observed that 21.8% were underweight (BMI < 18.5 Kg/m²) while three fourth of the study population were having normal BMI (BMI 18.5-24.9 Kg/m²).

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Observations

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nonworking and 53.3% were do
service/business/farming or were
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Tab

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Illiterate father	12	
Literate father	361	
Illiterate mother	4	
Literate mother	369	92.2...
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Father's education - p value <0.05.
Mother's eduction - p value <0.01.

Table - 3

Socio-economic classification of the s...
(According to Modified Kuppuswamy

Social Class	
Upper	
Upper Middle	
Lower Middle	
Upper Lower	
Lower	
BASE	10...

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EDITORIAL

THE FACTS ABOUT NUTRITION AND HIV/AIDS

The Effect of HIV/AIDS on Nutrition HIV/AIDS affects nutrition in these ways :

Reductions in food intake - Reductions in food intake may be due to painful sores in the mouth, pharynx, and/or esophagus. Fatigue, depression, changes in mental state (sometimes due to specific nutrient deficiencies), and other psychosocial factors may also play a role by affecting a person's appetite and interest in food. Economic factors affect food availability and the nutritional quality of the diet. Side effects from medications - including nausea, vomiting, metallic taste, diarrhea, abdominal cramps and anorexia - also result in lower dietary intakes.

Nutrient malabsorption - Nutrient malabsorption accompanies frequent bouts of diarrhea commonly experienced by people with HIV/AIDS. In addition, some HIV - infected people have increased intestinal permeability and other gut defects, even when asymptomatic, that contribute to nutrient malabsorption[1]. It is believed that HIV infection of the intestinal cells may also cause epithelial damage and nutrient malabsorption. Malabsorption of fats and carbohydrates in common at all stages of HIV infection in adults and children. Fat malabsorption, in trun affects the absorption and utilization of fat-soluble vitamins further compromising both nutrition and immune status.

Metabolic alterations - Changes in metabolism may occur as a result of severely reduced food intake as well as from the immune system's response to HIV infection. Anorexia, fever, and the break down of muscle frequently accompany this response. When the body responds to invading pathogens, it releases pro-oxidant cytokines and other reactive oxygen species. This leads to the increased utilization of "anti-oxidant vitamins (vitamins A, E, C and beta-carotene) as well as utilization of several minerals that form anti-oxidant enzymes (such as zinc and selenium). Oxidative stress occurs when there is an imbalance between the pro-oxidants and anti-oxidants, causing further damage to cells, proteins, and enzymes. Oxidative stress is believed to increase HIV replication and transcription, leading to higher viral loads and disease progression.

Increased energy and protein requirements - The body's cytokine-mediated reactions to infection adversely affect metabolism. The result is an increase in energy and protein requirements of people living with HIV and AIDS. This increase ranges from about 10-15% for energy requirements among asymptomatic HIV-infected persons, to up to 50% for protein requirements[2]. This translates roughly into an additional 300 kcals and 25 g of protein per day, which could be met through snacks or an extra serving of the family meal.

In summary, the impact of HIV/AIDS on nutrition results in weight loss and the wasting that is common in people living with AIDS. During the early stages of HIV infection, weight loss is mainly associated with reduced dietary intake and secondary infections, particularly diarrhoea[3]. This weight loss may be addressed, and even reversed, by nutritional or dietary management. However, once the metabolic abnormalities begin to play a leading role, it becomes very difficult, perhaps impossible, to reverse the nutritional consequences of the disease.

The effect of nutritional status on HIV disease progression

Studies from both industrialized and developing countries have shown that HIV - infected individuals have decreased absorption, excessive urinary losses and low blood concentrations of vitamins A, B1, B2, B6, B12, C, E as well as folate, betacarotene, selenium, zinc and magnesium[4,5]. It is *not known* whether these deficiencies are independent markers of disease progression resulting from a compromised immune system, or whether they are causally related to HIV disease progession and mortality. This distinction is important in order to determine whether the nutritional deficiencies can be reversed, and whether nutritional therapy and management can slow or alter the course of disease. Randomized, controlled trials are required in order to assess a causal relationship between these nutritional observations and HIV outcomes. Relatively few such trials have been carried out.

The body of literature reporting on trials in Africa (mostly of vitamin A) and in industrialized countries (on vitamin B12, E, selenium and zinc) suggests that nutritional status affects HIV-related disease progression and mortality, and that improving nutrition status may improve some HIV-related outcomes. Current understanding of the potential impact of nutritional interventions is incomplete and there are issue to consider when extrapolating findings from research undertaken in North America and Europe to populations where malnutrition is widespread.

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BEHAVIORAL AND EMOTIONAL PROBLEMS OF ADOLESCENTS-RELATIONSHIP WITH ACADEMIC ACHIEVEMENT

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ABSTRACT:

Research Question :

Is there any relationship between the behavioral and emotional problems of adolescents and their academic achievement.

Objectives :

1. To estimate the prevalence of behavioral and emotional problems of adolescents.

2. To assess the effect of these problems on the academic achievement of adolescents.

Study Design : *Cross-sectional study*

Study Unit : *Adolescents (10-19yrs).*

Study Area : *Field practice areas of Department of Community Medicine, JNMC, Aligarh.*

Study Variables : *Behavioral problems, emotional problems and academic achievement.*

Statistical Analysis : *By Chi square test of significance.*

Result : *The prevalence of combined behavioral and emotional problems was 17.9%. Behavioral problems (educational difficulties, substance abuse and conduct disorders) were more prevalent in adolescents as compared to emotional problems (depression and anxiety). Both types of problems had an inverse relationship with the academic achievement of students. Students had multiple problems and the load of these problems was more (2.9 problems / student) in those doing poor in studies.*

Conclusion : *Significant proportion of male adolescents has behavioral and emotional problems that are often hidden and precipitate academic underachievement. Acute or chronic academic underachievement should be used, as a warning sign so that proper mental health services can be provided to such students at the earliest.*

KEYWORDS *- Behavioral and Emotional problems, Academic achievement*

Introduction :

Behavior problems in children and adolescents are classified into two major domains of dysfunction, namely externalizing behaviors and internalizing behaviors. Achenbach & Edelbrock, (1978)[1]. Impulsivity, aggression and antisocial features mark the externalizing behaviors. The internalizing behaviors are evidenced by depression, dysphoria and anxiety.

As general category labels, the term "behavioral disorders" versus "emotional disorders" are synonymous with "externalizing" versus "internalizing" conditions. Bhola & Kapoor (2000).[2]

Adolescents may suffer from the behavioral problems such as conduct disorders,

educational difficulties, substance abuse, hyperactivity etc and emotional problems like anxiety, depression etc. at one time or the other during their development. Many of these problems are of transient nature and are passed unnoticed.

Success in school is an excellent marker for general adolescent well being; school failure in adolescence is a powerful indicator of other high-risk behaviors, such as delinquency, substance abuse, and pregnancy. Reiff (1998)[3]. The causes of school failure are myriad and often multiple within individual students who are struggling academically. Social, behavioral, and emotional problems frequently lead to academic difficulties. Robert (2005)[4].

It is surprising to note that there are only few studies about behavioral and emotional problems and their relation with academic achievement of adolescents from India. The aim of the present study is to estimate the prevalence of psychosocial maladjustment of school going male adolescents and to assess their association with academic achievement.

Material & Methods :

The study was undertaken during 2002-2003, in the schools under rural and urban field practice areas of the Department of Community Medicine, JNMC, Aligarh. The total population of the male adolescents (10-19 yrs) for all schools was 2347, out of which a sample of 410 students (205 from the rural schools and 205 from the urban schools) were selected using Probability Proportionate to Size sampling (P.P.S) but analysis was done only on 390 students due to the rejection of forms having incomplete information.

The study was carried out in 2 phases. In phase 1, a detailed psychosocial history was obtained from all selected adolescents and a screening tool the youth report of Pediatric Symptom Checklist (Y-PSC) [6] was used to screen the psychosocial impairment. The sensitivity of Y-PSC is 95% in middle socioeconomic class samples compared with 80% in lower class samples and specificity ranges from 100% in the lower class compared with 68% in middle class samples and has been found to be valid & reliable tool for screening psychosocial problems in children and adolescents.

Academic achievement was assessed by the class teachers of the respective classes in terms of the average of three consecutive major school examinations on a 4-point Likerts scale (1- Excellent, 2- Good, 3- Average and 4- Poor).

In the 2nd phase, all those adolescents with suspected psychosocial problems were referred to the psychiatrist for specific diagnosis. The diagnosis was generated as per criteria laid down in ICD10 (WHO1993).[7] Statistical Analysis was done by using SPSS 11 pack for windows. Chi Square test (χ^2-test) was used for comparing groups.

Results :

Majority of the study population belonged to early (10-13 yrs) and mid teens (14-15 yrs) of predominantly Hindu religion and lower to middle socioeconomic status. **Table I**

Out of 390 students (200 from urban and 190 from rural schools), 82 students (38 from rural and 44 from urban) were found positive by screening test (Y-PSC). After psychiatric assessment by ICD-10 criteria, 70 (33 rural and 37 urban students) fulfilled one or more ICD-10 criteria for the behavioral and emotional problems giving an overall prevalence of 17.9%.

It was found that 82.1% of the study

population was free from any problem studied. Thus, the prevalence of the total behavioral and emotional problems was 17.9% among male adolescents with insignificant urban and rural difference. It is prominent that the prevalence of behavioral problems is greater in the male adolescents. **Table II**

Table - I

Distribution of the study population according to their socio-demographic variables.

Socio-demographic Variables	Place				Total	
	Urban		Rural			
	No.	%	No.	%	No.	%
Age Group						
10 - 13 yrs	54	(27)	111	(58.4)	165	(42.3)
14 - 15 yrs	99	(49.5)	40	(21)	139	(35.6)
16 - 19 yrs	47	(23.5)	39	(20.6)	86	(22.1)
Religion						
Muslim	156	78	14	7.4	170	43.6
Hindu	44	22	176	92.6	220	56.4
Social class*						
I	22	11	7	3.7	29	7.4
II	74	37	23	12.1	97	24.9
III	91	45.5	134	70.5	225	57.7
IV	13	6.5	26	13.7	39	10
Total	200	100	190	100	390	100

* Modified Prasad's Classification (1970) with All India Consumer Price Index (AICPI), 96

Table - II

Distribution of the psychosocial problems according to the place of residence of study population.

S.No.	Psychosocial problems	Adolescents with psychosocial problems †						Test of Significance (χ^2)
		Urban (n=200)		Rural (n=190)		Total (n=390)		
		No.	%	No.	%	No.	%	
	No problem	163	81.5	157	82.6	320	82.1	N.S

Behavior Problems							
1 Conduct Disorder	19	9.5	17	8.9	36	9.2	N.S
2 Educational difficulties	37	18.5	31	16.3	68	17.4	N.S
3 Substance Abuse	26	13	26	13.7	52	13.3	N.S
Emotional Problems							
4 Depression	7	3.5	5	2.6	12	3.1	N.S
5 Anxiety	9	4.5	6	3.2	15	3.8	N.S

N.S = Not Significant Mulitple Psychosocial Problems

Table-III

Distributions of the psychosocial problems according to the academic achievement assessed by the class teachers in the adolescents.

S.No.	Psychosocial problems	Adolescents with psychosocial problems: Academic Assessment by Class-Teachers I		II		III		IV		Total		Test of Significance (χ^2)
		N=4	%	N=20	%	N=319	%	N=47	%	N=390	%	
	No problem	4	100	16	80	27	84.9	29	62	320	82.1	15.33‖ df=2
	Behavior Problems											
1	Conduct Disorder	0	0	2	10	26	8.1	8	17.0	36	9.3	3.87‡ df=1
2	Educational difficulties	0	0	2	10	48	15	18	38.3	68	17.5	16.1‡ df=1
3	Substance Abuse	0	0	4	20	34	10.6	14	29.8	52	3.4	12.5‖ df=1
	Emotional Problems											
4	Depression	0	0	1	0.05	6	1.8	5	10.6	12	3.1	10.2§ df=1
5	Anxiety	0	0	0	0	8	2.5	7	14.9	15	3.9	17.6‖ df=1
	Total problems	0		9		122		52		183		
	Problems/Child			2.2		2.5		2.9		2.6		

† Multiple Psychosocial Problems. df = degree of freedom.
I=Excellent, II = Good, III = Averae, IV = Poor in studies.
‡=p<0.05, §= p<0.005, ‖=p<0.001.

It is obvious from the **Table III** that the educational difficulties were highest (38.3%) among the behavioral problems in the students doing poorly in studies. Among the emotional problems, anxiety disorders (14.9%) were present in greater proportion of low achievers than the depressive illness (10.6%).

It is to be appreciated that the students graded as doing excellent in studies had neither behavioral nor emotional problems. The prevalence of these problems had an inverse relationship with the academic achievement of the adolescents. As the prevalence of psychosocial problems increase, the academic progress decreases. This difference in the prevalence of behavioral and emotional problems according to the academic achievement of the students is statistically highly significant.

It is also evident from the **Table III** that the students suffered from multiple problems and the load of problem per child is inversely associated to the academic achievement of the adolescents.

Discussion And Conclusion :

The present study assessed the prevalence of both behavioral (easily recognized to others) and emotional (difficult to recognize) problems. In this study, the estimated overall prevalence of both types of problems was 17.9%. Other researchers have shown a wide variation (10 40%) depending on the screening tool used in their study. (Singh et al

1983, Gupta et al 2001, Anita et al 2003)[8,9,10]

The significant inverse relationship of both the behavioral and emotional problems with the academic achievement was highlighted in this study. Significant associations have been observed consistently between academic achievement and externalizing problems and various studies have supported this view. (Spagna et al 2000, Grigorenko 2001)[11,12]

In contrast to the voluminous literature on the relation between behavioral problems and learning disabilities, little has been written about academic achievement and emotional problems. The statistically significant negative association was revealed between emotional problems in the present study. Other researchers have also supported this observation earlier Myklebust (1975)[13] and McGee et al (1988)[14].

Significant proportion of the male adolescents has behavioral and emotional problems that are often hidden and precipitate academic underachievement. Acute or chronic academic underachievement should be looked, as a warning sign so that proper mental health services can be provided to such students at the earliest.

The combination of ignored behavioral problems and the lack of mental health services in our country amplify the risk of precipitating academic underachievement and rising delinquent behavior in male adolescents. There is need to raise public awareness about the prevalence of these often "hidden" emotional disorders in Indian adolescents.

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KNOWLEDGE ATTITUDE AND PRACTICES AMONG FEMALE HEALTH WORKERS REGARDING REPRODUCTIVE AND CHILD HEALTH SERVICES IN RURAL MEERUT

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ABSTRACT:

Objective : *To assess the Knowledge Attitude and Practices among Female Health Workers regarding Reproductive and Child Health Care Services.*

Study design : *A follow up study*

Study Setting : *Department of Community Medicine, L.L.R.M. Medical College and Subharti Medical College, Meerut.*

Study Subject : *25 females health workers from 3 PHCs of rural Meerut.*

Study Period : *1996-97 and 2003*

Study Variables : *Knowledge Attitude and Practices among Female Health Workers regarding Reproductive and Child Health Care Services.*

Results : *There was improvement in the knowledge attitude and practices among female health workers regarding reproductive and child health care services over period of five years. The area of improvement and attitudes of female health workers were also identified.*

Introduction :

Provision of health care at the door steps of people is the national commitment and the nation of course has taken great efforts since the National Health Policy has been launched. Creation of subcentre was one step in this direction. But making of subcentre does not mean that objectives have been achieved. It is essential to know whether allotted services are being offered to the population or not, whether people are utilizing services as per their health need or not.

To measure the effectiveness of the subcentre, it is very important to evaluate the performance of female health worker. The skills of female health worker are combination of art and science. She play pivotal role in implementing all national health care programmes at community level. She is the one who requires positive attitude for decision making and for serving the health needs of the people. She also requires adequate knowledge for giving quality health care to the people.

Objectives :

The Present study was done with an objective to evaluate the performance of female health workers on the basis of their knowledge, attitude, practices in providing Reproductive and Child Health Care Services.

Material & Methods :

The present study was conducted at

three block level P.H.Cs., on randomly selected 25 female health workers, each providing health services through subcentre. A pretested and prescheduled proforma was prepared to know about the female health workers and also about her activities, which she was supposed to carry out under Family Welfare Programme. The Study was completed in two phases. In first phase (1998), a base line survey of knowledge, attitude and practices among female health workers was done. Each female health worker was visited at least thrice at her subcentre, mainly on the immunization and antenatal clinic days to elicit information by silent non participatory observation, followed by the an interview. The data collected was then tabulated, analyzed and compared. Performance of female health workers in the first phase was scored. In second phase (2003) similar survey was conducted on the same three blocks level P.H.Cs. selecting 25 same female health workers. The data thus collected in both the phase was compared by the test of significance.

Observation & Discussion :

The present study reveals the status of female health workers and level of knowledge attitude and practices regarding reproductive and child health care services, by assessing through a follow up study after five years. In the present study mean age of female health workers was found to be 43.6 years in first phase & 44.5 years in second phase. Which is comparable to findings (41.7years) of Sirohi et al[1] and much higher to findings (35.8 years) of Paul et al[2]. The higher mean age of female health workers could be because of long time gap in new entries for the post of health worker. Most of the female health workers were high school passed as in other studies.

Table - 1

KAP REGARDING REPRODUCTIVE HEALTH CARE AMONG FEMALE HEALTH WORKERS

Knowledge Attitude and Practice of Female Health Workes	Phase-I (1998) n=25	Phase-II (2003) n=25	X^2 P value
Antenatal Care			
a. Inquired about past pregnancy and BOH	8 (32.0%)	18 (72.0%)	8.01 <0.001
b. Blood pressure recorded	3 (12.0%)	2 (8.0%)	
c. Weight taken	7 (28.0%)	5 (20.0%)	0.444 >0.5
d. Checkup for Anemia and IFA tablets given	7 (28.0%)	25 (100.0%)	
e. Promoted institutional deliveries and high risk referral practice	14 (56.0%)	8 (32.0%)	2.92 >0.05
Family Planning Methods			
Complete Knowledge about family planning methods, their indication, contraindication and side effects.	14 (56.0%)	20 (80.0%)	4.67 <0.05
Post Natal Care			
a. Complete knowledge & practices about proper post natal care of women	7 (28.0%)	11 (44.0%)	1.39 >0.1
b. Most commonly asked symptoms were per vaginal bleeding and discharge	21 (84.0%)	25 (100.0%)	
c. Checking for uterus involution.	19 (76.0%)	25 (100.0%)	

Table no. 1 shows the status of knowledge attitude and practices of female health workers in provision of reproductive health care. It shows significant improvement (P<0.001) in practices of screening highrisk cases and bad obstetric history. But as far as referral to high risk cases to a centre and promotion of institutional deliveries, it was found to be apparently low. There was very high improvement in checking for anemia and giving iron tablets to all pregnant. The reason for this was 100% availability of iron folic tablets at sub cente. Study also reveals that cent percent female health workers in both the phases issued MCH card, gave TT injection, reminded of follow up visits and regular check up which was also seen by Sirohi et al[1]. During antenatal checkups the practices of taking blood pressure and weight was found to be apparently poorer in second phase. The reason informed was non availability of properly functioning equipments.

Regarding knowledge about contraceptives it was found that these was significant improvement in second phase. In post natal care there was apparent improvement in the knowledge attitude and practices of female health workers in comparison to first phase and also it was much higher than sirohi et al[1].

Table - 2

KAP REGARDING CHILD CARE AMONG FEMALE HEALTH WORKERS

KAP REGARDINGCHILD CARE	Phase-I (1998) n=25	Phase-II (2003) n=25
New Born Care		
a. Birth weight	0 (00.0%)	5 (20.0%)
b. Cord Care	4 (16.0%)	11 (44.0%)
c. Proper exclusive breast feeding initiation and methods promotion	13 (52.0%)	25 (100.0%)
Immunization Practices		
a. Proper use and maintenance of vaccine carrier	18 (72.2%)	25 (100.0%)
b. Use of single needle and single syringe	23 (92.0%)	25 (100.0%)
c. Proper disposal of left over vaccine	10 (40.0%)	15 (60.0%)
d. knowledge of vaccines and informing their side effects to clients	20 (80.0%)	22 (88.%)
Proper Case Management of Diarrhoea	14 (56.0%)	22 (88.0%)
Proper Case Management of ARI/ Pneumonia	2 (8.0%)	12 (48.0%)

Table - 3
FAVORITE ASPECT OF FEMALE HEALTH WORKER'S WORK

Favorite Aspect of Work	Phase-I (1998) n=25	Phase-II (2003) n=25
1. Immunization	25 (100.0%)	25 (100.0%)
2. Conducting deliveries	10 (40.0%)	10 (48.0%)
3. Clinical work	12 (48.0%)	20 (80.0%)
4. Antenatal clinic	13 (52.0%)	25 (100.0%)
5. Family Planning	25 (100.0%)	25 (100.0%)
6. Field work	4 (16.0%)	15 (60.0%)

Table - 4
PERFORMANCE BASED GRADES OF FEMALE HEALTH WORKERS

Percentage of performance of activities	Grades (Good, Average, Poor)	Phase-I (1998)	Phase-II (2003)
1. 85% or above	Good	2 (8.0%)	5 (20.0%)
2. 65% to 84%	Average	14 (56.0%)	18 (72.0%)
3. 40% to 64%	Poor	9 (36.0%)	2 (8.0%)

Table no.2 shows apparent improvement in kAP regarding child health care in second phase which is much higher than previous studies done[1&2]. Table no.3 shows that with time and repeated trainings the attitude of female health worker has improved to do the field work but in both the phases they had higher choice towards doing family planning work, antental and immunization clinics. The various activities to be carried female health workers, were counted and were marked as scores. Table no. 4 shows evaluation scores of the performance of female health workers. It shows improvement as better performing female health workers in second phase. The number of female health workers as excellent & good performer improved after five years follow up.

Conclusion :

The finding of study reveals that over a period of five years there is improvement in knowledge attitude & practices of female health workers regarding RCH. The major reason assumed was intensive orientation & reorientation training for RCH programmes.

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BLOOD PRESSURE PATTERN AMONG COMPUTER AND MOBILE PHONE USERS IN POPULATION AGED 13 YEARS AND ABOVE IN URBAN KANPUR

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ABSTRACT:

Background: *Hypertension has been identified as an established attribute in causation of cardiac problems. In light of certain reports, indicating induced mental stress by long-term computer use and chest - pocket placement of mobile phone interfering with pace makers and cardiac functions, the possible influence of such exposures on blood pressure opens a potential area of study.*

Objective : *To study the influence of varying degrees of exposure to computer and mobile phone use on blood pressure among adolescent and adult population of Urban Kanpur.*

Methodology : *Study group of people aged 13 years and above from Urban Kanpur was obtained by multistage sampling and community based data were collected by cross-sectional study on pre-designed and pre-tested schedule of interview and examination. A total of 2014 persons were obtained for study.*

Results : *38 .89% of study population was exposed to computer use. Almost 75% of the users, representing age group 13-30 and more than 50 years, did show higher mean blood pressure levels increasing in proportion to longer continuous hours of daily use. 42.35% of study population was using mobile phones. Out of the 261 male users, who kept mobile phones in chest pocket, 63% showed apparently higher mean blood pressure levels than those not keeping in chest pocket.*

Introduction :

In India, proportionate deaths due to cardiac causes contribute about 29.1% to all cause mortality. Hypertension is a established attribute in causation of cardiac problems and lifestyle an important determinant of hypertension. In recent years, varying degrees of exposure to computers and mobile phone among adolescents and adults has acquired a significant dimension in their lifestyle. In light of certain reports indicating induced mental stress by long-term computer use (Sharma et al, 2006) and chest-pocket placement of mobile phone interfering with pace-makers and cardiac functions (WHO, 2000), the possible influence of such exposures on blood pressure open a potential area of study.

Objective :

To study the influence of varying degrees of exposure to computer and mobile phone use on blood pressure among adolescent and adult population of Urban Kanpur.

Methodology :

Study group of people aged 13 years and above from Urban Kanpur was obtained by multistage random sampling. All the wards of Kanpur Nagar were divided into four groups of wards, one group in each of the four directions, i.e. north, east, south and west. At the first stage, one ward was selected randomly from each group. At the second stage, one mohalla was selected randomly from the each of the four selected wards. House to house survey was carried out in the selected mohallas, starting

from the first house on the left. All members of the families, who voluntarily agreed to participate, in the age of 13 years and above, were interviewed and examined on pre-designed and pre-tested schedule to obtain the required information. A total of 2014 persons were obtained for study. Data were analyzed using the software Microsoft Excel and SPSS 14.0 for Windows. Total period of study was about a year and a half, from February 2005 to November 2006, including development of study tools, collection of data, analysis and presentation of findings.

Results & Discussion :

Table - 1

DISTRIBUTION PROFILE OF COMPUTER AND MOBILE PHONE USERS IN THE STUDY POPULATION

Computer Use	Men		Women		Total (%)
	No. (%)	%	No. (%)	%	
Present	502 (51.65)	64.11	281 (26.97)	35.89	783 (38.89)
Absent	470 (48.35)	38.18	761 (73.03)	61.82	1231 (61.11)
Total	972 (100)	48.26	1042 (100)	51.74	2014 (100)
Mobile phone use					
Present	583 (59.98)	68.35	270 (25.91)	31.65	853 (42.35)
Absent	389 (40.02)	33.55	772 (74.09)	66.45	1161 (57.65)
Total	972 (100)	48.26	1042 (100)	51.74	2014 (100)

Of the 2014 study subjects, 783 i.e. 38.89% were found to be using computers. Among the users, approximately 64% were males and 36% were females. 42.35% (853) of the study population was using mobile phones. Among the users, approximately 68% were men and 32% were women.

Table - 2

EFFECT OF CHRONICITY OF COMPUTER EXPOSURE ON MEAN BLOOD PRESSURE LEVEL OF USERS (n=783)

Age (yrs)	Exposure (years)	No.	SBP(mmHg)		DBP(mmHg)		p-value	
			Mean	SD	Mean	SD	SBP	DBP
<20	Long term	29	105.45	6.33	64.62	5.57	0.153	0.343
	Medium	229	105.26	5.34	65.82	5.59		
	Short term	34	107.26	6.68	66.74	6.61		
Total		292						

Contd.

20-30	Long term	30	114.40	5.88	72.73	5.13	0.144	0.056
	Medium	177	112.56	6.16	72.08	6.45		
	Short term	29	111.21	7.17	69.03	5.72		
Total		236						
30-40	Long term	30	118.10	6.02	78.03	4.12	0.421	0.676
	Medium	46	120.30	8.03	78.80	4.88		
	Short term	4	118.75	1.89	77.25	4.86		
Total		80						
40-50	Long term	27	122.00	6.18	78.96	3.60	0.323	0.425
	Medium	69	123.64	9.59	79.16	6.53		
	Short term	16	120.13	9.43	77.00	6.55		
Total		112						
50-60	Long term	18	125.22	9.31	83.11	4.95	0.975	0.101
	Medium	25	124.80	6.70	79.80	5.49		
	Short term	10	124.60	6.98	80.40	3.73		
Total		53						
>60	Long term	2	132.00	0.26	80.00	0.00	0.348	0.418
	Medium	6	119.67	11.69	75.00	5.48		
	Short term	2	120.00	0.00	78.00	0.28		
Total		10						

Chronicity of computer exposure in terms of years of use, was classified as long term (>5 years), medium (1-5 years) and shortterm (< 1 year). It was observed that there was no significant difference in the mean blood pressure levels among the long term, medium and short term users in amy age froup (p>0.05).

Table - 3

EFFECT OF VARYING GRADES OF DAILY CONTINUOUS COMPUTER EXPOSURE ON MEAN BLOOD PRESSURE LEVELS OF USERS (n=783)

Age (yrs)	Exposure (hrs/day)	No.	SBP(mmHg)		DBP(mmHg)		p-value	
			Mean	SD	Mean	SD	SBP	DBP
<20	Heavy	4	109.00	5.77	69.00	5.77	0.000	0.000
	Moderate	41	109.10	5.18	69.37	6.07		
	Light	247	104.86	5.47	65.17	5.44		
Total		292						
20-30	Heavy	23	116.17	5.24	73.70	6.31	0.011	0.043
	Moderate	135	112.53	6.45	72.23	6.64		
	Light	78	111.74	5.99	70.46	5.38		
Total		236						
30-40	Heavy	16	116.44	7.98	76.44	5.19	0.171	0.148
	Moderate	53	120.28	7.47	78.92	4.56		
	Light	11	119.45	1.21	79.00	3.00		
Total		80						

Contd.

40-50	Heavy	13	123.00	9.33	78.62	5.85	0.547	0.492
	Moderate	66	122.02	7.38	79.44	5.56		
	Light	33	124.09	10.02	77.92	6.56		
Total		112						
50-60	Heavy	6	130.33	5.00	86.50	2.31	0.008	0.003
	Moderate	30	124.87	6.99	81.34	4.71		
	Light	17	123.06	7.29	78.88	4.60		
Total		53						
>60	Heavy	0	-	-	-	-	0.753	0.660
	Moderate	8	122.75	11.41	76.25	5.17		
	Light	2	120.00	0.00	77.50	0.08		
Total		10						

Daily continuous exposure was graded as heavy (>5 hours/day) , moderate (1-5 hour/day) and light (<1 hour/day). It was observed that in users of age groups <20 years, 20-30 years and 50-60 years, who constituted approximately 74% of the total users, the mean blood pressure levels increased with increasing grade of use, the difference being significant statistically ($p<0.05$). Sharma AK et al (2006) observed that mental stress was perceived by 35% of the computer users and it increased significantly in those who were working 5 hour or more per day on computer. Since mental stress has an established association with high blood pressure, the finding of the present study are perfectly coherent with that Sharma et al (2006). This area requires a deeper, methodical research, as computer use is now a part of lifestyle of people.

Table - 4

EFFECT OF CHRONICITY OF MOBILE PHONE USE ON MEAN BLOOD PRESSURE LEVELS OF USERS (n=853)

Age (yrs)	Exposure (hrs/day)	No.	SBP(mmHg)		DBP(mmHg)		p-value	
			Mean	SD	Mean	SD	SBP	DBP
<20	Long term	6	112.67	2.07	74.00	4.73	0.359	0.177
	Medium	34	110.14	6.14	69.47	6.32		
	Short term	20	112.00	4.65	69.60	4.00		
Total		60						
20-30	Long term	17	115.71	5.05	73.41	6.72	0.022	0.218
	Medium	233	111.80	6.20	70.93	5.93		
	Short term	56	113.23	6.82	71.82	7.53		
Total		306						
30-40	Long term	74	121.95	4.25	81.05	2.72	0.043	0.000
	Medium	39	118.68	7.72	77.27	5.40		
	Short term	8	118.38	5.90	75.75	5.37		
Total		121						

Contd.

40-50	Long term	55	126.13	7.42	81.84	5.33	0.001	0.001
	Medium	98	120.87	7.78	78.22	5.41		
	Short term	39	124.26	11.33	80.28	5.94		
Total		192						
50-60	Long term	31	124.06	9.13	80.58	5.40	0.476	0.465
	Medium	82	125.90	6.47	81.57	4.49		
	Short term	26	124.62	9.8	80.77	8.49		
Total		139						
>60	Long term	10	128.00	3.27	80.40	6.17	0.061	0.657
	Medium	19	120.74	7.59	78.58	9.41		
	Short term	6	130.67	15.13	82.00	8.17		
Total		35						

Chronicity of mobile phone use was classified as long term (>5 years), medium (1-5 years) and short term (<1 year). It was observed that in age groups <30 years, and > 50 years, who constituted approximately 63% of the user group, there no significant difference in mean blood pressure levels among the three categories of users, ($p>0.05$). However, in age group 30-50 years, significant differences were observed in the blood pressure levels of the three grades of users, ($p<0.05$). although no specific pattern could be elucidated.

Table - 5

EFFECT OF CHEST POCKET PLACEMENT OF MOBILE PHONE ON MEAN BLOOD PRESSURE LEVELS AMONG MALE USERS (n=583)

Age (yrs)	Placement of phone	No.	SBP(mmHg)		DBP(mmHg)		p-value	
			Mean	SD	Mean	SD	SBP	DBP
<20	Chest poc	8	115.75	1.58	72.75	3.49	0.011	0.843
	Others	31	113.39	3.70	72.45	4.50		
Total (%)		39 (6.69)						
20-30	Chest poc	50	117.84	2.65	76.30	3.97	0.000	0.003
	Others	110	115.72	4.39	74.11	4.87		
Total (%)		160 (27.44)						
30-40	Chest poc	48	121.82	6.48	79.67	4.85	0.637	0.654
	Others	47	121.26	4.83	79.26	4.04		
Total (%)		95 (16.30)						
40-50	Chest poc	83	125.65	9.14	81.73	4.74	0.044	0.008
	Others	67	123.06	6.53	79.55	5.10		
Total (%)		150 (25.73)						

Contd.

50-60	Chest poc	62	125.10	7.69	82.31	3.91	0.119	0.604
	Others	48	127.28	6.71	81.70	5.92		
Total (%)		110 (18.87)						
>60	Chest poc	10	129.50	11.81	78.40	11.54	0.156	0.941
	Others	19	123.26	7.89	78.11	5.78		
Total (%)		29 (4.97)						
Grand Total (%)		583 (100)						

Out of the 583 male mobile phone users, 261 (44.77%) kept their phones in their chest pocket. It was observed that in age groups >20 years, 20-30 years and 40-50 years, which harbored approximately 60% of the mobile phone users, chest pocket placers of mobile phone had significantly higher mean blood pressure levels than the non-placers, ($p<0.05$). This area is in urgent need of meticulous research so that the health risks of mobile phone use can be established and appropriate preventive measures taken.

Conclusion & Recommendations :

Computers use even for years together, per se, was not found to have any influence on blood pressure levels, provided daily continuous use was limited to lesser hours. Mobile phone use even for years together was not found to have any significant impact on blood pressure levels, in general, provided it was not kept in chest-pocket.

Precise and appropriately designed studies, aimed at eliciting the effect of computers and mobile phones which are now a part and parcel of our lives, on blood pressure, should be undertaken.

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STATUS OF ROUTINE IMMUNIZATION IN AN URBAN AREA OF MEERUT

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ABSTRACT:

Background : *Where "Pulse Polio Immunization" has gained significant success in mass immunization and reducing Poliomyelitis cases in India, "Routine Immunization" has failed to draw even half of the parents to such camps.*

Objective : *To access the immunization coverage of children of 1-5 years age in the community for BCG, three doses of DPT, OPV and Measles, and to find out the reasons for utilization / non-utilization of immunization services at the Urban Health Centre (UHC) - Field Practice area of Lala Lajpat Rai Memorial Medical College (LLRM Medical College), Meerut.*

Method : *400 mothers of children aged 1-5 years were selected using systemic random sampling and interviewed with a pre-tested questionnaire with multiple response options.*

Results : *93.25% of children in community were found to be completely immunized 5.25% parially immunized and only 1.5% non-immunized.*

Key Words : *Immunization, Urban Health Centre, Coverage.*

Introduction :

Infant mortality rate is considered to be the best indicator of health for the developing countries. In India, infant mortality has declined slowly from 204 during 1911-15 to 67 in year 2005.[1] Vaccine preventable diseases are again one of the important causes of infant mortality. Routine immunization services have received a set back after the advent of "Intensive Pulse Polio Immunization" activity. The vaccination of children against six serious diseases but preventable diseases has been a cornerstone of child health care system in India. Coverage levels have been variable from 11% in Bihar & 14-17% in Nagaland, Meghalaya, Assam & Rajasthan to 80% in Tamil Nadu, Himanchal Pradesh, Goa & kerala.[2,3] We are presenting a success story of routine immunization in an urban area of Meerut which can act as a model for health care delivery system in urban setup.

Material :

The present study was carried out in the Urban Field practice area of LLRM Medical College, Meerut with a total population of 9816 having 814 (8.29%) children in the 1-5 years age group.

Objectives :

The objectives of the study were to find out the present status of immunization in children of 1-5 years, to evaluate the services provided at UHC and to assess the factors for utilization of immunization services.

Methods :

A total of 384 children to be studied was estimated by finding out the sample size at estimated immunization coverage of 50% at a

relative precision of 10% at 95% confidence interval, but because of non-response and non-cooperative attitude of respondents, 400 children were studied. Out of 814 children, every second child was assessed by systemic random sampling. The factors which affect the immunization status like education of parents, faith of parents in the immunization system and reasons for non-covrage were studied by oral questionnaire method.

Results :

The study revealed complete immunization coverage of 373 children (93.25%), partial immunization coverage of 21 children (5.25%), and no immunization of 6 children (1.5%).

The study also revealed reasons / faith in the immunization services at the UHC, Field Practice area of LLRM Medical College, Meerut as well as relation with the education status of parents which can be seen in Tables 1 and 2.

Discussion :

In a country which claims 75% male literacy and 51% female literacy while only 42% children of 12-23 months of age are fully immunized, 44% are partially immunized for one or the other vaccine and 12% continue to be at the threat of perishing just because they were unable to spare few minutes of their lives for vaccination sittings.

A complete immunization of 93.25% was attained in the studied community, while Singh and Yadav had reported that in BIMARU states only 48% children were fully immunized.[5] The 5.25% children who were partially immunized were cases of negligence on parent's part. The reasons for the 1.5% children being non-immunized was enquired into and found that they were all migrants to the area from the eastern states and were unaware of need of immunization. Ughade et.al. have reported negligence (57%) and unawareness (22.7%) of parents as the major causes for improper utilization of immunization services.[6] Similar views have been expressed by Ray et.al. (2004).[7]

The study shows significant association of immunization status of children with the father's education (Fisher's exact p value < 0.05) and mother's education (Fisher's exact p value < 0.01). Ughade et.al. also reported significant association of delayed vaccination with paternal and maternal education.[6]

The provision of merely free vaccines will not help in increasing the vaccination coverage as only 45.92% of mothers felt this was one of the reasons to draw them to the centre for vaccination.

Any mother will not like her child to be laid in the hands of a health worker who has not been properly trained. While 80.4% of the mothers believed that they felt their children safe in the hands of trained doctors i.e. residents, 80.9% felt the need of a MOIC at the vaccination centres, and 82.7% believed that they felt free from the fear of any side effect at the centre.

The need for organizing these sessions very punctually at fixed places needs to be stressed upon as 83.0% mothers believed that they heavily relied in the fact that the vaccine and the vaccinators would be available at the specified time on the centre. Records reveal that during the past five years only 11% of the regular sessions on Wednesdays were missed due to public / gazetted holidays. Suresh and

Saxena have expressed their concern on falling vaccination coverage and suggested a similar way to improve this. They have called for organizing fixed immunization sessions at the community where low proportion of sessions is held.[8]

In the study, 79.1% mothers believed that they preferred the centre because they could get information regarding proper care of their children through the centre. In the past three years, more than 30 community meetings of the pregnant and lactating mothers have been held teaching them the importance of breast feeding, vaccination, growth monitoring, weaning, nutritional supplementation and family planing. This knowledge is imparted to the beneficiaries door to door by the interns as a part of their field work. All the children coming for vaccination are monitored for their growth statistics and a record is maintained which is used to tell the mother whether the child is growing normally, and if not, they are suggested ways to improve the growth. This helps in not only reducing the percentage of malnourished children form the community, but also a building up of faith in the health system leading to better utilization of the immunization services.

82.6% mothers believed that the less distance of the centre was one of the causes for coming to the centre. Ughade et.al. found significant association between proximity of the vaccination centre and delayed vaccination.[6]

Conclusion - Regular and timely immunization sessions, as well as properly trained workers having good knowledge regarding child rearing practices and organization of community meetings, and safe vaccination practices will go a long distance in improvement of immunization in urban areas / slums.

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Table - 1
Reasons for faith in the UHC for vaccination

	YES (%)**
Free of Cost?	180 (49.92%)
Regular immunization sessions?	329 (83.93%)
Expert Hands of residents?	315 (80.36%)
Expert Guidance of MOIC?	317 (80.87%)
Organization of Community Meetings?	310 (70.08%)
Good Physical Infrastructure?	259 (66.07%)
Minimum side-effects?	324 (82.65%)
Less distance?	324 (82.65%)
BASE n	392

**-Multiple response.

Table - 2
Parents' education and the immunization status of children

	Completely immunized		Partially/Non-Immunized		Total No.
	Number	%	Number	%	
Illiterate father	12	3.0	4	1.0	16
Literate father	361	90.25	23	5.75	384
Illiterate mother	4	1.0	8	2.0	12
Literate mother	369	92.25	19	4.25	388
N					400

Father's education - p value <0.05.

Mother's eduction - p value <0.01.

Table - 3
Socio-economic classification of the studied community
(According to Modified Kuppuswamy Classification)

Social Class	Percentage
Upper	14%
Upper Middle	40%
Lower Middle	38%
Upper Lower	14%
Lower	3%
BASE	100%

A STUDY TO ASSESS THE MAGNITUDE OF OVERWEIGHT AND OBESITY AMONG AGEGROUP 15 YEARS AND ABOVE IN THE RURAL KANPUR

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ABSTRACT:

Research Question : *What is the magnitude of the problem of overweight and obesity in rural area of Kanpur?*

Aims and Objective : *To study the demographic profile and assess the prevalence and correlates of overweight and obesity.*

Study design : *Cross-sectional study.*

Study place : *Baniyapur and Durgapur village of Kanpur*

Study period : *March 2005 to July 2006.*

Study subjects : *15 years and above population of Kanpur.*

Study Variables : *Age, sex, marital status, education and occupation.*

Statistical analysis : *Chi square test and percentage.*

Results : *Out of the total 2200 study population, 51.7% were males and 48.3% were females. Majority of study population was Hindus (96.9%). Prevalence of overweight (BMI = 25.0-29.9 Kg/m2) was 4.0% (3.3% in males nd 4.7% in females) while prevalence of obesity (BMI ≥ 30.0 Kg/m2) was 0.5% (0.4% in males and 0.8% in females). Prevalence of overweight and obesity increased with advancing age and it was higher in high socio-economic status class.*

Introduction :

For centuries, the human population has been suffering from varieties of health problems, which include both communicable and non-communicable diseases. Communicable diseases have been taking a large number of human lives throughout history. But now, the prevalence of non-communicable diseases like cardiovascular, renal, nervous and mental diseases, musculo-skeletal diseases, accidents, cancer, diabetes, obesity etc. has increased not only in developed countries, but also in developing countries.

WHO (2000) defines obesity as "abnormal or excessive fat accumulaion in adipose tissue, to the extent that health is impaired". Overweight and obesity are essentially due to energy imbalance. The major risk factors responsible for development of non-communicable diseases are lifestyle changes, environmental risk factors, inability to obtain preventive health services, cigarette smoking, alcohol abuse and stress factors. Obesity is very frequently also associated with other health conditions suchas gall bladder diseases, certain cancers, musculo-skeletal problems and sleep apnea. It is estimated that about 315 million people worldwide fall into the WHO-defined obesity categories with a BMI 30 kg/m2 or

above. This figure can double by year 2025 if no action is taken against this threat.

Material and Method :

The present study was carried out in Baniyapur and Durgapur villages of Kanpur Nagar from March 2005 to July 2006 among 15 years and above persons. Minimum sample size was calculated to be 2177. The study population was selected by using *Multistage Random Sampling Technique*. In the first stage of sampling, all the 10 blocks were listed and one block, Kalyanpur, was randomly selected. In the second stage, all the villages in the selected block were listed down and one village, Baniyapur, was randomly selected to study the required sample unit. House to house survey was carried out. The detailed information was elicited and collected on a pre-designed and pre-tested proforma. Simultaneously, BMI (Body Mass Index) values of eligible persons i.e. aged 15 years and above were calculated using the formula : BMI = Weight in kg/ (Height in meter)2

WHO (2000) recommended criteria were used for classification of obesity according to BMI.

Observations and Discussion :

It was observed that among 2220 studied population, maximum people belonged to 15-24 years age group (34%) followed by 25-34 years age group (26.6%). It was found that 96.9% were Hindus while 3.1% were Muslims. Majority of people were living either in joint (36.2%) or extended (24.2%) family while the remaining (39.6%) belong to nuclear family. Nearly three fourth (80.8%) belonged to social class III, IV and V and remaining (19.2%) were from social class I or II. It was also observed that 31.1% were illiterate followed by middle school 18.7% and just literate 17.7%. Illiteracy was more in females (46.6%) than males (16.6%). 33.7% in rural area were either unemployed or nonworking and 53.3% were doing either service/business/farming or were vendor or shopkeepers.

TABLE - 1
Distribution of study population by their Body Mass Index (BMI)

BMI (Kg/m^2)	Males (n=1148)		Females (n=1072)		Total (n=2220)	
	No.	%	No.	%	No.	%
<18.5	286	24.9	198	18.5	484	21.8
18.5-24.9	820	71.4	816	76.1	1636	73.7
25.0---29.9	38	3.3	50	4.7	88	4.0
≥30.0	4	0.4	8	0.8	12	0.5
Total	1148	51.7	1072	48.3	2220	100.0

$\chi 2$ (BMI vs. Sex) =16.37 $p<0.05$

Table 1 depicts the sex wise distribution of study population according to their BMI status. It was observed that a total of 4.0% (3.3% males and 4.7% females) were overweight (BMI = 25.0-29.9 kg/m^2) and 0.5% (0.4% males and 0.8 females) were obese (BMI ≥30.0 Kg/m^2). It was observed that 21.8% were underweight (BMI < 18.5 Kg/m^2) while three fourth of the study population were having normal BMI (BMI 18.5-24.9 Kg/m^2).

TABLE - 2
Age and sex wise prevalence of overweight and obesity in rural study area

Age groups (years)	Sex	No. of People	BMI <25 (Kg/m^2)		BMI 25.0-29.9 (Kg/m^2)		BMI ≥30 (Kg/m^2)	
			No.	%	No.	%	No.	%
15-24	Males	392	386	98.5	6	1.5	0	0.0
	Females	362	353	97.5	8	2.2	1	0.3
	Total	754	739	98.0	14	1.9	1	0.1
26-34	Males	308	298	96.8	8	2.6	2	0.7
	Females	282	269	95.4	11	3.9	2	0.7
	Total	590	567	96.1	19	3.2	4	0.7
36-44	Males	198	189	95.5	8	4.0	1	0.5
	Females	178	164	92.1	12	6.7	2	1.1
	Total	376	353	93.9	20	5.3	3	0.8
46-54	Males	136	129	94.9	6	4.4	1	0.7
	Females	122	112	91.8	8	6.6	2	1.6
	Total	258	241	93.4	14	5.4	3	1.2
56-64	Males	82	74	90.2	8	9.8	0	0.0
	Females	92	82	89.1	9	9.8	1	1.1
	Total	174	156	89.7	17	9.8	1	0.6
≥65	Males	32	30	93.8	2	6.3	0	0.0
	Females	36	34	94.4	2	5.6	0	0.0
	Total	68	64	94.1	4	5.9	0	0.0
Total (All Age Groups)	Males	1148	1106	96.3	38	3.3	4	0.4
	Females	1072	1014	94.6	50	4.7	8	0.8
	Total	2220	2120	95.5	88	4.0	12	0.5

$\chi 2$ (age groups vs. males) = 15.74 $p<0.05$
$\chi 2$ (age groups vs. females) = 70.57 $p<0.05$
$\chi 2$ (age groups vs. total) = 30.19 $p<0.05$

Table 2 reveals that prevalence of both overweight and obesity increased with advancing age. Overweight was maximum (9.8%) in 55-64 years age group and lowest (1.9%) in 15-24 years age group. Higher prevalence of overweight and obesity was seen

in females than males in all age groups except those above 55 years of age. It was observed that the prevalence of overweight was highest among Muslims (5.4%) followed by 3.9% in Hindus while prevalence of obesity was 2.7% and 0.5% in Muslims and Hindus respectively.

TABLE - 3

Prevalence of overweight and obesity in relation to socio-economic status

Socio-economic status	No. of people (n=2220)	Over wt. (n=88)		Obese (n=12)		Total (n=100)	
		No.	%	No.	%	No.	%
Class I	16	3	18.8	1	6.3	4	25.0
Class II	410	36	8.8	4	1.0	40	9.8
Class III	652	31	4.8	4	0.6	35	5.4
Class IV	860	14	3.0	3	0.4	17	2.0
Class V	282	4	1.4	0	0.0	4	1.4
Total	2220	88	4.0	12	0.5	4.5	2220

Table 3 reveals that the prevalence of overweight and obesity was highest among people belonging to social class I and lowest in social class V socioeconomic status group. Thus, in the present study, the prevalence of overweight and obesity is found to be inversely proportional to socioeconomic status of people.

In rural area, prevalence was found to be highest among unemployed / nonworking people (5.5%) and minimum in unskilled workers. Study revealed that majority (80.0%) were consuming 3 or more major meals per day while two major meals were being consumed by 20.0% persons.

The distribution pattern of prevalence of various associated diseases in the study subjects on the basis of history given by them revealed that musculo-skeletal problem was the most prevalent problem (27.0%) followed by hypertension (14.0%), Bronchial asthma (9.0%) diabetes mellitus (7.0%), chronic skin diseases (4.0%) and gall bladder diseases 3.0%. Regarding the practices and plans of overweight and obese people to control weight, it was observed that nearly half of the rural subjects (48%) had no plans, 78.0% were in favour of either avoiding oily food (40.0%) or fasting once in a week (38.0%). Females were more in favour of fasting compared to males (14.3% males, 55.2% females).

Recommendation :

In the light of the findings of the present study in both the areas, following recommendations and suggestions can go a long way towards preventions & control of overweight and obesity.

1. Low caloric diet to be consumed to prevent and control overweight & obesity.
2. Avoidance of intake of additional food substances between the major meals

may be useful to control the overweight and obesity.

3. People leading sedentary life styles should do the physical exercise to lose the body weight.

4. Practices & plans to lose the weight like daily walking, exercise, skipping a meal in day, avoiding oily foods, fasting once in a week to be followed.

5. Information, education and communication (IEC) to be imparted about high risk factors, interventional activities to lose the body weight.

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STATUS OF CONSUMPTION OF IODIZED SALT IN AGRA DISTRICT

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ABSTRACT :

Research question : *To enquire the practices regarding the use of iodized salt and level of iodination in the consumed salt in rural and urban Agra district?*

Objective :

1. *To know about the type of iodized salt consumed.*
2. *To know about the presence of iodine in the consumed salt.*

Study design : *Cross sectional study.*

Sampling technique : *Multi stage random stratified cluster sampling.*

Study methods : *Multi indicator rapid assessment household survey.*

Settings : *Mohallas of Agra city and villages of district Agra.*

Sample Size : *3200 households of 80 clusters of Agra district.*

Study variable : *Type of salt consumed, and presence of iodine in the consumed salt.*

Statistical analysis : *Tests of significance.*

Results : *48% households were consuming packed grinded salt followed by unpacked grinded salt (36.5%). Out of 640 salt samples were tested for the presence of iodine, 49.4% were found positive.*

Introduction :

Iodine deficiency is the most common preventable cause of mental deficiency in the world today. IDD constitute a major public health problem for India.[1] Survey by Ministry of Health and family welfare, of 283 of the country's 587 districts in 29 states and 6 union territories, classified 247 districts (87%) as endemic. All states/UT's except 2 had at least one endemic district. Overall, an estimated 167 million people risk developing iodine deficiency disorders, 54 million have goiter, and 2.2 million are cretins.[2]

The consequences of iodine deficiency include goitre, reduced mental function, increased rates of still births and abortions, and infant deaths. Severe mental and neurological impairment known as cretinism occurs in babies with severely iodine deficient mothers. Deficiencies in iodine later in infancy and childhood cause mental retardation, delayed motor development, growth failure and stunting, neuromuscular disorders and speech and hearing defects. Mild deficiency can cause lethargy, and this is reversible when iodine status improves.[3]

The present study assessed type of salt consumed, and presence of iodine in the consumed salt through Multi-Indicator Rapid

Assessment (MIRA) survey techniques in Agra district of U.P.

Material and Methods :

Present study was conducted in District Agra of U.P. state, India, which has a population of 3.6 million. A cross sectional study was done utilizing multi stage random stratified clustersampling and multi indicator rapid assessment technique for interviews. Study was conducted in 30 urban and 50 rural clusters of district Agra. The development of questionnaire and its field-testing (during pilot study) were done from April 2002 to June 2003. The actual survey with simultaneous data entry was done from June 2003 to Dec. 2003.

During the stage one of sampling, cumulative population of the district was calculated and the total required 80 communities were selected from the lists by using standard cluster sampling technique with a sampling interval of 36332 and a random number of 24868. During the second stage, maps of all the selected 80 communities were sorted out and each community was divided into four quadrants. In each quadrant, 10 households were visited in continuation by selecting first household randomly; the random number taken as the last digit of currency note. This gave us the 40 households, required from a cluster, making a total of 3200 households for the study. The study was conducted by the author under guidance of coauthors which was monitored through observing filled formats, counterchecking the covered houses and by validating the data entered.

A total of 3200 households in the selected 80 clusters of district Agra were interviewed during house to house visit for type of salt consumed, and presence of iodine in the consumed salt through iodine testing kit supplied by UNICEF.

The information collected was computerized in specific programme developed on computer software Fox pro(version 2.6) and analyzed with the help of SPSS statistical software (version 10.3).

Results :

Persual of table reveals that maximum i.e. 48 percent households were consuming packed grinded salt followed by unpacked grinded salt (36.5%). A small percentage of households were consuming unpacked-grinded salt and washed-crystal salt (10.9% & 4.6% respectively).

In households of Agra city most commonly consumed common salt was (60%) packed-grinded salt and second common was washed-crystal salt in 24.7 percent households only, while 12.8 and 2.6 percent were utilizing unpacked-grinded salt and washed-crystal salt respectively.

Washed-crystal salt and packed-grinded salt was consumed by more than four - fifth rural households (43.6 and 40.8 percent respectively) while about 16 percent were consuming unpacked-grinded salt or unwashed-crystal salt (9.9 and 5.8% respectively).

When enquired regarding the iodination of salt consumed in the households, it was found that many of community members (39.5%) were aware of it, the percentage of awareness being 50.6 percent in urban area. In rural area, about 32.8 percent were aware that the salt used by them was iodized while out of packed grinded salt users, majority (62.5%) were aware about the iodination status of the salt.

Table - 1
Awareness and Consumption of Type of Salt among Households

Type of salt Used		Awareness											
		Rural				Urban				Combined			
		Iodized	Not Iodized	Don's Know	Total	Iodized	Not Iodized	Don's Know	Total	Iodized	Not Iodized	Don's Know	Total
Unwashed-crystal salt	No.	20	26	69	115	9	8	14	31	29	34	83	146
	%	3.0	4.6	8.8	5.8	1.5	3.1	4.1	2.6	2.3	4.2	7.4	4.6
Washed-crystal salt	No.	166	271	435	872	74	105	117	296	240	376	552	1168
	%	25.3	42.4	55.5	43.6	12.2	41.3	34.5	24.7	19.0	46.2	49.2	36.5
Unpacked-grinded salt	No.	60	67	70	197	51	53	49	153	111	120	119	350
	%	9.1	12.0	8.9	9.9	8.4	20.9	14.5	12.8	8.8	14.7	10.6	10.9
Packed-grinded salt	No.	410	196	210	816	473	88	159	720	883	284	369	1536
	%	62.5	35.0	26.8	40.8	77.9	34.6	46.9	60	7.0	34.9	32.9	48
Total	No.	656	560	784	2000	607	254	339	1200	1263	814	1123	3200
	%	(32.8)	(28)	(39.2)	(100)	(50.6)	(21.2)	(28.3)	(100)	(39.5)	(25.4)	(35.1)	(100)

A large number of community members (35.1%) did not know about the iodination of salt in which 39.2 and 28.3 percent were residing in rural and urban areas respectively.

Table - 2
Results of Salt Samples Tested for Iodine

			Rural	Urban	Combined
No. of Samples Tested		**No.**	400	240	640
Positive	**<15 ppm**	**No.**	110	91	201
		%	27.5	38.0	31.4
	>15 ppm	**No.**	39	76	115
		%	9.8	31.7	18.0

The salt samples were tested for the presence of iodine in every 5th household in the area surveyed. Out of 640 samples, 49.4 percent were tested positive. In the urban areas, nearly about two-third samples found to be positive for iodine (69.4%), while in rural areas this was 37.3 percent only.

Among households in which salt samples were found positive only 18 percent were found to consume common salt iodine above the optimum level i.e. more than 15 parts per million (ppm), being higher in urban area compared to rural (31.7 and 9.8 percent respectively).

Discussion :

When enquired regarding the iodization of salt consumed in the households, it was found that nearly forty percent community members (39.5%) were aware of it, the percentage of awareness being 50.6 percent in urban area. In rural area, about 32.8 percent were aware that the salt used by them was iodized while out of packed grinded salt users, majority (62.5%) were aware about the iodination status of the salt.

Nandan D et al. (1995) found in Mathura, Etah and Almorah districts that high percentages of people were not aware of the type of salt they were consuming i.e. 46.0%, 80.6% and 57.1% in respective districts. **Panwar D.S. (1997)** reported that the 43.8 percent of household members were aware of type of salt they were consuming (whether iodized or not), and the awareness was lower (32.4%) in the rural areas.

Around 48 percent households were consuming packed grinded salt followed by unpacked grinded salt (36.5%). A small percentage of households were consuming unpacked-frinded salt and washed-crystal salt (10.9% & 4.6% respectively).

Nandan D et al. (1995) MIRA survey-UP (1995), Udaykiran et al (1996) and Multi Indicator cluster Survey-UP-UNICEF (2000) *reported that the percentage of households using iodized salt was 45percent, 31.4percent, 35 percent and 48 percent respectively* which is higher to the findings of present study.

Among households in which salt samples found positive only 18 percent were found to consume common salt with iodine above the optimum level i.e. more than 15 ppm, being higher in urban area compared to rural (31.7 and 9.8 percent respectively).

Panwar D.S. (1997) reported that among households in which salt samples found positive was 63.4 percent while in the present study it was 49.4 percent may be because of increasing imitated brands of common salts in the district. Very low figures were found regarding the consumption of common salt with the optimum level of iodine i.e. more than 15 ppm, was only 18 percent in the district.

Udaykiran et al (1996) reported from Southern Karnataka that none of the salt sample tested positive for iodine content at household level showing the dark aspect of situation of iodization in that area.

Overall the situation in the urban area is seems to be good but specific awareness programs are needed for the promotion and utilization of iodized salt at household level in Agra district.

Universal iodination of salt at the factory level does not necessarily ensure the universal use of iodized salt. In the rural areas where cheap raw salt is available in the market, special measures are necessary to ensure the universal of iodized salt.

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OBESITY AND LIFESTYLE DISEASES-A COMMUNITY BASED STUDY IN ADULT PUNJABI POPULATION

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ABSTRACT:

Research Question : *is there any association between obesity and lifestyle diseases.*

Study Design : *community based, cross-sectional.*

Setting : *Field practice areas of urban health centre (UHC) and rural health centre (RHC) of Deptt. of Community Medicine, DMC&H, Ludhiana.*

Participants : *541 ethnic Punjabi adults aged 20 years and above.*

Statistical Analysis : *Pearson chi square test, odds ratio, 95% confidence intervals.*

Results : *Prevalence of hypertension and diabetes was almost 3 times more in obese than non obese. Also, preponderance of coronary artery disease was slightly more in obese (3.8%) than non obese (3.3%).*

Introduction :

Among the various morbid conditions which are continuously crippling the mankind, obesity is increasing at an alarming rate in the affluent nations and in recent years in developing countries as well. The underlying cause is the undesirable positive energy balance. Obesity is related to a number of non communicable diseases like coronary artery disease (CAD),hypertension (HT), diabetes mellitus (DM) etc. Since, health consequences of obesity are serious; it should be prevented through the best of efforts.

Material and Methods :

A community based, cross-sectional study conducted in the field practice areas of UHC and RHC of Deptt. of Community Medicine, DMC&H, Ludhiana.

The study included a total sample of 541 subjects. Out of these, 207 subjects were selected from rural area and rest 334 was from urban background. Systematic random sampling was done and adults aged 20 years and above were considered for the study.

Body mass index (BMI) was used for classification of obesity and subjects having BMI ≥30 were considered obese. A standardized weighing machine was used for measurement of weight and a flexible, non stretchable measuring tape for measurement of height. Diagnosis of various lifestyle diseases was made on the basis of clinical examination and investigation reports available with the subjects.

Observation :

Table - 1

Prevalence of hypertension (HT) in relation to obesity (BMI>30)

Status of Obesity	N	Number of Cases (HT)	%
Non obese	461	59	12.8
Obese	80	27	33.8
Total	541	86	15.9

P<0.0005 **OR-3.471, 95% CI - 2.027-5.944**

Table - 2

Prevalence of diabetes in relation to obesity (BMI>30)

Status of Obesity	N	Number of Cases (HT)	%
Non obese	461	20	4.3
Obese	80	10	12.5
Total	541	30	5.5

P<0.0004 **OR-3.150, 95% CI - 1.416-7.010**

Table - 3

Prevalence of coronary artery disease (CAD) in relation to obesity (BMI>30)

Status of Obesity	N	Number of Cases (HT)	%
Non obese	461	15	3.3
Obese	80	3	3.8
Total	541	18	3.3

P=1.00 **OR-1.158, 95% CI - 0.328-4.096**

Results and Discussion :

Prevalence of HT and diabetes was almost 3 times more in obese (33.8%, 12.5%) as compared to non obese (12.8%, 4.3%). it was in agreement with the studies by Gopinath et al (1) and Swami et al (2). also, CAD was slightly more prevalent among obese (3..8%) than non obese (3.3%). Similar findings are obeserved in studies by Gopinat et al (1) and Goel (3).

Conclusion and Recommendations :

From the above study it is concluded that there is an association between obesity and risk of getting lifestyle diseases. Promotion of healthy diets and improved opportunities for physical activity are needed for prevention of obesity.

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INTERACTIVE LEARNING FOR ADOLESCENTS BY PEHAL KIT

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Adolescence is a period of acquiring new capacities. During this period adolescents face new challenges physically, mentally and emotionally. It is not only a time of opportunity but also of vulnerability to risky behavior, which can have life long consequences, especially on education, career and health. The world's youth Data Sheet 2006, which portraits the well being of youth (people aged 10-24 yrs) across the globe, indicates that many of these young people are at great risk for health problems ranging from sexually transmitted infections (STIs) to complication from smoking.

Life skill education has been identified as key strategic approach for bringing behavioral changes in reference to reproductive and sexual practices among adolescents therefore many methodologies have been identified for imparting the life skill education to adolescents.

Considering the same objective of imparting the life skill education to adolescents a special PEHAL kit was developed under the project- "Adolescent Initiatives Uttaranchal". Himalayan Institute Hospital trust, Deharadun implemented this project in the three districts of Uttaranchal viz Deharadun, Udham singh Nagar & Nainital. One block in each of these districts had been selected, to cover about 32,000 adolescents.

Under this project Pehal Kit was developed with the aim of sensitizing the adolescents on issues concerning themselves right from pubertal changes to sexual and adult life. Considering the gender sensitivity separate male and female kits had been developed. They were known as Shankar kit and Paro Kit, which were facilitated by male and female trainers respectively. The kit uses games (card game, a family spacing board game, a jigsaw puzzle game), activities, flipbooks, models etc. Adolescents had been given Pehal in the form of 5 Days packsge.

A pre-designed questionnaire was administered for Pre & post training assessment. Analysis of Pre and Post training assessment data of 4322 adolescent shows that after 5 days of training through Pehal Kit correct knowledge level used to reach up to 90-94% in many areas of reproductive health issues. Maximum improvement of 40.4% was observed regarding Antenatal care. Adolescent girls showed maximum improvement in their knowledge, regarding importance of TT for pregnant women. Among adolescent boys maximum improvement was observed in their knowledge of emergency contraception. These results indicate that adolescents learning remains high for the issues of immediate concern. A second post evaluation was done after six months of training, results of which showed 70% correct responses.

Hence it can be concluded that interactive learning not only makes the learning process easier but also enhances the knowledge retention.

S. No	Issues	Pre Training Evaluation	Post Training Evaluation
1	Harmful effects of early marriage	69.5%	94.1%
2	symptoms of RTI	66.2%	92.4%
3	Methods for protection from HIV	69.8%	91.6%
4	Right Age of Pregnancy	68.6%	91.4%
5	Sources of Iron rich food	77.0%	91.1%
6	Methods to avoid pregnancy	49.5%	83.7%
7	Usage of emergency contraceptives	31.2%	69.2%
8	Importance of TT for adolescents.	38.7%	78.4%
9	Iron and TT for pregnant woman.	50.0%	89.5%
10	Five cleans for Safe Delivery.	48.8%	83.4%
	Total	**56.9%**	**86.5%**

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ASSESSMENT OF KNOWLEDGE OF TEENAGERS REGARDING HIV/AIDS AT KANPUR

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ABSTRACT :

Research question : *What is the level of knowledge among teenagers regarding HIV/AIDS.*

Study design : *Cross-Sectional.*

Participants : *113 students from various Govt. Higher secondary Schools, Kanpur Nagar.*

Statistical Analysis : *Percentage.*

Results : *Among the study subjects 95% males and 90.38% females had ever heard about HIV/AIDS. Knowledge about viral etiology of the disease was higher among males (81.96%) then the females (75.0%). Regarding mode of transmission of the disease, males knew better than females about transmission through unprotected sex (45.90%, 30.76%), unsterilized razors (16.93%, 15.38%), untested blood transfusion (13.11%, 17.30%) and unsterilized syringes (11.47%, 9.61%).*

Conclusion : *Teenagers require more awareness regarding the deadly disease, HIV/AIDS.*

Introduction :

Adolescents are also known as teenagers and adolescence is period of transition from childhood to adulthood. It is the period of life between age of 10-19 years[1]. Physical, mental, social and behavioral changes affect this age and work as foundation for future life.

HIV/AIDS pandemic has threatened the world in recent years even than number of new cases is being diagnosed without any end. Knowledge about the spread of HIV and safe sexual practices has a critical impact on the prevention of the AIDS, teenager are the most eligible targets. Considering teenager the suitable group for study and their need and expectation regarding HIV/AIDS, the present study was planned at Kanpur.

Material and Method :

A cross sectional study was planned using multistage random sampling technique for both boys and girls respondents from government higher secondary schools. Ist stage One boys and one girls government H.S. school were selected from all Govt. H.S. school of Kanpur. IInd stage- 11th class were selected among class 9th, 10th, 11th and 12th classes. All students both girls and boys of 11th class in different schools were contacted a interviewed through pretest and pre-designed questionnaire.

Observations :

Table - 1

Heard / about HIV/AIDS

S.NO.	Responses	Male		Female		Total	
		No.	%	No.	%	No.	%
1	Yes	58	95.0	47	90.38	105	92.92
2	No	3	4.91	5	9.61	8	7.07
Total		61	100.0	52	100.0	113	100.0

Table - 2
HIV/AIDS is caused by

S.NO.	Causes	Male		Female		Total	
		No.	%	No.	%	No.	%
1	Viruses	50	81.96	39	75.0	89	78.76
2	Bacteria	3	4.91	5	9.61	8	7.07
3	Malnutrition	3	4.91	3	5.76	6	5.30
4	Biting by animal	1	1.63	2	3.84	3	2.65
5	Do not know	2	3.27	3	5.76	5	4.42
Total		61	100.0	52	100.0	113	100.0

Table - 3
HIV/AIDS is spread

S.NO.	Modes of spread	Male		Female		Total	
		No.	%	No.	%	No.	%
1	Mosquito bite	2	3.28	3	5.76	5	4.42
2	Untested blood transfusion	8	13.11	9	17.30	17	15.04
3	Unsterilized syringes	7	11.47	5	9.61	12	10.61
4	Unsterilized razor	10	16.39	8	15.38	18	15.92
5	Unprotected sex	28	45.90	16	30.76	44	38.93
6	By wearing other's cloth	4	6.55	8	15.38	12	10.61
7	Don't know	2	3.28	3	5.76	5	4.42
Total		61	100.0	52	100.0	113	100.0

Result and Discussion :

Table-1 depicts that the knowledge regarding HIV/AIDS was more among males (95.0%) than females (90.38%). Similar findings were observed by Basavayya GS[3].

Table-2 shows that majority of the subjects (78.76%) know about the viral etiology of the disease and further this knowledge was better among males (81.96%) than females (75.00%). Basavayya GS[3] also observed the same.

Table-3 show that 80.50% subjects know correct mode of transmission of the disease i.e unprotected sex (38.93%), unsterilized razors (15.92%), untested blood transfusion (15.04%), unsterilezed syringes (10.61%). Among them, overall knowledge of males was better.

Conclusion :

Keeping in view high prevalence and deadly nature of the infections disease HIV/AIDS among adolescents, there is a dire need to raise the level of awareness by formulating suitable strategies

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EFFECT OF PRANAYAMA ON PULMONARY FUNCTION TESTS AND BREATH HOLDING TIME IN MALE MEDICAL STUDENTS

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ABSTRACT :

Study Objectives *: To ascertain effects of Pranayama training (Yogic Respiratory Exercises) on various pulmonary function tests and breath holding time in young healthy subjects.*

Setting *: 20 healthy male medical subjects divided in 2 groups of 10 students each (control group and training group). The training group was given yogic respiratory training of Pranayama for 6 days a week at a fixed time each day for a duration of 2 months.*

Methods *: Both groups were given exercise challenges both before and after training period. The study was divided into 2 phases. Phase I comprised of determination of pre and post exercise values before start of training. Phase II comprised of determination of same after completion of training period.*

Measurements *: PFTs, TV, FVC, FEV_1, PEFR and Breath holding time were measured. $p<0.05$ was taken as significant.*

Results *: The pre and post exercise values in both phase showed that the control group did not have any significant changes. The training group showed significant fall in pre and post exercise respiratory rate after pranayama training as compared to pre-training levels ($p<0.001$). A significant increase in pre and post exercise values of TV ($p<0.001$), FEV_1 ($p<0.001$), FVC ($p<0.05$), PEFR ($p<0.001$) and Breath holding time ($p<0.001$) were observed.*

Conclusion *: Pranayama Training can alter PFTs increasing endurance time for better physical performance.*

Key words *: Pulmonary Function Tests (PFTs), Pranayama, Breath holding time, Exercise challenge.*

Abbreviation *: TV - Tidal Volume, FEV_1 Forced Expiratory Volume in 1" second, FVC- Forced Vital Capacity, PEFR- Peak Expiratory Flow Rate, BHT Breath holding time.*

Introduction :

Respiratory training can improve the ability of persons to sustain high levels of ventilation for long periods of time by improving the strength and endurance of the inspiratory muscles (1) Pranayama, a form of respiratory exercise has been shown to improve various respiratory parameters such as rate of respiration, forced vital capacity (FVC), forced expiratory volume in 1st second (FEV_1), Peak expiratory flow rate (PEFR) and breath holding time (2).

Pranayama has also proved to be beneficial in respiratory ailments such as pleural effusion (3) and bronchial asthma (4).

Material & Method

The present study was conducted on 20 healthy male medical students. They were divided into two groups of 10 students each-

Group 1 or control and Group II which was given the Pranayama training for 6 days a week at a fixed time each day for a duration of 2 months. All the subjects were in the range of 20-25 years of age and had no previous involvement in any kind of Yogic or physical exercise. The study comprised of determination of following parameters: Respiratory rate, FVC, FEV_1, PEFR and breath holding time. The work was conducted in 2 phases. During Phase 1 the baseline values were recorded and then the subjects were subjected to an exercise challenge comprising of acute exhaustive exercise, after which these parameters (excluding breath holding time) were again recorded.

Group II, then underwent two months of Pranayama training, at the completion of which again the same parameters before and after the exercise challenge were recorded (Phase II).

The above group were compared as follows: (a) Pre & Post exercise values during Phase 1 study (b) Pre & Post exercise values during Phase II study (c) Pre exercise values during Phase I & II (d) Post exercise values during Phase I & II

Statistical Analysis :

By students 't' test and $p < 0.05$ was considered as significant.

Results : The Pre & Post exercise values of Phase I & II of both the groups are given in table I & II.

Table - I

Pre & Post exercise values during Phase - I & II in Group - I

Parameter	Phase - I		Phase - II	
	Pre-exercise (Mean ±SD)	Pre-exercise (Mean ±SD)	Pre-exercise (Mean ±SD)	Pre-exercise (Mean ±SD)
Tidal volume (ml)	355 ±49.72	505 ±49.72	345 ±59.86	490 ±39.44
Respiratory rate (per min)	18.20 ±2.93	31.30 ±3.05	18.60 ±1.89	31.60 ±3.23
$FEV_1(1)$	2.96 ±0.42	3.01 ±0.42	2.87 ±0.36	3.02 ±0.42
FVC(1)	3.57 ±0.53	3.42 ±0.53	3.38 ±0.53	3.41 ±0.52
PEFR(1/min)	465.20 ±119.88	472.20 ±118.90	465.33 ±118.70	468.80 ±118.49
Breath holding time(sec)	36 ±2.06		35.80 ±3.70	

Table - II

Pre & Post exercise values during Phase - I & II study in Group - II

Parameter	Phase - I		Phase - II	
	Pre-exercise (Mean ±SD)	Pre-exercise (Mean ±SD)	Pre-exercise (Mean ±SD)	Pre-exercise (Mean ±SD)
Tidal volume (ml)	410 ±56.76	1055 ±233.86	565 ±52.96	1625 ±203.10
Respiratory rate (per min)	18 ±1.88	36.60 ±4.2	13 ±1.88	24.50 ±4.32
$FEV_1(1)$	3.48 ±0.26	3.62 ±0.23	3.95 ±0.078	4.08 ±0.22
FVC(1)	4.08 ±0.30	4.151 ±0.30	4.40 ±0.29	4.49 ±0.27
PEFR(1/min)	449.10 ±27.75	497.10 ±18.74	569.20 ±25.47	640.10 ±36.10
Breath holding time(sec)	52.60 ±10.96		88.30 ±11.59	

There was no significant change ($p>0.05$) in the pre and post exercise values of Group I during Phase II as compared to Phase I. Group- II showed a highly significantincrease in

pre & post exercise values of FEV_1($p<0.001$), FVC ($p<0.05$), PEFR ($p<0.001$) and breath holding time ($p<0.001$) during phase II as compared to pre & post exercise values of phase I respectively. However, there was a significant fall in pre & post exercise value of respiratory rate during phase II as compared to Phase I ($p<0.001$).

Discussion :

The training group showed a significant decrease in respiratory rate both before and after exercise (5), which may be in evidence of decreased autonomic arousal and also of psycho-physiological relaxation. The respiratory parameters such as tidal volume, FEV_1, FVC & PEFR showed a significant rise in the training group (6,7,8). The lowered respiratory rate with high tidal volume keeps respiratory minute volume at par with untrained subjects at a lesser cost of muscular energy. The tidal volume and vital capacity was more in the trained subjects probably because of the training imparted to them by the controlled rhythmic Pranayamic breathings, associated with deep inhalations and exhalations, leading to increased development of respiratory musculature incidental to regular exercise. Vital capacity is a critical component of good health and its determination is important for normal subjects, smokers and patients with respiratory and cardiovascular problems. PEFR is an accurate and simple test for measuring airway resistance and strength of expiratory muscles.

Breath holding time was found to be significantly increased in our training group during Phase II study (5). It may be because of the reason that during Pranayamic breathing, subject while keeping his skeletal muscles relaxed & immobile, exercises a close, continuous voluntary control over his respiratory muscles. In these prolonged efforts at controlling his respiratory muscles, the subject consciously and persistently overrides the usual stimuli for respiratory centres such as the impulses initiated by PCO_2 & PO_2, as well as the impulses from higher centres.

Conclusion :

Pranayama Training can alter pulmonary function tests (PFTs) and Breath holding time increasing the endurance time for better physical performance.

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EFFECT OF LITERACY STATUS ON MOTHERS KNOWLEDG AND PRACTICE OF BREAST-FEEDING

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ABSTRACT:

Objective:

1. *To fine out the Knowledge and Practices of mothers about breast feeding in Rural and Tribal villages of Madhya Pradesh.*
2. *To study the extent of Exclusive Breast Feeding practices.*
3. *To study the relationship between literacy status and breast feeding practices.*

Method: *A Cross sectional study was conducted among mothers with one or more children under 2 years of age in Rural and Tribal areas of Madhya Pradesh covered by NGOs from the same state. Data was collected by the health supervisor on pretested proforma.*

Statistical method: *Percentage, proportions and chi-square test.*

Key Words: *Exclusive Breast Feeding, Literacy status, Knowledge, practice.*

Conclusion: *The above study shows that knowledge attitude and practices of mothers of tribal and rural areas in comparatively better than our expectation.*

Introduction:

We have entered a new era of information, technologies and new advances in various other fields but still 70% population of the rural areas are looking for information regarding their basic health needs especially of mothers and children can be effectively improved if knowledge regarding health of their children and family. It is well known that breast feeding improves child survival by providing protection against infectious diseases and malnutrition for the baby. Exclusive breast feeding can save many lives by preventing malnutrition and reducing the risk of infections and hypothermia. Exclusive breast feeding should be practiced for at least four months and preferably six months in poor countries since they have a high risk of infections through contaminated water and food and to continue breast - feeding supplemented by other appropriate foods up to 2 years of life.[2] Breast milk has been considered as the most suited food for the child world over.[3-4] In rural communities, the child is often breast fed till mother's milk is exhausted. The duration of breast feeding varies with rural/ urban residence, literacy, socio economic status and other factors.[4-5] The present study was carried out in few villages covered by NGOs in rural and tribal areas of Madhya Pradesh. The study was focused on mother's knowledge, attitude and various practices regarding breast feeding in order to develop an effective IEC strategy.

Material and Methods:

This cross sectional study was

conducted in rural and tribal areas of Madhya Pradesh by six NGOs from M.P. Study population included all the mothers with one or more children less than 2 year of age, 5% of the above population was considered from each NGO area covering rural well as tribal population. Data was collected by the health supervisor and was collected on a pretested structured proforma by interview method and was analysed on computer using Epi-Info programme.

Results :

Table 1 shows literacy status of mothers and knowledge of breast feeding initiation. Which shows that 67.63% of illiterate mothers had knowledge of initiation of breast feeding within half an hour as compared to 63.41% mothers having primary education. This difference was found to be statistically significant. ($p<0.01$).

Table - 1

Knowledge of Breast Feeding Initiation among Mothers

Time of Breast feeding Initiation	Literacy level of mothers			Total
	ILLITERATE	LITERATE		
		Primary Education	Above Primary	
With in ½ hr.	510 (67.63)	26 (63.41)	52 (49.52)	588 (65.33)
After ½ hr.	192 (25.56)	06 (14.63)	39 (37.14)	237 (26.33)
No response	52 (6.89)	09 (21.95)	14 (13.33)	75 (8.33)
TOTAL	754 (83.77)	41 (4.55)	105 (11.66)	900 (100.0)

$X^2=16.65$
$p=<.001$

Table - 2

Practice of Breast feeding Initiation and Mother's Literacy Status

Time of Breast feeding Initiation	Literacy level of mothers			Total
	ILLITERATE	LITERATE		
		Primary Education	Above Primary	
With in ½ hr.	355 (70.1)	20 (80.00)	50 (72.50)	425 (70.71)
After ½ hr.	152 (29.98)	05 (20.00)	19 (27.50)	176 (29.28)
TOTAL	506 (84.1)	25 (4.10)	69 (11.0)	600 (100.0)

$X^2=0.73$
$p=<0.05$

Table - 3
Knowledge about Exclusive Breast feeding and Mother's Literacy Status

Duration of Exclusive Breast feeding in months	Literacy level of mothers			Total
	ILLITERATE	LITERATE		
		Primary Education	Above Primary	
4-6 months	315 (41.8)	09 (29.9)	66 (62.8)	390 (43.3)
>6 months	439 (58.2)	32 (78.1)	39 (37.1)	510 (56.7)
TOTAL	754 (83.8)	41 (4.5)	105 (11.7)	900 (100.0)

X^2=4.57
p=<.05

Table - 4
Practice of Exclusive Breast feeding and Mother's Literacy Status

Duration of Exclusive Breast feeding in months	Literacy level of mothers			Total
	ILLITERATE	LITERATE		
		Primary Education	Above Primary	
4-6 months	483 (95.2)	24 (96.00)	64 (94.1)	571 (95.1)
>6 months	16 (3.1)	01 (4.0)	3 (4.4)	20 (3.3)
No Response	8 (1.6)	00 (0.0)	1 (1.5)	9 (1.5)
TOTAL	507 (84.5)	25 (4.2)	68 (11.3)	600 (100.0)

X^2=9.12
p=<.01

Table - 5
Knowledge about Duration of Breast feeding and Mother's Literacy

Duration in years	Literacy level of mothers			Total
	ILLITERATE	LITERATE		
		Primary Education	Above Primary	
< 1 year	61 (8.1)	7 (17.1)	16 (15.2)	84 (9.3)
> 1 year	587 (77.8)	28 (68.3)	74 (70.5)	689 (76.6)
No Response	106 (14.0)	6 (14.6)	15 (14.3)	127 (14.1)
TOTAL	754 (83.8)	41 (4.6)	105 (11.6)	900 (100.0)

X^2=8.7
p=<.01

Table 2 shows literacy status of mothers and practices of breast feeding initiation. This shows that 70% of illiterate mothers had initiated breast feeding within half an hour as compared to 72.5% literate mothers having education above primary, however this difference in initiation of breast feeding was not found to be statistically significant.

Table 3 shows the knowledge about exclusive breast feeding in mothers. It was observed that 41.8% of illiterate mothers had correct knowledge of exclusive breast feeding for 4-6 months whereas 62.8% mothers educated beyond primary had correct knowledge of EBF and the difference was found to be significant.

As far as practice of exclusive breast feeding was concerned it was almost the same in educated and uneducated mothers i.e. 95.2% and 94.1%. In total 95.1% mothers were practicing EBF for 4 to 6 months (Table 4) and this difference was found to be statistically significant.

Considering the knowledge regarding duration of breast feeding it was heartening to note that 76.6% of the mothers approved of breast feeding the babies beyond 1 year of age whereas 14.1% did not give any response (Table 5).

Discussion :

The knowledge attitudes and practices of correct breast feeding and weaning is directly related to the baby's health. The present study was conducted in rural and tribal areas of madhya Pradesh. In the present study it was observed that 70% of illiterate and 72.5% of literate mothers initiated breast feeding within half an hour of delivery. Similar findings have been also reported by Ram et al[6] i.e. 85.5% where as Dutta Banik[7] have reported that 42% of infants were put to breast milk within 24 hours after birth. In another study[8] it was reported that 28.3% mothers started breast feeding with in 24 hours. In our study it was very heartening to note that around 95% mothers had exclusively breast fed their babies for 4-6 months. Another study[4] reports that infants in Davangere were breast fed till the age of 18 months. In comparison5 to 74% of rural mothers in Agra who breast fed till 12 months only. Where as in another study[8] it was reported that 70.1% rural mothers of Bihar breast fed the child for more than a year.

The above study shows that knowledge attitude and practices of mothers of tribal and rural areas is comparatively better than our expectation. Though the dissemination of information and knowledge regarding correct infant feeding practices should be emphasized upon in order to strengthen the correct and prevailing good practices.

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