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# **Editorial**

Dear Readers

## **Season's Greetings and A very Happy New Year 2020**

With this issue we present to you the third and final issue of 2019. It is heartening to note that the submissions have slowly and steadily started to rise in number and the quality of papers has also seen a sea change. It is for the first time that we have articles from Subharti Medical College and even Library Sciences. For this I would like to congratulate all our contributors for their whole hearted support and I hereby promise to take this journal to newer avenues. The focus in the future issues will be solely on original research rather than the review articles. The process of indexing the journal with scopus is already underway and I sincerely hope that from the next issue onwards our journal will be scopus indexed.

Taking the liberty of divulging from the journal for a few moments, the past four months have been a mixed bag as far as India is concerned. To begin with Article 370 was scraped and with this we finally had "One Country One Constitution" dream come true. The oldest pending case in the court of law finally saw the justice being delivered in Ram Janam Bhoomi Case.

On the other side, there was rise in cases with sickening frequency where there were instances of violence against a girl or woman. The terrible consequences of this epidemic of violence rob countries of the contributions and talent of half their populations. The situation looks grim on the economic front too with continuous rise in the inflation and alarming rise in the unemployment scenario across the country. The government should look into these factors before it becomes too little too late.

Coming back to the journal, I once again seek your support and look forward to welcoming your submissions for next issue and your valuable suggestions are eagerly awaited.

Happy Reading

Dr Vijay Wadhwan

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## Review Article

### Right To Health: Domestic & Global Perspective

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#### Abstract

Right to health is recognized by the Constitution of India. World Health Organization states that "Health is a state of complete physical, mental, and social well-being and not merely the absence of diseases or infirmity." Right to health presupposes that "it is the duty of the state to raise the level of nutrition and standard of living of the people for good health. The apex court of India declared that right to health is a fundamental right coming within Article 21 of the Indian Constitution. Right to health and health care needs multi-disciplinary services to monitor health condition of life. It is a huge task requires effective management and organized action. In this article, an attempt is made to introspect the right to health in the light of constitution as well as , international perspective and judicial decisions of the Supreme Court of India.

**Key Words:** Right to health, Health care, UDHR, Legal provision

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#### Introduction

In a welfare state, health and health care of the people are of prime importance. It presupposes that the state to ensure conditions congenial to good health. Maintenance and improvement of public health have to rank high as these are indispensable condition required in the modern state. Right to health is a necessity for rich and poor. The right to health is concerned with various factors such as housing, food, water, sanitation, and environment. The attendance of public health, therefore, is of high priority and perhaps the one agenda at the top of the civilized nation. Adulterated fast food, sale of hazardous products, contaminated water, polluted air, unhygienic surroundings, and sanitation is now a major concern for the state. The people living in village and urban area are facing the health hazards. Thus, health service is required for the people living anywhere on the earth. UDHR, 1948, also ensures such right to the protection of basic right of human being.<sup>[1]</sup>

Health care got much significance in the world scenario. The World Health Organization (WHO) created separate agenda to provide health care.<sup>[2]</sup>

All the state parties are supposed to fulfill the norms of agenda as a part of their national health planning and development. The WHO promotes sustainable health for all and cooperates with stake holders pursuing national health plans. The Constitution of India enumerates that right to health and other related rights to be improved by the state. The states have made some effective regulatory provisions in the area of medical practice, public health care services, food control and drug administration, etc. The standard guidelines are issued by the regulatory bodies and the apex court.<sup>[3]</sup>

The high level monitoring agencies are established to administer, control, and regulate health care units in India. Despite the fact, people of India face a lot of challenges in the area of health care. It violates the basic right of people. In this article, theoretical analysis is made to evaluate the health right of people in India. In this attempt, focus is made to analyze the various literature, committee reports, enactments and case laws.

#### International Perspectives

Health and health care is not only a major concern for India but also at international level civilized countries are thinking and taking care of it. The Universal Declaration of Human Rights, 1948, Article 25 declares that "everyone has the right to a standard of living adequate for the health and well-being himself and of his family, including food, clothing, housing and medical care, and necessary social services and the right to security in the event of unemployment, sickness, disability, widow-hood, old-age, or other lack of livelihood in circumstances beyond his control."<sup>[4]</sup>

Further, it provides that "motherhood and childhood are entitled to special care and assistance. All children, whether born in or out wed-lock, shall enjoy the same special protections."The International Covenant on Economic, Social, and Cultural Rights (ICESCR) of 1966 resolved to undertake health measure and the same was adopted by UNO in 1976.<sup>[5]</sup>

Article 12 of the covenant recognizes the right of everyone to the enjoyment of the highest attainable standard of physical and mental health. The state parties agreed to achieve the full realization of this right. It was agreed to take measure for the reduction of the still-birth and check infant mortality

so that healthy development of the child can be made possible.

Appropriate steps are made for the improvement of all aspects of environmental and industrial hygiene. It was resolved to take action for prevention, treatment and control of epidemic, endemic, occupational, and other diseases. The state parties shall create conditions which would assure to all medical services and medical attention in the event of sickness. Similarly, the convention on the elimination of all forms of discrimination against women ensures access of food health and education for women. The convention on the Rights of the Child provides overall development of child and health protection adolescent. International Convention on the Elimination of all forms of Racial Discrimination also give special attention on protection and advancement of health. In this regard, a number of regional treaties and instrument have been adopted to improve the working and living conditions of people and their families with a specific standard for health and dignity. It is a new global strategy to empower the population of women and adolescent from the dangers of HIV/AIDS, violence, suicide, and road traffic injuries. The WHO from time to time issuing guiding framework for domestic policies. Article 3 (1) of the regulation provides that, "the international health regulations shall be implemented with full respect for the dignity, human rights, and fundamental freedoms of persons."<sup>[6]</sup>

#### **Right to Health under Constitution of India**

India is a welfare state and being a signatory to UDHR adopted several health measures for health care. The Indian constitution recognized the importance of health and health care for the attainment of its socio-economic goal.

#### **Fundamental Right**

Article 21 of the Indian constitution ensures Right to Health and pollution-free environment under the pervue of protection of life and personal liberty.<sup>[7]</sup>

#### **Directive Principle Of State Policy Regarding Health**

**Article 39 (a)** states that the state shall in particular, directs its policy towards securing its citizens, men and women equally, have the right to an adequate means of livelihood.

**Article 39 (e)** directs the state for the health and strength of workers, men and women, and the tender age of children are not abused and that citizens are not forced by economic necessity to enter evocation unsuited to their age or strength.

**Article 39 (f)** provides that children are given opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment.

**Article 41** of the constitution ensures protection in old age, sickness, and disablement of the persons irrespective of their status.

**Article 42** provides that State shall make effective provisions for securing the just and human conditions of work and for maternity relief.

**Article 47** says that the State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties.

**Article 48(A)** of the constitution directs state for the promotion of health and strength of the people.<sup>[8]</sup>

These principles are adopted as guidelines for the state to provide just and human conditions for living. It forms the responsibility of the state to raise the level of nutrition and standard of living and improve public health and maternity relief. It becomes the constitutional obligation of the state to improve the environment for better protection of life.

So by giving these provisions in the Constitution as Directive Principle Of State Policy. States is under the obligation to follow these principles for the public health and healthcare.

#### **Fundamental Duty**

**Article 51A (g)**, it becomes the fundamental duties of every citizen to protect and improve the natural environment including forest, lakes, rivers, and wild life and to have compassion for living creatures. It will foster a good condition for better health of the people.

#### **Seventh Schedule**

Under Seventh Schedule, the states empowered to make legislation in different aspects, which will provide better health care and protection. The entries 6, 8, 17, and 51 in the State List provide that the state may make law for betterment of public health, sanitation, water supply, etc. The states are empowered to regulate production, sale, purchase, and possession of alcoholic substance and liquors. The state may make law to establish and regulate hospital, dispensaries, and medical institutions for the health care. Similarly, the entries 18, 19, 20-A of Concurrent List empowers Central Government and State to make law to stop adulteration of foods, food stuffs, and other goods not congenial for health. Both governments have power to make regulatory measures for population control and family planning. Regulatory measures may be made to sale, purchase, and possession of intoxicating liquors, opium, and other narcotic substances.

#### **Provisions at Grassroot Level**

Article 243 (G) empowers panchayats to deal with health and sanitary measure. It becomes the responsibility of panchayats to improve the health condition. The panchayats may establish and manage hospitals and dispensaries for the better health and family welfare. Under Article 243 (W), municipalities are empowered to make safety provisions for sanitation and health protection of the public. The municipality under obligations to supply water for domestic, industrial, and commercial purposes. It is the responsibility of the municipality to remove public nuisance and take steps for the improvement of slum. They are duty bound to construct drain and parks for better living. The above discussion establishes that the government is under constitutional obligation to protect the health and living condition of the people.

## Judicial Approach Towards Health and Healthcare

Literally Article 21 of our constitution is a colorless article. The state has to follow the law and procedure established by law and Article 21 has been judicially construed, a meaning which is reasonable, fair and just. The stream is endless and "protection of life and liberty" is the basis of expansion of the concept of life. The Right to Health in India got its initial recognition in Francis Coralie Mullin versus Union Territory of Delhi cases wherein the court held that Article 21 of the Constitution includes the basic right to food, clothing, and shelter. Mere animal existence is not the life. The Supreme Court addressed the types of conditions necessary for enjoyment of health.<sup>[9]</sup>

In *Morcha* case, the court held that Right to live with human dignity also involves right to "protection of health." Right to health includes the right to food, the reproductive rights, rights of workers to occupational health and safety, clean environment, adequate drugs, medical negligence, right against medical malpractices, emergency healthcare, HIV/AIDS and public health care etc. on each and above aspects the Supreme Court of India has emphasized and directed the state to take proper health measures for the welfare of the people.<sup>[10]</sup>

### Emergency Health Care

In medical profession, it is seen that the patients either suffer or die due to non-attendance of doctors as it was their plea that they have to follow the criminal procedure code and for their safety under the law. In *Paramananda Katra* case, the Supreme Court observed "No legal procedures as prescribed under Cr.P.C. should act as a hindrance for a doctor to treat an emergency case and hence all the fulfillment of these legal formalities should be a secondary action and that of saving a person's life should be primary action." In an emergency case, the doctor neither examine any F.I.R given before the police nor any forward letter made by the police for medical examination. First, the doctor has to take up all reasonable treatment of the patient and later on the procedural formalities under the law shall be taken.

In a public interest litigation under Article 32 read with Article 21, the court took the practical happenings in our day to day life, where the doctors seen completing the legal formalities first then initiating the medical treatment causing serious inconveniences to the injured persons needing immediate medical treatment. The court held that preservation of human life is of paramount importance. Hence, every injured citizen brought for medical treatment should instantaneously be given medical aid to preserve life and thereafter the procedural criminal law should be followed to operate to avoid negligent death. Emergency Medical treatment is the right of citizen.<sup>[11]</sup>

### Public Health is States Priority

Justice versus R. Krishna lyre, one of the leading exponent and authority on Human Rights in *Municipal Council, Ratlam* Case observed that the State will realize that Article 47 makes it a paramount principle of governance that the steps

are taken for the improvement of public health as among its primary duties. Right to health and medical care is a fundamental right under Article 21 read with Article 39 (e), 41 and 43.<sup>[12]</sup>

In *CESC Ltd. versus Subash Chandra Bose Case*, the Supreme Court held that Right to Health is a fundamental right.<sup>[13]</sup>

"The term health implies more than an absence of sickness. Medical care and health facilities not only protect against sickness but also ensure stable manpower for economic development facilities of health and medical care generate devotion and dedication to give the workers best physically as well as mentally, in productivity. It enables the worker to enjoy the fruit of his labor, to keep him physically fit and mentally alert for leading a successful economic, social, and cultural life. The medical facilities are, therefore, part of social security and like gilt-edged security, it would yield return in the increased production or at any rate reduce absenteeism on grounds of sickness etc. Health thus a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. In the light of Article 22-25 of UDHR, ICESCR, and in the light of socioeconomic justice assured in our constitution, Right to Health is fundamental human rights to workman. The maintenance of health is a most imperative constitutional goal whose realization requires interaction by many social and economic factors.

### Adequate and Quality Medical Care

The Supreme Court of India emphasized on adequate and quality medical care. It is a part of right to health and right to life. People are entitled to adequate health care. For adequate medical service, the Medical Council of India and the Department of Alternative Medicines such as Ayurveda, Unani, Siddha, and Homeopathy are fully fledged devoted themselves for the welfare of the people.

### Health and Environmental Issues

The environment plays a vital role in health of human beings, the air we breathe, water we intake, and food should not be polluted or adulterated "life, public health, and ecology have priority over unemployment and loss of revenue." It is the duty and obligation of the state give priority or public health and ecology. Right to pollution free air falls within Article 21 of the constitution for the removal of hazardous industry engaged in manufacture and sale of hazardous products at a tickly populated area causing health hazard to the workman and community living in the neighborhood, the matter was brought before the Supreme Court. The court directed to shift and relocate plant at some other place keeping in view the health care of the people of the locality. It is the duty of the state that due to contaminating source, the patients should not suffer. In an eye camp due to common contaminating source, the patients sustained damage to eyes. On humanitarian consideration directed state government to pay Rs.12,500/- to each victim in addition to interim relief. Enjoyment of pollution frees water and air which is included in right to life. It is seen that smoking is a general

practice and habit of the people in public place and adversely affect the passive smokers nearby. In public interest litigation, the Supreme Court prohibited smoking in public places on the ground smoking is injurious to health.

Environmental pollution is linked to health and is violation of right to life with dignity. Environmental, ecological air and water pollution, etc., should be regarded as amounting to violation of right to health generated by Article 21 of the constitution. It is the obligation of the state that the citizens should enjoy their life to fullest with dignity and due to water or air pollution their life should not be disturbed. In this connection, the Supreme Court imposed an positive obligation on the state to take steps for ensuring to the individual a better enjoyment of life and dignity and for elimination of water and air pollution.

#### **Working People and Health Care**

Right to health is an integral part of a meaningful right to life. In the work places, the employees/workman faces serious health hazards. In this context, special emphasis has been given under the factories Act and other legislations on the working conditions of the employees/workman. Temperature, humidity, etc., of the workplace, monotonous work, etc., plays vital role in working conditions. It is the obligation of the state not only to provide emergency medical services but also to ensure the creations of conditions necessary for good health including provisions for basic curative and preventive health services and assurance of healthy living and working conditions. In Consumer Education Research Centre case, the Supreme Court held that the right to health and medical care is a fundamental right and it makes the life of the work man meaningful and purposeful with the dignity of person. In another case, the Supreme Court held that Right to Healthcare of government employees is integral to right to life. Human safety and on health the Supreme Court has always given more importance. In a public sector undertaking when the workers claimed compensation for being exposed to the ill-effects of X-ray, radiation, the court issued directions as to checks and safeguard to be adopted to guard against radiation.

#### **Medical Service" as Service**

Medical service includes the diagnosis on the treatment of the disease. For medical service in return for monetary consideration amounts to "service" for the purpose of the Consumer Act, 1986.<sup>[14]</sup>

For deficiency in service, the service provider is liable for compensation likewise in medical negligence.

#### **Sale of Cooked Food on Streets**

It is a common sight and practice of the people to sale or intake cooked food on the streets creating permanent unhygienic conditions. In municipal areas, the municipality can stop that practice, and it is permissible under the law.<sup>[15]</sup>

#### **On Passive Smoking in Public Places**

In an attempt to protect the health of non-smokers, the Court held that allowing smoking in public places would amount to an indirect violation of the right to life of non-smokers. It said that smoking in

public was injurious to the health of passive smokers who were helpless victims of air pollution caused by smoking.<sup>[16]</sup>

#### **HIV/AIDS Control**

The Government of India prior to 2004 had only AIDs prevention policy. The treatment of the disease was not in the policy. After filing of writ petition by a voluntary Health Association of Punjab SHAP versus Union of India (W.P. No.349/2003), the Government of India announced free ARV drugs to the HIV +Ve.<sup>[17]</sup>

#### **Poverty and Health Care**

Although in a number of decisions, the Supreme Court directed the state to take proper steps for providing healthcare but poverty is a barrier to the health service. Poverty eradication is the prime duty of a welfare state and as the poverty in India is not totally eradicated health service of the state is also not up to the mark.

#### **229<sup>th</sup> Law Commission Report**

Under the chairmanship of Justice A.R. Lakshmanan, Law Commission report was given to the Central Government for the eradication of poverty.<sup>[18]</sup>

The main highlights of the report on health care are healthy and safe environment, adequate housing, people should be free from hunger, safe drinking water, primary health care, and medical attention in case of illness. It is the duty of the state to eradicate poverty from the country so that the Right to Health care be implemented properly. An example can be cited, the beggars home at Delhi leading a life of mere animal existence. No proper provision of drinking water, bathing, sanitation, food, clothing, and clean bedding or hygienic surroundings have been provided in the shelter home.

#### **Conclusion**

Right to Health and health care is coming within the ambit of the right to life and personal liberty. It is the obligation of the state to provide adequate and quality medical care to its people. Although the Alternative Medical People are deployed in the country, yet it has failed to cover each and every village of the country. As poverty is the root cause of the health care in India, it need to eradicated. The study reveals that poverty has not been eradicated properly, the people are deprived of their right to health and health care. Further steps taken by the state for pollution control is half-hearted initiations. It is not matching with the constitutional obligation. A positive step in this regard is the need of the hour to eradicate poverty and to provide health service in the country. India has public health sector, private sector and NGO sector to provide health services to the vast and scattered population. There are international health care agencies such as Red Cross society and WHO Agencies. Government of India need to work with cooperative action and coordination among stakeholders. Apart from resources mobilization public awareness is highly necessary to reach the goal of social justice and human dignity as envisioned in the world society.

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**Review Article****Awareness of Pharmacovigilance and Adverse Drug Reactions on Oncology**Shahrukh Khan<sup>1</sup>, Lubhan Singh<sup>1</sup>, Manish Pathak<sup>2</sup>, Ganesh Mishra<sup>2</sup>

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**Abstract**

**Background:** The drug induced morbidity and mortality is one of the major health problems in India. The pharmacovigilance Programme of India took an initiative to address this issue. The Activities under The pharmacovigilance Programme of India PvPI include collection, reporting, and follow-up of ADRs occurring in patients. The PvPI collect the data received from various Adverse Drug Reaction Monitoring Centers (AMCs) in the country and submit them on regular basis to global database maintained at Uppsala, Sweden.

**Aim:** To aware of Pharmacovigilance and Adverse Drug Reactions on Oncology.

**Material and methods:** This is a descriptive and exploratory study in the field of pharmacovigilance, in which the spontaneous notifications of suspected ADRs affecting oncology patients were analyzed on the basis of various journals published on internet and research papers available.

**Result & Discussion:** The main problem recognized is Under-reporting as a major limitation of the spontaneous ADR reporting system.5 and many reasons may be the result of fear on the part of health professionals to formalize the occurrence, fear of punishment, difficulty in completing the form, or lack of understanding of what constitutes an ADR.

**Conclusion:** This study has shown that pharmacovigilance is an increasingly important science in the hospital setting, especially in the oncology field. However, educating the health professionals about the need to notify these reactions is more important than studying ADRs. It was observed that oncology patients present several ADRs, including grade 3 and 4, which should be reported in the pharmacovigilance system. However, these pass by unreported, which contributes to the under-reporting in oncology.

**Keywords:** Oncology, ADRs, Pharmacovigilance

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**Introduction**

The World Health Organization (WHO) defines adverse drug reaction (ADR) as "A response to a drug, which is noxious and unintended, and which occurs at doses normally used in man for the prophylaxis, diagnosis, or therapy of disease, or for the modifications of physiological function<sup>1</sup>. The drug induced morbidity and mortality is one of the major health problems in India. The pharmacovigilance Programme of India took an initiative to address this issue. The Activities under The pharmacovigilance Programme of India PvPI include collection, reporting, and follow-up of ADRs occurring in patients. The PvPI collect the data received from various Adverse Drug Reaction Monitoring Centers (AMCs) in the country and submit them on regular basis to global database maintained at Uppsala, Sweden.

Signals generated from such activities are used to recommend regulatory interventions in the form of banning a drug, and the labeling revisions besides meeting risks to health care professionals and public. Fortunately PvPI leads to identify, estimate and characterize the extent of the

problems associated with drug used in the country<sup>2</sup>.

Cancer is among the three leading causes of death in developing countries and the disease incidence is quickly increasing over time in those countries<sup>1</sup>. Once thought of as a "western" disease, cancer is an impending public health problem across the continent of Africa<sup>2</sup>. A globalization of unhealthy lifestyles, particularly cigarette smoking and the adoption of many features of the modern Western diet (high fat, low fiber content), along with increased life expectancy, are the major causes of higher incidence of cancer in developing countries<sup>3</sup>.

**1.1 Epidemiological perspective**

Cancer is a major cause of morbidity in the UK, with around 267000 new cases diagnosed in 1999. There are more than 200 different types of cancer, but four of them —breast, lung, colorectal and prostate —account for over half of all new cases. Overall, it is estimated that one in three people will develop some form of cancer during their lifetime. In the 10-year period 1989–1998, the overall age standardized incidence rates for cancer increased by 1.6% in men and 6.3% in women. The fastest-growing cancers in men were malignant melanoma

and prostate cancer, while in women, they were cancer.<sup>4</sup>

### 1.2 Molecular perspective

The molecular features that identify cancer are described in 'Six steps to becoming a cancer'

(a) Grow without signal (self-sufficiency in growth stimuli)

(b) Do not stop growing (insensitivity to inhibitory stimuli)

(c) Do not die (evasion of apoptosis)

(d) Do not age (immortalization)

(e) Feed themselves (neoangiogenesis)

(f) Spread (invasion and metastasis).

Nowadays Cancer is the leading cause of death almost everywhere in both developed and developing countries. GLOBOCAN an International Agency for Research on cancer gave data, in 2012 estimated 14.1 million new cases and 8.2 million cancer related deaths occurred. And new cancer cases may increase to 19.3 million per year by 2025. Radiotherapy, Chemotherapy, hormonal therapy surgery, immunotherapy cryosurgery and biologic therapy are the different treatment modalities available for cancer. , Chemotherapy, immunotherapy and hormonal therapy are the treatment options in the early stages of cancer.

Most concerning thing is that anticancer drugs have narrow therapeutic index but the adverse drug reaction (ADRs) to these medications are too high when compared to other classes of drugs<sup>4</sup>.

## Material and methods

This is a descriptive and exploratory study in the field of pharmacovigilance, in which the spontaneous notifications of suspected ADRs affecting oncology patients were analyzed on the basis of various journals published on internet and research papers available.

### 2.1 Spontaneous Notifications of Suspected ADRs that Affected Cancer Patients

Different health professionals can notify suspected ADR by submitting a form to the Pharmacovigilance Sector of the hospital. The pharmacist reviews notifications to supplement the data by studying medical records, interviewing the professionals involved in the case, and monitoring patients from the point of notification to the resolution of the case or till their discharge from the hospital, to gather updated information. Subsequently, the pharmacist reports the reactions to WHO online.

## Results

By reviewing more than twenty published journals and various available research papers on the spontaneous notifications of suspected ADR occurring in oncology outpatients and inpatients, 10 notifications were found, 7 of which were antineoplastic and they constituted 37.0% of the total ADRs recorded in 2010. The mean age was  $46.6 \pm 20.6$  years (minimum age: 19 years, maximum age: 70 years) and the majority patients were male (70.0%). The therapeutic classes of drugs suspected of causing the reactions included- Three plant alkaloids and other natural products (podophyllotoxin derivatives and taxanes) (30.0%)<sup>5</sup>.

kidney cancer, non-Hodgkin's lymphoma and breast  
**Table1 : Case study report on ADR**

| Variables   | Number | Percentage (n=104) |
|-------------|--------|--------------------|
| sex Male    | 45     | 43.26%             |
| Female      | 59     | 57.75%             |
| Age (years) |        |                    |
| 23-30       | 20     | 19.2%              |
| 31-40       | 21     | 20.19%             |
| 41-50       | 28     | 26.92%             |
| 51-60       | 26     | 26%                |
| 61-70       | 9      | 9%                 |

In another research it has been shown that out of 126 patients enrolled during the study period as per inclusion and exclusion criteria, 104 could be followed up till the end of study. Among these 104 patients, 45 were males and 59 were females which shows male female ratio was 1:1.31. Maximum number (26.92%) of patients were in the age group 41-50yrs<sup>6</sup>. Total 104 patients included in the study 31(29.8%) of them suffered from cancer breast which was the highest followed by cancer of stomach in 21 patients. Ovarian cancer, carcinoma of buccal cavity and carcinoma gall bladder were observed in 13,11 and 10 patients respectively. Other cancers included in miscellaneous group were gestational trophoblastic tumour, rhabdomyosarcoma, germ cell tumour of the testis, seminoma of testis, ewing's sarcoma and osteosarcoma. Among these 104 cancer patients from different sites as described above, 13 types of regimens were prescribed. Frequently prescribed regimens were TAC (Cyclophosphamide+ Adriamycin+ Paclitaxel), CAPOX (Capecitabine+ Oxaliplatin) and Capoxe FU (Capecitabine+ Oxaliplatin+ Epirubicin+ 5 Flurouracil) which were prescribed in 19, 14 and 10 numbers of patients respectively. Least prescribed regimens were FEC (Cyclophosphamide+ Epirubicin+ 5 Flurouracil) and BEP (Bleomycin+ Etoposide+ Cisplatin).

## Discussion

The main problem recognized is Under-reporting as a major limitation of the spontaneous ADR reporting system.<sup>5</sup> and many reasons may be the result of fear on the part of health professionals to formalize the occurrence, fear of punishment, difficulty in completing the form, or lack of understanding of what constitutes an ADR.<sup>6</sup> Factors including ignorance (only severe ADRs need to be reported), diffidence (fear of appearing ridiculous for reporting merely suspected ADRs), lethargy (lack of interest or time to find a report card, and other excuses), and insecurity (it is nearly impossible to determine whether or not a drug is responsible for a particular ADR were some causes of under-reporting. The current study demonstrated that notifications of ADRs per year in oncology patients are a very small number, especially considering the toxicity of chemotherapy, thus characterizing the under-reporting.

Table 2: Anticancer drugs in combination number of ADR report observed

| Drug combination | Drug combination                        | ADRs observed (n=329) | %     |
|------------------|---|-----------------------|-------|
| Capoxe 5 FU      | Capecitabine+oxaliplatin+epirubicin+5FU | 52                    | 15.8  |
| CE               | Cyclophosphamide+ epirubicin            | 49                    | 14.89 |
| TAC              | Cisplatin+ paclitaxel+ 5FU              | 31                    | 9.4   |
| GCa              | gemcitabine+ carboplatin                | 31                    | 9.4   |
| AC               | Cyclophosphamide+adriamycin             | 22                    | 6.68  |
| Folfox           | Oxaliplatin+ leucovorin+5FU             | 21                    | 6.38  |
| TCaF             | Paclitaxel+ carboplatin+5FU             | 18                    | 5.47  |
| CaT              | Paclitaxel+ carboplatin                 | 18                    | 5.47  |
| Capox            | Capecitabine + Oxaliplatin              | 12                    | 5.31  |
| T. Trans         | Paclitaxel+ transtuzumab                | 11                    | 3.34  |
| FEC              | Cyclophosphamide+ epirubicin+ 5FU       | 10                    | 3.03  |
| BEP              | Bleomycin+ Etoposide + cisplatin        | 9                     | 2.73  |

### Conclusion

This study has shown that pharmacovigilance is an increasingly important science in the hospital setting, especially in the oncology field. However, educating the health professionals about the need to notify these reactions is more important than studying ADRs. It was observed that oncology patients present several ADRs, including grade 3 and 4, which should be reported in the pharmacovigilance system. However, these pass by unreported, which contributes to the under-reporting in oncology. The training of health professionals working in hospitals on how, when and what to notify is essential to reduce under-reporting. In addition, it is proposed that a clinical pharmacist should be recruited in this process, as they are ideal professionals to efficiently perform the pharmacovigilance role. The present paper can also be used to educate patients, to demonstrate that there are many ADRs associated with chemotherapy, but most of these are not debilitating<sup>7</sup>.

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## Case Report

### Role of Adalimumab in chronic psoriasis and debilitating arthritis

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#### Abstract

**Introduction:** Psoriasis is common, chronic, inflammatory and proliferative condition of the skin, characterized by erythematous plaques with classical white scales. Psoriatic arthropathy is a seronegative inflammatory arthritis, which occurs in up to 40% of patients with moderate to severe psoriasis. It can be destructive to joints and adds considerably to the impairment of quality of life and in psoriatic patients. Adalimumab is the first fully human anti-TNF $\alpha$  monoclonal antibody. It blocks TNF  $\alpha$  interactions with the p55 and p75 cell surface receptors. **Case report:** A forty five year old male presented with itchy raised scaly lesions all over body involving abdomen, back, bilateral upper limbs, bilateral lower limbs and scalp since last 3 years with a PASI of 34.23. He also complained of pain in bilateral knee joint, wrist joint and small joints of hand since 2 years. He was started on methotrexate 15mg/week which had to be discontinued in view of anaemia. He was shifted to cyclosporine 200mg twice daily, withdrawn after 2 months due to development of pustular lesions. Acitretin was then added 25 mg twice daily and continued for 4 months but there was no significant improvement. In view of the resistant disease and severe arthritis, he was then planned for adalimumab. Patient was investigated and in view of positive TB quantiferon gold, started on antitubercular therapy prophylaxis. Inj. adalimumab 80mg SC was given on day 1 with marked improvement in joint pain with 2- 3 days followed by Injadalimumab 40mg SC on, day 8 with improvement in skin lesions as well. PASI score reduced to 15.6. Post adalimumab therapy, his anaemia improved as well. **Discussion:** This case depicts the efficacy of biological therapy- adalimumab in recalcitrant psoriasis, psoriatic arthritis and anaemia of chronic disease.

**Keywords:** Psoriasis, Adalimumab, Dermatology

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#### Introduction

Psoriasis is common, chronic, inflammatory and proliferative condition of the skin, characterized by erythematous plaques with classical white scales. Psoriatic arthropathy is a seronegative inflammatory arthritis, which occurs in up to 40% of patients with moderate to severe psoriasis. It can be destructive to joints and adds considerably to the impairment of quality of life and in psoriatic patients. Adalimumab is the first fully human anti-TNF $\alpha$  monoclonal antibody. It blocks TNF  $\alpha$  interactions with the p55 and p75 cell surface receptors.<sup>(1)</sup>

#### Case report

A 45-year old male was apparently well 3 years back when he developed multiple mildly itchy raised scaly lesions over bilateral lower limb which then gradually progressed to involve both upper limbs, back, abdomen and scalp over a period of 3-4 months with a PASI score of 34.23. He then developed pain in bilateral knee joint, wrist joint and small joints of hand which started 9-10 months after appearance of skin lesions. Pain was severe with

limitation in walking and difficulty in carrying out routine activities. History of aggravation of lesions and itching during winters was present and no history of fever or burning micturition. There was no history of diabetes mellitus, hypertension, tuberculosis, asthma, cardiac disorders, jaundice, any surgery or trauma or any history of drug intake prior to onset of symptoms. Initially patient was started on topical treatment with coal tar with clobetasol propionate (0.05%) and salicylic acid (3%) ointment, with temporary relief in itchy lesions. After 6 months, patient returned with flare and arthritis. Then baseline investigations including complete blood count, liver function tests, kidney function tests, random blood sugar and urine examination were done which were within normal limits. He was started on methotrexate 15mg/week which was continued for 12 weeks with other supportive treatments. Essential investigations were repeated and methotrexate was discontinued in view of anaemia (haemoglobin - 6.6gm%). he got blood transfusion done (2 units of packed red blood cell) with no adverse reactions. He was then shifted to cyclosporine 100mg twice daily. Patient improved initially but due to development of pustular lesions

and persistent anemia, cyclosporine was withdrawn after 2 months. On getting investigations done, hemoglobin was 6.7%, general blood picture showed normocytic hypochromic anemia. Four units of PRBC was transfused with injectable and oral iron supplementation and eventually his hemoglobin was 10.1gm%. Oral acitretin was then added 25 mg twice daily and continued for 4 months but compliance was poor. Patient again came with flare of psoriasis and arthritis and presented with multiple well defined hyperpigmented, erythematous plaque with micaceous scales present over both lower limbs, upper limbs, abdomen and back (Figure 1 and 2). Diffuse white scales present over scalp with discolouration of nails with pitting, subungual hyperkeratosis, onycholysis and beau's lines present. Hyperkeratotic plaques with fissures were present over palms and soles. In view of the recalcitrant skin lesions and severe arthritis, adalimumab was planned. Patient was investigated and TB quantiferon gold came out to be positive and he was started on antitubercular therapy prophylaxis with rifampicin 600mg, isoniazid 300mg, and pyridoxine 20mg. Adalimumab 80mg was injected subcutaneously (SC) on day 1 with marked improvement in joint pain within 3 days followed by injection adalimumab 40mg SC on day 8 with improvement in skin lesions as well (figure 3, 4,5). PASI score reduced to 15.6. Post-adalimumab therapy, his anaemia improved as well.



**Fig 1 & Fig 2: Before adalimumab therapy**



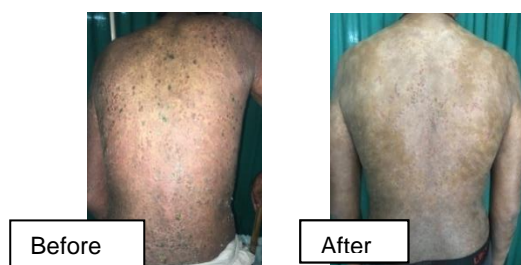
**Fig 3 & 4: Improvement after 2 sessions of Adalimumab injection**

## Discussion

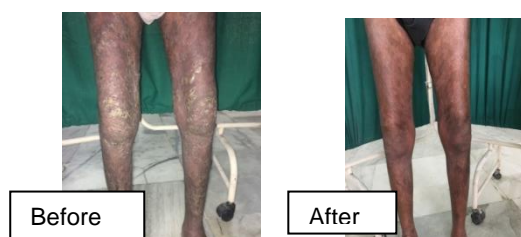
Psoriasis is a group of common, chronic, disfiguring, inflammatory and proliferative conditions of the skin, associated with systemic manifestations

in many organ systems. The most characteristic lesions consist of red, scaly, sharply demarcated, indurated plaques, present particularly over extensor surfaces and scalp.<sup>(1)</sup> Psoriatic arthritis is a seronegative inflammatory arthritis, which occurs in up to 40% of patients with moderate to severe psoriasis. It can be destructive to joints and adds considerably to the impairment of quality of life and symptoms such as fatigue suffered by patients with psoriasis.<sup>(2)</sup>

Adalimumab is a first fully human anti-TNF $\alpha$  monoclonal antibody. It blocks TNF interactions with the p55 and p75 cell surface receptors. It is given in the dose of 80 mg SC on day 1 followed by 40 mg SC on day 8 and then every 2 wks for 12 wks. It has moderately painful injection site reactions and can also trigger infections (TB and opportunistic infections) and malignancies. Reversible side effects include cytopenias, and exacerbation of and new onset of congestive heart failure (CHF). Baseline monitoring is done which includes tuberculin testing with PPD, LFT, CBC and hepatitis profile. PPD should be repeated annually and periodic assessment of CBC and LFT is required. It is a pregnancy category B drug.<sup>(3,4)</sup>



**Fig 5 & 6: Improvement after 2 sessions of Adalimumab injection**



**Fig 7 & 8: Improvement after 2 sessions of Adalimumab injection**

Eligibility criteria: Patients must have severe disease as defined in (A) and fulfill one of the clinical categories outlined in (B):

(A) Severe disease defined as a psoriasis area severity index (PASI) score of 10 or more (or a body surface area (BSA) of 10% or greater where PASI is not applicable) AND a Dermatology Life Quality

Index (DLQI) of >10. In exceptional circumstances (for example, disease affecting high-impact sites with associated significant functional or psychological morbidity such as acral psoriasis), patients with severe disease may fall outside this definition but should be considered for treatment

(B) Fulfill at least one of the following clinical categories : Where phototherapy and alternative standard systemic therapy are contraindicated or cannot be used due to the development of, or risk of developing, clinically important treatment related toxicity, Are intolerant to standard systemic therapy, Are unresponsive to standard systemic therapy, Have significant, coexistent, unrelated comorbidity, which precludes the use of standard systemic therapy such as cyclosporine or methotrexate, Have severe, unstable, life-threatening disease.<sup>(5)</sup>

FDA approved Indications of Adalimumab include Rheumatoid arthritis, Psoriatic arthritis, Juvenile idiopathic arthritis, Ankylosing spondylitis, Crohn's disease, Ulcerative colitis and moderate to severe chronic plaque psoriasis. Other dermatological indications include Hidradenitis suppurativa, neutrophilic dermatosis, Wegener's granulomatosis, sarcoidosis, pemphigus and alopecia areata.<sup>(6)</sup>

Definition of Disease Response : Adequate response to treatment is defined as either a 50% or greater reduction in baseline PASI (PASI 50 response) (or % BSA where the PASI is not applicable) and a 5-point or greater improvement in DLQI or a 75% reduction in PASI score compared with baseline (PASI 75 response) <sup>(6,7)</sup>

Other biologicals indicated in psoriasis are TNF- $\alpha$  inhibitor (Etanercept , Infliximab, Adalimumab, Golimumab, Certolizumab ), IL-12 & IL-23 inhibitors (Ustekinumab, Apilimod ), IL-17A inhibitors (Secukinumab, Ixekizumab), IL-17 receptor Inhibitor (Brodalumab) , T Cell Inhibitors (Abatacept), IL-23 inhibitors (Guselkumab, Tildrakizumab), PDE-4 Inhibitor (Apremilast) and others are Alephcept, Itolizumab .<sup>(8,9)</sup>

This case depicts the efficacy of biological therapy- adalimumab in recalcitrant psoriasis, psoriatic arthritis and anaemia of chronic disease.

**Source of Support: Nil**

**Conflict of interest: Nil**

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**Case Report****Thyroid Disorder presenting with behavioural symptoms depicting the importance of consultation liaison in psychiatry: A case report****Gureesha Singh<sup>1</sup>, Apoorv Yadav<sup>1</sup>, Arti Tyagi<sup>2</sup>, Sandeep Choudhary<sup>3</sup>**

1. J R III, 2. Asst. Professor, 3. Prof &amp; Head

Department of Psychiatry, NSCB Subharti Medical College,  
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**Background:** This patient came to our psychiatry OPD with the complaints of self-muttering, self-smiling, poor self-care, wandering behaviour, decreased sleep and appetite along with drastic weight loss. We managed with medication and investigation. Diagnosis was found to be auto immune thyroiditis and was referred to the endocrinologist for better management. **Aims:** To stress the importance of consultation liaison in psychiatry. **Settings and design:** Case Report **Materials and Methods:** The patient approached the Psychiatry OPD with behavioural symptoms, which had been continuous from past 1 year along with drastic weight loss. **Statistical analysis used:** None **Results and Conclusions:** This case emphasizes the importance of consultation with other medical departments for the proper management of a psychiatric patients.

**Keywords:** Thyroiditis, psychiatry, behaviour**Address for Correspondence:** Dr.Gureesha Singh, Satyam Hospital, Patel Chowk, Pathankot, Punjab - 145001  
**Mail:** [gurisha11@gmail.com](mailto:gurisha11@gmail.com)**Contact:** +91-8193836400**Introduction**

Thyroid hormones are very important during brain development as well as in the adult brain. Fluctuations in the levels of thyroid hormones at any stage during development or throughout the life can lead to various psychiatric manifestations<sup>(1)</sup>. These fluctuations in T3, T4 and TSH can lead to various psychiatric disorders like depression, mania, psychosis etc. Although altered levels of free serum thyroxine (FT4) have been found in patients with psychiatric disorders such as schizophrenia and affective disorders, but findings have been inconsistent<sup>(2)</sup>. There has been difference found in the serum levels of TSH and its response to thyrotropin - releasing hormone (TRH) in the healthy controls as compared to patients with psychiatric disorders, including depression, BPD and mania<sup>(3)</sup>.

The nervous and immune systems have been known to coordinate with each other to influence each other's function. This kind of bidirectional communication is helpful to maintain the homeostasis in the body<sup>(4)</sup>. It has been concluded from many studies that thyroid dysfunction is generally present in patients with psychotic as well as affective disorders. However, autoimmune thyroid disease has been more commonly seen in patients with psychotic disorders compared to affective disorders<sup>(5)</sup>.

Here is a case report of a 30 year old women presenting in the psychiatry OPD with grossly psychotic symptoms, and after getting investigations done, her TSH levels turned out to be >60.0

**Case report**

A 30 year old female presented with the complaints of self-muttering, self-smiling, poor self-care,

wandering behaviour, decreased sleep and appetite along with drastic weight loss. Her these complaints started almost an year ago.

As stated by informant, her husband, patient was apparently asymptomatic around one year back when one day she was alone at home and saw a young boy being murdered and hanged to death in the neighbourhood. After seeing that, she got afraid and called up her husband and told him what all happened. Same day she developed headache and got panic. She went to some pandit that day. Next day she developed body aches and started telling everybody that ghosts are sitting over her shoulders. She was taken to multiple pandits and maulvis for the treatment of above symptoms. Within next few days, she was seen talking to herself, sitting alone and writing something on the table with her index finger. She used to laugh on her own and stopped talking to everybody at home. She started remaining to self. Her daily household activities started suffering as she stopped taking care of the self or the children or cooking food. Her sleep deteriorated, she stopped sleeping at night and once her family members slept, she used to get and roam inside the house whole night. From past one month, her appetite was decreased and she used to eat only on being forced. She was taken to many pandits for treatment but was never given a medical treatment.

Patient had no family history of any kind of psychiatric illness nor she had history of any physical illness. She was married around 15 years back and had two son and one daughter of 10 year, 6 year and 3 years respectively. Her parents are alive and healthy and there were no interpersonal problems or issues between the family members, as they all were very supportive towards family members. Patient had history of bidi(nicotine)

consumption since the age of 13-14 years. Before illness, she was a socially interactive person and had good relations with her neighbours.

While doing MSE, patient was uncooperative and didn't speak anything, so Kirby's MSE had to be done. Her finding in general reaction and posture were: untidy, had to be fed, and had occasional episodes of anger outbursts. Her behaviour towards examiner was resistive, irritable and non-compliant. 3. Her voluntary postures were comfortable and no abnormal posturing was there. She was alert and at times, suspicious towards the examiner. Her eyes were opened during the examination, didn't give attention to the questions being asked, no fixed 4. gaze was attained and there was no response to sudden movements of hand towards patient's eyes. She didn't respond to any of the commands, active uncooperativeness was seen. There was normal movements of limbs. Her muscle tone was decreased and there was no urine or faecal incontinence. There was no emotional response when her family members were talking to her, she kept ignoring them. Patient was mute consistently.

On physical examination, her built was poor and pallor was present. BP was 90/70 mmHg. There was no abnormality on examination of cardiovascular, whole abdomen, respiratory and central nervous system. She was started on Tab Olanzapine 5 mg BD, Cap Dexorange 1 BD, Cap Sompraz-D 1 OD. Fluids RL and NS were started due to her low blood pressure. Her all the routine investigations i.e complete blood count, urine routine and microscopy, liver function tests, kidney function tests and thyroid stimulation hormone level were done. Her Hb was 8.1, haematocrit=26.8, MCV=76, MCH=23.2, MCHC=30.4. Her CT-head was also done which came out to be normal. Rest, urine routine and microscopy along with LFTs and KFTs came out be normal. Her thyroid stimulating hormone came out to be >60.0 which pointed towards autoimmune thyroiditis.

Thus patient was immediately referred to the endocrinologist available.

### Discussion

It is concluded from the above case report that sometimes the psychiatric symptoms can be present due to some organic cause also. Her TSH level >60.0 points towards the possibility of some autoimmune thyroid disorder. Thus, in order to treat such disorders, we psychiatrists need to work in liaison with the other specialities., for example endocrinology in this case for the better treatment of the patient.

**Source of Support: Nil**

**Conflict of interest: Nil**

**Acknowledgement: None**

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**Case Report****The Problem of Delayed Diagnosis in a patient of Frontal Lobe Neoplasm presenting in a psychiatric OPD: A case report****Vivek Kumar<sup>1</sup>, Apoorv Yadav<sup>2</sup>, Gaurav Srivastav<sup>3</sup>**1. MD, Associate Professor, 2. J R III, 3. J R II  
Department of Psychiatry, NSCB Subharti Medical College,  
Swami Vivekanand Subharti University, Meerut, INDIA-250005**Abstract**

**Background:** The patient came to our psychiatry department with complaint of decreased personal care along with decreased social interaction and anger and irritability with incontinence. We managed with medication and investigation. Diagnosis was found to be frontal lobe neoplasm and was referred to neurosurgery department for better management. **Aims:** To stress the importance of considering neurological/organic etiology in patients presenting with atypical psychiatric symptoms. **Settings and Design:** Case report. **Methods and Material:** Patient approached us in psychiatry outpatient facility and was admitted to psychiatry ward. Atypical presentation of symptoms with no improvement on psychotropics prompted us to consider an organic pathology. **Statistical analysis used:** None **Results and Conclusions:** This case emphasizes the importance of neuroimaging in a psychiatric case.

**Keywords:** Psychiatry, psychotropics, frontal lobe**Address for Correspondence:** Dr. Apoorv Yadav, 1/124-D, Delhi Gate, Near Raja ki Mandi Railway Station, Agra-282002.**Mail:** [apoorvyadav92@gmail.com](mailto:apoorvyadav92@gmail.com)**Contact:** +91-7507442280**Introduction and Review**

The association between frontal lobe tumours and psychiatric symptoms is well known and has been abundant in medical literature.<sup>1</sup> An estimated 2% psychiatric patients admitted to tertiary care facilities are found to have brain tumours.<sup>2</sup> The corresponding prevalence in general population is estimated to be 25 per 100000, thus stressing the need for neuroimaging in psychiatric patients with atypical symptomatology, course and progression of illness.<sup>3</sup>

Psychiatric symptoms are often the initial and occasionally the solitary manifestations of a cerebral space-occupying lesion. They can present with mood symptoms, psychotic symptoms or personality changes, irritability, agitation, excitement, hallucinosis and thus complicate the clinical picture.<sup>4-7</sup> The characteristic sensory and motor deficits appear late and behaviour changes are what are seen first which prompt the patient to be referred to the psychiatrist. These behavioural symptoms are generally a result of the loss of function or disability which is in fact a result of tissue destruction due to the cerebral lesion and the resultant altered cerebral function.<sup>8</sup> This is why in a lot of cases, the correct diagnosis is only made after lengthy and needless psychiatric treatment, and in some unfortunate cases, only at autopsy.<sup>9</sup> With this case report we aim to specifically show how frontal lobe tumours can be disguised as a psychiatric disturbance.

**Case Report**

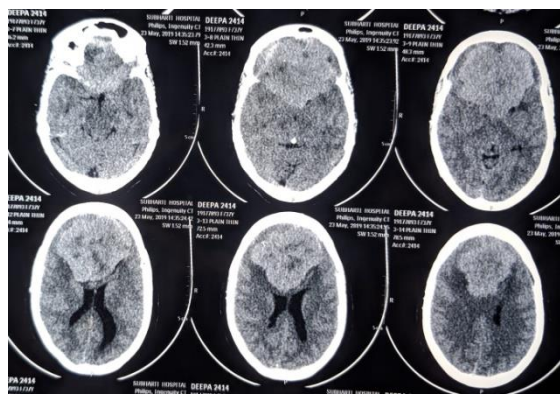
A 37-year-old female presented with complaints of impaired self-care, social withdrawal, anger and irritability for the last 5 years and incontinence for the last six months. The patient was complaint with treatment for the last 4 years from a tertiary care psychiatric institute, where diagnosis of depression with psychotic symptoms was kept. However, she did not show significant improvement in symptoms over the years.

Further history revealed that the patient had gradually left doing household chores, urinating and defecating in her clothes, did not make efforts to clean herself after incontinence and fleeting persecutory ideas. Sleep and appetite were normal. There was no history of depressed mood, guilt feeling, worthlessness, hopelessness, suicidal ideas, suspiciousness, hearing of voices, elevated mood, grandiose ideas, repetitive behaviour, forgetfulness, seizure and abnormal body movements.

General physical examination was normal except for mild pallor. Neurological examination revealed normal deep tendon reflexes and plantar flexor response was elicited. Patient mental state examination revealed normal gait with slow pace, psychomotor activity was markedly reduced, though patient was conscious and aware but could not be easily aroused, affect was blunt with restricted range, thought productivity was markedly reduced. Patient routine blood investigations were within normal limits. Further on investigation patient EEG findings was normal. Patient NCCT brain revealed "A large well defined hyper dense lobulated mass

lesion of size 8x7x6 cm is seen in bifrontal region with central areas of hypodensity and few foci of calcification within it. The lesion was causing mass effect over the frontal horn of bilateral lateral ventricles". A diagnosis of intracranial space occupying mass lesion was made by the consultant radiologist and CEMRI advised.

This case was referred to the neurosurgery department where a diagnosis of frontal lobe meningioma was kept where she was advised surgical intervention.



**Fig. 1:** NCCT of the patient shows "A large well defined hyperdense lobulated lesion of size 8x7x6 cm is seen in bifrontal region with central areas of hypodensity and few foci of calcification within it.

## Discussion and Conclusion

Certain symptoms should therefore nudge the psychiatrist in favour of a neuroimaging. These are psychiatric symptoms not responding to first line medications, sudden onset psychiatric symptoms that are not otherwise seen and neurological signs like headache, seizures, absence of core psychiatric symptoms, eccentric course of presenting symptoms, etc.<sup>10</sup> Other gradual non remitting symptoms like dysphasia, forgetfulness, irritability and poor self-care should also be paid more attention.<sup>9</sup> Alterations in the level of consciousness, loss of sphincter control, reappearance of primitive reflexes, problems in gait, tone, posture are also seen.<sup>11</sup> If identified promptly and correctly then disability and treatment burden on the patient can significantly be reduced.

**Source of Support: Nil**

**Conflict of interest: Nil**

**Acknowledgement: None**

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## Original Study

### Knowledge Management Reengineering (KMR) Building Smart Libraries

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#### Abstract

In this paper 'Re' has been taken from *Research* for 'engineering' for needful and continuous search again and again for perfect knowledge management practices/ models in libraries. Over the last two decades our libraries has been developed because of Knowledge Management Reengineering (KMR) only due to information communication technology (ICT) savvy library and information science professionals from 'waiting' time to 'real time' information delivery, we achieved smart libraries due to smart builders of library science and information technology (IT) professionals by amalgamating the software technologies in knowledge management best practices for required information delivery in technological savvy environment. The paper elaborates the academic libraries relation with knowledge management reengineering outputs and its essentialities.

**Keywords:** Knowledge Management Reengineering, Real Time Information Delivery, Information Acquisition and Retrieval, Knowledge Management Integration, Five Laws of Library Science, Information Communication Technology.

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#### Introduction

Libraries traversed a lot from traditional knowledge management (KM) system to library 1.0 and then towards library 2.0, which enhanced the information integration through knowledge management reengineering and practices due to continuous and nonstop research and development work by KM experts and IT professionals, this bonding gave the wonderful outputs, which are still going on.

According to time and needful pace in the light of ICT, knowledge management has been improved/reengineered by smart library science professional with the help of IT professionals, which may be known by knowledge management reengineering (KMR), it is an updated and enhanced terminology of knowledge management, being practiced in our traditional converted modern libraries. Along with the time passed away, libraries been empowered by information communication technology as an infrastructure, and an e-resources as its collection. Traditional catalogues been replaced by online catalogues and digital collection. Where traditional collection was accessible within limited defined time and periphery, on the other hand digital collection is accessible pan globe 24x7 without any physical boundaries.

Societies and institutions has been aware that knowledge is one of important asset which has to managed accordingly in the paperless environment, so, nowadays KM is considered as an important task to achieve the collection's acquisition's right & safe preservation, and real time usage with effectiveness.

This paper elaborates relationship between knowledge management practices and need of its reengineering, as both are compatible for needful output and are two parts of same coin. In short reengineering is dedicated to changing refined

processes through technological innovations, interpretations, and implementations.

#### Purpose

Knowledge management is strongly in practice to preserve the collection and serve the same to users. To write the paper means, is to summarize the useful and needful tools, which are enhancing the libraries in redefined way that other library professionals can also be able to:

- a. Understand the technology behind reengineering
- b. Identify the needful tools and technologies
- c. Identify the main features.
- d. Identify the impact on modern libraries.
- e. Justify five law of library science in modern scenario.

#### Literature Review

As literature review, few of author's impressions on reengineering has been taken to understand the concepts, as mentioned below:-

Dhiman & Yadav (2014)<sup>1</sup> concluded that institutional repositories are the digitized objects put online for the access of scholars round the clock. They are getting attention of librarians worldwide and presenting scholarly output to the vast community of users. Dinkar & Verma (2009)<sup>2</sup> extend the output that data mining is rapidly expanding field to find interesting pattern in large amount of data. Explosive growth in stored data generated an urgent need for new techniques and automated tools that can intelligently assist us in transforming vast amount of data into useful information and knowledge. Hammer (1990)<sup>3</sup> says that power of modern IT redesign our public processes to achieve dramatic performance. Roth, Waterman & Lenat (1983)<sup>4</sup> elaborated the knowledge management reengineering as transfer and transformation of problem solving expertise from knowledge source to

programme, is the heart of expert system development process. Shingote & Malviya (2011)<sup>5</sup> analysed that ICT system is growing very fast in mobile, internet, multimedia, and network technology; and applied to international environment. Idea of online education, researches, information, paper publication, digital library is getting support from all quarters. Singh & Tyagi (2019)<sup>6</sup> emphasized that in automatisations and digitization of library services open source softwares (OSS) are leading to best knowledge management practices, because of customization facility and 24x7 availability of library platforms without any wall worldwide.

**Software Engineering in KM**

Jawdekar (2007) elaborated that 'software engineering technology is applied for software development through engineering methods'. Whatever the knowledge based system has been developed, is happened due to software engineering existence only. Goal of knowledge management reengineering is similar to software technology and engineering from an art to engineering discipline. Now paradigm shift has been transferred from first generation to second generation of experts. Quick knowledge sharing been happened because of research and development through knowledge management engineering and reengineering in need. R&D in KM engineering and reengineering resulted in several achievements relevant to software engineering for knowledge management integrations. Vary type of working models may be constructed to capturing the functional aspects of data flow for decision making. Relationship to real time work output through software engineering been happened due to continuous reengineering. Software engineering defines problem solving methods as architecture, an assumed framework or functionality.

Digital revolutions and technological advancements have made possible for library and information science professionals to get benefit from innovations across the world. Technology is now being used to reengineering knowledge based system globally to handle knowledge management.

**KM engineering and reengineering**

Firstly existed knowledge management practices been transferred verbally from generation to generations, then preserved in form of print repositories via libraries, and now available in eFormat. Thus continuous reengineering changed the knowledge management system by redefining and redesigning under the impact of dynamic information communication technology.

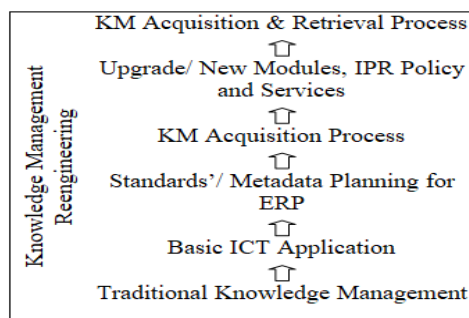
**Shifting from 'waiting' to 'real time' information delivery**

Engineering and reengineering of KM has been possible only due to ICT's applicability in today's libraries. Traditional KM is being done to gather, update, distribute and information usage. But with the continuous engineering, enterprise resource planning (ERP) system has been developed. KM system is developed a process to provide information, system reengineering motive will be loud and clear. In the form of an integrated expert

system of database, library professional, and IT professional make the hands together to built the strong KM system.

**Interaction between KM and Reengineering System**

Every success story have its own history of failure attempts. Existing process can't be replaced by new system, as manpower don't accept it easily, N number of examples [Flow Chart: 1] are traceable pan globe. KM and its reengineering are as the part of same coin to make more valuable and efficient processes. Sequence of KM and reengineering may be as below:-



**Flow Chart: 1**

**Reengineering via ERPs**

All the developments must be in sequence for needful reengineering as enterprise resource planning (ERP), which are being in use in reengineering the processes which leads organizational working design. Five Cs may be integrated with the said issue i.e. conversion, connection, communication, collaboration, and creation. An integrated knowledge management system (ILMS) flow [Flow Chart: 2] has been elaborated here from an ERP, which has been implemented in Amity University Greater Noida.

|                |   |
|----------------|---|
| Acquisition    | ⇒Budget ⇒ Vendors ⇒ Order ⇒ Delivery of item..                          |
| Serial Control | ⇒Budget⇒Vendors⇒Order⇒Delivery of item⇒eNotice to vendor in need..      |
| Cataloguing    | ⇒MARC formatted/ Z39/ Data Importing..                                  |
| Patrons        | ⇒Categories⇒Registration⇒CheckIn/Out of items⇒NoDues..                  |
| Circulation    | ⇒CheckIn/Out⇒System generated eNotices⇒FineCollection⇒NoDues..          |
| Administration | ⇒Defining system environment variables / modules ..                     |
| Reports        | ⇒Customised reports generation ..                                       |
| Tools          | ⇒Patrons/Circulation/Catalogue/Calander/LogViewer/News/Task Scheduler.. |

Service to User

**Flow Chart: 2**

Features of ERP are as below:-

- Analysis representation through graph and data matrix,
- Decision making flow with defined restrictions,
- Information capturing efficiency at source,
- Information subsumation processing for output,
- KM multiprocess technology,
- Less manual, more automated work,
- Less paper trail,
- Log history traceable,
- Mapping information flow,
- Modules for parallel activities on integrated software package for user service,
- Working output is reviewable for needful action.
- Saves the time of users and administrators.

**Information Integration and Services**

The best practices always been taken to improvise the libraries, these may be organized accordingly to its functionality. Happened transformations are as below:-

**9.1 Semantic web-** In place of accessing the single information, multiple information is available due to semantic retrieval system of web, where multiple pages are being tagged to access vary and integrated information.

**9.2 BarCode to QRCode to RFID-** Barcodes are black paralleled linear/ one dimensional lines have basic information and scanable by optical scanner has been replaced by QRCode (Quick Response), having multiple information of defined item. But in the process, RFID emerged, which can store much more information and can be accessed in dynamic way by using radio frequency.

**9.3 Print to E&D Library-** Digitally born and digitized study material has taken place along with print material which is accessible through internet 24x7 without any physical wall, which saves the time and space.

**9.4 Websites to Mobile Apps-** Mobile apps has proved its utility as a great adon in surfing electronic information apparently desktop websites.

**9.5 Card Catalogue to MARC-** Previously we spent/ ruin a lot of time in searching the bibliographical information, available on cards, and stacked in wooden boxes. But that has been obsolete due to emergence of machine readable catalogue (MARC) structure, which gave the birth to online public access catalogue. Now user may fetch the desired information electronically, either using simple or advance searches.

**9.6 Cable to WiFi-** Although internet connectivity is networked through fibre cables but now user is in easy choice to access the internet without using any wire, i.e. wireless fidelity.

**9.7 Offline to online** is reengineering of state of connectivity and fast pace to information accessibility, which gave the liberty from disconnectivity.

**9.8 Register to ILMS-** Knowledge management reengineering down the paper work and underlined the integrated library management system, available in *proprietary* and *open source* category. Open source are comparatively more popular because of customization liberty.

**9.9 Metadata Engineering** is being practiced to develop/ update the effective communication between end users that given information of set of data about other data can be concise.

**9.10 Library 1.0 to 2.0-** Library 2.0 environment tools may grouped in five categories as collaborative publishing tools, collaborative service platform, content delivery, synchronous communication, and hybrid application. Web 2.0 is the enunciator of library 2.0 to emphasize from '*individual*' to '*community sharing*' through API, AJAX, Blogs, Social Book Marking, HTML Feed, Instant Messaging (IM), Mashups, PodCasting, RSS Feed, SMS Enquiry, Social Networking, Streaming Media, Tagging, Toolbar, VODcasting, Wikis applications and tools [Table: 1]

|             | Category                       | Tools   |
|-------------|--------------------------------|---|
| Library 2.0 | Collaborative publishing tools | <ul style="list-style-type: none"> <li>• Blogs</li> <li>• Wikis</li> </ul>  |
|             | Collaborative service platform | <ul style="list-style-type: none"> <li>• Social Book Marking</li> <li>• Social Networks</li> <li>• Tagging</li> </ul>   |
|             | Content delivery               | <ul style="list-style-type: none"> <li>• Short Message Service (SMS) Enquiry</li> <li>• RSS Feed</li> <li>• HTML Feed</li> <li>• PodCasting</li> <li>• VODcasting</li> <li>• Streaming Media</li> </ul> |
|             | Synchronous communication      | <ul style="list-style-type: none"> <li>• Instant Messaging (IM)</li> </ul>  |
|             | Hybrid application             | <ul style="list-style-type: none"> <li>• Application Programming Interface (API)</li> <li>• Asynchronous JavaScript and XML (AJAX)</li> <li>• Mashups</li> <li>• Toolbar</li> </ul>                     |

**Table: 1**

- Short Message Service (SMS) Enquiry** is being using over mobile networks for the delivery of short messages for patrons.
- Rich Site Summary/ Real Simple Syndication (RSS)** feeds technology allows to ePublish the contents using XML.
- HTML Feed** is basically RSS feed containing HTML codes to have interaction between peer to peer to sharing the RSS results.
- PodCasting** contains digitally audio media files capturing over internet for playing on portable media devices.
- VODcasting** is an amalgamation of VOD (Video On Demand) + casting, is as well as podcasting where audio files takes place but vodcasting is for delivering video files.
- Streaming Media** where audio video media streaming takes place as an application; it happens over a computer network for end user and delivered by media provider.
- Blog** is lightweight publishing tool and maintained in website form by an individual or group of individuals as description of events, commentary, videos, and graphics...
- Social Book Marking** is the name of searching, storing, and managing bookmarks using metadata to save web links to remember and share the same with others.
- Social Networks** are web based interfaces using defined softwares for user communities to sharing activities and interests.
- Tagging** stands for piece of information, it may be a map, picture, video clip, blog entry... used for bookmarks, computer file, digital images, web pages...
- Wikis** are collection of multiple web pages to contribute needful contents as communication tool by libraries to enable social interaction.
- Instant Messaging (IM)** is real time instantaneous communication using text format between two or more person.

- m. **Application Programming Interface (API)** may be known as source codes, working as interface in operating systems, system libraries where particular programming language is required.
- n. **Asynchronous JavaScript and XML (AJAX)** is interrelated cross platform web based development techniques usable in computer architecture, operating systems, and web browsers with JavaScript and document object model compatibility.
- o. **Mashups** are two or more web based integrated tool/ applications to combine multiple data sources into single, in short it's hybrid of social networks, instant messaging, content aggregators, blogs, streaming media, wikis for new services.
- p. **Toolbar** contains buttons', menus', icons' panel as Graphical User Interface (GUI); commonly used as add-ons for web browsers, Microsoft office, and open office etc.

### KMR Modeling Features

Building a working model through software is to realizing problem solving capabilities by building computer model. Several alternatives may happen to organizing a library, and indexing them accordingly.

- a. Modeling process is revisable in every stage,
- b. Process is dependent on knowledge management expert engineers,
- c. Cyclic and infinite process,
- d. New model may guide for further knowledge acquisition,
- e. New observations leads to refinements to sharpen the model.

Reengineered libraries are different from previous library system. Due to reengineering, today's library's operations are focused and task oriented. An operation has been shifted to defined ICT based system, which leads to myriad changes. For instance library staff may access the whole information by using an accession number/ barcode of item and can fetch the details of its past users along with parallel information i.e. procurement process to circulation. Developments of personal digital assistants (PDAs) and such gadgets gave the pace to KM engineering and reengineering, which leads to-

- a. Capturing the information from right source,
- b. 24x7 connectivity,
- c. Creating atmosphere for tech savvy users' and professionals,
- d. Integration of conceptual model to real working model to save time and money,
- e. KM get stronger and effective,
- f. Knowledge based systems (KBS) development as expertise model,
- g. Libraries are planning to move towards process based approach through reengineer service delivery setup,
- h. Link up the activities with information repository for needful filtered results,
- i. Making users' lives much easier,
- j. Organized outcomes,

- k. Subsume efforts for real time information processing/ delivery,
- l. Traceable history,
- m. Treat resources centralizally,
- n. Wikipedia in place of print encyclopedia,
- o. Real time eContent submission & delivery through blogs, podcasting, wikis, webpages using internet,
- p. Personalized and dynamic OPAC,
- q. Online social networking and sharing,
- r. Online information conversion,
- s. Multimedia along with text tutorials,
- t. Folksonomy (eTagging) in place of taxonomy (classification),
- u. Customization through open source codes,
- v. Collective intelligence on ERPs, repositories etc,
- w. Fulfills five laws of library science condition.

### Conclusion

This paper portrayed the adons duly refined as developments via reengineering of KM as process in library and information science field over last 20 years, that reengineering and KM are tight fixed together. Reengineering have the capability to bundle the KM system. KMR fully supports and prove fifth law of library science '*Library is a growing organism*' propounded by Dr S R Ranganathan, father of library science in India. Librarians who may also called as Cyberarians in this electronic age due to KMR, are adopting relevant technologies accordingly for their library 2.0 updation. Discussed tools can be implemented for library 2.0 environment without any confusion and delay.

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## Original Study

### Contraceptive training programme among Indigenous Systems of Medicine Practitioners

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#### ABSTRACT

**Background:** Contraceptive training programme among Indigenous Systems of Medicine Practitioners (ISMPs) was very important training programme being implemented by Subharti Sewa Sansthan in 12 blocks of Meerut district. **Objective:** The objective of trainings was to provide family planning services in each village of the Meerut district. **Results:** The result of training showed that 1484 (98.93 %) ISMPs were fully trained to provide family planning services. The ISMPs' knowledge and skills in Family Planning counseling improved. It was also observed that all trained ISMPs were having an important role in National Health program. They referred 1349 cases of Tubectomy, 1088 copper-T insertion and 03 cases of Vasectomy to PHC/CHC or district hospital. After trainings programme 02 Follow ups, 04 monitoring visits, 12 Reproductive Child Health (RCH) camps 12 workshops were organized. 03 newsletters were published. There are frequent Follow up and monitoring visits required for the sustainment of acquired knowledge and skills of ISMPs.

**Key Words:** ISMPs, Trainings, Follow ups, Monitoring, RCH Camps, Newsletters, Workshop

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#### Introduction

India has a large number of Indian System of Medicine and homeopathic practitioners. Indian System of Medicine (ISMPs) become an integral part of village community and have strong influence on the health seeking practices of rural people. The main reasons are short waiting time, low cost, convenient hours for consultation and respectful attitude. Recognizing the role and potential of ISMPs, it was suggested that they can play a vital role in improving access to family planning services. So, this contraceptive training programme among Indigenous Systems of Medicine Practitioners (ISMPs) was very important training programme being implemented by Subharti Sewa Sansthan in 12 blocks of Meerut district. [1,2]

#### Objective of the trainings

The objective of trainings of ISMPs was to provide family planning services in each village of Meerut district. The training programme aimed to enhance the Family Planning adoption rate among eligible couples in the Meerut district by involving the ISMPs as family planning counselors and providers of non clinical family planning services.

#### Materials and Methods

A training Programme was carried out among ISMPs, out of 2437 ISPMs, 1484 ISMPs were selected randomly for trainings in 12 blocks named Saroorpur, Sardhana, Daurala, Mawana, Hastinapur, Kila Parikashatgarh, Macchra, Rohta, Jani, Meerut, Rajpura & Kharkhoda in Meerut district. [3]

Information about proper address, status of professional qualification, clinic timings and areas of specialization were collected. [4] Written informed consent was obtained from ISMPs.

Before each training session, a pre-training test was conducted to assess the knowledge of ISMPs about the family planning services. The traditional and modern teaching methods such as classroom lectures, PPT presentation, OHP demonstration, group discussions, use of charts, flip charts, role plays etc. were adopted for training. PHCs/CHCs, Panchyat Bhawan, Block office, educational institutions were chosen as training venue. After completion of each training session, a post training test was conducted to assess the improvement. Certificate of participant, conference bag, record sheet, handouts, self addressed 10 post cards, pamphlets, stationary material like pad, register, pen, some packets of condoms and oral pills, one laminated check list of OCP and referral slips were distributed to all participants. ISMPs were motivated to keep all the records of their clients and activities.

Both qualitative and quantitative techniques were used for data collection. Data were represented using percentage. The data statistics were analyzed by using SPSS 19 software packages. Chi square test was done to see the difference in two follow-ups and four monitoring after training.

## Results

Table no.1 : Total ISMPs and their number of trainings

| S. NO | Blocks of Meerut District | Total ISMPs in each Blocks | Total no. Of ISMPs trained | No. of completed trainings |
|-------|---------------------------|----------------------------|----------------------------|----------------------------|
| 1.    | Mawana                    | 283 ( 11.61)               | 129 ( 08.69)               | 06                         |
| 2.    | Hastinapur                | 186 ( 07.64)               | 118 ( 07.95)               | 06                         |
| 3.    | Kila Parikshatgarh        | 210 (08.61)                | 141 ( 09.50)               | 07                         |
| 4.    | Machhra                   | 196 ( 08.05)               | 92 ( 06.19)                | 04                         |
| 5.    | Jani                      | 209 (08.58)                | 109 ( 07.34)               | 06                         |
| 6.    | Rohta                     | 146 ( 05.99)               | 116 ( 07.81)               | 06                         |
| 7.    | Saroorpur                 | 170 ( 06.98)               | 117 (07.88)                | 06                         |
| 8.    | Rajpura                   | 256 (10.50)                | 171 (11.52)                | 09                         |
| 9.    | Meerut                    | 186 ( 07.64)               | 109 (07.81)                | 05                         |
| 10.   | Daurala                   | 218 ( 08.94)               | 135 (0 9.09)               | 06                         |
| 11.   | Sardhana                  | 217 (08.90)                | 143 (09.63)                | 07                         |
| 12.   | Kharkhoda                 | 160 (06.56)                | 104 ( 07.00)               | 06                         |
|       | <b>Total</b>              | <b>2437 (100.00)</b>       | <b>1484 ( 100.00)</b>      | <b>74</b>                  |

Table no.1 shows that 2437 ISMPs were identified through baseline survey from 12 blocks in Meerut district. Out of these, 1484 ISMPs were randomly selected for training programme. Total schedule of 74 batches of ISMPs were organized to trainings.

Table no. 2 : Follow up of the trained ISMPs

| Sr. No | Blocks             | 1 <sup>st</sup> Follow up after two month of training | 2 <sup>nd</sup> Follow up after 04 month after first Follow up | Total & percentage of Follow up |
|--------|--------------------|---|--|---------------------------------|
| 1)     | Mawana             | 124 (59.34)   | 85 (40.66)   | 209 ( 11.24)                    |
| 2)     | Hastinapur         | 90 (84.90)  | 16 (15.10)   | 106 ( 05.70)                    |
| 3)     | Kila Parikshatgarh | 117 (66.85)   | 58 (33.15)   | 175 ( 09.41)                    |
| 4)     | Machhra            | 79 (56.42)  | 61 (43.58)   | 140 ( 7.53)                     |
| 5)     | Jani               | 105 (54.68)   | 87 (45.32)   | 192 ( 10.32)                    |
| 6)     | Rohta              | 106 (100.00)  | ---  | 106 (5.70)                      |
| 7)     | Saroorpur          | 98 (69.50)  | 43 ( 30.50)  | 141 ( 07.58)                    |
| 8)     | Rajpura            | 149 (66.52)   | 75 (33.48)   | 224 ( 12.04)                    |
| 9)     | Meerut             | 103 (51.76)   | 96 (48.24)   | 199 ( 10.70)                    |
| 10)    | Daurala            | 112 (57.44)   | 83 (42.56)   | 195 ( 10.48)                    |
| 11)    | Sardhana           | 126 (100.00)  | ---  | 126 ( 0 6.77)                   |
| 12)    | Kharkhoda          | 46 (100.00)   | ---  | 46 ( 02.47)                     |
|        | <b>Total</b>       | <b>1255 (67.50)</b>                                   | <b>604 (32.50)</b>   | <b>1859 (100.00)</b>            |

## \* Statistically Significant

Table no. 2 shows that two Follow ups were separate activity of the training programme. Visits were to test knowledge and skill at their clinics. First follow up was done after two month of training schedule whereas second follow up was done after 04 month after first of follow up. During first follow up, it was observed that counseling skills of trained ISMPs were improved. The knowledge of ISMPs has been changed. They were properly giving information and suggestion of family planning services to their clients. They were providing packet of condom and OCP to their clients. During the visits their records were checked. It was found that the work of ISMPs was satisfactory.

Second Follow up was done after 04 months of first follow up. It was observed that Follow ups were statistically significant and declined. There are frequent Follow up visits required for the sustainment of acquired knowledge and skills of ISMPs.

Table no.3. Monitoring of trained ISMPs

| Blocks of Meerut District | I Monitoring        | II Monitoring      | III Monitoring     | IV Monitoring     | Total                |
|---------------------------|---------------------|--------------------|--------------------|-------------------|----------------------|
| Mawana                    | 125                 | 117                | 85                 | 55                | 382 (13.56)          |
| Hastinapur                | 90                  | 86                 | 75                 | -                 | 251 (8.91)           |
| Kila Parikshatgarh        | 130                 | 112                | 86                 | 27                | 355 (12.60)          |
| Machhra                   | 85                  | 79                 | 15                 | -                 | 179 (6.35)           |
| Jani                      | 105                 | 101                | 97                 | -                 | 303 (10.75)          |
| Rohta                     | 112                 | 104                | 72                 | -                 | 288 (10.22)          |
| Saroorput                 | 104                 | 87                 | 43                 | 04                | 238 (8.44)           |
| Rajpura                   | 149                 | 75                 | 29                 | -                 | 253 (8.98)           |
| Meerut                    | 105                 | 96                 | -                  | -                 | 201 (7.13)           |
| Daurala                   | 112                 | 83                 | -                  | -                 | 195 (6.92)           |
| Sardhana                  | 126                 | -                  | -                  | -                 | 126 (4.47)           |
| Kharkhoda                 | 46                  | -                  | -                  | -                 | 46 (1.63)            |
| <b>Total</b>              | <b>1289 (45.76)</b> | <b>940 (33.36)</b> | <b>502 (17.83)</b> | <b>86 (03.25)</b> | <b>2817 (100.00)</b> |

## \*Statistically Significant

Table no. 3 shows that Monitoring visits were carried out to check records of average number of clients receiving counseling, contraceptive supplied and referrals. The ISMPs were requested to send or refer their family planning clients to RCH camps. It was observed that a substantial proportion of ISMPs were maintaining all the records. ISMPs were reoriented about the record keeping system as well as its importance. Few of them were not doing so in absence of any incentive. Findings of monitoring was found statistically significant and declined. The monitoring was not done properly due to some circumstances. There are frequently monitoring required in second, third and fourth monitoring of all trained ISMPs.

### Findings of training Programme

Training Programme was successfully accomplished. It established linkages between trained ISMPs, government health functionaries and identified depot holders of temporary contraceptive methods such as condom and OCP etc.

It was also observed that (98.93 %) of ISMPs were fully trained in family planning services such as counseling, condoms demonstration, OC Pills and referral cases. 1349 cases of Tubectomy, 1088 cases of copper-T insertion and 03 cases of Vasectomy referred to PHC/CHC or district hospital. They were much aware about the birth control and birth spacing methods. ISMPs' knowledge and skills in FP counseling improved. The reports from the district hospital Meerut, also revealed that there had been remarkable improvements in sterilizations, condom supply and copper -T insertion cases. It was also observed that all trained ISMPs were doing an important role in all national health program such as family welfare programme, AIDS/HIV awareness, polio eradication, TB control Programme (DOTS), Leprosy eradication and blind control program.

#### Other activities

##### (i) Contraceptive Social Marketing (CSM)

Initial supplies of oral pills and condoms were provided to all the trained ISMP's immediately after the trainings. Thereafter, supplies were provided during the monitoring visits and follow ups. Thereafter free supply of condom and OCP was regularly received through ANM/PHC/CHC and also during training RCH camps and workshop and when they required. The ANM and other Para medical staff supplied contraceptives to the ISMP's during their village visits. [5]

##### (ii) Workshops

24 workshops (two workshops in each block) were organized. An average of 20 – 30 ISMPs were attended each workshop. All these workshops were organized at PHC/CHC or any suitable rented place. The purpose of these workshops was to establish a platform to introduce the ISMPs with the government health staff for smooth supply of contraceptives and referrals. Another purpose of these workshop was to establish strengthen linkage between ISMPs and health authority in group discussion, they discussed about the family planning issues. A certificate of participation was given to each participants.

##### (iii) RCH camps

Total 12 RCH camps were organized very successfully in all the 12 blocks. Information of RCH camps was given to ISMPs during their follow ups and monitoring visits and also by post or personal visits from time to time. Exhibition on FP method

were organized in Reproductive child health camps. Posters were displayed at community location such as SC/PHC/CHC, Aganwadi center and local Govt. building. Brouchers & Pamphlets etc. distributed in markets. All the RCH camps were very well acknowledged by Village pardhan and block chairmen and large number of rural peoples.

##### (iv) Publication of Newsletters

Three newsletters were published at quarterly intervals. Newsletters were attractive with colorful photographs. All newsletters were made in local language as Hindi and distributed to all ISMPs, health personal, paramedical workers, ANMs & public. All the newsletters were very much appreciated by them.

### Recommendations and Suggestions

It is very important to meet trained ISMPs repeatedly and motivate them. The ISMPs should be appreciated for their contribution in the field of family planning services. The ISMPs do get demoralized if they do not get any appreciation for their contribution. They should encourage for their contribution in National Health program. Some incentive or motivational charges should be provided to trained ISMPs for sterilization cases. The orientation programme should be organized after completion of the trainings.

### Conclusion

Training of ISMPs was to provide family planning services in each village of district Meerut. Randomly selected 1484 ISMPs were motivated to enroll for training program. After training, two Follow Up visits and four monitoring visits have done properly. 12 RCH camps and 24 workshops conducted in every block. Three newsletter published and distributed to all trained ISMPs, health authority, ANMs and Paramedical workers. 1349 cases of Tubectomy, 1088 cases of copper-T inserted and 03 cases of Vasectomy referred to PHC/CHC or district hospital. The reports from the district hospital Meerut, also reveals that there has been remarkable improvements, in sterilizations, condom supply and copper T inserted clients through ISMPs.

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