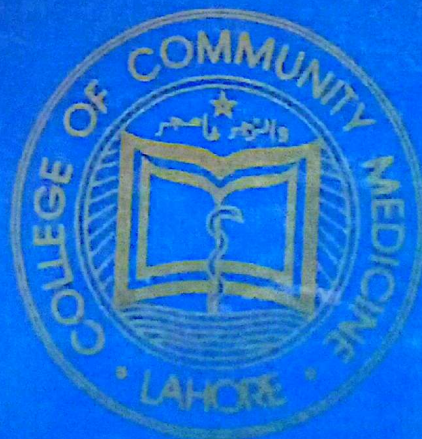


PAKISTAN JOURNAL OF HEALTH

Official Journal of College of Community Medicine, Lahore



PAKISTAN JOURNAL OF HEALTH

EDITORIAL COMMITTEE

Chief Editor

Mahmuda Mubasher

Editor

I. A. Naveed

Managing Editor

Ilyas Ahmad Faridi

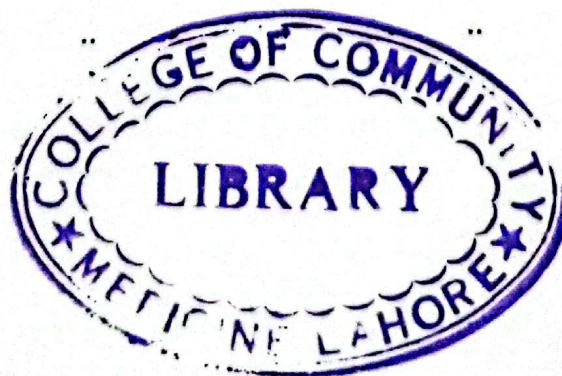
Assistant Editors

Maqsood Ahmad

Shaheena Manzoor

EDITORIAL BOARD

A. H. Awan	..	..	..	Lahore
Muhammad Ilyas	..	..	..	Karachi
Syed Mohsin Ali	..	..	..	Islamabad
Iftikhar A. Malik	..	..	..	Rawalpindi
Akhtar Ali Qureshi	..	..	..	Rawalpindi
Muhammad Zahir Shah	..	..	..	Peshawar
Siraj-ul-Haq Mehmood	..	..	..	Islamabad
Geofferey Carroll	..	..	..	London
Shamim Manzoor	..	..	..	Lahore
M. A. Barzgar	..	..	..	WHO-Islamabad
Muhammad Akram Pervaz	..	..	..	Lahore
Naeem-uddin Mian	..	..	..	Lahore



Correspondence:

Editor, Pakistan Journal of Health, College of Community Medicine
Off Tail Road, Lahore

Pakistan Journal of Health is indexed with
the following International Cataloging Services :

1. INDEX MEDICUS FOR WHO EASTERN MEDITERRANEAN REGION (MEMR)
W.H.O. EMRO - Alexandria, Egypt.
2. UNRICHT'S INTERNATIONAL PERIODICALS DIRECTORY
R. R. Bowker
121 Chardon Rd.
New Providence, N. J. 07974, USA.



CONTENTS

EDITORIAL

Development and Health A. H. Awan	1
Monitoring Gaseous Pollutants at Murree Highway Najeeba Saleem, Mohammad Saleem and Ather S. Dil	3
The Real Threat to Pakistan M. Ashraf Chaudhry	6
Study of Knowledge, Attitude and Practice of Population Planning in 1000 Cases Ghulam Qadir Malik, Mahmood Gishkori, Shaukat Ali Malik, Capt. Khalid Masood and Rukhsana Malik	10
A Screening Programme for Early Detection of Carcinoma of Cervix Seema Imdad	14
A Correlation of Blood Lipids in Newly Diagnosed Patients of Diabetes Mellitus and Hypertension M. Iqbal Tahir and Mukhtar Ahmad	17

DEVELOPMENT AND HEALTH

Development may be defined as a process which would lead to "Goal-Oriented" changes for the purpose of improving human life. It implies progressive improvement in life styles, working conditions and in quality of life. Development, thus, is a process of organizing and carrying out prudently conceived, and rationally aimed activities directed towards achieving defined goals. But it would be fallacious to consider development only in terms of sustained economic growth. Development, in fact, necessarily implies accompanying positive social and political changes.

Good health and productivity are the basic objectives of development. They are reciprocal and complimentary. Without health, productivity can hardly gain momentum, and similarly without productivity opportunities for acquiring better health cannot develop. Only people who enjoy good health can enjoy working, and are likely to achieve a high degree of productivity. Health is not only basic to leading a happy life but is necessary for all purposeful and productive activities in a society. It is man's most precious asset and its promotion is essential for sustained economic and social development. Unfortunately, often, social planners forget this simple truth, and squeeze health out of their "Planning horizons".

It is universally accepted that health is a fundamental human right. Health and Development are closely inter-linked and are inseparable. Thus, good health is both a major pathway towards development, as well as an end-product.

A large number of nations of the World are finding themselves handicapped in meeting the felt health needs of the masses, especially in rural and poor urban communities. Advances in medical technology and therapeutics have further widened the gap between the "haves and have-nots". Post-war models of western health systems have not worked in Third World countries because of different cultural, economic, political and geographical settings, and also due to different patterns of health and disease. The framework in which health status is maintained is different for the rich and poor worlds.

In the presence of scarcity of economic and human resources, different methodologies and different system approaches are indicated. We have to identify the methodologies which are required because of changing social philosophies and aspirations.

The low priority assigned to health by planners and administrators has resulted in lack of dynamic relationship between health and development. Submissive and obliging health planners and administrators have therefore continued to adopt the old models of Health Care Delivery Systems in the Third World countries, which have out-lived their utility. Health officials, usually lacking political support, have found it convenient to be accommodative, rather than aggressively attempt to win the necessary political support for essential health-based social changes.

The capital and maintaining costs of urban based hospitals and health centers, and the use of inappropriate technologies and non-productive operational methodologies, account for the bulk of health expenditure in Pakistan. Urban population which constitutes about 20 percent of the population absorbs about 80 percent of the health budget and available health manpower. The distribution of qualified health manpower is skewed. Highly qualified and experienced health personnel feel little responsibility towards poor people specially in the rural areas and urban slums. This has resulted in an extraordinary situation. The limited services available to rural population are under-utilized and work at low level of efficiency. Poorly framed priorities do not coincide with consumer needs.

Medical skills and services are distributed on the basis of political pressure and in response to the demands of pressure groups. They are also dependent upon the sophisticated norms set up by super-

specialized experts who have major concern for persons and not for communities. Unequal economic factor encourages and supports the concentration of medical skills in a few urban metropolitan areas. Economic framework is also responsible for the brain-drain of medical skills from the already depleted Third-World countries to the developed industrialized World. The net result of all the above anomalies is that health care system is developed in such a way that it serves selectively the interests of a small percentage of richer population. The cost-explosion caused by high-technology-care, and demand by pressure groups for super-specialized personnel not only depletes resources available to poor, but perpetuates the state of deprivation and want.

Culturally people have high regard for medicine. They have a mistaken belief that practice of medicine can solve all their woes. They have not realized that social problems of development cannot be solved by medicine but require a mix of socio-economic and political approaches. Without this support the health dilemma cannot be solved. Medicine can no longer be visualized as one of the most fundamental contributors to good health. The determinants are controlled by the social order and political maturity of a nation.

A. H. AWAN

Maternal & Child Welfare Association of Pakistan
M.C.H. House 30-F, Gulberg-II, Lahore

MONITORING GASEOUS POLLUTANTS AT MURREE ROAD HIGHWAY

NAJEEBA SALEEM, MOHAMMAD SALEEM AND AYESHA KHAN

*Department of Environmental Health Section,
National Institute of Health, Islamabad.*

Summary

Gaseous pollutants CO, NO, SO₂ and TSP were monitored from the vehicular emissions at Murree highway from Satra-Meal upto Murree. The result demonstrates that total suspended particulate (TSP) were high at most of the locations. Whereas Carbon monoxide levels were exceeded the limits. The levels of Sulphur dioxide were found within maximum allowed limits. Due to limitation of measuring device, the Nitrogen dioxide could not be detected. The study revealed that there have been an increasing trends towards pollution in air and these may pose long term health effects on the population exposed to these pollutants.

Introduction

Environmental pollution has gained serious consideration throughout the world. The pollution of the air is one of the most clearly recognized forms of Environmental pollution, that has created health problems in urban and industrial areas, especially in large number of cities in the world. The source of pollution can vary quite widely from place to place and from season to season.

The more important sources of air pollution arise from domestic, industrial activities, road transportation and aircraft navigation. Some of the important chemical pollutants emitted by land vehicles are sulphur dioxide (SO₂), carbon monoxide (CO), Nitrogen-dioxide (NO₂), particulate matter and lead (1). Cars, together with trucks and buses, consume a significant portion of global energy resources, and contribute a major share of the green house gases linked to global warming, and are major source of air pollution. Their number is growing rapidly, especially in developing countries. (2)

The present study was aimed to monitor vehicular emissions at various sites on Murree Road Highway to assess the levels of gaseous pollutants. So as to be able to study their impact on environment.

Materials and Methods

The air sampling was conducted at sites starting from Satra Meal, going through TDCR,

Chattar Bagh, Trate, Chara Pani, Company Bagh, Barooi Chungi, Chitta More, Sunny Bank, upto Murree. All the measurements were made by the roadside, while the traffic was playing with moderate density. Carbon monoxide was measured by carbon monoxide indicator, TPA, Komyo, Japan. Nitrogen dioxide was measured by Draggers tube method employing 10 strokes. Sulphur dioxide was determined by kit method, by air pump Lamotte chemical product company U.S.A. The air samples were collected by air pump for 1 hour and was subsequently analyzed colorimetrically. Portable High volume Air sampler (Model CMWT-2200, General GMW Metal works, USA) was properly calibrated. Sampling time was 1 hour. The weather conditions were recorded in terms of temperature, pressure and humidity by portable monitor.

Results and Discussion

The weather condition at sampling sites were recorded and the data are presented in table 1. The data indicated that variations in temperature, pressure and humidity were negligible. The data for wind direction and speed, however, showed much variations. At day time it was tranquil while for most other time it was turbulent. The wind speed ranged from 2.0-5.0 km/hr.

Main air pollutants consist of gases, vapours and particles. The particles range in size from less than 0.01 μ m to well over 100 μ m. The

measurement made in the study for total suspended particulate (TSP) showed that the particles size were more than 10 μm . It is generally considered that only particles less than about 10 μm are inhalable by human beings ; however, only finest particles are capable of reaching the depths

of the lungs, i.e. of size of 2-3 μm . The TSP ranged from 147-1293 $\mu\text{g}/\text{m}^3/\text{hr}$ (table 2); lowest TSP being at TDCR and the highest at Sunny Bank. The values are

Table 1. Weather Conditions at air Sampling Site

Sampling	Time hrs.	Temp $^{\circ}\text{C}$	Pressure mhs	Humidity %	Wind Direction	Sky Speed km/hrs
SATARA MEEL	11.15	35.0	935	49	Calm	Calm Clear
TDCR	11.00	31.5	938	54	N-W	5.0 "
CHATTAR BAGH	11.15	31.5	936	62	S-W	3.0 "
TRATE	11.20	31.5	943	62	Calm	Calm "
HARA PANI	12.35	31.0	940	62	N	2.0 Cloudy
COMPANY BAGH	9.45	31.5	938	59	Calm	Calm "
BAROOI CHUNGHI	12.30	25.5	937	64	S	2.0 Clear
CHITTA MORE	11.20	28.0	937	56	Calm	Calm "
SUNNY BANK	14.00	26.5	937	64	N-W	Calm "

Table 2. Levels of Vehicula Pollutant at Various Sampling Site

Sampling Site	Time hrs	* CO mg/m/hr	Emission noxious gases ** NO SO ² ug/m ug/m/hr	TPS hg/m/hr
SATRA MEEL	11.15	33.9 $\pm$ 8.6	** ND 57	562
TDCR	11:00	28.6 $\pm$ 4.1	ND 28	147
CHATTAR BAGH	11:15	37.78 $\pm$ 5.5	ND 200	173
TRATE	11:20	22.9 $\pm$ 2.8	ND 57	1065
HARA PANI	12:35	44.65 $\pm$ 4.4	ND 57	316
COMPANY BAGH	9:45	33.2 $\pm$ 4.9	ND 114	448
BAROOI CHUNGHI	12:30	38.9 $\pm$ 5.5	ND 28	186
CHITTA MORE	11:20	35.49 $\pm$ 5.2	ND 200	554
SUNNY BANK	14:00	68.7 $\pm$ 4.4	ND 28	1293

* Mean of reading taken at 15 min. interval.

** Not detected.

much higher than guideline value for particulate matter, which stands at $120 \mu\text{g}/\text{m}^3$ (3) for 24 hours (4). Results showed that TPS was high at Satra Meal, Trate, Company Bagh, Chitta More and Sunny Bank which may be attributed to calm weather conditions prevailing at the time measurements were made. Conversely the TPS was relatively low when the weather was turbulent at wind speed ranging between 2-5 km/hr at sampling sites. At TDCR, Chattar Bagh, Chara Pani, and Barooi Chunghi, TPS probably dispersed by the wind speed.

The background levels for sulphur dioxide, carbon monoxide and nitrogen dioxide were measured at times when there was no-flow of traffic. The levels of these pollutants were negligible, indicating a quick dispersion into the atmosphere.

Sulphur dioxide levels ranged from 28-200 $\mu\text{g}/\text{m}^3$. These levels are within the maximum allowed values 350 $\mu\text{g}/\text{m}^3$ for 1 hours. It may be mentioned that in proposing guidelines values based on the present knowledge of exposure to both sulphur dioxide and particulate matter, an arbitrary protection (safety) factor of 2 has been used in relation to morbidity and mortality (3). It has a range of 2600-2700 $\mu\text{g}/\text{m}^3$ which gives rise to frank effects with bronchospasm in asthmatics (3).

The natural background level of carbon monoxide reported at 0.23 mg/m^3 in urban areas depend on weather and traffic density (3). The mean concentration of carbon monoxide level ranged from 22 mg/m^3 to 68.7 mg/m^3 . According to the guideline values the maximum permitted exposure of CO is 30 mg/m^3 for a period not exceeding 60 minutes. The largest sources of carbon monoxide emission is incomplete combustion processes, such as in automobiles and industrial processes, etc. The levels of carbon monoxide was found higher than permissible limits at some sampling sites. (table-2) High traffic density or improper tuning contribute significantly to CO emission.

Nitrogen dioxide was not detected due to low concentration. The minimum detection limit of dragers tubes used for measuring NO_2 in present study 940 $\mu\text{g}/\text{m}^3$. It has been reported that usually, there is low background level of nitrogen dioxide, which increases during rush hour and on busy roads it often exceeds 940 $\mu\text{g}/\text{m}^3$ (3).

Vegetation was found to be profused by the roadside and the leaves were observed for settling dust. The study was conducted during dry season, and the

vegetation was found dusty. However, there was no visible damage to vegetation which could be attributed to pollutants investigated.

The sampling sites were generally situated along roadside shopping centres only sparsely populated. The public response was encouraging when they were informed about the purpose of the study.

There is every likelihood that shop keepers along the road and the drivers might be under constant exposure to the gaseous pollutants studied, in particular TPS, SO_2 and CO. They may have long-term health effects which call for epidemiological studies.

It has been reported that emissions of different types of pollutants fuels depend on for land vehicles such as super, lead-free petrol, and the so called "Green" petrol available at many European petrol station, the observed emission of carbon monoxide, nitrogen dioxide and of hydrocarbon was not much different from super which was taken as reference. The same is true for petrol supplemented with methyl-tetra-butylethylene (MTBE) (5). This does not mean that MTBE should be not be used, rather should be replaced by the conventional/super petrol so as to minimise lead emission from vehicular traffic.

Acknowledgement

We thank Miss Alam Khatoon for her technical assistance during this work. Thanks are also due to Mr. Masood Ahmed Awan for processing this manuscript PC Word Project.

References

1. Manual on urban Air Quality Management WHO series No. 1, WHO (EMRO) 1976.
2. World Resources, A Guide line of the Global Environment 1990-91, UNEP, Oxford University press 1990.
3. Air Quality Guide line for Europe, WHO Regional Office for Europe, Regional Publications. European series No. 23, Copenhagen, 1987.
4. Islam, M.S.Ulmer, WT, Borderline concentration of SO_2 for patient with oversensitivity of the bronchial system *Wissenschaft und Umwelt* 1:41-47 (1979).
5. Andrea Lepri and Enzo Tiezzi Fuel for transport and Climatic changes, doctors for the environment an international ISDE Scientific Office Italy 1991.

THE REAL THREAT TO PAKISTAN

M. ASHRAF CHAUDHRY

Department of Community Medicine, Army Medical College, Rawalpindi

Introduction

Although there are numerous threats to Pakistan including military Threats from the neighbouring enemy countries like India, the Economic Threat through rising international debt liabilities, Drug Addiction Threat (More than 3 million addicts in Pakistan) and other obvious threats which form the basis of Newspaper headlines every now and then, but the real threat to Pakistan is the growing problem of "POPULATION EXPLOSION" alongwith its serious and grave consequences.

The Population of Pakistan was 32.5 million at the time of independence (August, 1947). Today, it has reached 120 million, making Pakistan the ninth most populous country of the world. Out of these countries, Pakistan has the highest rate of population growth at around 3.1 percent per annum, adds 3.6 million to the existing population each year. Each family in Pakistan, on average, has sex children. If the present growth rate of population continues, the

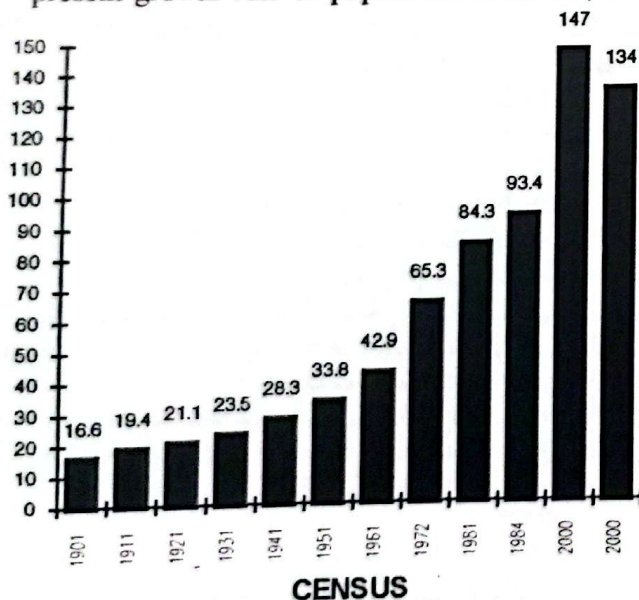


Fig. 1 Population of Pakistan 1901 - 2000 (IN MILLION)

population of Pakistan will reach around 150 million by the year 2000 (Figure 1) and the population of Pakistan would double in about 23 years (Figure 2).

Factors Responsible For High Growth Rate.

1. In addition to declining mortality, other factors in maintaining a high growth rate:-
 - a. Early marriage (average age of marriage being 17 years).
 - b. Son preference.
 - c. Long child bearing (15-45 years).
 - d. High infant and child mortality.
 - e. Lack of security.
 - f. Poverty and lack of economic prosperity.
 - g. Illiteracy (female literacy rate is 21% in urban and 5% in rural areas).
 - h. Religious constraints.
 - j. Customs and traditions.
 - k. Beliefs etc.

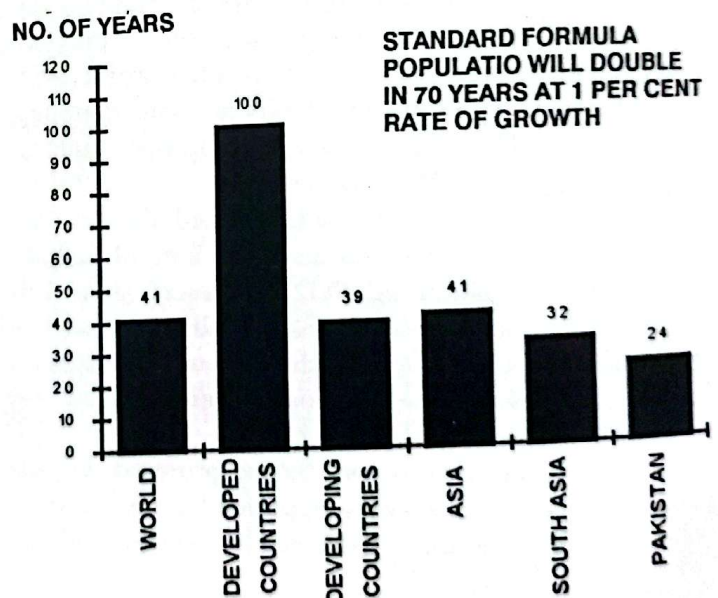
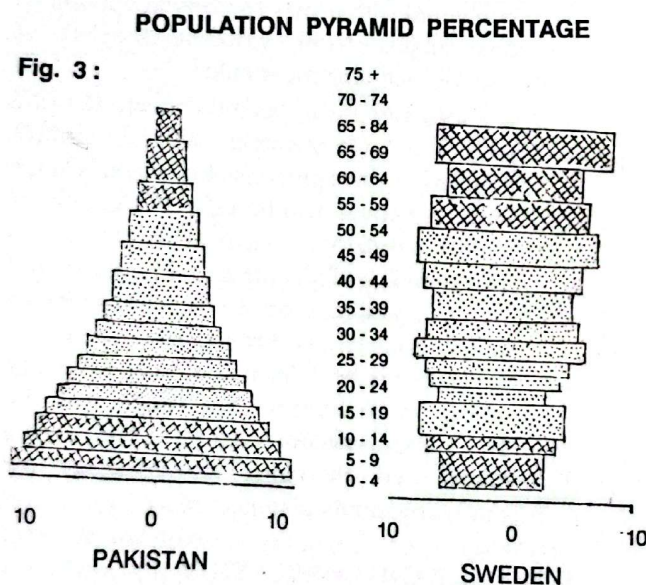


Fig. 2 No. of Years to Double Population (at current rate) Pakistan & Regions of the World - 1984

Implications of Rapid Population Growth in Pakistan

When the population grows rapidly, the numbers increase. A sheer increase in figures is of no concern to us, but when viewed by its consequences on the culture, society and the nation, it becomes a point of serious thinking for all enlightened citizens of Pakistan as evident from the following:-

- a. **High Dependence Rates** The declining mortality trends coupled with high fertility rates produce more dependent population (children below 15 years of age 45% in Pakistan) (Figure 3), contributing to declining living standards.



- b. **Density of Population** The rapid growth of population brings about high densities of population. High density puts more pressure on the resources of our country. In the agriculture sector, it leads to unfavourable land-man ratio. The cropped area in Pakistan is below subsistence level i.e. 0.50 acres per person.
- c. **Food and Nutrition Situation:** Due to increase in population, we are forced to spend 50% of our income on food. About 12 million (52%) children under 5 years are

malnourished. Costing about Rs. 8 billion. If the present trend of population growth continues, the situation would be worsened further in future.

- d. **Standard of Living** Increasing burden of new entrants in our society puts more pressure on the existing resources of the country. As these are scanty and meagre, the unfulfilled basic needs lead to lower standard of living of the people. Our per capita income is amongst the lowest (410 dollars/year). It is estimated that about one-third of our population lives below the poverty-line. About 50% of the people have an access to clean drinking water. 75% people are deprived of basic sanitary facilities. Even 45 years after independence, large parts of rural population are without electricity.
- e. **Education** Only 1/3rd of our population is literate and the absolute number of illiterates is increasing due to fast growing population. Only about two-third (66%) of primary school age children are enrolled. In other words 55 lac children of primary school age have no schooling facilities. At the current rate of population growth, roughly by the year 2000, we will require 1 Lac additional primary schools.
- f. **Health care Facilities** More than half of our population does not have access to basic health care facilities. In case of Pakistan, there is one doctor for 2008 persons, one nurse for 6500 population and one hospital bed for 1506 population. About 80% of the births are carried out by traditional or untrained birth attendants. About 28 thousand mothers die due to child birth each year. Under the constant growth rate of population, additional requirements of hospital beds would be 25,000 and doctors 20,000 by the year 2000. Similarly the number of MCH centres, Rural Health Centres and Basic Health units required by the year 2000 would be 15,000. A blind and unchecked increase in population is only going to create further problems. Even to improve upon the present circumstances we require an investment of billions of rupees.

With population continuing to increase, this is becoming a formidable task.

- g. **Urbanization** During recent past, the inflow of population from the rural sector to the cities has been tremendous. It is expected that the present 40 million population of the urban areas will rise to 75 millions in the coming 07 years, thus, increasing the urban unemployment rates, formation of slums and poor communities, environmental deterioration, pollution, unhygienic sanitary conditions, traffic jams and creating many such socio-economic and political problems.
- h. **Housing Requirements** According to Economic survey 1991-92, there is backlog of 6 million houses in the country, which is increasing every year with the increase in population. The additional requirement of housing would be 8.4 million by the year 2000 at the current rate of population growth.
- i. **Energy Requirements** Energy requirement would increase from 15 million tonnes of oil equivalent (TOE) to 34.7 million TOE by the end of year 2000, if the population growth rate does not decline.
- k. **Employment** There are more than one crore unemployed people in the country at present and in this 10 Lac unemployed people are being added each year. Usually for one vacancy, 1 to 2 thousand applications are received. The main cause of increase in the number of crimes in our country is also unemployment.

RECOMMENDATIONS.

1. Open and continuous political support at each level, particularly from the top is a must for effective implementation of Family Welfare Programme in Pakistan.
2. Incentives accelerate the promotion of acceptance small family norms. These may be promoted keeping in view the socio-economic and cultural million of society.
3. Increased educational and employment opportunities to women, particularly young women, will not only safeguard their integrity but also help them to attain

positive say in house-hold decision making, especially in regard to their own regulation of fertility. This could be successfully achieved by giving priority in socio-economic development plans to increase the female literacy, educational level etc.

4. In order to make the programmes more efficient and action-oriented, research should be encouraged and pushed with increased allocation of funds to applied research for better understanding of the problems and issues.
5. The hard facts about quality of life due to resource constraints should be extensively reported and correlated with the need for population welfare.
6. The fates of Al-Azhar University on the justification of population should be publicized with a view to eliciting opinion on this subject from different sections of society, including the ulema.
7. If a majority of the people endorse the said fates the Government should control population through legislation, as in China. Debates should also be held on this subject at different places.
8. The thinking of people should be changed so that people start to act upon family planning. Propoganda/motivation programmes be launched among people to make them appreciate the problems/disadvantages attached with a big family and therefore the necessity for practicing family planning.

SUMMARY AND CONCLUSION

1. To meet the basic needs of just additional population, the country would need extra resources to the tune of Rs. 80, 000 crores by the year 2000 A.D and Rs. 290,000 crore by the year 2027.
2. The present level of Population as a result of its high growth rate, is exerting an enormous pressure on land and other resources of the country. If the present trend of population growth continues, by the year 2000 A.D the additional requirements of the country would be:
 - a. 9.2 million tons of wheat;

- b. 2.5 million tons of rice;
 - c. 8.4 million housing units;
 - e. 25,000 hospital beds;
 - f. 20,000 doctors.
3. In spite of the appreciable industrial development, the country continues to be heavily dependent on rural economy. Although the area under cultivation has increased, the share of land per person has decreased and shall continue to decrease due to high population growth as shown below:

Years land	Cultivated Area	Cultivated per person
1947	393 (Lac acres)	1. 12 acre
1987	512 (Lac acres)	0. 51 acre
2000	529 (Lac acres)	0. 37 acre
2027	563 (Lac acres)	0. 22 acre

4. In 40 years from 1947, the cultivable land availability per person has decreased to less than half and in the next 40 years i.e 2027, it would further decrease by another 50%.
5. Due to high birth rate, the density of population has increased from 40.8 persons per Sq km in 1947 to 126.7 in 1987 and if the present trend is not arrested, it is projected to be 314.96 in another 40 years i.e 2027.
6. On the basis of present trend of economic development, the economy would be hardly capable of supporting the huge population of 150 million. The problem of unemployment, malnutrition, housing, education and health, all would continue to

grow and become more and more unmanageable.

7. The number game is no more Numbers Game for Pakistan, but is life and death game now.
8. Let us resolve collectively as a nation, that we have to make Pakistan a land of peace and prosperity. This we can do only with a manageable population, which would enable every member of the society to have a decent life in the dignity and honour.]

References

1. Malik S.K. The Concept of Threat Perception. Pakistan Army Journal Dec 1988; P.P. 49-59.
2. Malik G.Q. Prof. Population Planning Program: Perspective and Prospects. Special J. of Continuing Medical Education; Jan-March 1986; Vol-2, No. 5; 114-117.
3. Government of Pakistan Population Welfare Programme. Sixth Five Year Plan (1983-88).
4. National Institute of Pakistan Studies and Population Welfare Division, Ministry of Planning and Development, Pakistan. "Effects of Rapid Population Growth on Social and Economic Development in Pakistan" (Sep 1989).
5. Government of Pakistan Ministry of Planning and Development Population Welfare Division Islamabad. Population Welfare Programme. Seventh five year plan (1988-93).
6. Rukanuddin A.R. The Growing Population of Pakistan and its implications for Socio-economic development. Third Journalists, Workshop on Population and development reporting. 22-26 Nov 1983; Islamabad.
7. Jilani M.S. & Hashmi S. Population Growth and Socio-Economic Development. Five Billion World Population Day. July 1987. Population Welfare Division, Ministry of Planning and Development. Govt of Pakistan, Islamabad.

STUDY OF KNOWLEDGE, ATTITUDE AND PRACTICE OF POPULATION PLANNING IN 1000 CASES

GHULAM QADIR MALIK, MAHMOOD GISHKORI, SHAUKAT ALI MALIK,
KAHALID MASOOD AND RUKHSANA MALIK
*Dept. of Community Medicine, Nishtar Medical College, Multan
and Allama Iqbal Medical College, Lahore*

Summary

The Knowledge, Attitude and Practice (KAP) towards Population Planning in 500 Urban cases was conducted by the Department of Community Medicine, Khyber Medical College, Peshawar with the help of questionnaire. The knowledge about contraceptive practice was found in 35.4% Rural and 42.2% in Urban Population. About contraception 83.4% people in Rural and 62.2% in Urban areas consider it bad. 13.2% Urban and 8.8% of Rural population practised contraception. Practice of family planning is more common in educated people. People who are strictly religious minded, do not like it. Among those who practice contraception 91.7% people use condoms as a mean of contraception. 2.9% of the respondents practised I.U.D's and the rest used oral contraceptive pills. For the development of country, population growth control is must and it is only possible if the people are motivated.

Introduction

Family Planning in a broad sense is a measure designed to promote well-being of the family and ultimately of the communities of nation. It is a programme which recognised the right of every couple to determine the size of its family according to its resources and regulate the conceptions in such a way that suits the interest of the couple and the state. Family Planning is not only birth control, but has a broad scope of family limitation, birth spacing, infertility control services, marriage counselling, sex education and other population welfare activities.

The galloping rate of population growth is matter of great concern for us and for those who inhabit the third world countries.

The population of Pakistan at the time of independence in 1947 was 32 million and in 1991 the population has gone to 112 million. The growth rate of Pakistan is 3.1% which is among the highest in the World. If the population continues to grow at the current rate it will double by the year 2014 to reach 230 million. Even with the corresponding increase in resources we shall remain, where we are today in term of standards of living, housing, education, health care and employment. Therefore rapid increase in population is a challenge, that has

to be faced squarely, both by the Govt. and the people. Family Planning is the way of thinking and living, that one adapts voluntarily on the basis of Knowledge, Attitude and Practice (KAP) in the interest of people.

In order to study Knowledge, Attitude and Practice (KAP) of population planning interviews were taken from 500 Urban and 500 Rural cases with following objectives:-

1. To study various practices of population planning being adopted by the population.
2. To find out the various problems faced in different methods of family planning.
3. To highlight the advantages of planned parenthood.
4. To study the impact of religion on population planning and to do away with it if it is hampering the family planning programme.

Questionnaire

The staff of Department of Community Medicine designed a Questionnaire which included information about age, educational status, marital status, income, number of children, inquiry of children, their age, number of sons/daughters, their feeding etc. The question about knowledge of family planning and different sources and media

from which they came to know about it. Enquiry related to practice of different methods of contraception. Information about the attitude of the sample about population planning and various causes for likeness/ dislikeness of planned parenthood.

Data Collection

After preparing the Questionnaire next step was data collection from 500 rural and 500 urban population. For this a map of Peshawar city and surrounding rural areas was used and samples were collected from Gulbahar, Hayatabad and University town among urban areas and Dora Village, Palosi, Sufaid Dheri, Ragal and Jehangir Kalay among rural areas. Each member of the team was allocated a specific area and collected data by random sampling. Equal number of cases were selected from each area..

Results and Discussions

Out of 500 families 13.2% in urban and 8.8% of rural population practised contraception. In urban areas average number of children per family was 5.5 and in rural areas was 6.1.

Main reasons for high growth rate of small portion of population practising contraception were studied in project and inferences deduced as following:-

1. Early Marriage

Average age of wife at time of marriage in urban areas was 18.1 years, while in rural areas it was 16.9 years. Age of husband at time of marriage in urban areas was 19.7 years and in rural areas was 18.7 years. This is quite contrary to most of developed countries where average ages of husband and wife at the time of marriage are 25 and 23.5 years respectively. Early marriages are, therefore, one of the causes of high growth rate.

2. Lack of Education

Lack of education is another important factor for high growth rate. It results in decreased knowledge about contraception, different methods of contraception and advantages of population planning.

In this survey among those females practising contraception 27% were educated (class 5 or above), 0.3% were illiterate. Similarly 33% of educated males practised contraception, also 7% of illiterate used contraception.

3. Breast Feeding

Lack of breast feeding or decreased duration of breast feeding proved to be a cause of big family size. 17.60% mothers of rural and 36.6% in urban areas did not breast feed their children at all. 72.8% in rural areas breast fed their children for less than 6 months. The major reason for not breast feeding their children in urban as well as rural areas was stated to be ill health of mother due to repeated pregnancies.

4. Lack of Knowledge about Family Planning

13.4% Rural and 11% urban population did not know anything about family planning, only 37% population did know enough about family planning.

The major source of knowledge about family planning in urban areas was T.V., Radio and newspaper which together accounted for 80% of information about family planning. The role of population Welfare Programme, Traditional birth attendant (T.B.As) L.H.Vs and midwives proved to be zero only 2.2% people stated that they were ever visited by them.

5. Attitude About Family Planning

For one reason or the other 62.2% urban and 83.4% of rural population stated that family planning is not a good practice. However, when asked about reasons only 1.4% said that it is not good for health 60.8% wanted male children 22.6% rejected it on religious ground. Out of 20%, who said that family planning is good. Only 6.6% knew that what are the results of a high growth rate.

It is concluded that the negative attitude of majority of population to family planning is basically due to lack of education or desire of more children and ignorance about devastating effects of high growth rate.

6. Need for Male Children

65% of urban and 86% of rural population did not practise contraception due to need of many male children.

In urban areas 39% and in rural areas 69.2% population wants more than 6 male children per family.

7. Dislike for Female Children

74.2% rural and 36.7% urban families did not want any female child at all.

Reasons for dislikeness of female children was that the females kids can not earn and heavy

expenses incurred on their marriages, this was reply of 85% urban, 98% of rural population.

It was observed in those families where first 2 or 3 children were females that the parents produced more children in order to get male child and this resulted in the big family.

8. High Cost of Contraception

One of the main reasons for not using contraceptives was their high cost. In Urban and rural areas 85-90% contraception was done by males. (mainly condoms, due to their low price)

Only 15.9% contraception was done by females out of which 6% by tubal ligation, 5% by I.U.D. and only 2% oral contraceptions.

This was due to high price of oral-contraception, injections, foams or Jellies which majority of population could not afford.

This is quite contrary to developed countries, where most of the contraception (above 70-75%) is done by females, mainly in form of oral-contraceptions.

Suggestions

1. Early Marriages to be discouraged

There is a trend of very early marriages in our society specially in girls. It is partly due to lack of option for girls or there is the fear of many parents that their honour is at stake as long as they have unmarried daughters with them. This trend can be changed by proper education of girls or change of attitude of the parents. Marriages at late age will result in less productive life and more mature thinking of parents about having children and thus growth rate can be controlled.

2. Health Education

Education about family planning can be given at many levels. It should be made a part of primary health services and even L.H.Vs or midwives can easily do it, if properly trained. It should include information for parents about disadvantages of high birth rate.

Different methods of contraception, communication through T.V., Radio, Newspapers and other available media can also be used for this purpose.

3. Breast Feeding

Breast feeding is a natural method of birth control. It may be advocated and practiced for about more than two years. It helps in

contraception and is also very beneficial in controlling infection and malnutrition as breast milk is a balanced food for the baby. For this purpose services of L.H.Vs midwives or even T.B.As can be easily used.

4. Infant Mortality Rate (I.M.R) to be decreased

A significant decline in infant mortality rate will help families to decide for having less children since they can be reasonably sure that their babies will survive to grow into adults. I.M.R. can be brought down by health services, proper antenatal and post-natal care.

More funds should be provided to this sector and serious planning should be done if Govt. really wants to bring down growth rate.

5. Improving Socio-Economic condition

Poverty is one of the leading causes for desire of more children and especially male-children so that they can help their parents in their earnings. As couple cross the poverty line their desire to have more material-benefits is another factor influencing their decision to have smaller families. So if socio-economic conditions are improved it will make the situation much better. It can be done by giving more job opportunities to the population, setting of more industries in private and Govt. sector and sending Pakistanis abroad for job opportunities.

6. Education

Lack of education in mothers is another very important factor in high growth rate.

Literacy rate of Pakistan is 28% i.e. male 17% and female 11%. The rate is even less in Baluchistan, Sind and for flung areas of Punjab which varies from 2 to 5%. The literacy rate of Singapore and Indonesia is 91% and 67% respectively. Govt. of Pakistan intends to raise literacy rate to 70% in the next decade. This is very much encouraging as more the mothers are educated more they are aware of birth spacing.

7. Bias against Female Children should be finished

Dislike of female children is another factor for increased children. In a family, if first children are female then parents try to have more children in order to get boys. This trend has to be discouraged. This status of women as second-class citizens is mainly due to narrow vocational opportunities available to them. Through social pressures and prejudices, in a male-dominant

society, most education women are discouraged to compete with them in almost every field of life. For this Govt. should make legislation and females should be educated and given equal opportunities for jobs.

8. Community Involvement

This is very important. For this purposes local organizations, working on voluntary basis or financed by Govt. should be organised at different trends. They should include educated people from all walks of life who should be motivated to use their influence for implementation of population planning. Expert advice should be made available to population under their supervision and it should

be integrated with different development or health programme at National level.

References

1. Seventh Five year plan (1986-93). Govt. of Pakistan, 261-269.
2. Mahmood Siraj-ul-Haq Souvenir 3rd International Congress on Maternal and Neonatal health Lahore, Pakistan. Nov. 7th-11th, 1987: 15-26.
3. Malick Ghulam Qadir. Reproductive Health Services Project in Pakistan. J-Mother and Child, 1988; 26:25-28,
4. Mehmud Siraj ul Haque. Proceeding of 3rd International Congress on Mother and Neonatal Health Lahore. Nov. 1987.

A SCREENING PROGRAMME FOR EARLY DETECTION OF CARCINOMA OF CERVIX IN A SUBSECTION OF LAHORE - PAKISTAN

SEEMA IMDAD

*Department of Maternal and Child Health
College of Community Medicine, Lahore.*

Summary

A screening programme was designed for women of community attached with Maternal and Child Health Department of College of Community Medicine. Women of ages 35-55 years selected because in this age group in Pakistan, there is a high incidence of carcinoma of Cervix. 180 cases were studied. 2 groups of women were made according to age. Age group from 35-45 showed dysplasia in 5.5% of cases and one case (0.55%) of carcinoma in situ. In 2nd group of women ages between 45-55 years, the incidence of dysplasia was 1.1%. This test is cheap and non invasive and results showed a definite benefit for screening purpose. Women must be intensively educated about the pap smear and it should be routinely scheduled to detect asymptomatic cases of carcinoma of cervix.

Introduction

Carcinoma of Cervix is the most frequent of all genital tract cancers and of all cancers occurring in women, it takes second place after cancer of breast(1). Invasive Carcinoma of Cervix is often but not invariably preceded by changes in cervical epithelium characterised by loss of normal orderly arrangement of cells(2). But these remain confined to epithelial layer within the basement membrane and do not invade deeper tissues. Cells shed from surfaces of an area of abnormal cells and also from Carcinoma in situ can be detected in cervical smear. The decline in death rates from Cervical cancer in United States and Britain has been widely attributed to the use of Papanicolaou or pap smear for early detection of Cervical cancer(3). Carcinoma of Cervix, a disease with an obscured aetiology is that which most women think of cancer of womb. By virtue of its accessibility it can be readily diagnosed even in pre-invasive state and if treated in its early stages, the patient is very often cured of disease. Papanicolaou, also gave his name to pap smear laid the foundation for preventive medicine at its best. Regrettably in different Communities, this test is not used for screening purposes though this is very simple and cheap. Carcinoma of Cervix may develop in either the squamous epithelium or glandular epithelium of endocervix, 90% of growth being squamous cell carcinoma and 10% adeno carcinoma(4). The

existence of a preinvasive stage in the development of squamous carcinoma has been known since Sir John Williams(5) who presented a case of carcinoma in situ. Robin(6) described non-invasive change at the margins of invasive carcinoma and it was he who introduced the term carcinoma in situ. The concept of dysplasia that is a stage in preinvasive process prior to carcinoma in situ, was put forward by Walters and Reagan 1956(7) WHO'S recommendation (Poulsen and Taylor(8) set out the pathological features of various stages of disease. Mild dysplasia is regarded as Grade-1, cervical intraepithelial neoplasia, (CIN) moderate dysplasia as Grade-2 (CIN) and severe dysplasia and carcinoma in situ as Grade-3 (CIN). Incidence of Cervical Carcinomas is more in promiscuous women, those with early marriage and especially wives of those men who have more chances of extramarital relations(9). Infection of Women with Herpes Simplex type-II virus and papilloma virus increase the risk.

Looking at the above situation we planned this screening programme for high risk women from community.

Materials & Methods

This screening programme for early detection of carcinoma of cervix was conducted in women of community attached with Maternal and Child

Health department of College of Community Medicine, Lahore.

Total population of this community is about 8175. Among whom women of age group of 35-55 years in that community are 250. These women were called at centre and pap smears were taken and a questionnaire was prepared which was filled in which special consideration was given to aetiological and risk factors.

Two smears were taken with a wooden tongue depressor, from squamocolumnar junction and from pool of posterior fornix on glass slides and they are immediately fixed with a solution of 95% ethyl alcohol and methanol. Subsequently they are stained with Haematoxylin and Eosin method. 180 pap smears were taken. Patient turn over was small, so about 40% of specimens were taken at their homes.

This test is simple and non-invasive only health education is required for motivation. We can easily collect specimens at Maternal Child Health Centres and Rural Centres. Main problem in collecting specimen was non-cooperation of asymptomatic women.

Results

In this community as was mentioned there are about 250 women between age 35-55 years. We divided them into 2 groups for convenience and application of statistical tests.

35-45 years	%age	45-55 years	%age
Normal	20	38	
Cervicitis	79	30	
(a) Acute	10	10	
(b) Chronic	70	20	
Dysplasia	10	2	1.1
Carcinoma			
in situ 1	0.55	Nil	

In this study women who were never married or who has had hysterectomy were excluded.

On these results CH1 square (x2) test was applied ($P = 0.05$).

Discussion

Cytodiagnosis depends on the fact that surface cells are being shed continuously from the

epithelium. Hence the cells which they can therefore be collected and examined. Basically cytology is of a non-invasive nature. It is a means of screening asymptotically healthy and symptom free women to discover those who deserve further investigations to see if they have malignant disease. Method involves scrapings of the superficial cells from the external os and squamocolumnar junction by wooden spatula.

Ideally cervical cytology should be carried out on all sexually active women but this is impracticable. But certain age groups are more prone, in Pakistan 35-55 years are at risk. In developed countries like United States screening programme is started at an early age (i.e. 20-25) because of earlier onset of sexual activity. The procedure is very successful for early detection of cervical neoplasia. According to research in Department of Community Health in Florida(10) "Unfortunately no other gynecologic malignancy shares this success. Success of pap smear in screening for Cervical cancer illustrates the best example of any other screening programme for a disease" A similar type of research was conducted in National Institute Bethesda(11) in its results state "Educational programmes should target unscreened women who forego the test under estimating its importance, procrastination because their medical care providers do not suggest the procedure".

In areas where a large section of female population has been regularly subjected to Cervical Cytology for several years, incidence of Cervical invasive carcinoma has fallen. Decrease of 30% in 5-15 years is reported from British, Columbia(12) and Ontario(13).

From the results of present programme it is clearly evident that cytodiagnosis should be recommended to women of every community. It screens out abnormal cervixes and this test is cheap and easily performed. It is hoped that death rate from cervical cancer will be reduced by these measures.

References

1. Wilfred Shaw, New Gynaecology of Uterus and epithelial tumors of cervix, Shaw's Textbook of Gynaecology, 1978, 9th Edition, London, 606.

2. Stanley G. Glayton, Carcinoma of Uterus, Gynaecology by Ten teachers, Edward Arnold Ltd., London, 1980, 13th Edition, 179.
3. Stanley G. Glayton, Carcinoma of Uterus Gynaecology by Ten teachers, Edward Arnold Ltd., London, 1980, 13th Edition, 180.
4. Norman Jeffcoate, Tumors of Cervix uteri, V. R. Tindoll Jeffcoate's Principles of Gynaecology, Butterworth and Co. Publishers Ltd., 1987, London, 401.
5. Sir John Dewhurst, Premalignant and Malignant Disease of the Cervix, Dewhurst's Textbook of Obstetrics and Gynaecology for postgraduates, Black Well Scientific Publications, Osney Mead Oxford, 1987, 4th Edition, 766.
6. Sir John Dewhurst, Premalignant and Malignant disease of Cervix, Dewhurst's Textbook of Obstetrics and Gynaecology for postgraduates, Blackwell Scientific Publications, Osney Mead Oxford, 4th Edition, 1987, 766.
7. Sir John Dewhurst, Premalignant and Malignant Disease of the Cervix, Dewhurst's Textbook of Obstetrics and Gynaecology for Post-graduates, Black well Scientific Publications, Osney Mead Oxford, 4th Edition, 1987, 766.
8. Sir John Dewhurst, Premalignant and Malignant Disease of the Cervix, Dewhurst's Textbook of Obstetrics and Gynaecology for Post-graduates, Black-well Scientific Publications, Osney Mead Oxford, 4th Edition, 1987, 766.
9. Sir John Dewhurst, Premalignant and Malignant Disease of the Cervix, Dewhurst's Textbook of Obstetrics and Gynaecology for Post-graduates, Black-well Scientific Publications, Osney Mead Oxford, 4th Edition, 1987, 768.
10. Hall KL, Dewar MA, Perchalski 1, Screening for Gynaecologic Cancer, Primary Care Journal, 1992, 19th Volume, 20 - 607.
11. Harlan LC, Bernstein and Kessler, Cervical Cancer Screening : who is not Screened and Why ? American Journal of Public Health, 1991 81 Volume, 90 - 885.
12. Stanley G. Glayton, Carcinoma of Uterus, Gynaecology by Ten teachers, Edward Arnold Ltd., London, 1980, 13th Edition, 179 - 180.
13. Coker, Jenkin, Busando, Human Papilloma Viruses and Cervical Neoplasia in South Crolina, Journal of Cancer epidemiology and prevention, 1993, 2nd Vol., 12 - 207.

A CORRELATION OF BLOOD LIPIDS IN NEWLY DIAGNOSED PATIENTS OF DIABETES MELLITUS AND HYPERTENSION

M. IQBAL TAHIR AND MUKHTAR AHMAD

Department of Biochemistry, Punjab Medical College, Faisalabad, Pakistan

Summary

Two groups of 50 each newly diagnosed hypertensive and diabetic individuals were studied for developing a correlation between vascular disease and diabetes mellitus. Their lipid fractions have been analyzed and compared with normal healthy controls. Cholesterol, TriAcylGlycerols (TAG), Phospho Lipids (PL), Low Density Lipoproteins (LDL), Cholesterol in LDL and Total Lipids (TL) were found significantly elevated in the serums of both hypertensives and diabetics. It is concluded that the relationship between two diseases of multifactorial etiology is probably the common pathogenic mechanism.

Introduction

It is estimated that there are 1.25 millions insulin dependent diabetics in the United States. Elevated levels of blood glucose associated with an impairment of carbohydrate metabolism characterize the disease diabetes mellitus. Chronic diseases like diabetes mellitus and hypertension are serious cause of death, all over the world. The lipid disturbances in these conditions is a topic to be studied from many angles and to be compared. The frequent clinical association of hypertension and diabetes, increasing number of patients of these diseases, and comparison of lipid fractions in these conditions have an actual practical value.

The cause of diabetic angiopathy has been explained on the basis of disorders of the lipid metabolism. The biochemical disorders include:

- (a) Decreased utilization of glucose by the cells and increased in the blood glucose levels of a biologic system.
- (b) Abnormal mobilization of fat from adipose tissues causing deposition of lipids in vascular walls generating atherosclerosis.
- (c) Low protein content of the tissues of the body.

In diabetic microangiopathy, the circulatory lipids are involved in other complications like retinopathy or neuropathy. The present study describes the degree by which lipid fractions i.e. Cholesterol, TAG, PL, LDL, Cholesterol in LDL

and TL are elevated in newly diagnosed hypertensives and diabetics and correlated.

Materials and Methods

The following groups A, B and C were included in our study.

Group A:

(Hypertensives) - included 50 individuals, newly diagnosed for hypertension, with diastolic blood pressure of 100 mm of Hg or above. None of them had received any antihypertensive therapy previously. None was obese and had clinical evidence of any other disease. They were 18 males, 22 females enrolled for treatment in the Hypertension Clinic of DHQ Hospital, Punjab Medical College, Faisalabad.

Group B:

(Diabetics) - included 20 males and 30 females, newly diagnosed for diabetes mellitus by a standard oral glucose tolerance test. None had any antidiabetic therapy before. None was obese and had clinical evidence of any other disease. They were selected from Diabetic Clinic of DHQ Hospital, Punjab Medical College, Faisalabad.

Group C:

(Healthy controls) - included 30 normal, healthy individuals as control. They were 16

males, 14 females of different age groups from students and staff of the Punjab Medical College, Faisalabad. The normal controls were free from any disease with diastolic blood pressure of 90 mm of Hg or below. The hypertensives, diabetics and normal controls were on usual average average Pakistani diet, with no diet restriction.

The blood samples were collected from hypertensives, diabetics and normal individuals after 12 hours of overnight fast and analyzed for Cholesterol (1), TAG (2), PL (3), LDL (4), Cholesterol in LDL (4) and TL (5) under identical sets of experimental conditions.

Results

Table 1 shows the mean total cholesterol level in normal healthy controls which is 188 mgs%. Total cholesterol is found to be raised both in hypertensives and diabetics by a mean value of 238 mgs% and 234 mgs% respectively. A percent rise of 26.5 mgs and 24.5 mgs is observed in both these conditions respectively.

Table 1: Serum Total Cholesterol in Hypertensives, Diabetics and normal controls (mgs/100 ml)

	Control	Hypertensive	Diabetics	Mean Sex Wise
Male	194	245	235	225
Female	182	230	233	215
Mean				
Condition Wise	188	238	234	
Percent increase	26.5	24.5		

Table 2 shows that mean serum TAG level in healthy controls is 125 mgs%. The mean serum TAG values are observed elevated by a value of 216 mgs% and 187 mgs% in hypertensives and diabetics respectively.

A percent rise of 72.8 mgs in hypertensives and 49.6 mgs in diabetics is observed.

Table 2: Serum Tri-Acyl-Glycerols in Hypertensives, Diabetics and normal controls (mgs/100 ml).

	Control	Hypertensive	Diabetics	Mean Sex Wise
Male	126	218	182	175
Female	124	215	191	177
Mean				
Condition Wise	125	216	187	
Percent increase		72.8	49.6	

Table 3 reveals that PL in hypertensives and diabetics are present with mean value of 241 mgs% and 244 mgs% respectively. In normal healthy controls PL have mean value of 192 mgs%. A percent rise of 25.5 mgs and 27.1 mgs is observed in hypertensives and diabetics respectively.

Table 3: Serum Phospho Lipids in Hypertensives, Diabetics and normal controls. (mgs/100 ml)

	Control	Hypertensive	Diabetics	Mean Sex Wise
Male	193	250	239	227
Female	191	231	250	224
Mean				
Condition Wise	192	241	244	
Percent increase		25.5	27.1	

Simultaneously LDL (Beta-Lipoproteins) fraction was also analyzed for both these conditions. Table 4 shows that LDL are also raised by a value of 371 mgs% and 349 mgs% for hypertensives and diabetics respectively. The mean value of LDL in normal healthy persons is 233 mgs%. The LDL fraction is significantly higher with a percent increase of 46.6 mgs in hypertensives and 37.9 mgs in diabetics.

In LDL the cholesterol content was determined for hypertensives and diabetics. The results are described in Table 5. In normal healthy control, the cholesterol content of LDL is 96 mgs%. This value is higher in case of hypertensives and diabetics with the mean value of 135 mgs% and 130 mgs% respectively. The quantity of cholesterol present in LDL of normal healthy controls is 52% while cholesterol present in LDL fraction of hypertensives is 57% and for diabetics it is 55%.

Table 4: Serum Low Density Lipoproteins in Hypertensives Diabetics and normal controls. (mgs/100 ml)

	Control	Hypertensive	Diabetics	Mean Sex Wise
Male	237	374	346	319
Female	269	369	353	330
Mean				
Condition Wise	233	371	349	
Percent increase		46.6	37.9	

Table 5: Cholesterol in low Density Lipoproteins in Hypertensives Diabetics and normal controls. (mgs/100 ml)

	Control	Hypertensive	Diabetics	Mean Sex Wise
Male	90	136	129	119
Female	102	134	131	122
Mean Condition				
Wise	96	135	130	

Our study shows that mean serum TL level in healthy controls is 524 mgs% while in hypertensives and diabetics, the mean values of TL is 727 mgs%.

and 700 mgs% respectively. The values of TL in males are higher than females in all the three groups Table 6. The TL level is found significantly higher by a value of 38.7% in hypertensives and 33.6% in diabetics.

Table 6: Serum Total Lipids in Hypertensives, Diabetics and Normal Controls. (mgs/100 ml)

	Control	Hypertensive	Diabetics	Mean Sex Wise
Male	541	746	705	664
Female	507	709	695	637
Mean				
Condition Wise	524	727	700	
Percent increase		38.7	33.6	

Discussions

The increasing incidence of hypertension and diabetes mellitus lead several authors to investigate and develop relationship between various factors creating these conditions (6,7). Apart from cluster of other abnormalities, glucose intolerance with hypertriglyceridemia has been found associated with diabetes mellitus (8). Back as 1941, 45% of 47,000 cardiovascular deaths were because of hypertension and this figure has increased at present. Hypertension results from influences upon the vascular system to narrow the calibre of arteries, arterioles, structurally and functionally. This increases the peripheral resistance (9). These influences may be intermittent or persistent in their nature. Irrespective of their temporary effect on vascular system, they may set in motion other processes of more permanent character (10).

It is well known that in normals lipid and glucose metabolism is closely related. Both are significantly disturbed by lack or presence of any additional factor. Blood lipid level is significantly influenced by sympathetic nervous system and circulatory catecholamine (Figure-I). The commonly used antihypertensive drugs exert their therapeutic effects by interfering with the sympathetic nervous system involved in the mobilization of lipids effecting the blood glucose level (11). Increase in

serum cholesterol, PL and LDL have been associated with coronary Heart Disease (12).

The Eskimos have low risk of coronary heart disease, hypertension and increased bleeding time. They have low level of cholesterol, very low density lipoproteins (VLDL) and LDL and is attributed to their dietary habits consisting of fish and fish oils. Although these marine animals do have a high cholesterol and fat contents, their fat is unique in that it contains large quantities of long chain, polyunsaturated Omega-3 fatty acids (13). Dietary fish oils, rich in Omega-3 fatty acids, reduce plasma lipid levels in normolipidemic subjects (14). In comparison with the diet of Eskimos, Pakistani typical diet differs in many ways. This usually has high content of carbohydrates and fats (both vegetable and animal origin) and varies from class to class so generalisation is not possible. A considerable quantity of milk, yoghurt and Lassie is also utilized in rural and urban society. Like dietary fish and fish oils, our diet may have some hypolipidemic factors. The further research should be carried out, to work out these factors so that incidence of hypertension and coronary heart disease can be minimized in our population by changing the dietary habits.

From our studies it is obvious that all lipid fractions are elevated in hypertensives and diabetics. The average value of TAG are even higher in hypertensive patients by 15.5% than the diabetics. A predilection of the diabetics to raise the blood pressure levels has often been asserted and remains disputed. The elevated lipid fractions in hypertensives and diabetics may be correlated as following :

1. In diabetes mellitus, even a less elevated level of lipids if sustained over a long period of its therapy may exert a cumulative effect and cause hypertension at some later stage.
2. The elevated lipid level interferes with glucose metabolism (15) and may enhance the serum glucose. Continuous increase demands of insulin may affect the beta cells of pancreas and ultimately leads to diabetes mellitus.

In conclusion it is suggested that the relationship between these diseases of multifactorial aetiology is the common pathogenetic mechanism.

References

1. Watson, D. Clin. Chim. Acta 5, 1960, 637.
2. Giegel J, Ham AG and Clema W. Estimation of Triglycerides. Clin. Chem. 1975; 21: 1575.
3. Fiske CH and Subarow Y. The calorimetric determination of Phosphorus. J. Biol. Chem. 1925; 66 : 375.
4. Fried RR. Therapie der gegenwart. 1965; 104: 354.
5. Zollner N and Kirsch K. Zeitschrift fur die Gesamte experimental medizen. 1962; 135: 345.
6. West KM and Kalibfleisch JM. Influence of nutritional factors on prevalence diabetes. Diabetes 1971; 20: 99.
7. Walff OH, and Salt HB. Serum lipids and blood sugar levels in childhood diabetes. Lancet 1958; I: 707.
8. Ostrander LD, Neff BJ, Block WD, Frances T and Epstein FH. Lipoproteins in subjects with and without Coronary Heart Disease. Annals of Internal Medicine 1967; 67: 34.
9. Johnson B, Bye C. The relationship of antihypertensive treatment to plasma lipids and other vascular risk factors in hypertensives. Clin. Sc. Mol. Med. 1974; 47 (2): 9 - 10.
10. Walton KE. Pathogenetic Mechanism in Atherosclerosis. Amer. J. Cardiology 1975; 35: 542 - 559.
11. Havel RJ. The Autonomic Nervous System and Intermediary Carbohydrate and fat metabolism. Anaesthesiology 1968; 29: 702.
12. Kannel WB, Dawber TR, Friedman GD, Gilman WE and McNamara PM. Risk factor in Coronary Heart Disease - An evaluation of several serum lipids as predictors of Coronary Heart Disease. The Framingham study; An. Intern. Med. 1964; 61: 888 - 889.
13. Dyerberg J and Hjorne N. The composition food consumed by Greenland Eskimos. Acta Med. Scan. 1976; 200: 69 - 73.
14. Beverly E, Philipson, Douglas W, Rathrock et al. Reduction of plasma lipids, lipoproteins and a proteins by dietary fish oil in patients with hypertriglyceridemia. The New England Jr. of Medicine 1985; 312 (19) 1205 - 72.
15. Ostrander LD Jr, Frances T Jr, Hayner NS, Kelsberg MO and Epstein FH. The relationship of Cardiovascular Disease to hyperglycemia. Annals of Internal Medicine 1965; 62: 1188.

