Mental Health Research in India

DIVISION OF NONCOMMUNICABLE DISEASES
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(Technical Monograph on ICMR Mental Health Studies)

Division of Noncommunicable Diseases

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FOREWORD

Mental and behavioural problems are increasing part of the health problems the world over. The burden of illness resulting from psychiatric and behavioural disorders is enormous. Although it remains grossly under represented by conventional public health statistics, which focus on mortality rather than the morbidity or dysfunction. The psychiatric disorders account for 5 of 10 leading causes of disability as measured by years lived with a disability. The overall DALYs burden for neuropsychiatric disorders is projected to increase to 15% by the year 2020. At the international level, mental health is receiving increasing importance as reflected by the WHO focus on mental health as the theme for the World Health Day (4th October 2001), World Health Assembly (15th May 2001) and the World Health Report 2001 with Mental Health as the focus. At the national level, mental health policy has been the focus of Indian public health initiatives during last two decades. Currently India is implementing a national level programme of integrating mental health with primary health care, the largest such effort in a developing world.

However, a lot of work remains to be done. For example, the treatment for epilepsy exists so that up to 70% of newly diagnosed cases can be successfully treated with anti epileptic medication taken without interruption. Yet the health care system of the country has not been able to provide the right treatment to those in need of it. It is important to note that medications available for epilepsy are both effective and cost efficient. Given their low price they are an affordable remedy in developing countries also. Alcohol dependence is another major public health problem contributing to road accidents, accidents at work place and violet behavior. Suicide rates are increased in substance dependence. Suicide risk among those whose abuse alcohol is 50 to 100 times greater than for general population. The mental health care programme has to address these problems of enormous magnitude.

Research has advanced the understanding of psychiatric disorders and made major contributions to their treatment. The helplessness of the past has been replaced by considerable hope since conditions like schizophrenia that once where treated in closed institutions are being treated in general hospitals, in primary care services and through interventions at home. Early treatment is essential for better recovery. Effective treatment for depressive disorders are available, yet there are millions of people affected by depression where suffering and disability is prolonged because their condition goes undetected, or is often not adequately treated. There is a need to strengthen mental health care.

This Monograph presents the findings of major ICMR research projects in the area of mental health during last two decades. It is hoped that this Monograph would be useful for researchers and planners in their endeavor to work towards strengthening mental health care in the country.

DR. N.K.GANGULY
Director-General

PREFACE

Resources and services for mental and behavioural disorders are disproportionately low compared to burden caused by these disorders the world over. In most developing countries, care programmes for the individuals with mental and behavioural problems have a low priority. Provision of care is limited to a small number of institutions-usually over crowded and under staffed. Over past several decades, the model of mental health care has changed from the institutionalization of individuals suffering from mental disorders to a community care approach. The mental health research programmes of the council have played important role in this shifting paradigm. The Council had brought out a document "Strategies for research in mental health" in 1982 that listed the mental health projects carried out during 1960-1982 and described the mental health research strategies formulated in early 1980s. The present Monograph gives a brief description of ICMR mental health research projects carried out during 1982-2004.

Mental health research programme of the Council at present has focus on development of modules of mental health care in urban areas, psychiatric morbidity in disaster situations, and suicide behavior. Compared with the routine peace time psychiatric epidemiology, the disaster situation (such as earthquake) has a strong temporal component, that is the changing nature of pattern and prevalence as the time passes following disaster. A gradient effect is observed particularly in case of disaster like earthquake which means that the impact of disaster is not distributed uniformly, and dose response relationship exists between severity of exposure and subsequent psychopathology.

Suicide has emerged as a leading cause of death the world over. Research studies of the council have developed a simple tool for use by general physicians to identify persons with suicidal risk as it was found that a large proportion of persons attempting suicide were in contact with treatment facility for some time before suicide attempt. A community based task force project on suicide behaviour has now been undertaken for the first time. It is expected that the ongoing research on suicide behaviour will help in evolving strategies for suicide prevention. A multicentric project on urban mental health has been initiated to develop strategies for early identification of mental health problems and appropriate services for early intervention.

The present Monograph on Mental Health Research covers a wide range of research areas in mental health. The strength of ICMR mental health research programme is that over hundred experts from different parts of the country have participated in this research programme as may be seen from the Appendices in the Monograph. The research programme has covered nearly all parts of the country and generated data on various aspects of mental problems in the country. I hope it will be useful to researchers as well as mental health planners to advance the cause of better mental health care in the country.

DR. BELA SHAH
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INTRODUCTION

There was hardly any research data available on mental health in India at the time of independence. Sir Joseph Bhore in 1946 and Dr. A.L. Mudaliar in 1959 have made observations in their reports about non availability of data on psychiatric morbidity in India. ICMR has initiated projects on mental health research at a significant level from 1960. The first major mental health survey was undertaken under the aegis of ICMR in Agra, U.P. in a study sample of 29,468 in 1961. A series of epidemiological studies on psychiatric disorders were subsequently undertaken during 1960's and 1970's in south, north, eastern, and western parts of the country but, on relatively smaller study samples. For the first time in the country, ICMR organized a multicentric collaborative study on Severe Mental Morbidity at 4 centres – Bangalore, Baroda, Calcutta and Patiala from 1976-83. This was the beginning of ICMR task force projects on mental health research.

The recommendations of first ICMR Advisory Committee on Mental Health that met in July 1979 led to formation of five task force groups and two working groups. The main objective of these groups was to initiate task oriented operational research programmes on areas which are directly related to the mental health problems specific to our country where additional knowledge would help in alleviation of morbidity from these disorders. The strength of these research programmes was the active participation of mental health professionals from all parts of the country. The process of mental health research planning and contribution of researchers from all over the country in this endeavour have been described in ICMR publication Strategies for Research on Mental Health (1982).

The role of Mental Health Advisory Committee was taken over by Scientific Advisory Group on Non-communicable Diseases in 1990's. The projects carried out by task force groups and Centres for Advanced Research during last two decades (1982-2002) can be classified in 7 sections: (a) Community mental health, (b) Phenomenology, natural history and outcome studies, (c) Mental health indicators, (d) Child and adolescent mental health, (e) Drug/ substance dependence, (f) Suicide behaviour, (g) Mental health consequences of disasters.

This monograph presents highlights of the mental health task force projects of the council. The areas covered under community mental health include psychiatric morbidity surveys, intervention done by primary health care personnel, development of training programme for non-psychiatrist primary care doctors, development of modules for integration of mental health care with general health care. A PHC based module for total health care of the rural elderly has been evolved with special reference to mental health. Most of these projects addressed the mental health problems of the people in rural areas. Since rapid urbanization brings deleterious consequences for mental health through the influence of increased stressors and factors such as overcrowded and polluted environment, dependence on cash economy, high levels of violence, reduced social support, a new project on urban mental health has been initiated to identify and develop strategies for early identification of mental health problems and to suggest necessary intervention, including services.

The monograph presents a series of studies that were carried out, these include studies of phenomenology, natural history and outcome of psychiatric disorders, Acute psychosis, Schizophrenia, Depression. Clinical descriptive studies were also carried out on psychiatric, neurological, psychosocial and behavioural aspects of HIV infected patients. Another descriptive clinical study explored the illness behaviour in patients presenting with chronic pain.

In the area of mental health indicators, task force projects were undertaken to develop tools of measurement for quality of life at individual level, family level, and community level. A short instrument was developed to measure psychosocial stress. The Health Modernity Education Project developed the concept of health modernity and developed and evaluated health educational intervention to enhance health modernity of tribal population in Jharkhand.

The important projects in area of child and adolescent mental health include hospital based studies on psychiatric problems of children, community based projects on mental health of child and adolescent population, studies on school children and intervention strategy for their mental health care.

The task force projects in area of drug/substance dependence were carried out for community based surveys, educational intervention modules, development of drug abuse monitoring system, and treatment evaluation.

The studies on suicide behaviour were carried out on suicide attempters, who were brought for management to various departments of the hospital. A more comprehensive project with community based and hospital based components has been initiated to study the entire range of suicide behaviour from suicidal ideation to suicide attempts. Another important area taken up by the Council is the study of mental health consequences of disasters. The studies carried out in the aftermath of MIC gas exposure at Bhopal and the earthquake disasters in Marathwada have been presented. A multicentric project on mental health aspects of earthquake in Gujarat has now been initiated.

The task force projects are centrally originated projects on priority areas identified by the advisory committees of ICMR. The council also supports open ended research at medical colleges and institutes of the country through ad hoc research projects. The ICMR ad hoc research projects on mental health have been carried out in areas of biological psychiatry, clinical studies, family studies, therapies, meditation and yoga, child psychiatry, mental retardation, alcohol and drug dependence, psychiatric epidemiology, delivery of mental health services, psychometery, and other social and psychology studies. A list of all mental health projects (task force, ad hoc projects, and fellowship projects) carried out between 1982-2002 is given in the appendix. The list of mental health projects carried out during 1960-1982 is given in 'Strategies for Research in Mental Health (1982)'. The addresses of the principal Investigators given in appendices pertain to the period when these projects were undertaken. This monograph presents main findings of projects in a wide range of areas of mental health research carried out under the task force mode and centers of advanced research of the Council. It is hoped that this would be useful for researchers and planners as it provides information in a concise form on mental health research programmes of ICMR.

COMMUNITY MENTAL HEALTH CARE

COLLABORATIVE STUDY ON SEVERE MENTAL MORBIDITY

Collaborative study on severe mental morbidity was among the first few multicentric projects initiated by ICMR under expanded programme of mental health research. The study was undertaken at 4 centres in the country viz. Bangalore, Baroda, Calcutta and Patiala. The specific objectives of the study were as follows:

a) To determine the prevalence of severe mental illness in the community with focus on psychosis and epilepsy at 4 different centres in the country.

b) To study the feasibility and effectiveness of involving the multipurpose workers (MPWs) and primary health centre (PHC) doctors for (i) detection and management of all psychotics and epileptics in rural areas, (ii) for bringing changes in attitudes towards mental health in the rural community, and (iii) to estimate the cost of training and management of the programme in rural areas.

Study design

The essential core of the study was the training of and intervention by the primary health care personnel for identification and management of severe mental illness and epilepsy, and the evaluation of the intervention by a final field survey. The study areas were identified at all the four centers around primary health center, covering roughly a population of 40,000 at each centre. Following the selection of study areas and population to be covered, the health workers and primary health care doctors were given in-service training in basic mental health care, without disturbing their routine tasks and activities. Training programmes and separate manuals of instruction in mental health care for PHC doctors and multipurpose workers were developed. The training for the PHC doctors consisted of 15 sessions of 2 hours each, in the form of lectures, discussions, examples of cases and actual demonstration of cases. Flexibility was permitted to suit the local situation. The training for the health worker was carried out in the vernacular and in 11 sessions of two hours each in the form of lectures, discussions, examples of cases and actual demonstration of cases. The pre and post training assessments had shown that the knowledge gain of the doctors and health workers at all the four centers was satisfactory.

Study instruments

The main instruments used in this study were i) Indian Psychiatric Survey Schedule (IPSS) for measuring psychiatric morbidity, ii) Katz's Social Adjustment Scale (KAS Behaviour Inventories) to measure social dysfunctioning of those assessed in detail with the IPSS. This instrument was suitably modified for use in the Indian setting. A short 15-item questionnaire was developed to assess attitudes towards mental illness and epilepsy. A short screening proforma was also developed.

Prevalence survey

At the end of intervention phase, a field survey was carried out by the research team at all the 4 centres to estimate the prevalence of severe mental morbidity. It was a two-stage survey. During the initial stage, trained research investigators administered a simple 15 questions screening proforma to one adult member of every household in the study after collecting certain basic socio-demographic information about the household. This 'symptom in others' questionnaire asked them if they knew anybody who suffered from one or more of the 15 symptoms either in their families or in their villages. During the second stage, all such nominated probable cases were assessed in detail using the IPSS. Based on the symptoms recorded by the IPSS, the patients were diagnosed. The 'symptoms in others questionnaire' is essentially an instrument which detects severe mental morbidity, particularly different forms of psychoses and epilepsy. Table 1 gives prevalence of severe mental morbidity at the 4 centres.

Table 1. Prevalence of Severe Mental Morbidity

Diagnosis	*Bangalore*		*Baroda*		*Calcutta*		*Patiala*	
	No. of cases	Rate/ 1000	No. of cases	Rate/ 1000	No. of cases	Rate/ 1000	No. of cases	Rate 100
Epilepsy	278	7.82	51	1.28	59	1.71	11	3.17
Organic brain syndrome	4	0.11	24	0.61	22	0.64	88	2.40
Schizophrenia	65	1.83	70	1.77	71	2.05	113	3.09
Mania	20	0.56	14	0.35	8	0.23	50	1.37
Depressive Psychosis	28	0.79	22	0.55	127	3.67	150	4.10
Total no. of cases & Prevalence rate/1000	395	11.1	181	4.6	287	8.3	517	14.1
Population studied	35,548		39,665		34,582		36,595	

Management of cases by PHC staff

The primary health care staff identified and managed severely mentally ill persons and epileptics in their respective catchment areas and maintained simple case records. All the patients detected and managed by the PHC team were also assessed by the research staff using the IPSS during the intervention phase. The same patients were reassessed by the research staff during the field survey. Thus their improvement could be evaluated by comparing the two IPSS. While the changes in the social discrepancy scores indicated improvement in patients managed by the PHC team, these changes were not very marked. It was noted that a majority of patients were chronically disabled for several years. It was observed that chronic psychosis and epilepsy patients need long term and regular medication to show satisfactory improvement in symptomatology and social functioning.

Table 2. Mental Health Care by PHC personnel

	Bangalore	*Baroda*	*Calcutta*	*Patiala*	*Tota*
Population studied	35,548	39,655	38,582	36,595	146,380
Total No. of patients severe mental morbidity)	395	181	287	517	1,380
Rate per 1000 population	11.1	4.6	8.3	14.1	9.4
No. of patients identified and managed by PHC team during the intervention phase	72	36	58	6	232
Percentage of patients managed by the PHC team	18.2	19.9	20.2	12.8	16.8

The percentage of cases managed by the PHC team is shown in table -2

Attitude survey

The results of the attitude survey, before and after the intervention phase showed that at all the 4 centres there were overall changes in the attitudes in positive direction. While the overall changes were satisfactory, item-wise analysis showed that certain crucial items like suitability of the local health centre for treatment of most of the mental illnesses has not changed considerably. There was little change in belief regarding the causation attributed to black magic, evil spirits, masturbation, excessive sex and bad deeds of past and present. These items elicited very few correct answers not only in the initial survey but during the repeat survey also.

Cost evaluation

Simple costing exercise was carried out to estimate cost of training and intervention including case finding and case holding by PHC personnel, cost of monitoring and cost of the final survey, the cost of records, drugs, training material and other incidental expenses. The expenditure on research staff and cost of travel were the main costs taken in to consideration. The usages of the PHC personnel were not considered as they were already in employment for carrying out various health care activities. The total cost of the programme for training and intervention, monitoring and final survey amounted to about one lakh rupees at each centre in early 1980's.

As the study was carried out as a research project, a major portion of the total costs was constituted by the salaries for the research staff. For large-scale replication of the intervention programme, the costs are likely to be less.

TRAINING PROGRAMME FOR NON-PSYCHIATRIST PRIMARY CARE DOCTORS

In its endeavour to investigate models of extension of psychiatric services to the community, the ICMR appointed a working group on delivery of mental health services. The working group proposed a task force project at Bangalore, Hyderabad and Vellore with following objectives:

The objectives of the training programme were to enable the primary care doctor to:

i. Have diagnostic skills to identify common psychiatric problems in his practice.
ii. Manage the above problems independently.
iii. Educate his patients and family members to remove misconceptions regarding mental illness.
iv. Develop skill in selectively referring cases for psychiatric consultation.
v. Inculcate psychological orientation towards medical conditions.

Since a separate ICMR project on 'severe mental morbidity' was already evaluating the training of primary health centre doctors, the inclusion for this training programme was restricted to MBBS doctors working full time in primary health care practice, mostly general practitioners.

Psychiatric conditions

Psychosis, neurosis, psychogenic somatic conditions (neuroses presenting with somatic symptoms), mental retardation, epilepsy, and psychosexual problems of human reproduction and family planning were included as common psychiatric problems.

Training Programme

MBBS doctors between the age ranges of 30-50 years were selected for the training programme by the following procedure:

(a) A questionnaire was administered to local doctors at each centre. Besides basic demographic data like age, sex etc. the questionnaire sought information on the number of psychiatric and epileptic patients seen and referred by them in the previous 3 months.

(b) From the above information, a list of about 100 eligible doctors was prepared at each centre using the two criteria, namely, MBBS qualification and 30 to 50 years age. These doctors were put on the random numbers. Moving along the list, the doctors falling on the random numbers were offered training. This process was continued till about 35 doctors were enrolled for training at each centre.

(c) The training programme consisted of 13, weekly once afternoon sessions of two hours each with a 15 minutes break in the middle. The session topics followed the same order as in the manual. The topics covered were: Introduction, history taking and interviewing principles, major psychiatric signs and symptoms, mental retardation, epilepsy, psychosis, neurosis, psychogenic somatic conditions, psychosexual problems of human reproduction and family planning, psychopharmacology, psychiatric emergencies, and principles of counseling. Mental retardation was combined with epilepsy in one session, and similarly psychiatric emergencies with principles of counseling. However, the 1st session included pre-training assessment, the 11th and 12th sessions were case demonstration sessions, and the last session was meant entirely for post-training assessment and the feed-back information from the trainee doctors.

(d) Each session of the training programme consisted of: (i) Brief lectures on respective topics with the help of slides using the manual as the guide, (ii) Demonstration of 'live' cases for each clinical diagnosis covered above, (iii) Discussion on trainee doctors' own experience with their patients having similar symptomatology (iv) Session on psychiatric emergency included suicide, stuporous states,

excitements, and extra pyramidal symptoms. At the end of each session, the trainee doctors were given cyclostyled copies of the respective chapters of the manual. A session wise record of the trainee doctors attendance was maintained at each centre.

(e) The tools of assessment i.e. the assessment protocols, developed at NIMHANS, Bangalore consisted of two series ('A' and 'B') of six clinical vignettes each. The vignettes of both the series were similar and parallel. This ensured that the same doctor did not get exactly the same vignettes for both pre and post training assessments. The six vignettes represented:

Nil-psychiatric (or normal), hysteria, schizophrenia, depression, epilepsy and psychogenic somatic condition.

Same set of questions accompanied each vignette enquiring about: Diagnosis (multiple choice question with choice of 6 diagnosis), drugs, dosage and their side effects, management of the side effects, advising, and disposal (i.e., when would the doctor refer the patient to the psychiatrist?). There were also six attitude questions.

Observations and Discussion

1. The tools of assessment

   a. Found easy to administer and score

   b. They have good inter-rater agreement

   c. 'A' and 'B' series of vignettes are similar but need random mixing for future use.

   d. They discriminate different levels of knowledge. They measure a performance range of 30% (Doctors before training) and 68% (psychiatry residents) of maximum scorable. There is scope to increase their sensitivity further by adding more vignettes especially on neuroses and adding some difficult vignettes.

   e. It is necessary to (i) change the question on diagnosis to open ended question, or offer more number of choices than the number of vignettes used, (ii) rephrase or change the question on referral (disposal).

   f. Nil-psychiatry and epilepsy vignettes can be made redundant from the tools of assessment.

   g. It is necessary to try other measures of attitudes, as the ones used do not reflect adequate change by training.

2. The Manual

The manual is adequate, easy to follow and useful. More practical details with more clinical case examples of wider variety need to be included on neuroses. A greater emphasis on practical aspects of management is needed.

3. The training curriculum and programme

The training curriculum and programme are flexible and adoptable. More adequate coverage on neuroses and counseling is needed by: (i) more sessions, (ii) more repeated presentation of important items of information (iii) more number of demonstrations. The results of the training at all the three training centres were similar.

4. The performance of the doctors on diagnosing common psychiatric problems was high. It was good before training also, and the training contributed to increase in this ability. However, the question on diagnosis needs suitable change in its own right in future training programmes.

5. The doctors have gained modest skill in selective referral though the answers of most of them were not relevant to what was asked of them. However a suitable change in the question on disposal (referral) is needed in future programmes.

6. Three psychiatrists in three different centres were able to train a total of 97 General practitioners in 11 teaching sessions of 2 hours each, to the extent that the performance of the GPs on the clinical questions reached to 83% of the performance of the psychiatry residents.

ICMR CENTRE FOR ADVANCED RESSEARCH ON COMMUNITY MENTAL HEALTH

The establishment of the **ICMR** centre in 1984 occurred against the background of the **NATIONAL MENTAL HEALTH PROGRAMME** formulated in August 1982 and the **NATIONAL HEALTH POLICY** adopted by the Parliament in 1983. Both of these major policy documents emphasized the need to provide basic services to the total population. The approach identified was decentralization, deprofessionalization and active community participation. Against these policy backgrounds one of the major considerations of the centre was to develop appropriate technology for implementation of the NMHP.

The decade of 1980's was also a period of intense research effort from ICMR in the area of mental health. This period was marked by major research studies in the area of epidemiology, phenomenology, studies of course and outcome of mental disorders, integrating mental health with primary health care, training of general practitioners and related areas.

There have been major breakthroughs in the understanding of mental health problems. The study of acute psychosis has demonstrated the importance of early treatment in terms of better outcome, as well as the overall rapid recovery within weeks without relapse at the end of one year of follow-up. The other ICMR study on 'course and outcome of schizophrenia' has reconfirmed the relative good prognosis of schizophrenia in India. In this study the shorter duration of illness, drug compliance was found to contribute to better prognosis. In the study on Severe Mental Morbidity, the feasibility of integrating mental health with primary health care was studied. This 4-centre study provided an understanding of the necessary steps for such integration (training, supplies, records, monitoring etc.) and the impact of such integration.

These research efforts of the decade have highlighted the importance of understanding mental disorders as they occur in India as well as the necessity for developing models of care keeping in mind the socio-economic realities of the country.

At the National level, the NMHP (1982) has provided the policy framework for the development of mental health services. The NMHP has received support from the larger movement of primary health care in the country. NMHP was included in the 7th five year plan with budget allocation of rupees one crore. The major steps that have been taken up for the NMHP implementation are:

i) Sensitization of the planners and administration of all States and UTs

ii) Involvement of mental health professionals in NMHP implementation.

iii) Development of training materials (manuals etc.), records, health education materials to support the NMHP.

iv) Experimental district mental health programme in Bellary district.

v) Importance given in some states like Karnataka, Kerala and Maharashtra to develop state level plans and programmes.

vi) Training of trainers from all the states and UTs.

vii) Initiation of first phase community mental health projects in most of the states.

viii) Development of projects to integrate mental health as part of school health, ICDS, Voluntary agencies and volunteers.

There have been developments of institutional framework for NMHP in the form of National Mental Health Advisory Group, State Mental Health Advisory Groups and identification of state level programme officers.

As a result of all these efforts currently the stage is set for the development of modest and viable programme in each state rather than ambitious plan for a wider coverage which may not be feasible with our limited resources (Srinivasan 1989).

The ICMR centre, through its various activities has contributed to the implementation of NMHP.

The specific activities in the 7 areas identified at the time of grant of the centre are as follows:

1. ESTABLISHMENT OF A FIELD PRACTICE AREA AROUND SAKALAVARA MENTAL HEALTH CENTRE.

The goal of this activity was to have an area and a population unit for mental health monitoring; specifically this was considered important for incidence studies, prevalence studies, course and outcome of mental disorders, study of aetiological factors, effects of social change on mental health, study of effectiveness of different interventions (both therapeutic and social). In short this was envisaged as a long-term 'public mental health laboratory'.

During the first 3 years of the centre the focus to study the total morbidity of about 5000 population. In 1989, this focus was shifted to include larger population with broader goals of prevalence and incidence studies. A total of 1,00,000 population of the Anekal PHC was identified for the epidemiological study.

2. DEVELOPMENT OF MODELS FOR BASIC MENTAL HEALTH CARE

This part of the activity of the Advanced Centre was taken up from 1985-1988. The project was completed along with the analysis of the data.

The Solur project report provides detailed information covering one primary health centre about the scope, process and impact of the integration of mental health in primary care. As a result of this project, number of tools were developed for study of health personnel, the record system for mental health care and manuals for training. An important outcome has been the identification of the level of care and quality of care, the need for support and supervision by mental health professionals and the required administrative support.

This project has contributed to the development of other projects in different parts of India. In addition the experience of this project and the materials developed has been the basis for development of similar projects in Nepal, Pakistan and South Yemen.

3. DEVELOPMENT OF MANUALS

Two manuals have been developed in the last 6 years. The first of this the Manual of Mental Health for Multi-purpose workers was first published in 1983. The second revised edition with visual material and incorporating the experiences of the use of the manuals at different centres was published in 1989. The Hindi translation of the 1989 manual was also brought out.

The Doctors manual was brought out from NIMHNAS in 1985, which has gone through further revisions. In addition, a manual for Bhopal doctors on mental health care was prepared in 1987.

Another manual prepared in collaboration with WHO is the Manual on 'Recognition and management of patients with functional complaints. (WHO/SEA/Ment.99.1989).

The manual of MPW's has been adopted,with local translations by professionals in Nepal, Bangladesh and Afghanistan.

4. TRAINING PROGRAMMES FOR MENTAL HEALTH PROFESSIONALS

The Council initiated this in 1981. Since the initiation of the centre, every year one 4-week training was organized for medical and non-medical mental health professionals. In addition to the ICMR centre supported trainers, over 100 professionals have taken part in these trainers programmes with other funding. These professionals are from different part of India and neighboring countries.

A notable development was the recognition of this training as important for initiating community mental health programmes. The state of Mahrashtra regularly deputed its professionals with state resources.

5. EPIDEMIOLOGICAL TOOLS

The epidemiology project has provided experience of the utility of a number of 'tools' use in India. In addition the following specific tools were developed: I) Kannada version of present state examination, ii) WHO disability Assessment Schedule (Indian Adaptation) and iii) Attitude Questionnaire.

6. DISSEMINATION OF INFORMATION

This has been an important activity of the centre. Publication of the community Mental Health News and

other publications were carried out. It is well recognized that the publications have been an important contribution to the NMHP implementation in the country.

7. PUBLIC MENTAL HEALTH EDUCATION

Systematic efforts to develop visual public health education materials on the priority mental disorders have been made; the flip chart and poster on FEATURES OF MENTAL DISORDER were widely distributed. The flip charts on M.R. and epilepsy were printed.

In addition to those specific activities, the centre worked actively with the Council in number of other areas. A good example is the specific inputs made in the event of the Bhopal Disaster.

Two workshops namely, Community Mental Health in India and Research Issues in Psychiatric Epidemiology were conducted by the centre.

The reports and publications have been utilized in the various training programmes and meetings of NMHP.

In conclusion, the ICMR centre was established at a time of initiating the NMHP. In the 6 years of work the activities have provided technical inputs for the NMHP and supported its implementation.

A STUDY ON MENTAL HEALTH CARE OF THE RURAL AGED

It is estimated that around the year 2025, the proportion of the elderly in the developing countries will escalate to 12 per cent of the population. Realizing the importance of research on the health status and health needs of the aged and psychosocial problems affecting them, the ICMR constituted a task force in this area. A task force project was carried out in two phases at the Institute of Psychiatry, Govt. Rajaji Hospital, and Madurai. While phase one was a hospital based study, the phase – II was a feasibility study for integrating health care (physical as well as mental) of the rural aged with general health care at PHC level.

Phase one of the study on "Problems of the Aged Seeking Psychiatric Help" was hospital based and conducted over a 3 year period on 150 consecutive patients (101 males and 49 females) aged 60 and above attending the Institute of Psychiatry, Madurai and an identical number of controls matched for age and sex. These aged patients formed 3 per cent of the total attendance of the Institute of Psychiatry. Among the psychiatric illnesses detected, affective disorders, especially depression out numbered the others. Acute organic brain syndrome and dementia formed one third of the diagnoses. While depression equally involved both sexes, mania was five times commoner in males. The study revealed that the aged were handicapped by visual, musculoskeletal and auditory impairment and many others suffered from physical illness. These handicaps and physical illnesses were significantly more in the study subjects. The observation that 40 per cent of the study group suffered from affective disorders should prompt the institution of appropriate pharmacological measure in such patients. Additional measures to overcome their physical illness and handicaps are also necessary. The study has also indicated that dementia is prevalent in this part of the world and that the multi-infarct type is commoner than senile dementia Alzheimer type (SDAT), thus dispelling the Western notion that dementing illness is rare in the developing countries. This pattern of vascular dementia outnumbering SDAT is similar to that reported from Japan. It is natural that as the country's population ages the number of these cases will increase.

An important finding of this study pertains to the family and social integration of the elderly. There was no appreciable difference in the physical composition of the families between the study group and the control group. However, what mattered was the degree of their integration into the family and social network; a lack of family and social integration distinguished the study group from the control group. The study has highlighted that the family integration may suffer even among those living within its fold. Similarly such of those elders, who are living alone, need not suffer isolation. A large number of these were found to be well integrated into the rural society. These findings are of relevance for planning psychosocial support. That psychiatric care cannot be approached in isolation has been an important conclusion. A comprehensive care is called for in the management of geriatric subjects. The study (1st phase) being hospital based does not offer data that could be generalized to the community. Nevertheless the data on controls do have some limited utility in this direction.

COMMUNITY BASED PROJECT

The community based project on health care of the rural aged was carried out utilizing a Primary Health Centre (PHC) near Madurai, that is at PHC Kallandiri near Madurai with an estimated number of 4656 individuals aged 60 and above in its catchment area. The PHC staff including the multipurpose health workers (MHWs) participating in the project were suitably trained by specialists from Madurai Medical College (and training manuals evolved). The study covered 1910 subjects (664 males and 1246 females) registered either at the ICMR Geriatric Clinic in the PHC or by field visits by the project staff with MPHWs. Nearly 80 per cent of the subjects were between 60-70 years of age. The females outnumbered the males in the ratio of 2:1. Nearly 80 per cent of the subjects were illiterate; 91 per cent of the subjects belonged to the SES IV and V. The tools

employed for the study were a Screening Schedule, Socio Economic Status (SES) scale, Khatri's Family Jointness scale and Family and Social Integration schedules (specially evolved for the study).

Each individual reported at the Geriatric Clinic with an average of five or six symptoms. The visual complaint accounted for 88 per cent and locomotor for 40 per cent. The other complaints in the descending order were related to the central nervous system (18.7%), cardiovascular system (17.4%), respiratory system (16.1%), skin (13.3%), abdomen/gastrointestinal tract (9.9%), hearing impairment (8.2%), and urinary problems (3.5%). The psychiatric problems accounted for 8.5 per cent and took the eighth place in the rank order. There were 11 patients with cancer (0.6%). Diabetes mellitus was encountered in 21 subjects (1.1%). Nearly 76.5 per cent had two or three diagnosis and 13.2 per cent had four clinical diagnoses. Seventy three percent of the subjects were managed at the PHC itself, while 18.5 per cent were referred to specialists in the Government Rajaji Hospital, Madurai.

PHYSICAL AND PSYCHIATRIC MORBIDITY:

The predominant findings in different systems are as follows:

Visual (N = 1681, 88%)

Immature cataracts (1378), aphakia (236), matured cataracts (163); corneal opacity (68), dacryocystitis (34), pterygium (38), leucoma (16), blindness (11) and glaucoma (2) were the predominant ones.

Locomotor (N=764, 40%)

Degenerative joint disease (DJD) was diagnosed in 615 subjects and myalgia in 55; cervical spondylosis and lumbago in 15 and 11 respectively. Fractures (malunited, colles', tibia, rib, calcaneal etc.) accounted for 25.

Neurological (N=358, 18.7%)

Peripheral neuritis (288), hemiplegia (15), senile tremors (13), titubation (12), Parkinsonism (6), facial palsy (5), epilepsy (2) were the predominant diagnoses.

Cardiovascular (N=333, 17.4%):

Ninety-two subjects were diagnosed as hypertensives. 214 subjects were anaemic. Eight subjects had myocardial infarction with 6 others complaining of angina. There were 9 subjects with congesting cardiac failure. Four had aortic stenosis and 2 aortic incompetence. Irregular beats (Extra systole) were made out in 4 subjects. Twenty-one subjects had postural hypotension.

Respiratory (N = 308, 16.1%)

Acute bronchitis (100), Upper Respiratory Infection (82), Pulmonary tuberculosis (57), Bronchial asthma (40), Chronic bronchitis (30) were common conditions. Five subjects had Bronchiectasis.

Dermatology (N = 254, 13.3%).

Pruritus (51, Hansen's Disease (39), Eczema (28), Scabies (24), Fungal infection (20), Urticaria (17), Vitiligo (10) and Keloid (5) were the common skin conditions.

Gastro Intestinal (N = 190, 9.9%)

Gastritis (64), Worm infestation (41), Peptic ulcer (20), Ankylostomiasis (12) and Gastro enteritis (16) were predominant ones.

Psychiatry (N = 160, 8.1%)

Among the psychiatric diagnosis, Depression accounted for 133 cases (Endogenous, Reactive, Masked etc.). There were 3 cases of Dementia. Two had Delusional parasitosis and a solitary case of hypomania was come across.

Hearing (N = 156, 8.2%)

Otosclerosis and Presbyacusis accounted for 59 and 52 cases respectively. There were 19 with nerve deafness.

Genito Urinary (N = 66, 3.5%)

Benign prostatic hypertrophy and haemorrhoids were encountered in 24 cases each, and Urinary tract infection was noted in 10 subjects.

Oncological

The following tumours were encountered; Lipoma 13; Papilloma 1; Benign nodular goiter 10; Multinodular goiter 2; Dermoid cyst 2; Leukoplakia vulval; Leukoplakia cheek 1; Leukoplakia oral cavity 2; Haemangioma 2; Carcinoma Penis 1; Carcinoma cheek 2; Carcinoma breast 1; Carcinoma endometrium 1; Carcinoma cervix 3 ' carcinoma larynx 1; carconoma thyroid 1; 1 Bladder carcinoma; Melanoma face 1; Cystic hygroma 1.

Diabetes Mellitus

Twenty-one cases were diagnosed as Diabetes Mellitus.

MULTIPLE DIAGNOSIS:

Multiple diagnoses is a common clinical experience in geriatric medicine. In terms of clinical diagnoses, 76.5% (N = 1460) had 2-3 clinical diagnoses while 16.5% (N = 316) had 4 or more diagnoses. Single diagnosis was encountered in 6.8% (N = 131). While physical illness alone was observable in 91.4% (N = 1747), Psychiatric illness alone was observable in 0.3% (N=5). A combination of psychiatric and physical illness was arrived at in 8.1% (N=155). It is thus evident that psychiatric illness in the elderly cannot be considered apart from physical illness. Sixty four per cent were living in "Not at all joint' families and only 7.3 per cent were living in 'Completely joint' families; 25.5 percent lived alone. Fifty five per cent were 'Well integrated' into the family 22 per cent were found to be 'Isolated', 53.9 per cent were 'Socially well integrated' and only 4.6 per cent were 'Not integrated' socially.

The intervention, besides medical, consisted of rehabilitation measures in the economic, nutritional and recreational spheres and health education. Following intervention measures, outcome data were collected to assess their impact on clinical condition and the psychosocial variables. The final evaluation after 30 months was achieved in 91.4 per cent of the cohort (N=1745). A mortality rate of 5.7 per cent was observed among the cohort (N=109). Clinical outcome was rated as 'cured', 'cured and relapsed', 'Improving', Static' and 'Worsening' for each illness. Following cataract surgery 38.4 per cent benefited. Hypertension was controlled in 77.5 per cent. Six of the 11 cancer patients died. Depression had cleared in 70.2 per cent. Family and social integration improved following psychosocial intervention.

During the study two sub-sample surveys were carried out. While the first one covered 603 subjects aged 60 and above in the catchment area, the second covered 843 subjects. The first survey collected data on the pattern of utilization of health service by the aged and the second survey assessed the impact of the intervention measures. The study also revealed that 19 per cent of the aged in the rural area were contented, happy and healthy.

This phase of the project has demonstrated that a Geriatric Clinic in the PHC premises offering comprehensive care could cater to the needs of the rural aged. This model of total health care could be incorporated into the existing PHC services with augmentation of available resources.

URBAN MENTAL HEALTH

It is expected that about 50% population will be living in urban areas in the country in next two decades. The urbanization brings deleterious consequences for mental health through the influence of increased stressors and factors such as overcrowded and polluted environment, dependence on a cash economy, high levels of violence, and reduced social support. There is considerable stigma attached with mental disorders and ignorance regarding information about mental illness and available help and treatment. The mental health care in urban areas is at present limited to psychiatric hospitals and departments of psychiatry in medical colleges. Mental health problems at early stage remain unrecognized and untreated. There is tendency to conceal even severe psychiatric problems due to stigma. It is proposed to develop models for mental health care in urban areas with focus on extension of mental health care to community level.

A WHO funded project on urban mental health problems and service needs has been initiated with following objectives:

1. To study the utilization pattern of existing mental health care facilities in geographically defined urban area, and assess strengths and weaknesses.
2. To study the pattern of mental health problems through (a) Data available from mental health care facilities, (b) Qualitative descriptive studies on mental health problems in the community.
3. To identify and develop strategies for early identification of mental health problems and to suggest necessary intervention, including appropriate services.

The project has been initiated at 3 centres – Delhi, Lucknow and Chennai.

PHENOMENOLOGY, NATURAL HISTORY AND OUTCOME

COLLABORATIVE STUDY ON THE PHENOMENOLOGY AND NATURAL HISTORY OF ACUTE PSYCHOSIS

Clinical experience has shown that some patients with acute onset of psychosis have a better outcome. These cases often present with florid symptoms and grossly disturbed behaviour and they do not precisely fall in the diagnostic categories of schizophrenia or manic depressive psychosis. The International Pilot Study of Schizophrenia reported that this acute illness with full remissions was more frequently seen in Africa and India as compared to western countries. This suggested that perhaps the acute psychosis cases seen in India were not typical of the western concept of schizophrenia but could be a variant of schizophrenia or manic depressive psychosis, or perhaps a benign acute psychotic illness with good outcome and not hitherto recognized as separate entity.

The Indian Council of Medical research initiated a collaborative project at four centres (Bikaner, Goa, Patiala and Vellore) to examine these issues and to study the outcome of such cases.

Aims of the study

The aims of the study were to study the phenomenology, natural history, sociodemographic correlates, family history, response to treatment, long-term outcome and prognostic indicators of cases of Acute Psychosis. It also aimed to study whether acute psychosis is a unitary, hitherto unrecognized disease entity or made up of a heterogeneous group of disorders, and if so whether it is possible to clearly define a separate acute psychosis as distinct from schizophrenia or affective illness.

Inclusion – Exclusion Criterion

(1) Age of the patient between 15-60 years, (2) Sudden onset of symptoms, development of full blown psychosis within days, upto a maximum of two weeks, (3) Contact with the clinic within four weeks, and (4) Presence of any of the marked eight features. The presence of delusion or hallucination alone would also qualify for inclusion as a case. Gross organic brain disorder, Epilepsy, MR, History of previous episodes of psychotic illness, residence beyond a defined catchment area etc., were the exclusion criteria of the study.

Inspite of the rather strict inclusion and exclusion criteria employed in the study, including (a) that the patient must have reported to the centre within four weeks of onset of illness, (b) must be a resident within the defined catchment area, (c) no history of any previous mental illness, overall prevalence rate was 8.7% of all cases of psychosis seen at the four centres. The figures would probably be much higher if we remove the stringent inclusion and exclusion criteria.

The male-female ratio of acute psychosis cases was the same as that for the total sample of psychotics. It was seen that acute psychosis did not differ from the total

Table 1: Acuity of onset (percentage)

	Bikaner N=68	*Goa N=85*	*Patiala N=102*	*Vellore N=68*	*All centres N=323*
Acute less than 48 hours	47	84	31	57	54
Acute 48 hours -1 week	34	16	46	31	33
Subacute 1 - 2 weeks	19	0	23	12	14

$\chi^2 = 56.02$ d.f. = 6 p value<0.05

sample of psychosis in any other socio-demographic variable.

Onset of illness

The onset of psychotic illness in these cases was found to be very rapid. In 54% cases, the interval between the onset of first symptom to the full blown psychosis was less than 48 hours and in other 33%, this period was between 48 hours and one week, and in only 1% this period was between 1 and 2weeks. The present study does not support the hypothesis of purely reactive or psychogenic psychosis since 19% were found to be definitely reactive while 28% were rated as possibly reactive. Physiological stress was more common (30%) than psychological stress (26%) whereas in some cases both were present.

Premorbid personality

A majority of these patients (74%) were rated as having a normal premorbid personality and the remaining 26% included patients of hysterical personality or schizoid personality and only 4% were reported to have deviant or anti-social personality.

Family history of mental illness

A positive family history was found in only 28% cases, and among these, the ICD categories of manic depressive psychosis, schizophrenia and non-organic psychosis were equally represented.

ICD Diagnosis

At the time of initial contact, 35% were diagnosed as Schizophrenia (ICD-295), 25% as MDP (ICD-296) and the remaining 40% as under (ICD-298) other non-organic psychosis (unspecified category). At the end of one year, the percentage of cases categorized as schizophrenia remained the same (35%). There was a slight increase in the number of cases diagnosed as MDP (from 25 to 29%) with a corresponding decrease in other non-organic psychosis (from 40 to 36%).

ICMR categories

Descriptive categories were evolved in this ICMR project based on clinical presentation for classification of these cases as shown in table 2. Almost 50% cases got classified in two diagnostic categories i.e., predominantly

Table: 2 Distributions by ICMR - Descriptive Categories.

S.No.	*ICMR descriptive Categories*	*Bikaner N=68 %*	*Goa N=85 %*	*Patiala N=102 %*	*Vellore N=68 %*	*All centres N=323 %*
1.	Predominantly Depressed type	5.9	11.8	17.7	11.8	11.8
2.	Predmominantly Elated type	14.4	8.2	0.0	4.4	4.2
3.	Predominantly Withdrawn type	14.7	14.1	6.9	16.2	12.9
4.	Predominantly Excited type	42.7	28.2	24.5	20.6	29.0
5.	Predominantly Paranoid type	22.1	27.1	22.5	11.8	20.8
6.	Predominantly Confessional type	1.5	1.2	1.8	1.5	2.0
7.	Predominantly Satirical type	5.9	3.5	2.0	20.6	8.0
8.	Possession type	0.0	1.2	3.9	1.5	2.0
9.	Fixed type	1.5	2.4	9.8	11.8	6.3
10.	Others	1.5	2.4	1.0	1.5	1.6

Table 3. Outcome at 1 year

S. No.	*Outcome*	*No.*	*%*
1.	Full remission and no psychotic relapse (FOC-1)	245	75.9
2.	Full remission and one psychotic relapse (FOC-2)	28	8.7
3.	Full remission and more than one psychotic relapse (FOC-3)	3	0.9
4.	Full remission and no psychotic relapse (FOC-4)	28	8.7
5.	Still in index episode (FOC-5)	19	5.9

excited and predominantly paranoid type while the remaining 50% were distributed over their remaining 8 categories. It was noted that the clinical presenting picture of predominantly withdrawn or predominantly paranoid type were significantly more likely to be labeled as schizophrenia whereas the predominantly excited, elated and depressed categories were significantly more often labeled as MDP. Almost all the cases of non-organic psychosis (other and unspecified) belong to the remaining descriptive categories and also paranoid type category.

Treatment

Treatment compliance was very good. 86 percent received the full treatment and follow up. 11 percent received partial treatment and only 3 percent were untreated. Neuroleptics were the most commonly used. ECT was used in only those cases that failed to respond to drug treatment.

Clinical outcome at one year

The outcome was rated into 5 categories (FOC-1 to FOC-5). 75 percent of all cases were in the category of FOC-1 at one year follow up i.e., fully recovered with no relapse of psychotic episode. Another 10 percent fell into categories FOC-2 (9%) or FOC-3 (1%) i.e. full remission with one or more relapse, while remaining 14% had a poor outcome falling in to categories of FOC-4 or FOC-5.

It is interesting to note that all the cases that achieved full recovery at one year, had recovered completely within the first 3 months, whereas those who were still in the Index episode at 3 months tended to have a prolonged course and poor outcome. Outcome was not found to be related to age or sex.

Acuteness of onset was related to the outcome. Patients with very acute onset i.e., full blown picture developing within 48 hours had the best outcome - 82 percent had full remission no relapse, 9 percent achieved remission with relapse and only 9 percent did not achieve full remission at the end of one year. Patients with onset between 48 hours and one week also showed good recovery but it was less dramatic than the previous category.

Analysis using CATEGO programme

According to classification using CATEGO programme the largest number (22%) fell into the uncertain psychotic class, and further 13 percent were assigned more than the one CATEGO class and therefore, 35 percent of all cases of acute psychosis could not be classified into any clear cut diagnostic category. There is considerable agreement between the clinical and CATEGO diagnosis in cases of schizophrenia (ICD-295) where 48 cases are classified the same by both, and for manic depressive psychosis (ICD-296) 43 cases being correctly identified by both methods, but the greatest discrepancies arose in cases clinically labeled as other non-organic psychosis (298.0-298.8) and the NOP 'other' group (298.9) .Of the 64 cases clinically diagnosed as 298 (0 to 8) none was so classified by CATEGO. Similarly in the group of 30 cases of other NOP (298.9) no case was diagnosed as such by the CATEGO programme. According to CATEGO analysis, 20 percent of all patients of acute psychosis were diagnosed as schizophrenia, another 19 percent as cases

of manic-depressive psychosis and 11 percent as depressive psychosis or Reactive depression. Thus a full 50 percent were either not assigned to any clear-cut diagnostic category (35%) or were assigned more than one diagnostic category (13%) or into 'other' category (2%).

On the basis of the initial ICD diagnosis as well as the ICD diagnosis at one year follow up it is seen that out of a total number of 323 cases of Acute psychosis as per inclusion criteria for the study, 35 percent were categorized as suffering from schizophrenia while another 25 percent as cases of MDP. Thus the remaining 40 percent (161 out of 323) were cases, which were unclassified and can be designated as cases of Acute psychosis not otherwise specified.

Thus it is evident that acute psychosis cases as defined for purpose of this study comprise of 3 distinct groups: (a) those categorized as schizophrenic clinically (35%) (on CATEGO classification 20 percent) (b) Manic depressive psychosis clinically 25 percent, (on CATEGO 19 percent) and (c) Those cases who do not fit into any clearly defined diagnostic category clinically 40 percent and on CATEGO 50 percent.

The clinical presentation of an acute illness thus includes three main categories of patients: a) approximately 25 percent both at initial contact and at one year follow up and confirmed by CATEGO program to be cases of schizophrenia, (b) 25 percent are found to be cases of MDP, (c) remaining 50 percent cases in which there are no clear cut symptoms of schizophrenia or primary affective disorder and in addition do not show the symptoms of anxiety or perplexity etc., constitute third group of Acute Psychosis not hitherto recognized as a separate group. However, these patients differ from the two former groups not only on the basis of their clinical picture but also on the basis of their normal premorbid personality, absence of family history of mental illness and an excellent recovery rate over 85% and at one year follow up were continuing to remain well without maintenance treatment. These cases were identified as cases of Acute Psychosis, a unitary distinct entity, different from schizophrenia and manic depressive psychosis.

FACTORS ASSOCIATED WITH THE COURSE AND OUTCOME OF SCHIZOPHRENIA

A multicentric investigation to examine the factors associated with the course and outcome of schizophrenia (SOFACOS) was carried out under the auspices of the Indian Council of Medical Research at three centers - K. G. Medical College, Lucknow; Madras Medical College, Madras, and Christian Medical College, Vellore. The project addressed the following research questions:

1. Is it possible to identify sociocultural and clinical variables, which are associated with and might be etiologically related to the course and outcome of schizophrenia.

2. Is the course and outcome of schizophrenia better in a developing country such as India as is suggested by the WHO multi country project – International Pilot Study of Schizophrenia?

3. Do the three centers in India with different sociocultural backgrounds differ in the course and outcome of schizophrenia?

Selection of patients

All consecutive patients who attended the psychiatry clinics of the participating centers from 15th October 1981 to 15th October 1982 and satisfied the inclusion criteria were included in the study. These criteria were adapted from Feighner's criteria of diagnosis (Feighner etal., 1972). The duration was taken as 3 months since it was felt that we might otherwise lose some acute schizophrenic patients for the study.

The following were the criteria of diagnosis used in this study:

(A) Presence of delusions or disorganized thoughts and communication or passivity feelings.

(B) Absence of primary affective illness, manifest organic cerebral disorders, regular abuse of alcohol, epilepsy, or severe or moderate mental retardation.

(C) The duration of illness should be at least 3 months continuous without return to premorbid level and should not be more than 2 years.

(D) Any one or more of the following:

i. poor social adjustment.
ii. Schizoid premorbid personality.
iii. Family history of schizophrenia
iv. Hallucinations.
v. Emotional blunting.
vi. Catatonic episodes.

All the above criteria A, B, C, and D must be fulfilled. Only patients in the age group 15-45 years were included. 386 patients were studied: 207 in Lucknow, 96 in Madras, and 83 in Vellore.

Initial psychiatric evaluation

The following tools were used for this purpose: These tools were adapted after making small modifications from those used in the WHO Collaborative study on Determinants of outcome of severe mental disorders.

i. A screening schedule to select the patients who satisfied the criteria of inclusion and exclusion as elaborated above.

ii. A detailed psychiatric history was taken from all available sources using the WHO Psychiatric and Personal History Schedule.

iii. A detailed mental status examination was conducted using Present State Examination 9th Ed. (PSE) (Wing and Cooper, 1974).

iv. A Diagnostic and Prognostic Schedule (DPS) was also used as part of initial psychiatric evaluation.

Before beginning the Study, a workshop was organized in Vellore to get experience with the tools and to conduct reliability exercises. The investigators,

consultants and research staff participated. All the above tools were discussed in the group. When one member of the group interviewed a relative of the patient (using PPHS I) or the patient (using PSE) the others scored. Several such exercises were conducted. The inter rater reliability in most of the items was about 90% in the use of the above tools. It was found that some items showed consistent disagreement. These items were discussed to get uniformity in assessment. The above exercises were repeated at future meetings of investigators, consultants and research staff.

Follow-up

After the initial assessment the patients were regularly followed up at least once in 3 months during the first year and at least once in six months for the next four years. The interim Follow-up Schedule (IFS) used for this provided information regarding symptomatology, details of treatment, and drug compliance. This tool was also adapted from a WHO Schedule used in the Collaborative Study on determinants of outcome of severe mental disorder.

A detailed reassessment was done after 1 year of initial assessment using a 1-year follow up Psychiatric and Personal History Schedule (PPHS) and P.S.E. If any patient did not come for follow up, even after sending 3 letters, home visits were made to complete follow up. This was a trial follow up to find out whether the study was going in the right direction and also to evaluate the possible follow up rate. This showed that in all the 3 centres the one-year follow up was more than 90%. Interim follow up was continued as referred to earlier. A detailed assessment was made as before at the end of two years using a 2-year follow up Psychiatric Personal History Schedule (PPHS III) and PSE. Similarly the patients were assessed at the end of third, fourth and fifth years. Throughout the course of the study, every 10th patient in each centre was assessed by a second person also to assure intra-centre reliability.

Assessment of course and outcome

The main objective of the study was to identify the factors which influence course and outcome of schizophrenia. A large group of hypotheses variables were therefore selected mainly based on clinical experience and reports from various studies. These are grouped under the following headings: Sociodemographic variables (14 items); past history variables (8 items); variables related to episode of inclusion (4 items) and variables related to follow up period (8 items).

Since the above variables had to be correlated to course and outcome, it was important to evolve a method of quantifying course and outcome. For this purpose a method similar to that used in IPSS (WHO 1979) was used. The outcome was assessed on following dimensions:

a) Percentage of follow up period spent in psychotic state: 0-15%; 16%-45%;46-75 %; 76-100 %
b) Pattern of course (clinical outcome): (This was taken from PPHS III Item 2.6). The operational definition of remission used in this study was the same as that used in the WHO study. It is a state following a psychotic episode in which none of the symptoms characteristics of a psychotic episode would be present for a minimum period of 30 days.

c) Occupational outcome: For the assessment of occupational outcome, 3 items on PPHS III were used. viz: 6.10; 6.13; and 7.3 along with 11.4 of PPHS I. Different items of PPHS III were used for housewives and students.

d) Social outcome: For the assessment of Social outcome, PSE items 106 and 107 and PPHS III 9.1.1 to 9.1.4 items were used.

An overall assessment of outcome was done using the above 4 dimensions to give the best, worst and intermediate outcomes. This has been referred to as 'overall outcome'. An outcome grouping similar to that used in IPSS (WHO 1979) was also used. This was referred to as IPSS outcome.

Offshoot studies

Each of the centre carried out offshoot study to explore relationship of other dimensions with course and outcome of schizophrenia. Lucknow centre studied the Attitudes of key relatives and the outcome of

schizophrenia. Madras and Vellore centers carried out studies on (a) Life events and the course and outcome of schizophrenia, (b) Disability in schizophrenia.

Results and conclusions:

The following are the main observations of this study:

(1) The clinical manifestations of schizophrenia are very similar in all the 3 centres. The following were the commonest clinical manifestations: lack of insight, social impairment, blunted affect, auditory hallucinations, delusions of persecution, delayed sleep, self neglect, social withdrawal, and incoherent speech.

(2) Most of the symptoms subsided at 2 year follow up and the same tendency continued at the end of 5 years.

(3) The follow up rate was about 84% at the end of 2 years and 75% at the end of 5 years.

(4) About 67% of patients showed good outcome at the end of 2 years and 5 years using IPSS method (tables 1 & 2). This is very similar to the outcome in Agra center in the I.P.S.S.

(5) The 3 centres did not differ in the course and outcome.

(6) The following factors are significantly related to the course and outcome at 5 year follow up:

(a) Drug compliance

(b) Absence of dangerous behaviour

(c) Rise in socioeconomic level

(d) Low level of education

(e) Short duration of illness

(f) Younger age of onset

(g) Absence of economic difficulties

(h) Absence of delusions of persecution

(i) Presence of agitation.

Besides the above, another nine factors also were significantly related to good outcome at 2 year follow-up, namely, presence of religious activities at the time of intake; absence of self neglect as a presenting symptom; items such as schizoid traits in personality, catatonic symptoms. Avoidance of relatives and neighbours was also associated, but a little less than being statistically significant.

(7) A combination of factors such as absence of dangerous behaviour, good drug compliance, rise in socioeconomic level, low age of onset of illness, low level of education, rural background, regular occupational history and acute onset can correctly classify about 80% of patients into good and bad outcome groups.

(8) Of the 386 patients studied, 12 patients committed suicide, thus giving a suicide risk of 3.1%.

(9) The offshoot study on Disability showed that the mean disability score were between mild to moderate. There was high correlation between the disability score and all the course and outcome parameters. Good outcome groups had low disability score.

(10) The offshoot study on life events showed that neither the total number of life events nor the objective stress score were significantly related to relapses.

(11) The offshoot study on Attitudes of key relatives showed that number of critical comments, hostility, dissatisfaction, and lack of warmth are significantly related to poor course and outcome and relapses.

Table 1: Course and outcome of schizophrenia cases at Second Year Follow up.

		Madras (N=84)		Vellore (N=66)		Lucknow (N=176)		Total (N=326)	
		No.	%	No.	%	No.	%	No.	%
I.	**Psychotic state**								
	1. 0-15%	40	48.2	44	68.8	118	67.0	202	62.5
	2. 16-45%	28	33.7	11	17.2	39	22.2	78	24.1
	3. 46-75%	9	10.8	6	9.4	17	9.7	32	9.9
	4. 76-100%	6	7.3	3	4.6	2	1.1	11	3.5
II.	**Pattern of course**								
	1. Best remission	42	50.6	34	53.1	70	39.8	146	45.2
	2. Worst remission	15	18.1	6	7.8	14	8.0	34	10.5
	3. Intermediate	26	31.3	25	39.1	92	52.3	143	44.3
III.	**Occupational adjustment**								
	1. No impairment	33	39.8	28	43.7	69	39.2	130	40.2
	2. Severe imp	17	20.5	7	10.9	33	18.7	57	17.6
	3. Some imp.	33	39.8	29	45.3	74	42.0	136	42.2
IV.	**Social interaction**								
	1. No impairment	22	26.5	16	25.0	71	40.3	109	33.7
	2. Severe impairme	7	8.4	12	18.7	22	12.5	41	12.7
	3. Intermediate	54	65.1	36	56.2	83	47.2	173	53.6
V.	**Overall outcome**								
	1. Best	23	27.7	24	37.5	58	33.0	105	32.5
	2. Intermediate	47	56.6	35	54.7	104	59.0	186	57.6
	3. Worst	13	15.7	5	7.8	14	8.0	32	9.9
VI.	**Outcome group-IPSS classification**								
	1. Very favourable	32	38.5	33	51.6	62	35.2	127	39.4
	2. Favourable	10	19.3	11	17.2	60	34.1	87	26.9
	3. Intermediate	29	35.0	16	25.0	51	29.0	96	29.7
	4. Unfavourable	6	7.2	3	4.7	1	0.6	10	3.1
	5. Very unfavour	0	0.0	1	1.5	2	1.1	3	0.9

Table 2: Fifth year follow-up: Course and Outcome

		Madras (N=68)		Vellore (N=60)		Lucknow (N=159)		Total (N=287)	
		No.	%	No.	%	No.	%	No.	%
I.	**Psychotic state**								
	1. 0-15%	46	67.6	33	55.0	114	71.7	193	67.2
	2. 16-45%	14	20.6	16	26.7	38	23.9	68	23.7
	3. 46-75%	6	8.8	9	15.0	7	4.4	22	7.7
	4. 76-100%	2	2.9	2	3.3	0	0.0	4	1.4
II.	**Pattern of course**								
	1. Best remission	16	23.5	19	31.7	46	28.9	81	28.2
	2. Worst remission	4	5.9	4	6.7	5	3.1	13	4.5
	3. Intermediate	48	70.6	37	61.7	108	67.9	193	67.2
III.	**Occupational adjustment**								
	1. No impairment	25	36.8	24	40.0	63	39.6	112	39.0
	2. Severe impairment	11	16.2	10	16.7	30	18.9	51	17.8
	3. Some impairment	32	47.1	26	43.3	66	41.5	124	43.2
IV.	**Social interaction**								
	1. No impairment	14	20.6	17	28.3	43	27.0	74	25.8
	2. Severe impairment	9	13.2	21	35.0	32	20.1	62	21.6
	3. Some impairment	45	66.2	22	36.7	84	52.8	151	52.6
V.	**Overall outcome**								
	1. Best	11	16.2	17	28.3	40	25.2	68	23.7
	2. Intermediate	53	77.9	39	65.0	114	71.7	206	71.8
	3. Worst	4	5.9	4	6.7	5	3.1	13	4.5
VI.	**IPSS outcome**								
	1. Very favourable	14	20.6	18	30.0	45	28.3	77	26.8
	2. Favourable	31	45.6	15	25.0	70	44.0	116	40.4
	3. Intermediate	21	30.9	24	40.0	44	27.7	89	31.0
	4. Unfavourable	2	2.9	2	3.3	0	0.0	4	1.4
	5. Very unfavourable	0	0.0	1	1.7	0	0.0	1	0.3

PSYCHOPATHOLOGY OF DEPRESSION

The project was undertaken by the ICMR Centre for Advanced Research on Health & Behaviour at Madurai Medical College, Madurai with following general aims:

a) To examine the cognitive triad in cases of major depression.

b) To correlate the cognitive triad with depressive mood, pineal gland function and cortisol profile in depressed patients.

c) To examine whether recurrences of depressive disorders are characterized by the re-appearance of pattern of original disorder of thinking and associated pineal gland and cortisol abnormality.

The consecutive cases of major depression attending the OPD of Institute of Psychiatry, Govt. Rajaji Hospital, Madurai were examined from 1st November 1986 to 30th April 1987. 50 cases satisfied the inclusion criterion – diagnosis of major depression as per DMS-III and consensus on diagnosis between two psychiatrists who independently examined the case. The methods of assessment included: Schedule for Standardized Assessment of Depressive Disorder (WHO, 1984), Beck's Depressive Inventory, Beck's Hopelessness Scale, Presumptive Life Events Scale, and Crandell's Cognitions Inventory.

The study required observation on remissions, recurrences, complications like suicide behaviour and most importantly to study the cognitive abnormality (based on clinical, BDI, BHS and CCI ratings), its persistence in phases of remission and recurrence and estimation of melatonin levels (in blood and urine). The occurrence of chronicity and refractoriness to treatment were also noted.

During the phases of remission and recurrence, standard psychiatric examination was carried out as well as the re-administration of the schedules (BDI, BHS, CCI etc.) as at index evaluation. Estimation of melatonin (in blood and urine) was carried out during these phases.

The main findings of the study are as follows:

1. 45 cases out of 50 could be followed up to 36 months:
   - Cases that remained unchanged = 6.7%
   - Cases that pursued recurring course = 1.1%
   - Cases in remission after index intervention without any recurrence = 2.2%
2. The mean age of onset was lower (31.47 years) for those pursuing a recurring course than those who are in continuous remission (46.16 years)
3. The sample of 50 subjects comprised 21 suicide attempters prior to index evaluation. During follow up five instances of suicide attempts (one of which was a completer) were encountered. These happened in their recurrent state of illness.
4. Two thirds of remitted patients were free from cognitive abnormality during first remission.
5. Those with cognitive abnormality in remission are more prone for recurrence than those who do not have cognitive abnormality during remission.
6. A significantly higher risk for early recurrence was found among those who had cognitive abnormality persisting notwithstanding clinical remission.
7. Those who pursued a recurring course had more stressful life events than those who are in continuous remission without recurrences in remitted state.
8. The melatonin study on depression concluded that a dip in nocturnal melatonin levels appears to be a feature of depression and its reversal towards normal the index of recovery. Failure to register a nocturnal rise in melatonin seems characteristic of patients with persistent negative cognitions even while they had recovered from depression.

A CLINICAL STUDY OF THE HIV INFECTED PATIENTS

The study was undertaken by the ICMR Centre for Advanced Research on Health and Behaviour at the STD OP Department of Govt. Rajaji Hospital, Madurai with following objectives: (i) to study psychiatric and neurological features and neuropsychiatric syndrome in HIV infected subjects, (ii) to allocate clinical syndrome according to DSM III R category of diagnosis, (iii) to assess the premorbid personality of the subjects with an emphasis on sexual behaviour prior to the index evaluation, and (iv) to offer psychiatric, psychological and other management measures to the subjects and the family members.

The research team consisting of medical officers, social workers and clinical psychologists screened consecutive registrants. The demographic details, the

Table 1: Source of Intake

S.No.	*Source of intake*	*Male (N=90)*	*Female (N=45)*	*Total (N=45)*	%
1.	STD-OPD	34	17	51	57
2.	Referred by AIDS surveillance Centre	10	11	21	23
3.	Vigilance Home	-	7	7	8
4.	Prisons	1	10	11	12

Table 2: Distribution of HIV cases by marital status

S.No.	*Marital Status*	*Male (N=45)*	*Female (N=45)*	*Total (N=90)*	%
1.	Unmarried	21	8	29	32
2.	Married	19	23	42	47
3.	Widowed/separated/divorced	5	14	19	21

Table 3: Distribution of HIV cases by occupation

S. No.	*Occupation*	*No.*	*%*
1.	Coolie/worker	26	29
2.	House wife	16	18
3.	Prostitute	23	25
4.	Transport workers	8	9
5.	Others	17	19

Table 4 – Mode of HIV Infection

1.	Promiscuity of the subject	68
2	Heterosexual	73
3.	Bisexual	5
4.	Promiscuity in spouse	4
5.	Blood Transfusion	3
6.	Could not be ascertained	10
	Total:	90

correct address of the subjects and clinical features of STDs were collected at the initial screening, and the blood was collected for sero testing for syphilis and HIV. After the receipt of HIV result, the sero-positive subjects were contacted by home visits or at the STD OP itself. 90 HIV positive cases could be registered after screening 5483 cases. The source of intake is shown below in table 1.

Further data on clinical and behavioural aspects were collected and the following rating scales were administered: BDI, BHS, CPRS and Bender Gestalt and memory scales. STD findings were obtained from Dept. Of STD, and Professor of Neurology furnished the neurological findings. The psychiatric and psychological status was ascertained by the Principal Investigator and the project medical officers. In thirty-eight subjects brain CT scan could be done.

The seropositivity status was disclosed to the patients and consequent psychological responses noted.

The psychological responses in general, especially the negative ones following the disclosure of HIV seropositivity were elicited in 50 subjects. The method of eliciting the response was more or less on the lines of clinical psychiatric examination. It must be stated that a number of subjects who were the inmates of Vigilance Home, Prison at the time of intake have already had a 'hunch' that they were infected with HIV. In these subjects, a clear-cut response following the disclosure or confirming their fear of having contracted the infection could not be made out. The negative psychological responses to disclosure were in the nature of depressed mood, an attitude of resignation, a fear of death, disfigurement and apathy. However, there were others who appeared to remain unperturbed and also those who expressed a "denial". No reaction was observed in 10 and an attitude of "unconcern" was noticed in 8. In all, thirty-two subjects showed negative responses: (overlapping in some) Depressed mood with suicide tendency (20), Suicide attempts (5), a panic reaction with fear of death (6), anxiety (15), fear of disfigurement (1), Two of the subjects who reacted with depression proceeded to a full major depression. The schedules were administered in these cases to assess the degree of anxiety, depression and state of hopelessness.

STD diagnosis

An assessment was possible in 79 subjects. Sixty-five (82%) had one or more STD diagnosis. These are as follows: Syphilis (34), Trichomonas vaginolis (12), genital warts (8), genital herpes (5), Gonorrhoea (6), Chancroid (5), L.G.V. and P.I.D. (3), Kaposi's sarcoma (1) etc.

Other physical diagnosis

An assessment was possible in 71 subjects. Thirty subjects (42%) were diagnosed to have one or more of other physical illnesses. These are as follows: P.T. (4), Bronchitis and L.R.I. (4), Peptic ulcer and chronic diarrhea (3), Hansen's disease (2), Viral fever (2), Chronic Myeloid Leukemia (1), Cirrhosis lever (1), Urinary tract infection (1) etc.

Psychiatric illness

Thirty-four (49%) of the 70 subjects assessed had

Table 5 – Diagnostic classification of psychiatric disorders

S. No.	*Diagnosis*	*No.*	*%*
1	Depression	24	34.3
2	Mental Retardation	7	10.0
3	Substance abuse	5	7.1
4	Alcohol abuse	2	2.8
5	Paranoid schizophrenia	1	1.4
6	Grief reaction	1	1.4
7	Chronic anxiety	1	1.4

Table 6 – Psychometry Findings

	N	%
INTELLIGENCE (N=67)		
Superior	-	-
Average	37	55.2
Below average	30	44.8
VISUO-MOTOR FUNCTION (N=67)		
Normal	21	31.3
Abnormal	46	68.1
MEMORY (N=67)		
Verbal impairment only	4	
Non-Verbal impairment only	6	53.7
Both impairment	26	
Both intact	31	46.3
PERSONALITY (N=67)		
Extrovert with neuroticism	23	34.3
Neuroticism with extroversion	43	64.2
Ambivalent	1	1.5

one or more diagnosable psychiatric disorders. The diagnostic break up of psychiatric disorders is given below in Table 5.

Psychometric findings

The psychometric findings have been presented in table 6. There was evidence of extroversion and neuroticism in almost all cases (98%). As many as 45% were rated as below average on intelligence and 55% were in the 'average' category. None was rated as 'superior'.

Abnormality in visuo-motor function was detected in 68% of subjects. On the memory scale 54% were found to have verbal impairment, or non-verbal impairment or both.

Scan Findings

Brain CT Scan was done in 38 subjects. These findings are as follows:

i) Cerebral oedema 10
ii) Possibility of post-encephalitic sequelae 2
iii) Possibility of pituitary adenoma 1
iv) Cortical atrophy 1
v) Bil. Calcaneum ; Baral Bronchiectasis 1
vi) Suggestive of old tuberculoma 1
vii) Old treated granuloma 1
viii) Normal 21

Intervention measures consisted of psychiatric treatment with drugs and counseling; treatment of STDs and other physical diseases. Health education was imparted with a view to prevention of spread of infection from the subjects. The impact of health education and the degree of compliance and behaviour change were noted. The change in behaviour among the promiscuous did not correlate with age, sex, literacy or marital status. The only factor that appeared to influence favourable in effecting a behaviour change was the shorter duration of the currently diagnosed STDs or absence of earlier STD history.

ILLNESS BEHAVIOUR IN PATIENTS PRESENTING WITH PAIN AND ITS RELATIONSHIP WITH PSYCHOSOCIAL AND CLINICAL VARIABLES

Chronic and intractable pain is a common medical problem responsible for large amount of health service utilization, economic loss and suffering to the afflicted persons. This project was undertaken with the objective to (i) study the illness behaviour in patients primarily presenting with chronic pain, (ii) study the role of psychological and socio-demographic variables in illness behaviour of such patients, (iii) study the efficacy of selected therapeutic measures on illness behaviour in patients with chronic intractable pain, and its relationship with psychosocial variables.

A pilot study was first undertaken on fifty-one consecutive new patients reporting to the following clinics of Postgraduate Institute of Medical Education and Research, Chandigarh:

Pain clinic, General medicine, Neurology/ Neurosurgery clinic, Orthopaedic clinic, Gynaecology clinic, Psychiatry clinic, Rheumatology clinic, Radiotherapy/Cancer clinics.

Main Study

The main study included two hundred consecutive patients reporting to the various clinics as described above. Only those patients were included who had "continual" pain. Pain has been operationally considered to be continued if the pain-free period did not exceed four days at a time. The other inclusion/exclusion criteria were as follows:

Inclusion criteria: Patients with the first or second volunteered complaint of 'pain' of duration of three months or more. For the purpose of the study, pain was operationally defined as the complaint of 'pain' referred to the body or any part of it.

Exclusion criteria: The following patients were not selected for the study:

a) Children below 15 years of age, and people above 65 years of age.

b) Patients with gross organic lesion ordinarily sufficient in the estimate of the treating clinician to explain existence, and substantially the severity of pain.

Procedure of data collection: Co-operation of colleagues was solicited for referral of patients from the concerned clinics. The patients thus referred were screened using the inclusion/exclusion criteria. Subjects thus included were examined and interviewed clinically to collect the following data:

a) Sociodemographic variables: Age, sex, marital status, religion, education, occupation and rural-urban background were elicited from the patient and/ or one of his close relatives.

b) Clinical variables: The data pertaining to the following clinical variables was studied:

- Organ/system wise classification of pain
- Qualitative description of pain
- Severity of pain measured in terms of disability caused
- Mental status examination using a structured schedule
- Clinical diagnosis (physical and psychiatric) using ICD-9

c) Psychological variables: The psychological variables studied were:

- Life events – using the Social Readjustment Rating Scale (Holmes and Rahe, 1967).
- Psychoticism, Extraversion, Neuroticism Inventary (PEN) (Eysenck and Eysenck, 1968) as translated and adapted at Chandigarh (Verma and Wig, 1972).
- Illness Behaviour: was assessed using Pilowsky's Illness behaviour questionnaire (IBQ). (Pilowsky and Spence, 1975). The questionnaire was translated and adapted for use in this part of the country.

d) Pilot study of selected treatment modalities in patients was attempted. The patients were subjected to psychotherapy, acupuncture and conventional treatment. These subjects were followed up after 3 months to assess the efficacy of the treatment methods.

e) A general information manual was prepared giving relevant details of the study .

Follow-up

Attempts were made to contact all patients for follow-up. One hundred and thirty patients could be followed up at three months from intake or within two weeks of termination of therapy and the following data were collected:

- Treatment given
- Change in intensity of pain
- Duration of attack of pain
- Frequency of pain
- Change in psychological problems encountered.

Mental State Examination was repeated using screening version of PSE. Illness Behaviour Questionnaire was re-administered to look for any changes.

Observations

It was found that 100 cases (50%) had a physical diagnosis while the remaining 50% had no physical diagnosis. The physical disorders included Arthralgia, Rheumatoid Arthiritis, Trigeminal Neuralgia & CNS conditions, Gastro-intestinal (IBS, Peptic ulcer), Neoplasms, Genitourinary and others. 144 cases (72%) had diagnosable psychiatric problem. The more frequent psychiatric disorders found among patients presenting with pain were: Depressive neurosis, Anxiety states, hysteria & Hypochondriasis, Psychalgia and others (Table 1). Intensity of pain was moderate to severe in 81 (40.55%) cases and mild in remaining about 60% cases (Table 2).

Comparison of pain with and without organicity

To see the relationship between the pain and its organic basis, the sample was divided into two groups as follows:

(i) Patients with absolutely no identifiable physical disease or illness, or where the physical illness or organic lesion was not considered by the physician to be adequate to explain the nature and severity of pain. They were labeled as patients of non-organic, chronic, intractable (NOCI) pain.

(ii) Patients suffering from chronic, intractable pain having a diagnosed physical illness or definite organic pathology sufficient to explain the pain.

The two groups were comparable with each other in the socio-demographic attributes, pain variables, psychosocial problems and psychiatric diagnosis.

Table 1: Physical and Psychiatric Diagnosis of Pain Patients.

Physical Diagnosis	*N*	*Anxiety States*	*Depressive Neurosis*	*Hyst.& Hypoch ondriasis*	*Psychalgia*	*Others*	*Psychosis*	*No Psy. Dis.*
Neoplasms	10	3	6	0	0	0	0	1
Trigeminal Neuralgia & CNS conditions	21	4	5	1	0	0	0	11
Gastro-Intestinal Disturbances (IBS, Peptic ulcer)	14	5	5	2	0	1	0	1
Genitourinary	7	2	1	1	0	0	0	3
Arthralgia Rheumatoid Arthritis	42	2	12	3	1	1	1	22
Others	6	0	0	0	0	2	0	4
Nil Organic	100	22	32	19	5	6	2	14

Table 2 - Intensity of Pain.

Site of Pain (Organ system- wise)	*Intensity*			*Total (N=12)*
	Mild (N=200)	*Moderate (N=119)*	*Severe (N=69)*	
Head, face & neck	56	24	28	4
Chest-Abdomen	47	30	15	2
Back and Lower back	30	21	8	1
Extremities	41	26	12	3
Whole body and others	26	18	6	2

Table 3 presents the pain variables like site, qualitative description, intensity, frequency, and duration of pain vis-à-vis organicity. The NOCI pain was uniformly represented over various parts of the body – head, face and neck (29 per cent), chest and abdomen (22 per cent), extremities (20 per cent). Fourteen per cent patients had pain all over the body. There is a significant difference ($P< 0.05$) as regards qualitative description. 'Dull' aching pain was the predominant type, though the other variates of pain were also reported. There was no difference in the two groups of chronic pain patients as regards frequency and duration of pain.

Psychosocial problems

Non-organic chronic pain has caused marked psychosocial disability. Eighty one percent had personal dissatisfaction. Fifty five percent reported disinterest in work and lack of work motivation. Absenteeism from work was associated with 41% cases. Forty one percent had social problems and 26% domestic problems. Similar conditions were found in patients with identifiable organicity. There was no significant difference between NOCI patients and those with some organicity with regard to social problems, except school/college disruption, which was significantly, more in NOCI pain patients (Table 4).

Other important parameters of illness behaviour in patients presenting with pain included depressive symptoms, and biological disturbances of depressive nature, which have been presented in tables 5 and 6. The tables are self-explanatory.

Conclusions

Two hundred consecutive patients between the age range of 15-65 years with first or second volunteered complaint of pain of more than three months duration with the pain free period not exceeding 4 days at a time, with no gross organic pathology, were studied. Some inferences that can be drawn from this study are as follows:

i) There is a good sample representation in all clinics of patients with pain as the chief symptom of presentation.

ii) Pain is uniformly present in all age groups and both sexes. Marital status and occupation also made no significant differences in the presentation of pain.

iii) Pain has been reported to be 'severe' in intensity by those educated up to matric, 'mild' pain has been reported more by those educated above matric. Pain of 'severe' intensity is reported more often by patients from rural background.

iv) Certain physical illnesses, namely neoplasm, nervous system disorders are more often associated with 'severe' pain.

v) "Continuous" pain was reported by a great majority (75 per cent) of patients.

vi) Common psychosocial problems are associated with patients presenting with chronic, continual pain. Lack of interest and motivation in work, personal dissatisfaction and social problems were more often reported.

vii) Seventy-two per cent of patients had identifiable psychiatric problems. Neurotic disturbances

Table 3: Clinical description of pain

	Total Cases N=200	*NOCI* N=100	*Chronic Pain with some organicity* N=100	*p value*
Site of pain				
Head and face	56	29	27	
Chest/abdomen	47	22	25	
Pelvis and back	30	15	15	N.S.
Extremities	41	20	21	
Whole body	26	14	12	
Qualitative description				
Dull	77	42	35	
Pricking/burning	48	26	22	
Squeezing, pulling, boring	34	13	31	0.05
Throbbing	41	19	22	
Intensity of pain				
Mild	119	66	53	
Moderate	69	29	40	N.S.
Severe	12	5	7	
Frequency of pain				
Once a week or more	32	19	7	
Once or several times a day	21	7	14	N.S.
Continuous	147	74	73	
Duration of pain				
Less than 1 day	41	23	18	
One day to 1 week	9	3	6	N.S.
One week to 1 month	3	0	3	
Continuous	147	74	73	

predominate. Depressive neurosis and anxiety neurosis were diagnosed in almost 50 per cent of the sample.

Fifty per cent of the cases had no identifiable organic pathology in any form or severity. The other 50 per cent of the cases had some physical problems associated, but it was not sufficient to explain the severity and nature of pain.

viii) Though the majority of patients reported psychological symptoms as anxiety, worrying, depression, lack of confidence, only 17 per cent had sought any form of psychiatric treatment prior to inclusion in the study.

ix) Almost 80 per cent had reported improvement after various treatments given of which 43 per cent reported 'good relief'. An overall improvement was also noticed in the psychosocial problems and the psychiatric symptoms.

x) Ten of the subjects treated with Acupuncture could be followed up. 'Partial' to 'good' relief was reported by 80 per cent though the pain remained 'continuous' in duration in nine of the ten subjects. A general improvement was noticeable in the psychosocial problems.

Table 4: Psycho-social problems encountered

	Total Cases N=200	*NOCI N=100*	*Chronic Pain with some organicity (N=100)*	*p value*
Absenteeism	71	41	30	N.S.
Marital discord	16	10	6	N.S.
Lack of work motivation	116	55	61	N.S.
Personal dissatisfaction	165	81	84	N.S.
School-College disruption	15	12	3	0.02
Disinterest in work	110	54	56	
Social problems	87	41	46	N.S.
Domestic problem	44	26	18	N.S.

Table 5: Depressive Symptoms

PSE Item	*N*	*%*
Subjectively inefficient thinking	11	5.5
Poor concentration	33	16.50
Neglect due to brooding	27	13.50
Irritability	83	41.50
Loss of interest	63	31.50
Depressed mood	80	40.00
Hopelessness	33	16.50
Suicidal plans	16	8.00
Social withdrawals	19	9.50
Self-depreciation	12	6.00

Table 6- Biological disturbances of depressive nature

PSE Item	*N*	*%*
Loss of weight	*36*	*18.00*
Delayed sleep	27	13.50
Subjective anergia and retardation	23	11.50
Early morning waking	4	2.00
Loss of libido	34	17.00
Morning depression	12	6.00

MENTAL HEALTH INDICATORS

MENTAL HEALTH INDICATORS

ICMR – WHO PROJECT ON MENTAL HEALTH INDICATORS

An ICMR –WHO project on mental health indicators was initiated to develop Indicators of well-being and to develop psychosocial interventions to improve well being of young mothers. The project was carried out at three centres: Bangalore, Delhi, Lucknow. Following indicators of mental health were developed during first phase of the project:

- Subjective Well Being Inventory to assess well being at individual level

- Home Risk Card (well being at family level)

Subjective well being inventory

Although human health has been explored in depth, yet the positive subjective well being has been largely ignored. Some theoretical and empirical work on well-being has been undertaken over last two decades, subjective well being has been of central importance to those interested in measuring the quality of life.

The subjective Well Being inventory developed in ICMR-WHO project consists of 40 items. Nineteen of these elicit positive affect, that is, whether one feels happy or good or satisfied about particular life concerns. Twenty-one items elicit negative affect i.e., unhappiness or worry or regret about particular life concerns. A brief description of dimensions of subjective Well Being Inventory (as identified by factor analysis) and number of questions in each dimension are given in Table 1.

The inter-rater reliability exercises were carried out during initial phase of the project. The inter-rater reliability was found to be high ; intra centre as well as inter-centre. The factor validity was established through factor analysis. The factor analysis was carried out separately for the following strata of study sample: (a) each of three centres separately, (b) for males of all centres combined, (c) for females of all centres combined, (d) for all persons aged less than 18 years, and (e) for all persons aged over fifty years. This provided an opportunity to study the stability of factor structure across centres, for males as well as females, and separately for adolescents and for elderly (to examine whether the factor structure breaks down towards the tail of age range included in the study or it remains stable). The factor structure was found to remain stable across all strata of study population. The concurrent validity of Subjective Well Being Inventory was assessed by finding correlations between scores on subjective well-being and Home Risk Card (HRC).

Home Risk Card (HRC):

Home Risk Card (HRC) is another instrument developed in the first phase of the project. The requirement was to prepare a short instrument – a service tool, which can be used by field workers. The use of tool should not mean additional burden and its usage should require only a few minutes during home visit of families by the anganwadi worker/field worker, and she should be able to interpret and make use of data in her day to day work.

The first version of the instrument developed was a comprehensive schedule consisting of 71 items. A step up multiple regression analysis of HRC items was undertaken with (a) nutritional status of children as dependent variable, and also with (b) cognitive development of children as dependent variable. This led to identification of 21 items that made significant contribution to cognitive development or nutritional status of children. This helped in reducing the interview schedule for identifying children at risk from 71 items to 21 items.

The 21 items belonged to seven areas (factors). Inter rater agreement exercises were undertaken to find out if these seven factors could be directly rated as present or absent by health workers in a reliable manner. The inter-rater agreement between research worker and each

Table 1: Description of factorial dimensions of Subjective Well Being Inventory

S. No.	*Factor* (No. Of items)	*Description*
1.	Subjective Well-being Positive affect	Feeling of well-being arising out of an overall perception of life as functioning smoothly and joyfully.
2.	Expectation-achievement Congruence	Feelings of well being generated by achieving success and the standard of living as per one's expectation, or what may be called satisfaction.
3.	Confidence in coping	Perceived personality strength, the ability to master critical or unexpected situations. It reflects positive mental health in an "ecological sense" i.e. the ability to adapt to change and to face adversities without breakdown.
4.	Transcendence	Feelings of subjective well being derived are beyond the ordinary day-to-day material and rational existence. These have a touch of spiritual values.
5.	Family group support	Positive feelings derived from the perception of the wider family as supportive, cohesive and emotionally attached.
6.	Social support	Feelings of security derived from supportive attitude in times of crisis
7.	Primary group support	Feelings of happiness/worry about one's relationship with primary family, viz. spouse and children.
8.	Inadequate mental mastery	Feelings of having a sense of insufficient control over, or inability to deal efficiently with certain aspects of life that are capable of disturbing the mental equilibrium. This inadequate mastery is perceived as disturbing or reducing subjective well-being.
9.	Perceived ill health	Perceived physiological dysfunctioning complaints
10.	Deficiency in social contacts	Feelings of missing friends or lack of close relationship.
11.	General Well-being-negative affect	Feelings of ill being in an overall perspective, reflecting a generally depressed outlook on life.

anganwadi worker was found to be over 80 per cent for each factor separately. The use of HRC in phase II of project established sensitivity of HRC in assessing change brought about by family intervention programme. Factors of HRC are described in table 2.

Table 2: Factors of HRC Schedule

Description

Neighborhood Environment

- Inadequate play space
- Neighbors who dislike/discriminate against the child
- No peer group
- Witnessing aggression and violence would constitute adverse neighborhood environment

Abject poverty

- Difficulty for food, clothes etc.
- Cannot arrange play material for child
- Kuccha house

Poor house keeping

- Unclean house
- Evidence of poor house keeping
- Children unclean

Personality characteristics of mother

- Sad or depressed for long period without reason
- Gets upset easily

Severe marital discord

- Often serious problems with husband
- Often solid reason for conflict
- Conflict over money matter
- Conflict over children
- Not happy with married life

Neurotic traits

- Bed-wetting
- Stammering

Child neglect/abuse

- Not showing affection to child
- No regular routine for child
- Frequent beating
- Blaming, scapegoating or humiliating the child

Lack of playmates for the child

Phase -II

Psychosocial interventions to improve well-being of young mothers were developed and these were carried out through home visits by Anganwadi Workers during second phase of the project. The strategy adopted for family (psychosocial) interventions is shown in the schematic diagram.

Child health was chosen as the entry point in the homes as visit of health worker/Anganwadi worker to the home for child health activities is accepted and welcomed by the families. The Anganwadi workers were given orientation training and on the job training for the intervention. During initial visits, the Anganwadi workers evaluated the family in terms of problem areas in the family such as abject poverty, adverse neighbourhood environment, poor house keeping, emotional/psychological problems of young mother such as irritability or remaining sad without reason, neurotic traits in children, child neglect severe marital discord and the family resources such as knowledge about health care needs, willingness to cooperate in the intervention adequate coping ability, economic stability, adequate family routine, presence of family cohesiveness, presence of a leader or person from whom counsel is sought. The intervention workers helped the women enhance their coping abilities for tasks related to their day to day life in which child care also formed an important part.

The results of intervention showed that there was significant improvement that was maintained at follow-up also in various health parameters. The improvement in subjective well being of young mothers is shown below. A significant difference (marked improvement in experimental groups as compared to control group) was found in the following factors of S.W.B.I.

SCHEMATIC DIAGRAM OF FAMILY INTERVENTION

Indentification of Risk factors / resources	Indentification of Family capabilities

Selection of entry point

- As a part of tasks already being done by the worker, e.g. health education, MCH care etc
- Tasks should be perceived as needed by the family
- Tasks should be acceptable to the family

Plan of interventions

- List series of tasks to be jointly performed by the family member and the worker
- Tasks should be feasible and simple
- Tasks should be flexible

Feeling of concern

- High degree of involvement of the worker
- Empathy and understanding
- praise and appreciation of the family's efforts

Family feels helped

Health worker's satisfaction

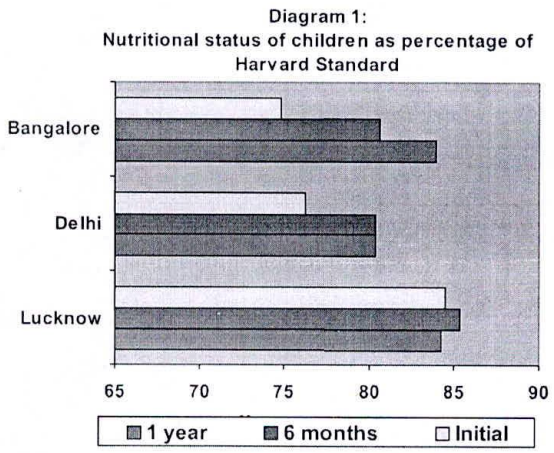
- Increases family's participation overtime
- Sense of imporvement and gain in confidence
- Measurable improvement on health parameters

Table 5. Percentage distribution of families by presence of H.R.C. factors at Lucknow

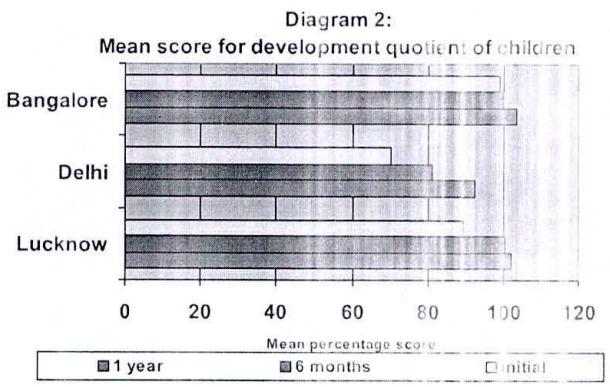
HRC factor	Percentage of families having home risk factors					
	Experimental area			Control area		
	Initial	6 months	1 year	Initial	6 months	1 year
Adverse neighborhood environment.	35.00	31.25	29.49*	54.67	49.3*	46.75*
Abject poverty.	30.00	13.75*	13.92*	34.67	29.33	26.92
Poor house keeping.	78.75	30	24.05*	58.67	46.67*	50.00*
Characteristics of mother.	33.75	16.25*	15.19*	44.00	37.33	37.17
Severe marital discord.	22.5	12.5*	11.39*	26.67	21.33	20.51
Neurotic traits.	27.5	3.75*	2.53*	22.67	12.00*	11.54*
Child neglect	82.5	56.25*	45.00*	72.00	68.00	71.79

* Indicates significant improvement as compared to initial evaluation
\# Indicates significant deterioration

NUTRITIONAL STATUS OF CHILDREN: The improvement observed in nutritional status of children is shown in bar diagram 1.



COGNITIVE DEVELOPMENT OF CHILDREN:
The improvement observed in cognitive development of children is shown in bar diagram 2.



The instruments of psychosocial measurement are usually long and serve the purpose of only research instruments. This project has attempted to develop tools of psychosocial measurement following scientific rigors, but making them so simple to use and interpret that these may be of practical use in day-to-day work of field level workers. A very significant aspect of the methodology used in their development was that the validity with relevant independent criteria was kept in the forefront from the beginning.

The project has demonstrated that it is simple to carry out psychosocial interventions at family level through home visits by field level workers with impressive positive health outcomes.

SUBJECTIVE WELL-BEING INVENTORY

People are different. They live in a variety of situations and they do not feel the same way about life and the world around them. From a practical viewpoint, it is important to know how different persons feel with regard to their day-to-day concerns like their health or family. Such knowledge is necessary if an improvement in the quality of life of people is to be brought.

This is a questionnaire on how you feel about some aspects of your life. Each question may be answered by any one of the given categories by putting a circle O around the number which seems to represent your feeling best. For example, in the first question, if you feel that your life is very interesting. Please put a circle around the response 'Very much' (1) At times you may find that your feeling is nor represented perfectly by any of the given response categories. In such cases, just choose the one closest to what you think.

All information given by you will be treated as confidential and will be used only for research purposes.

Subjective Well-being Inventory

Job No. 2 0 3 ☐ 1-3

Card No. ☐ 4

Centre_____ ☐ 5

Type of Area_____ ☐ 6

Address_____

_____

Family Serial No._____ ☐ 7-9

Name of the respondent_____

Sl. No. of the respondent_____ ☐ 10-11

Age ☐ 12-13

Sex ☐ 14

Education ☐ 15

Occupation ☐ 16-17

Subjective Well-being Inventory

1. Do you feel your life is interesting? ☐ 18

Very much	1
To some extent	2
Not so much	3

2. Do you think you have achieved the standard of living and the social status that you had expected? ☐ 19

Very much	1
To some extent	2
Not so much	3

3. How do you feel about the extent to which you have Achieved success and are getting ahead? ☐ 20

Very good	1
Quite good	2
Not so good	3

4. Do you normally accomplish what you want to ☐ 21

Most of the time	1
Sometimes	2
Hardly ever	3

5. Compared with the past, do you feel your present life is: ☐ 22

Very happy	1
Quite happy	2
Not so happy	3

6. On the whole, how happy are you with the things you have been doing in recent years? ☐ 23

Very happy	1
Quite happy	2
Not so happy	3

7. Do you feel you can manage situations even when they do not turn out as expected? ☐ 24

Most of the time	1
Sometimes	2
Hardly ever	3

8. Do you feel confident that in case of a crisis (anything which substantially upsets your life situation) you will be able to cope with it/face it boldly? ☐ 25

Very much	1
To some extent	2
Not so much	3

9. The way things are going now do you feel confident to coping with the future? ☐ 26

Very much	1
To some extent	2
Not so much	3

10.	Do you sometimes feel that all of us are part of a common force? (God or any such force)			☐ 27
		Very much	1	
		To some extent	2	
		Not so much	3	
11.	Do you sometimes experience moments of intense happiness which are difficult to describe?			☐ 28
		Quite often	1	
		Sometimes	2	
		Hardly ever	3	
12.	Does it give you happiness to think that you are part of mankind?			☐ 29
		Quite often	1	
		Sometimes	2	
		Hardly ever	3	
13.	Do you feel confident that relatives and/or friends will help you out if there is an emergency, e.g. if you lose what you have by fire or theft?			☐ 30
		Very much	1	
		To some extent	2	
		Not so much	3	
14.	How do you feel about the relationship you and your children have?			☐ 31
		Very good	1	
		Quite good	2	
		Not so good	3	
		Not applicable	4	
15.	Do you feel confident that relatives and/or friends will look after you if you are severely ill or meet with an accident?			☐ 32
		Very much	1	
		To some extent	2	
		Not so much	3	
16.	Do you get easily upset if things don't turn out as expected?			☐ 33
		Very much	1	
		To some extent	2	
		Not so much	3	
17.	Do you sometimes feel sad without reason?			☐ 34
		Very much	1	
		To some extent	2	
		Not so much	3	
18.	Do you feel too easily irritated, too sensitive?			☐ 35
		Very much	1	
		To some extent	2	
		Not so much	3	

19.	Do you feel disturbed by feelings of anxiety and tension?			☐ 36
		Very much	1	
		To some extent	2	
		Not so much	3	
20.	Do you consider it a problem for you that you sometimes lose your tempor over minor things?			☐ 37
		Very much	1	
		To some extent	2	
		Not so much	3	
21.	Do you consider your family a source of help to you in finding solutions to most of the problems you have?			☐ 38
		Very much	1	
		To some extent	2	
		Not so much	3	
22.	Do you think that most of the members of your family feel closely attached to each other?			☐ 39
		Very much	1	
		To some extent	2	
		Not so much	3	
23.	Do you think you would be looked after well by your family in case you were seriously ill?			☐ 40
		Very much	1	
		To some extent	2	
		Not so much	3	
24.	Do you feel your life is boring/uninteresting?			☐ 41
		Very much	1	
		To some extent	2	
		Not so much	3	
25.	Do you worry about your future?			☐ 42
		Very much	1	
		To some extent	2	
		Not so much	3	
26.	Do you feel you life is useless?			☐ 43
		Very much	1	
		To some extent	2	
		Not so much	3	
27.	Do you sometimes worry about the relationship you and your wife/husband have?			☐ 44
		Very much	1	
		To some extent	2	
		Not so much	3	
		Not applicable	4	
28.	Do you feel your friends/relatives would help you out if you were in need?			☐ 45
		Very much	1	
		To some extent	2	
		Not so much	3	

29.	Do you sometimes worry about the relationship you and your children have?			☐ 46
		Very much	1	
		To some extent	2	
		Not so much	3	
		Not applicable	4	
30.	Do you feel that minor things upset you more than necessary?			☐ 47
		Very much	1	
		To some extent	2	
		Not so much	3	
31.	Do you get easily upset if you are criticized?			☐ 48
		Most of the time	1	
		Sometimes	2	
		Hardly ever	3	
32.	Would you wish to have more friends than you actually have?			☐ 49
		Very much	1	
		To some extent	2	
		Not so much	3	
33.	Do you sometimes feel that you do not have a real close friend?			☐ 50
		Very much	1	
		To some extent	2	
		Not so much	3	
34.	Do you sometimes worry about your health?			☐ 51
		Very much	1	
		To some extent	2	
		Not so much	3	
35.	Do you suffer from pains in various parts of your body?			☐ 52
		Most of the time	1	
		Sometimes	2	
		Hardly ever	3	
36.	Are you disturbed by palpitations/a thumping heart?			☐ 53
		Most of the time	1	
		Sometimes	2	
		Hardly ever	3	
37.	Are you disturbed by a feeling of giddiness?			☐ 54
		Most of the time	1	
		Sometimes	2	
		Hardly ever	3	
38.	Do you feel you get tired too easily?			☐ 55
		Most of the time	1	
		Sometimes	2	
		Hardly ever	3	

39.	Are you troubled by disturbed sleep?		☐ 56
		Most of the time 1	
		Sometimes 2	
		Hardly ever 3	
40.	Do you sometimes worry that you do not have close personal relationship with other people?		☐ 57
		Very much 1	
		To some extent 2	
		Not so much 3	
		Thank you,	

HOME RISK CARD

Home Risk Card (H.R.C) is one of the instruments developed in the first phase of W.H.O. ICMR project on Indicators of Mental Health. The earlier work in this area in Sri Lanka had indicated that nutrition of the child showed significant association with lack of curiosity, opportunities for play, items reflecting the Caretaker's knowledge of child care, household organization and interest in and knowledge of child's needs. Further the Sri Lanka experience had shown that health workers could obtain reliable data on such parameters. The inter rater reliability of 90 per cent or more was found for factual items and 75 per cent or more for subjective judgments. It was decided in the present project to undertake work in this area in a holistic manner drawing from experience of Sri Lanka and other countries as well as the vast experience available in our country in the area of child mental health. The validation of the instrument with relevant and independent criterion variables was planned from the initial stage of the project.

Definition of problem

The requirement was to prepare a short instrument – a service tool, which can be used by field workers. The use of tool should not mean additional burden and its usage should require only a few minutes in known families. The field worker should be able to interpret and make use of the data in her day to day work.

This should be differentiated from a psychosocial measurement schedule which require elaborate conceptualization of theoretical constructs, and then some kind of scoring procedure to provide a measure of the psychological/social attribute under study. It was not envisaged to be an instrument requiring qualified social scientists for data collection and interpretation. No complex scoring system was desired.

The idea was to develop a set of indicators which can be rated by health worker through observations and informal talk with the housewife during home visits. The tool should help the health worker in identifying families in need of special care (with regard to psychosocial development of child and well being of mother).

Development of an interview schedule

A comprehensive schedule was first developed collect data on family, home and social environment that could be risk for healthy psychosocial development of children. This involved development of a schedule based on available literature and experience in this area. The first draft of the schedule included items on factors that were identified during similar efforts in Sri Lanka and Indonesia. This schedule was revised three times by making significant contributions based on experience of the investigators. The three revisions of the schedule were necessitated to incorporate the additional items that were suggested as a result o experience during field trials and the interaction among the experts. The following reliability exercises were undertaken during the process of evolving the Interview schedule for Identifying Children at Risk:

i) First revision : Field trial in 60 families at Bangalore and 40 families at Lucknow Centre
ii) Second revision : Field trial and inter-rater reliability exercises in 40 families at each centre.
iii) Third revision : Inter-rater, and inter-centre reliability exercises in 40 families.

The inter-rater reliability showed over 80 per cent agreement for each item of the schedule separately.

Condensation of Interview Schedule and Validity Exercises

The interview schedule for identifying children at risk (of poor psychosocial development) was reduced in size from 71 items to 21 items using step up multiple regression analysis. It also helped in validating the instrument against independent criterion variables. In order to reduce the size of H.R,.C., and to validate it against independent criterion, step up multiple regression analysis of H.R.C. items was undertaken with (a) nutritional status of children as criterion variable for Bangalore Centre (n+411) and for Lucknow Centre (n+401), (b) cognitive development of children as criterion variable for Bangalore Centres and for Lucknow Centre. The items thus selected are given in table 1. The multiple correlation R between H.R.C. items and cognitive development was found to be 0.74 and 0.65 for the two study centres respectively. The value of R between HRC items and nutritional status was 0.55 and 0.43 for the two study centres respectively.

Further evidence of validity was provided by studying the multiple correlation of these 21 items of HRC with subjective well being of mother. Multiple R was found to be 0.80 for Bangalore Centre and 0.74 for Lucknow Centre.

The interview schedule for identifying children at risk was reduced in size from 71 items to 21 items as described above. But it was still an interview schedule. The health workers are not expected to administer a questionnaire during routine home visits. The tool can be of use in routine home visits if it can help the health workers in identifying risk families (as regards psychosocial development of child and well being of mother) through some general observations and informal talk. The development of such a tool from the questionnaire was undertaken as follow:

The 21 items belonged to seven areas (factors). It was decided to undertake an exercise to find out if these seven factors could be directly rated as present or absent by health workers in a reliable manner. Inter rater reliability exercises were undertaken in 50 families at each study centre as follows:

a) 21 – item HRC rating by research worker
b) HRC-7 factor version direct rating by research worker
c) HRC-7 factor version direct rating by Anganwadi worker-I
d) HRC-7 factor version direct rating by Anganwadi worker-II

The inter rater agreement was examined between research worker and Anganwadi worker-I, research worker and Anganwadi research worker-II, Anganwadi worker-I and Anganwadi worker-II. It was found to be over 80 per cent for each factor separately.

Ratings

The factors of HRC are rated as present or absent by the health worker/AWW. Presence of two or more risk factors in a family indicates that the family is at risk (for poor psychosocial development of children). The use of H.R.C. in phase-II of the project established sensitivity of HRC in assessing change brought about by family intervention programme.

Table 1. Items of the condensed form of H.R.C. schedule

Description
Neighbourhood environment conductive for child?
Abject poverty
Difficulty for food, clothes etc. Cannot arrange play material for child Kuccha house
Poor house keeping
Unclean house Evidence of poor house keeping Children unclean
Personality characteristics of mother
Sad or depressed for long period without reason Gets upset easily
Severe marital discord
Often serious problems with husband Often solid reason for conflict Conflict over money matter Conflict over children Not happy with married life
Neurotic traits
Bed wetting Stammering
Child neglect/abuse
Not showing affection to child No regular routine for child Frequent beating Blaming, scapegoating or humiliating the child Lack of play mates for the child

GLOSSARY

1. Adverse neighborhood environment: (Not at all conducive for child's proper growth).

   It is thought that if the neighborhood environment is unsanitary, very noisy, has inadequate play space, neighbors who dislike the child, or no peer group, then the neighborhood is not conducive to the child's growth and development. If the neighborhood is delinquent and rowdy, it may adversely affect the harmony and peace of the family and thereby adversely affect the family members that take care of the child. Witnessing aggression or violence may adversely affect the child's psychosocial growth.

2. Abject Poverty: (the family has difficulty even for food/ cloths, or can not affort any play material for child).

   Deprivation means less nutrition and also less psychological stimulation or perhaps negative over stimulation due to overcrowding. Extreme poverty is also indicative of other social mental/physical problems in the family and inability of the later to meet the psychological needs of the child.

3. Poor house keeping: (Unclean house, poor house routine, unclean children).

   It is known that disorganization of the house is associated with lack of, or inadequate child care. Points of observation such as unclean house and children are important. Poor house routine indicate poor organizing capacity of the family and therefore less care to the child.

4. Characteristics of mother: (Remains sad or depressed for long periods without reason or often gets upset easily).

   A chronic physical or mental illness (depression or anxiety or any other illness) of mother is likely to adversely affect the child especially if there are no other caretakers. Similarly if the mother lacks self confidence, this may also adversely affect the psychological development of the child. The mother will never be sure what she is doing is right or wrong and may be inconsistent in her behaviour with the child, especially discipline (constant nagging or frequent irritability of the mother may inhibit the child's expression of feelings and thinking.

5. Severe marital discord: (often serious problems among the couple, conflict over money matters, drinking habits, or general dissatisfaction with married life) Severe marital discord is well known to be associated with children's psychological problems. It may also have adverse effect on child rearing and on psychosocial development of child.

6. Neurotic traits: (bed wetting or stammering if any child in the house is in age group 3-6 years).

7. Child neglect: (lack of interest/affection and lack of routine, child gets frequent beating or is blamed often, child lacks play mates).

   Child neglect is reflected through criticism of the child, constant nagging, lack of appropriate affection, psychological stimulation and happy interaction, and whether the child has a routine for activities of daily living. Presence of either physical or psychological abuse will have adverse implications for child development.

(HOME RISK CARD)

	Job No.Cols.	1-3.....
Centre	:Card No.	4.....
Type of area	:	5.....
Address	:	6.....
Family serial no.	:	7-9...
Name of the mother	:	
S. No. of mother	:	10-11..
Age :	:	12.13..
Education	:	14
Occupation	:	15-16
Number of children	:	17
Number of children between 3 and 6 years		
I. **Adverse Neighbourhood Environment** (not at all conducive for child's proper growth and development)		18
II. **Abject poverty** (the family has difficulty even for food/clothes, or cannot afford any play material for child)		19
III. ***Poor house keeping*** (Unclean house, poor house routine, (unclean children)		20
IV. **Characteristics of mother** (She remains sad or depressed for long periods		21
(without reason or often gets upset easily)		22
Severe marital discord (There is often serious problem with husband, conflict over money matter, drinking habits or she does not feel happy with married life in general)		23
Neurotic traits (In any child in house in age goup 3-6 years) (bed wetting or stammering)		24
Child neglect (for any child in age group 3-6 years) (lack of interest/affection and lack of routine for child or child gets frequent beating or is blamed, child lacks playmates) a. Yes e. No. 3. Not certain		25

MEASURES OF QUALITY OF COMMUNITY LIFE

The concept of quality of community life has assumed special significance in the medical field in the wake of progressive move towards rehumanising high-tech medicine. Comprehensive health assessment should not be restricted to physical and psychopathological problems but should also include the quality of life. Assessment of health should be conceptualized holistically with due emphasis on positive aspects of health and subjective perspectives of the individual. There has been a growing awareness about the need of in-depth enquiry about the quality of life and its role in the epidemiology of various illnesses, their prevention and treatment procedures.

Health Sector in India from the time of independence has appreciated the need of community involvement in improvement of health care and several ambitious health programmes have been started with community participation as an important component. Mass media have been extensively used to educate and sensitize the people.

WHO/SEARO has been concerned with the development of indicators of quality of life; WHO/UNICEF inter-country workshops during 1980's emphasized the need of studying communities, which was re-emphasized by Regional Coordinating Group for Mental health Programme in September 1986. It was observed that little work had been done on indicators of quality of community life. The meeting also observed that it would be futile to scientifically study the community intervention programmes without developing indicators of quality of community life. ICMR and WHO have already developed Subjective Well-being Inventory for studying the quality of individual's life. ICMR has also developed Home Risk Card to study the quality of family life. As a logical sequence ICMR undertook this research project to develop an instrument to study Quality of Community Life (OOCL).

Aims of the study

The Task Force study on Measures of Quality of Community Life (QOCL) was undertaken at Chennai and Lucknow with the following objectives:

1. To carry out stepwise Ethnographic Exploration to evolve items for in-depth study on Quality of Community Life (QOCL).

2. To study the factor structure of QOCL. To carry out item reduction and to arrive at a short tool to measure QOCL.

3. To study the validity of the measures of QOCL against independent criterion variables including health related variables.

The study thus aimed to develop an instrument using the process of stepwise ethnographic exploration to measure the quality of community life and develop insights into the support systems available and operating in the community. It was conducted in villages, urban slums and other urban colonies.

Development of the Questionnaire

The concepts relevant to community life were identified by conducting a comprehensive ethnographic study in Chennai, South India, and Lucknow, North India. The sample of ethnographic study included widely divergent socio economic groups comprising of a representative segment of rural community, urban colonies, and urban slums (authorized and unauthorized). The concepts identified during this study were subsequently transformed into questionnaires by both the centres independently. The respective questionnaires were administered to 500 respondents each drawn from above-mentioned residential areas at the two centres. The data so-collected was factor-analyzed to study meaningful clustering of items. Items found to be less sensitive or less relevant to community life were dropped. The analysis based on consideration of factor loadings resulted into a reduction of number of items and to a questionnaire of 80 items. This questionnaire was again field-tested by administering it on 600 respondents each at the two centres. The data so obtained was factor-analyzed using combined data of the two centres to identify the factors relating to community life.

Analysis provided identification of 11 factors as given below:

1. Relationship with colleagues.
2. Community efforts for sanitation.
3. Support of relatives.
4. Support of family.
5. Support of neighbors.
6. Relationship with friends.
7. Medical & other facilities.
8. Social discrimination.
9. Social contacts & Community information.
10. Law & order problems.
11. Caste and religion.

To make the instrument appreciably precise so that it could be easily administered to different groups or communities, attempt was made to select only three questions for each factor having the highest factor loadings. The final questionnaire therefore consists of only thirty-three items (questions) found to be most relevant to the quality of community life.

In addition to the above, a checklist was also developed to assess infrastructure facilities. Since these facilities relate to a varied nature of community variables they were broadly categorized into the following six areas for purpose of assessment:

Internal Consistency:

To establish internal consistency of the questionnaire, squared multiple correlation of each item with all other items was computed. It was fond that each item has a significant correlation with all the remaining items of the questionnaire. As all items are significantly correlated among themselves it implies that all items measure the same characteristics (Quality of Community Life) and the instrument is internally consistent.

Validity:

Two types of validity have been established: factor validity and concurrent validity.

The separate factor analysis for the two centre yield similar factors supporting the robustness of factorial structures.

Although there is no absolute standard of QOCL and therefore we cannot demonstrate validity of our instrument by studying its degree of correlation with such a standard instrument. Concurrent validity can be shown by correlating score on QOCL with score on related measure such as infrastructure facilities (which can be seen as objective parameters of quality of community life) and Home Risk Card. Correlation analysis shows that score on QOCL has significant correlation with these parameters.

The significant differences in mean QOCL scores between different types of residential areas point to a good sensitivity of the instrument to differences in neighborhood and thereby to changes over time in socio economic development of the area.

This instrument has been able to differentiate between the quality of community life in different geographical areas as well as amongst rural and urban population. The scores on the questionnaire reflect the state of the area as is evident by similar responses in a given residential area. This questionnaire can differentially estimate the problem areas in a given community e.g. problem of discrimination in rural and urban slum of Lucknow Centre, which is different from Chennai.

This instrument can be used in all situations where community participation is central to the programme e.g. all national programmes (Family planning, Literacy etc.). In psychiatry it can be used to assess wherever community resources are utilized in rehabilitation or in district mental health programme. Proper intervention may play a significant role in the acceptance of any community-based programme.

QUALITY OF COMMUNITY LIFE QUESTIONNAIRE

Instructions for administration:

All people perceive life differently. This perception of life is intricately related to one's health and well-being. The knowledge about individual's perception of life around him can be utilized to improve health and productivity. This questionnaire contains some questions regarding perceptions of people and support facilities available to them. Read these questions carefully and circle the response which appears close to your feelings.

QUALITY OF COMMUNITY LIFE QUESTIONNAIRE

1. Are you satisfied with the amount of contact you have with people in your community?
   1. Not really 2. To some extent 3. Very much

2. Are you satisfied with opportunities to obtain information about your own locality?
   1. Not really 2. To some extent 3. Very much

3. Are you satisfied with the help you get from your neighbours?
   1. Not really 2. To some extent 3. Very much

4. Are you satisfied with the opportunities in your area to obtain general information?
   1. Not really 2. To some extent 3. Very much

5. Do you feel content about the relationship you have with your relatives?
   1. Not really 2. To some extent 3. Very much

6. Do your relatives share your happiness?
   1. Not really 2. To some extent 3. Very much

7. Do you think that you will get enough help from your neighbours in your family functions?
   1. Not really 2. To some extent 3. Very much

8. Are you satisfied with the relationship you have with colleagues at your working place?
   1. Not really 2. To some extent 3. Very much.

9. Do you think that criminals are making daily life of people difficult in your community?
   1. Very much 2. To some extent 3. Not really
   4.N.A. (unemployed, house wife, student, retired)

10. Do you feel that you can easily get good medical care?
    1. Very much 2. To some extent 3. Not really

11. Do you feel that you can easily get good medical care?
    1. Not really 2. To some extent 3. Very much

12. Do you some times feel disappointed that you cannot avail of the services/benefits which you feel are due to you?
    1. Very much 2. To some extent 3. Not really

13. Are you satisfied with the transport facilities in your area?
    1. Not really 2. To some extent 3. Very much

14. Are you satisfied with the help you get from your family members?
    1. Not really 2. To some extent 3. Very much

15. Do you think that your family members will sympathize with you in times of sorrow?
    1. Not really 2. To some extent 3. Very much

16. If people are in difficulties, do you think that it is your duty only to help persons of your own religion?
    1. I would only help people
    2. Sometimes it may be of my religion right to help people of other religions
    3. No.I should help anybody
    4. N.A. (homogenous community)

17. Do you sometimes feel disappointed for not getting what is due to you because of caste or religious considerations?
    1. Very much 2. To some extent 3. Not really

18. Are you often unhappy-because of your family?
    1. Very much 2. To some extent 3. Not really

19. Are you sometimes disappointed that friends are unwilling to help when you are in need?
    1. Very much 2. To some extent 3. Not really

20. Do you feel that your neighbours will share your grief?
    1. Not really 2. To some extent 3. Very much

21. Do you think that your colleagues at work will help you financially in times of need?
    1. Not really 2. To some extent 3. Very much
    4.N.A. (unemployed, self-employed, housewife)

22. Do your relatives share your grief?
    1. Not really 2. To some extent 3. Very much

23. Do you think your friends will help you out in times of need?
    1. Not really 2. To some extent 3. Very much

24. Could getting help from your colleagues at work cause problems in the future?
    1. Not really 2. To some extent 3. Very much

25. Do you feel that you should share your happiness only with people of your own caste?
    1. Very much 2. To some extent 3. Not really

26. If people are in difficulties, do you think that it is your duty only to help persons of your own caste?
    1. I would only help people
    2. Sometimes it may be of my own caste right to also help people of other castes
    3. No.I should help anybody

27. Are you satisfied with the ease of access of medical facilities in ;your community?
    1. Not really 2. To some extent 3. Very much

28. Do you think that sufficient efforts are being made by people in your community to maintain sanitation (disposal of sewage and waste)?
    1. Not really 2. To some extent 3. Very much

29. Do you think that sufficient efforts are being made by people in your community to manage toilet facilities?
    1. Not really 2. To some extent 3. Very much

30. Do you think that sufficient efforts are being made by people in your community to maintain the drainage facilities?
    1. Not really 2. To some extent 3. Very much

31. Do you sometimes feel disappointed for not getting what is due to you because of corruption?
    1. Very much 2. To some extent 3. Not really

32. Do you feel that criminals in your areas are too strong and powerful?
    1. Very much 2. To some extent 3. Not really

33. Are you satisfied with the relationship you have with your friends?
    1. Not really 2. To some extent 3. Very much

SCORING OF THE QUESTIONNAIRE

	Factors	Item Numbers	Scoring
I.	Colleagues	8	1,2,3
		21	1,2,3
		*24	3,2,1
II.	Community efforts	28	1,2,3
		29	1,2,3
		30	1,2,3
III.	Relatives	5	1,2,3
		6	1,2,3
		22	1,2,3
IV.	Family	14	1,2,3
		15	1,2,3
		*18	3,2,1

V.	Neighbours	3	1,2,3
		7	1,2,3
		20	1,2,3
VI.	Friends	19	1,2,3
		*23	3,2,1
		33	1,2,3
VII.	Medical & other facilities	11	1,2,3
		13	1,2,3
		27	1,2,3
VIII.	Social Discrimination	*12	3,2,1
		*17	3,2,1
		*31	3,2,1
IX.	Social Contact	1	1,2,3
		2	1,2,3
		3	1,2,3
X.	Law & Order	*09	3,2,1
		*10	3,2,1
		*32	3,2,1
XI.	Caste and Religion	*16	3,2,1
		*25	3,2,1
		*26	3,2,1

*Negatively structured items.

Note : Range of score for each factor : 3-9

Range of score for all the factors : 33-99

HIGHER THE SCORE, GREATER THE QUALITY OF LIFE

INFRASTRUCTURE FACILITY SCHEDULE

	Available (1)	Not available (2)
I. BASIC AMENITIES:		
1. Water supply		
Electricity		
sewage facility		
Garbage disposal		
Roads		
Public transport		
Markets		
II. EDUCATIONAL FACILITIES		
8. Primary school		
9. Junior High School		
10. High School		
11. Intermediate		
12. College/University		
13. Technical education		
III. HEALTH FACILITIES		
14. Dispensary		
15. P.H.C.		
16. Indoor hospital		
17. District hospital		
18. Private health facilities		
19. Medical College		

IV. OTHER FACILITIES:

20. Fair price shop
21. Post Office
22. Telephone
23. Bank
24. Cooperative Society
25. Balwadi/Anganwadi
26. Local newspaper
27. Sports facilities
28. Entertainment facilities

V. ORGANIZATIONS/ASSOCIATIONS:

29. Youth club
30. Mahila Mandals
31. Resident associations/NGOs

VI. (a) Religious bodies

(b) Caste specific associations

The infrastructure checklist can be very useful in obtaining supplementary objective information about infrastructure facilities available in the community.

The instrument consisting of 33-item questionnaire and Infrastructure Checklist could be widely used to assess the quality of community life and should be especially helpful in the studies of mental health and public health.

DEVELOPMENT OF A TOOL FOR PSYCHOSOCIAL STRESS

The research on psychosocial stress in India has so far remained confined to some specific life domains and for particular groups of people. There are several studies on organization structure, executive stress, but the nature and experience of stress in rest of the population has remained unexplored. In fact no simple measurement instrument was available for Indian population for assessment of emotional stress experienced by persons of all age groups and from different strata of society in their day-to-day life as well as due to stressful life events. There was a felt need among medical researchers for a short psychometric instrument for assessment of psychosocial stress which could be used in research on risk factors for non-communicable diseases. An ICMR project to develop such an instrument was carried out at two centres – Ahmedabad and Varanasi.

The questionnaire of psychosocial stress was prepared in the form of a 'semi-structured interview'. The self-report measure of stress purports to assess the extent of basic components/constructs of felt stress arising from excessive environmental forces in various domains of social life. In order to widen the applicability of the instrument, the items were so framed as to be suitable to assess the extent of stress of the people irrespective of their age, sex, religion, culture, educational level and socio-economic status.

The questionnaire assesses the social stressors in the area of:

(a) Tense or strained interpersonal relationships

(b) Economic constraints

(c) Excessive responsibility, over and under expectations

(d) Marriage related problems (of own or/and family members)

(e) Health related problems (of own or/and family members)

(f) Adverse social situation, legal and property related problem etc.

(g) Perceived/or imagined threat to social position, economic status etc.

The above dimensions of operational social stressors were confirmed by factor analysis. These may be considered as dimensions or subscales of stress questionnaire. The stress factor of 'personal inadequacy' or 'low self esteem' has been covered in this structure under the factors of 'interpersonal relations' and 'responsibility'.

The stress questionnaire provides for collection of information about above operational social stressors in following spheres of social interaction: person-self, family, relatives, neighborhood, peer group, work place, community or society. In addition to the questionnaire, a short measure of stress arising from infrequent but crucial life events that occurred in respondents' personal/ social life in recent past was also prepared in order to cover broader area of operation of psychosocial stress and also to make the tool more comprehensive.

Reliability:

The reliability of the scale was estimated through different methods, such as Cronbach's –Alpha Coefficient, split-half (odd-even), retest and inter-rater consistency for the whole as well as for seven sub-scales of the Stress Questionnaire on the data collected in pilot study at two centres. The analysis revealed that the score on the Stress Questionnaire as a whole as well as on its seven sub scales were stable over time. The table 1 given below shows the reliability index of the Questionnaire estimated through different methods.

Table 1: Reliability Indices of Stress Questionnaire and its Seven Sub-Scales

Sub-Scales	*Methods of Reliability Estimation*				
	Split-half (odd-even)	Cronbach's alpha	Retest(at interval)	10 days	Inter-Rater
	Sample-I N=156	Sample I N=59	Sample N=53	Sample II N=60	Sample I N=156
Strained Interpersonal Relations	.47**	.46**	.63**	.53**	.59**
Threat to social status	.65**	.51**	.53**	.86**	.48**
Economic constraints and social Liabilities.	81**	.79**	.73**	.75**	70**
Marriage Related Problems	.36**	.43**	.39**	.52**	.38**
Health Related Problems	.36**	.39**	.37**	.30**	.34**
Bureaucracy	.73**	.69**	.41**	.33**	.42**
Others	.77**	.70**	.49**	.33**	.46**
Total	.88**	.88**	.72**	.64**	.65**

**p<0 .01, * p<0 .05

Validity:

After having established factor validity, the Questionnaire was further validated against concurrent criteria. The correlation of the respondents felt stress with certain psychological, behavioural and health outcomes were examined. The obtained coefficients of correlation given in Table 2 below make it obvious that psychosocial stress as a whole as experienced in various spheres of social life correlates with symptoms of neuroticism (measured through P.G.I. Health Questionnaire), use of emotional coping patterns, and various types of behavioural and somatic pathologies.

Table 2: Coefficients of Correlation between psychosocial stress and its behavioural and health outcomes (Sample I, N = 158)

Psychosocial Stressors	*Neuroticism*	*Emotional Coping*	*Somatic Diseases*	*Behavioural Pathologies*
Strained Interpersonal Relations	.28**	.28**	.32**	.35**
Responsibilities/Liabilities	.28**	.37**	.49**	.44**
Economic Constraints	.50**	.36**	.36**	.46**
Marriage Related Problems	.31**	.28**	.31**	.27**
Health Related Problems	.51**	.38**	.41**	.45**
Adverse Social Situations	.52**	.39**	.54**	.50**
Threat to Prestige/Status	.27**	.13	.39**	.34**
Overall Social Stress	.38**	.32**	.40**	.41**

**p .01

Pattern of psychosocial stress and coping:

Pattern of psychosocial stress and coping in the community was studied using above instrument in representative samples at the two centres. The study shows that interpersonal relationships are the most important source of psychosocial stress. Another important factor is perceived/imagined fear to social position, respect, prestige, position in profession/ vocation. These perceived/imagined threat and worries/ apprehensions reflect on negative expectations from interpersonal relationships.

Research on relationship between life stress and illness has focused largely on stress caused by presumed stressful life events. The present study shows that chronic stressors are the main contributors to psychosocial stress. The event is more likely an episodic segment of continuing problems. Inventory of life events allows us to see only the segment and not its history; we ignore the more extended life circumstances of which the event may be a part. Thus in interpreting events-health relationships, we are susceptible to exaggerating the importance of eventful change and to minimizing or overlooking altogether the problematic continuities of people's lives. There are various ways in which events and chronic strains come together in stressful experience, such as events leading to events; and strains and events providing meaningful contexts for each other. Events and chronic strains often flow together in people's lives. These can be experienced either as liberating or depriving. It is not an event or strains only that merits attention, but how the organization of people's lives may be disrupted in the stress process.

The present study has also collected data on how people cope with psychosocial stress. Coping refers to the strategy adopted by individual persons to combat stress and strains. Theoretical models of Lazarus and Folkman emphasized that the selection of coping strategies is determined by stable characteristics of the individuals as well as appraisal of situation characteristics. The data of present study shows that a large number of respondents (significantly higher percentage of females than males) adopted coping style of not taking decision in stressful situation, or leave it for others to decide, or demand decision from others, or become irritable and upset. This implies that a large number of stressful situation are expected to remain unresolved without outside professional help. There is need to enhance knowledge base in the area, to assess the needs for professional help, and to develop effective interventions.

ICMR STRESS QUESTIONNAIRE

Job No.	☐☐☐ 1-3
Centre	☐ 4 4
Types of areas	☐ 5
Card No.	☐ 6
Address	
Sl. No. of Family	☐☐☐ 7-9
Namae of respodent	
Sl. No. of respodent	☐ 10
Age	☐☐ 11-12
Sex	☐ 13
Marital Status	☐ 14
Educational level	☐ 15
Occupation	☐☐ 16-17
Income of respodent	☐ 18
Family income	☐ 19
Type of family	☐ 20
Family members (in 13-16 years age range)	☐ 21
Caste & religion	☐ 22

Part-A

PSYCHOSOCIAL STRESS FACTORS

(Key for qusetions in Part A:

Not at all = 0, A little/mild/some times=1
Moderate/many times=2, Severe/often=3

I. Do you feel under stress/tension due to *interpersonal relationships* ? To what extent ? ☐ 23

1. within family ☐ 24
2. other relatives ☐ 25
3. neighbourhood
4. working place ☐ 26
5. school/college/peer group ☐ 27
6. others (specify) ☐ 28

II.Do you feel under stress because of responsibilities/liabilities/over expectations/under expectation ? To what extent ?

1. within family ☐ 29
2. other relatives ☐ 30
3. neighborhood ☐ 31
4. work place ☐ 32
5. school/ college/ peer group ☐ 33
6. others (specify) ☐ 34

III.Do you feel under stress due to economic difficulties ? To what extent ?

1. difficulty in arranging food, clothing and housing ☐ 35
2. expenses on education-self or family members ☐ 36
3. expenses on treatment - self or family members ☐ 37

4. expenses on marriage ☐ 38

5. expenses on other social obligations ☐ 39

6. unemployment (for those seeking employment) ☐ 40

7. repayment of loan ☐ 41

8. competition for buying things just because others also have it ☐ 42

9. other (specify) ☐ 43

IV.Do you feel under stress due to matters related to marriage ? To what extent ?

1. worry (or undesirable apprehensions) about marriage ☐ 44

2. worry (or undesirable apprehensions) about own marriage ☐ 45

3. serious problems in marriage of a close relative ☐ 46

4. serious problem in own marriage ☐ 47

5. other (specify) ☐ 48

V.Do you feel under stress due to health reasons? To what extent?

1. health problems of self ☐ 49

2. sex related stress ☐ 50

3. chronic illness of a family member ☐ 51

4. others (specify) ☐ 52

VI.Do you feel under stress due to adverse/difficult situations as described below ? To what extent ?

1. feeling of insecurity due to general law and order situation ☐ 53

2. feeling of insecurity due to enmity or special reasons ☐ 54

3. harassment by bureaucracy ☐ 55

4. harassment by police ☐ 56

5. stress due to court cases ☐ 57

6. property disputes ☐ 58

7. physical discomfort/fatigue ☐ 59

8. physical/mental handicap of own self ☐ 60

9. physical/ mental handicap of family members ☐ 61

10. conflicts among different roles (family, job, social) ☐ 62

11. others (specify) ☐ 63

VII.Do you feel under stress due to perceived/imagined threat for the following ?
To what extent ?

1. social position ☐ 64

2. respect/ prestige ☐ 65

3. position in profession/ vocation ☐ 66

4. economic position ☐ 67

5. fear of sexual abuse/ assault ☐ 68

6. others (specify) ☐ 69

VIII.Stressful Life Events

Have the following events taken place during last one year ? If yes, to what extent it was stressful to you ?
(Put a cross mark if the event has not taken place during last one year)

1. Death of a close relative ☐ 70

2. Service illness / accident of own self ☐ 71

3. Severe illness / accident of family member ☐ 72

4. Separation / divorce of own self ☐ 73

5. Separation / divorce of close relative ☐ 74

6. Violent encounter (robbery / physical attack / sexual abuse) ☐ 75

7. Theft / fire ☐ 76

8. Other serious financial los ☐ 77

9. Decline in income	☐ 78
10. Problem with law / police	☐ 79
11. Loss of job	☐ 80
12. Examination failure	☐ 81
13. Conflicts in love affair	☐ 82
14. Other (specify)	☐ 83

IX.Special (additional) section for teenagers (13-19 years)- Students
(Put a cross mark if not applicable otherwise rate 0, 1, 2 or 3 according to the key)

a) Have you joined a new school / college during last one year ? If yes, has It been a cause of stress to you ? To what extent ?	☐ 84
b) Was there a change of medium of instruction for you in school/ College ? If yes, was it stressful for you ? To what extent ?	☐ 85
c) Do you feel under stress due to pressure from peer group (for Smoking, breaking school / college regulations or other deviant behaviour) ? To what extent ?	☐ 86
d) Do you feel under stress because of rejection / isolation by peer group ? To what extent?	☐ 87
e) Do you feel under stress due to fear of punishment /rejection from teacher ? To what extent ?	☐ 88
f) Do you feel under stress due to examination ? To what extent ?	☐ 89
g) Do you feel that your family has been unfair to you and not provided necessary opportunities to you ? If yes, to what extent do you feel unhappy/under stress for it ?	☐ 90

X. Special (additional) section for teenagers (13-19 years)- Non-Students

a) do you feel under stress because of problems related to basic needs like food, clothing etc. ? To what extent ?	☐ 91
b) Do you feel under stress because of problems related to housing ? To what extent?	☐ 92
c) Do you feel under stress because of problems related to occupational	☐ 93

(non-payment of wages, excessive work, beating / abuse or other types of exploitation by employer)? To what extent ?

d) Do you feel under stress due to fear from administration / police ? To what extent ? ☐ 94

e) Do you feel under stress because of antisocial elements / pressure for joining antisocial groups ? To what extent? ☐ 95

f) Do you feel under stress due to absence of social / emotional support? To what extent ? ☐ 96

g) Do you think that your family has been unfair to you and not provided necessary opportunities to you ? If yes, to what extent do You feel unhappy / under stress for it ? ☐ 97

Part-B

Coping Style

Probes

Are you generally successful in controlling stress with your own resources? Yes / No

How often ?

How do you achieve success – (if yes)

What do you do when not successful?

(Record verbatim. Wait for sometime as some respondents are slow to begin giving details).
If response not spontaneously given –ask – People use different methods to gain control over the situation such as given below. Are these true in your case ? How often ?
(Key : Not at all = 0. Some times = 1, Often = 2, Always -3)

a) Some people	
- make extra effort to gain control over stressful situation	☐ 98
- seek help from friends / relatives /teachers / parents / neighbours regarding information about what to do or how to do things, etc.	☐ 99
- make new plans-modify it	☐ 100
- weigh alternatives, then take rational decisions	☐ 101
- make special efforts to overcome and then accept the results whatever they might be.	☐ 102
b) Some people	
- do not take decision / postpone decision making	☐ 103
- take impulsive decision	☐ 104
- leave it for others to take decision	☐ 105
- demand helf / decisions from others	☐ 106
- start worrying too much without doing much about it	☐ 107
- blame others / self. Feels hopelessness, helplessness	☐ 108
- becomes irritate, angry, easily upset, quarrelsome	☐ 109

- depressed, even suicidal thoughts	☐ 110
- withdraws, gives up, accepts defeat	☐ 111
b) Stress situations sometimes lead to physical and / or mental problems.	
Physical	
- poor appetite	☐ 112
- disturbed sleep	☐ 113
- palpitation	☐ 114
- breathlessness.....	☐ 115
- headache	☐ 116
- indigestion / vomiting / constipation	☐ 117
- change in blood pressure (High/Low)	☐ 118
- vague aches and pain	☐ 119
- excessive smoking / tobacco use	☐ 120
- excessive drinking / drug abuse	☐ 121
Mental	
- general feeling of weakness	☐ 122
- suicidal thoughts	☐ 123
- fears	☐ 124
- anxiety	☐ 125
- depression	☐ 126
Overall assessment of interviewer about coping style of this person	☐ 127

(Key : a = Healthy coping style, Problem solving =1
b = Self preoccupation, Emotional, Unhealthy = 2
c = Conversion symptoms, Somatic response =3)

Note: In case the subject asks for or, appears to be in need of help, refer him to the nearest psychiatrist or, clinical psychologist for help and guidance.

Part C

Outcome parameters

a) Overall how do you feel your life is ☐ 128
(Key : Going on smoothly = 0, Somewhat stressful =1
Moderate stress many times, or severe stress sometimes = 2
Severe often =3)

b) How do you feel about your health ? ☐ 129
(Key : Better than average for your age =0, Average for persons of your age =1
Not so good = 2 Not at all well = 3)

c) Have you been diagnosed as suffering from
(Key : No =0, Yes =1)

Hypertension.... ☐ 130

Diabetes ☐ 131

Cardiac problem / Heart disease (specify) ☐ 132

Ulcer ☐ 133

Cancer ☐ 134

Other chronic disease (specify) ☐ 135

At least one of the above ☐ 136

d) Have you been diagnosed as having a psychiatric problem? ☐ 137
(Key : No = 0, Yes = 1)

e) Do you smoke / use tobacco ?..... ☐ 138
(Key : No = 0, Only sometimes) = 1, Often (but not a regular user) = 2,
Regular or chain smoker = 3)

f) Do you use alcohol / intoxicant drugs ? ☐ 139
(Key : No = 0, Only sometimes =1, Many times = 2, Regular = 3)

g) Are you able to get required time and attention to your job / studies ? ☐ 140
(Key : Yes, always = 0, Yes, often = 1,
Just managing the work = 2, No, the work is suffering = 3)

h) Class room behaviour (For teenager-students) ☐ 141
(Key : Regular attendance = 0, Sometimes missing classes = 1,
Many times missing classes = 2, Often missing classes / punished or
Warned for missing classes = 3)

Time taken for this schedule in minutes ☐☐ 142-143

HEALTH MODERNITY EDUCATION PROJECT

Concept of Modernity

In social science literature the concept of Modernity has been defined as an aggregate of certain personality-cum-attitudinal traits which facilitate individual growth and development with social responsibility and make the individual and effective agent of socio-economic and political development . Attitudinal Modernity has been considered as a pre-requisite for socio-political and economic development.

ICMR Development of Modernity Scale Project (DMSP)

The project constructed a Modernity Scale with four sub-scales namely, Personality, Socio-Cultural, Political and Health. The sub-scale of Health Modernity was added to other acknowledged dimensions of Modernity on the rationale that health is the first input in the developmental process of the individual, influencing cognitive growth, which, in turn, influenced personal, socio-cultural and political attitudes. In view of the importance of health, the project recommended that a more comprehensive Health Modernity Scale (HMS) be prepared to cover the important aspect of health and health-related issues.

ICMR Health Modernity Education Project (HMEP)

The Concept of Health Modernity

The HMEP defined Health Modernity as:

Scientifically correct information, attitudes and behaviour in relation to physical and mental health, family-planning and child-care, personal-hygiene and environmental-sanitation and such other issues which are essential pre-requisites for healthy living, and therefore, for human and social development.

HMEP considered Health Modernity as an important component of total Modernity arguing that:

If modernity is a pre-requisite for social, economic and political development. Health Modernity is the pre-requisite for human development, which undoubtedly is the sum mum of all development. The individual must be alive and cognitively, competent to be economically productive, socially liberal, and politically democratic. Admittedly, Health Modernity does not ensure and guarantee social, economic and political modernity, but nonetheless, it is the fundamental precondition of all development.

Health Modernity Scale (HMS)

A Health Modernity Scale was constructed with seven dimensions, namely: (i) Physical Health (PH), (ii) Mental Health (MH), (iii) Diet and Nutrition (DN), (iv) Family Planning (FP), (v) Child Care (CC), (vi) Breast-Feeding (BF), and (vii) Health Habits (HH).

Using the Health Modernity scale a survey was conducted in two rural blocks of Ranchi District which exposed "The Myth of the Healthy Tribal", reporting that the Health Modernity in the tribals in the seven dimensions of Health Modernity Scale varied from 0.2% to 3.5%.

From Modernity to Health Modernity to Cleanliness Modernity

The focus of the project was on Modernity. It changed to health Modernity in the first phase of HMEP. In the second phase it narrowed down to Cleanliness Modernity.

The Concept of Cleanliness Modernity

The concept of Cleanliness was considered as an appropriate integrating theme for the various health messages in relation to Personal Hygiene and Environmental Sanitation. Another factors that influenced the decision to use the concept of Cleanliness as the focus of the intervention study was the fact that in popular image also Cleanliness was positively associated with health and uncleanliness with disease.

Definition of Cleanliness Modernity

Cleanliness Modernity has been operationally defined for the present study as "scientifically correct knowledge, Attitudes and Practice (KAP) in relation to Cleanliness of Body, Food-Water, Home and Village". Admittedly, this definition needs modification and refinement. The present definition was decided by the realities of the present study, as it developed.

Cleanliness Modernity Scale (CMS)

A Cleanliness Modernity Scale was prepared with four dimensions, namely, Cleanliness of Body, Food-Water, Home and Village. Each Dimensional Scale consisted of 12 items; each item having 3 scores (0,1,and 2), thus, yielding a range of 0-24. The four Dimensional Scales have positive statistically significant correlations (Table 3.3). The Total Cleanliness Modernity Scale is a combination of the four dimensional sub-scales. It has a range of 0-96 scores. The reliability of the Cleanliness Modernity Scale was

established using split-half technique. Its validity has been examined by computing its correlation with Cleanliness Habits Scale.

Cleanliness Education Materials (CEM): Preparation

Cleanliness Educational Materials on Cleanliness of Body, Food-Water, Home and Village were prepared incorporating 50 messages. The CEM was prepared in two forms: (i) Nineteen posters with photographs and (ii) 109 slides with synchronized commentary. The script of the nineteen posters and that of the synchronized commentary of the slides were identical. Each of the nineteen posters was prepared in the form of questions and answers. It gave scientific explanations of the health messages. It ended with a couplet summarizing the messages. The couplet was sung in the manner of a tribal dance song. The posters as well as synchronized commentary used Nagpur language spoken by the tribals of the present study.

Cleanliness Educational/materials (CEM): Field Administration

Initial field experiences and a pilot study demonstrated that the posters with photographs could be more meaningfully used than the slides with synchronized commentary. Most of the villages covered did not have electricity. The posters were used as an aid to the health educator. The health educator did not read the messages written on the posters. She/he used the blow-up photographs to initiate discussion. Without giving any direct hint, the health educator tried to elicit from the respondents the health messages that were to be communicated and were written in the posters. After the group arrived at the messages on its own, the taped cassette was played which repeated these messages in a more systematic way. The contents of the taped commentary were discussed to ensure understanding. The taped commentary was repeated which ended with the dance song, which was replayed. The group was encouraged to join in singing. The dance song used tribal tunes and was sung by male and female voices.

Aims of the Present Research

The three main aims of the present study were:

(i) To prepare tribal-appropriate educational materials on the themes of Cleanliness of Body, Food-Water, Home and Village.

(ii) To measure the extent of Cleanliness Modernity in the tribal population of two rural blocks in Ranchi District and,

(iii) To conduct a Cleanliness Intervention Programme to measure its impact.

The Sample

The sample location of the present study has been taken from two rural blocks of Ranchi District namely Kanke and Namkum. The former served as the Control

Group and the latter as Experimental Group. The sample stratification was based on sex and age (15-24), 25-34, 35-44 and 45-54 years). Each age category had approximately the same percentage, sex-wise, of the total sample size, as was its representation in the village. The sample consisted of 700 cases. The Control Group had 250 and Experimental Group had 450 cases. The entire sample consisted of the tribal persons. The most important demographic characteristics of the sample

were that most of them (82%) were illiterate and poor, 59% having a monthly income of Rs. 200 or less.

Main Findings

The main findings of the present research relate to:

(i) The extent of Cleanliness Modernity, and

(ii) The Impact Evaluation of Cleanliness Education Intervention.

Extent of Cleanliness Modernity in the Sample

Extent of Cleanliness Modernity was measured by Cleanliness Modernity Scale having four dimensions, namely, Cleanliness of Body, Food-Water, Home and Village. Each Dimensional Scale had a range of 0 to 24 scores and the Total Cleanliness Modernity Scale had a range of 0 to 96. The extent of Cleanliness Modernity was measured on the basis of three sets of data, (i) Bench Mark Data of Control Group, (ii) Bench Mark Data of Experimental Group and (iii) Resurvey Data of Control Group. Four statistical techniques were used, namely, (i) mean scores of the sample groups, (ii) percentages of 'Modern Scorers' i.e., those who had scientific KAP on Cleanliness Modernity Scale, (iii) percentages of Non-Modern Scorers, i.e., those who did not have scientific KAP, and (iv) main areas of ignorance and misconceptions i.e., items on which 50% of the sample or more had scientifically incorrect KAP. The main conclusion that emerged from the analysis was that the extent of Cleanliness Modernity was very low in the sample group. About half of the sample was ignorant about cleanliness and 20% had only partially correct knowledge.

Impact Evaluation of Cleanliness Education Intervention

The impact of Cleanliness Education Intervention was evaluated in three ways: (i) Comparison of Before and After Intervention Data of Experimental Group (Item-wise), (ii) Comparison of Before and After Intervention Data of Experimental Group (Mean Scores.

Comparison of Before and After Intervention Data of Experimental Group (item- wise)

Scores on each item of Cleanliness Modernity Scale obtained by Experimental Group during before and After Intervention surveys were compared by using Chi-Square test. The scores of After Intervention, in most cases were significantly higher than those obtained in the Before Intervention Survey indicating the fact that intervention had a positive impact on improving Cleanliness Modernity. The intervention failed to have impact on items which involved complex procedures as in preparing a ditch for storing excreta of animals. It also related to items removed from their living conditions, e.g. advantages of entrance of kitchen water in the vegetable garden. In most tribal homes, the vegetable garden (Bari) is usually located a little away from the residential houses. Another factor which worked against the intervention was the entrenched popular habits such as the message on cleaning of mouth before sleeping at night. In many instances the economic factors were the main reasons for the non-impact of intervention. These included washing of garments and bedclothes and washing of hand with soap after defecation.

Table 1. Inter-Correlations Between subscales of Cleanliness Modernity scale (N=700)

	CFWS	*CHS*	*CVS*	*CMS*
CBS	.47	.38	.42	.59
CFWS		.43	.46	.3
CHS			.39	.52
CVS				.61

CBS = Cleanliness of Body Scale
CFWS = Cleanliness of Food-Water Scale
CHS = Cleanliness of Home Scale

CVS = Cleanliness of Village Scale
CMS = Cleanliness Modernity Scale

All correlations are significant at .01 levels.

Table 2. Cleanliness Modernity before and after intervention

	Cleanliness Of Body	*Cleanliness of Food*	*Cleanliness of Home*	*Cleanliness of village*	*Cleanliness Modernity Behavior*	*Cleanliness Habits*
Range of Scale	0-24	0-24	0-24	0-24	0-96	0-15
1. Control Group- base line (n=250)						
M	10.49	8. 48	7.05	10.39	36.41	5.97
SD	6.04	5.88	5.32	5.94	21.97	3.63
2. Experimental Group- Base line (n=450)						
M	10.93	8.99	7.33	5.49	38.01	6.14
D	3.72	4.23	5.32	10.76	20.85	3.74
3. Experimental Group-after intervention (n=450)						
M	14.13	11.54	9.49	13.66	48.82	7.07
SD	4.89	4.23	5.59	4.86	22.20	3.71
4. Control Group- resurvey (n=250)						
M	11.14	9.23	7.78	10.96	39.10	6.06
SD	6.35	6.07	6.01	6.25	21.29	3.63

The mean scores on TOTAL Cleanliness Modernity and its four dimensions show significant increase after the intervention in Experimental Group Table 2). There was a gain of 11 points in the After Intervention Data as compared with Before Intervention Data in the Total Cleanliness Modernity Scale. In all four dimensions of Cleanliness Modernity the mean scores of After Intervention was significantly higher than Before Intervention mean scores. This trend was also true for the Health Habits Scale.

MULTI-CENTRE STUDY OF THE PATTERNS OF CHILD AND ADOLESCENT PSYCHIATRIC DISORDERS

This multi-centre project was initiated with the general aim to systematically study the psychiatric disorders in children and adolescents seen in psychiatric/ child guidance clinic set up. The information on children and adolescents included in the study was collected uniformly in standardized manner and diagnosis made on ICD-9 (WHO, 1978) multi-axial system of classification (Rutter, 1978). The specific objectives of the project were as follows:

1. To study the relative prevalence of various psychiatric disorders in children and adolescents, within and between various centres.
2. To compare the relative prevalence of different associated abnormal psychosocial factors observed within and between various centres.
3. To compare the information collected to diagnose the clinical syndromes (Axis I and II of MAS), to make a checklist of symptoms along with a glossary. The symptoms to be arranged in order of their frequency and this check list could help in evolving interview schedules or questionnaires in regional languages for field studies.

The sample consisted of all children below 16 years attending the child psychiatry outpatient clinics at the four collaborating centres during the study period. Children with moderate, severe or profound retardation, as well as those with only medical diagnosis were excluded from the study.

A semi-structured interview schedule was developed to collect the data pertaining to the sample and the multi axial scheme of classification for child and adolescent psychiatric disorders evolved by Rutter et al., and I.C.D.-9 were adopted for diagnosis. Thus each case was diagnosed on five axes viz: Axis I – Clinical psychiatric syndrome, Axis II–Specific delays in development, Axis III – Intellectual level, Axis IV – Medical conditions and Axis V – Abnormal psychosocial situations.

The distribution of cases according to psychiatric diagnosis is given in table1.

In the age group 0-5 years, maximum number of children (33%) had diagnosis of hyperkinetic syndrome. The common diagnoses in age group 6-11 years were: hysterical neurosis, hyperkinetic syndrome, and conduct disorders. The common disorders in age group 12-16 years were: psychosis, hysterical neurosis, and conduct disorders. Psychoses and conduct disorder cases were significantly more among males while hysterical neurosis cases were more common among female children.

Mild mental retardation was present in 22% children in 0-5 years age group, 19% children in 6-11 years age, and among 6% in children of 12-16 years age group among those attending the psychiatric clinics/child guidance clinics.

Table 1: Pattern of Axis I diagnosis in three age groups

S. No	*Diagnosis*	*0-5 years (N=188)*		*6-11 years (N=632)*		*12-16 years (N=1015)*	
		No.	%	No.	%	No.	%
1.	Psychoses	4	2.1	45	7.1	412	40.6
2.	Hysterical neurosis	3	1.6	142	22.5	274	27.0
3.	Conduct disorders	12	6.4	83	13.1	72	7.1
4.	Emotional disorders of childhood and other neurosis	8	4.3	39	6.2	50	4.9
5.	Hyperkinetic syndrome of childhood	62	33.0	92	14.6	9	0.9
6.	Enuresis	3	1.6	39	6.2	19	1.9
7.	Stammering and stuttering	5	2.7	33	5.2	25	2.5
8.	Specific disorders of sleep	2	1.1	8	1.3	14	1.4
9.	Psychalgia (Tension headache)	0	0	12	1.9	10	1.0
10.	Academic problem (Scholastic backwardness)	1	0.5	46	7.3	20	2.0
11.	Adjustment reaction	3	1.6	5	0.8	10	1.0
12.	Others	10	5.32	30	4.7	50	4.9
13.	No psychiatric diagnosis in Axis I	75	39.9	58	9.2	50	4.9

Table 2: Abnormal Psychosocial Factors

Abnormal psychosocial factors	*Bangalore (N=702) %*	*Delhi (N=262) %*	*Lucknow (N=285) %*	*Waltair (N=586) %*	*Total (N=1835) %*
1. Mental disturbance in other family members	22	13	10	4	13
2. Discordant intrafamilial relationship	20	11	3	0	10
3. Familial over involvement	38	16	5	7	20
4. Inadequate/inconsistent parent control	18	5	4	0.3	8
5. Animalous family situation	13	8	5	3	8
6. Stress or disturbances in school	19	11	2	4	11

The other important observations from the project pertain to abnormal psychosocial situations in family and other social environment of children. The psychosocial factors were: familial over involvement, mental disturbance in other family members, discordant intrafamilial relationship, inadequate/inconsistent parental control, stress in school environment. It was found that abnormal psychosocial factors were more associated with conduct disorders, emotional disorders, psychalgia (headache, tension) and academic problems. Symptom checklists were prepared for clinical syndromes.

This was the first large scale study conducted on childhood mental health problems conducted in different parts of the country using standardized instruments for assessment.

EPIDEMIOLOGICAL STUDY OF CHILD AND ADOLESCENT PSYCHIATRIC DISORDERS IN RURAL AND URBAN AREAS

The area of child and adolescent psychiatric epidemiology has been little investigated in India. A few studies carried out so far, have reported wide variations in prevalence rates due to small non-representative sample, and unstandardized assessments. The methods for child psychiatric epidemiological studies have made considerable progress. The method of screening populations, tools of assessments and diagnostic classification have gone through lot of developments and improvement. Since the methods of evaluations of preschool and school children and adolescents differ, an epidemiological study should make suitable provisions in this regard. Therefore there was a need for a methodologically sound epidemiological study on representative sample of adequate size in urban and rural areas .A task force project on child and adolescent psychiatric disorders in rural and urban areas was undertaken at Bangalore and Lucknow with following objectives:

(i) To find out the prevalence rates of child and adolescent psychiatric disorders in rural and urban areas.

(ii) To study the psychosocial correlates of the child and adolescent psychiatric disorders.

(iii) To assess perceived needs of the family for help / treatment regarding psychological /psychiatric problems of children and adolescent.

SAMPLE: It was decided to select 2000 children at each center so that psychiatric disorders with a prevalence of 5% may be estimated within range of 4% - 6% with probability of type I error equal to 0.05. It would detect disorders with true prevalence of 1% within range of 0.5% - 1.5%. The sample was selected in two stages. Colonies from slum and non-slum urban areas and villages from rural areas were selected at the first stage by simple random sampling. Thus 3 colonies from urban slum, 3 colonies from non-slum areas and 4 villages from rural areas were selected at each center. 100 families from each selected colonies/ village were selected by random sampling. In case, the selected family did not have a child in 0-16 years age group, the next house was included in the study. The number of children finally selected was 2064 at Bangalore centre and 2309 at Lucknow centre.

STUDY INSTRUMENTS: The study instruments used at various stages of investigation are shown in Flow Chart

KEY:

1. SDP: socio demographic proforma
2. SLC: screening checklist.
3. VSMS: Vineland social maturity scale.
4. CBCL: child behavior checklist.
5. AM: additional module
6. FTN: felt treatment needs.
7. PE: physical examination.
8. SIS: structured interview schedule.
9. PIS: parent interview schedule.
10. C-GAS: children global assessment scale.
11. DISC-P diagnostic interview schedule for children (parent version).
12. DISC-C: diagnostic interview schedule for children (child version).
13. BKT: Binet Kamat test.
14. SLD: specific learning disability.
15. (+/-) As & when needed.

FLOW CHART SHOWING THE VARIOUS INSTRUMENTS USED FOR DIFFERENT AGE GROUPS

STEP: 1

Socio demographic proforma (SDP)

STEP: 2

SCREENING			
0-3 years SCL VSMS	4-5 years CBCL AM	6-12 years CBCL AM Rutter's Form	12-16 years CBCL AM Rutter's Form

STEP: 3

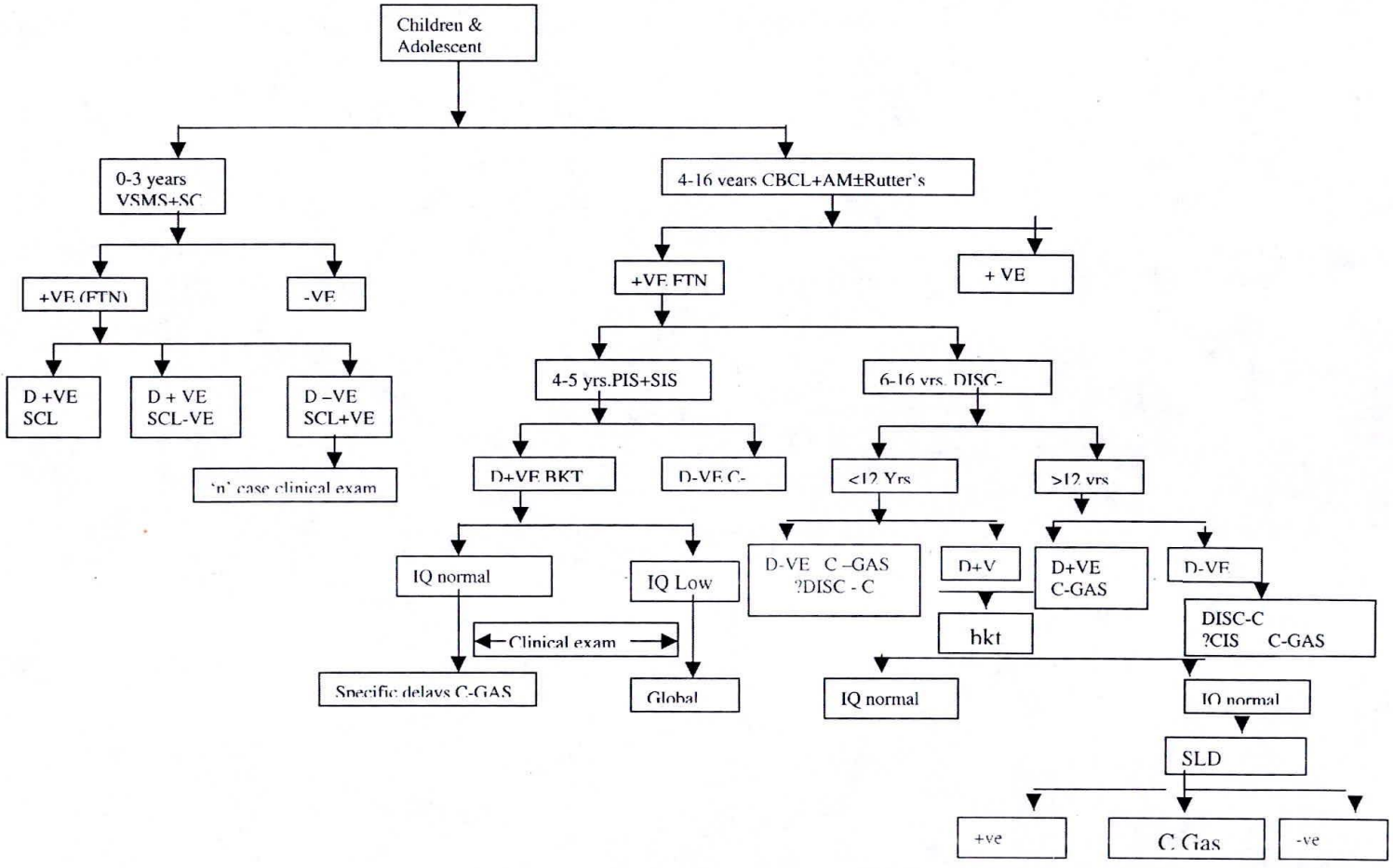
Diagnostic assessment and confirmation for those screened positive and 10% of those screened negative.			
FTN P E Clinical Examination	SIS PIS FTN P E C-GAS BKT (+/-)	DISC-P PIS FTN P E C-GAS BKT (+/-) SLD (+/-)	DISC-P PIS FTN P E C-GAS DISC-C (+/) BKT (+/-) SLD (+/-)

The children with psychiatric problems were identified through a two stage methodology (a) screening, (b) diagnostic assessment and confirmation for those screened positive. 10% of those screened negative were also examined in detail by psychiatrists to obtain an estimate of sensitivity of screening instrument.

Screening checklist (SCL) was used for screening for children 0-3 years age group. SCL was developed combining the child behavior checklist (CBCL) for 2-3 years age group and the behavior checklist developed at AIIMS, New Delhi. The sensitivity of SCL ranged from 0.95to 0.98. . Children in 4-16 years age range were screened using CBCL, an additional module for CBCL and Rutter's teachers questionnaire it was found that CBCL did not screen for developmental disorders and scholastic problems. Some children who had poor scholastic problems, epilepsy, mental retardation, enuresis and phobias etc. were not picked up as positive by CBCL as their score remains too low. Therefore it was decided to have an additional module to tap these areas. Hence 12 questions were added as an additional module. The sensitivity of CBCL with additional module ranged from 0.74 to 0.81 at the two study centers.

Diagnosis according to ICD-10 was assigned for children in 0-3 years age group through clinical examination. Structured interview schedule and parent interview schedule were used for children in 4-5 years age, and DISC-P and parent interview schedule for children in 6-16 years age group to obtain information for diagnostic assessment.

FLOWCHART ON METHODOLOGY



Multi axial system of classification was used to record diagnostic information on five axes: (1) psychiatric diagnosis (2) specific developmental delays, (3) intellectual level, (4) significant non-psychiatric medical diagnosis (5) abnormal psychological condition.

Table 2. Distribution by psychiatric disorder at Lucknow centre

DISORDER	*TOTAL N = 2325*	
	No of cases	*rate per 100*
Mild depressive episode	2	0.09
Social phobia	4	0.19
Separation anxiety disorder	2	0.09
Gen. Anxiety disorder	3	0.14
Simple phobia	41	1.98
Agro phobia	1	0.05
Panic	1	0.05
Enuresis	98	4.70
Stammering	22	1.06
Pica	10	0.48
Behavior disorder NOS	13	0.60
Sleep disorder	2	0.09
Non organic encopresis	2	0.09
Obsessive compulsive disorder	2	0.09
Conduct disorder (C.D.)	2	0.09
C D (NOS)	1	0.05
Oppositional defiant disorder	13	0.60
Trans tic	2	0.09
Chro tic	2	0.09
Feeding disorder	3	0.14
ADHD	22	1.06
Hyperkin. CD	1	0.05
Other psych. Disorder	7	0.33
Mild M.R.	16	0.78
Moderate M.R.	5	0.24
Severe M.R.	1	0.05
Total	278	13.47

Table 2. Distribution by psychiatric disorder at Lucknow centre

DISORDER	*TOTAL N = 2325*	
	No of cases	*rate per 100*
Conversion disorders	4	0.17
Conduct disorders	34	1.46
Mixed conduct- emotional disorder	2	0.09
Emotional disorder	9	0.39
Non organic enuresis	65	2.79
Pica of infancy	51	2.19
Stuttering	10	0.43
Other psychiatric disorder	6	0.26
Developmental delay	17	0.73
Specific learning disability	10	0.43
Mental illness NOS	52	2.24
Mild M.R.	17	0.73
Moderate M.R.	3	0.13
Severe M.R.	2	0.09
Total	282	12.13

Results :

Bangalore centre:

1) 278 children were identified as having psychiatric disorder in study sample of 2064 children in age – range (0-16) years giving prevalence rate of 13.4%. It was found that 41 (2.0%) children had diagnosis only on axis II (developmental delay), 14(0.7%) had diagnosis on axis III (intellectual level), 142 (6.9%) had one diagnosis on axis I (psychiatric disorder), 44(2.1%) had more than one diagnosis on axis I, and 37 children (1.8%) had diagnosis on more than one axes of the multi axial diagnostic classification.

2) Prevalence rate excluding 'only' SLD for 0-16 years =12.5%
Rural 12.4% slum 10.8% urban 13.9%
For 0-3 years it is 13.7%
Rural 14.36% slum 11.5% urban 15.2%
For 4-16 years it is 12%
Rural 11.9% slum 10.6% urban 13.5%
When a C-GAS score below 70 was taken to mean disability, the prevalence in the 4-16 years fell to 5.3%. All this is done excluding the 'SLD only' groups.

3) Of the cases taken up for 2nd stage evaluation, 33% were categorized in the scale41-70 on the C-GAS, placing them as moderately disabled. There was only one case, which was placed in the severe disability category (0-40).

4) Enuresis, simple phobia, stammering ADHD, ODD in descending order of frequently constituted the most often diagnosed condition on axis-I in the 4-16 years age group. Of the 22 cases diagnosed ADHD, 15 were from the urban (non slum), 5 from the slums and just

two were from the rural area. This urban preponderance was noticed for ODD, where 8 were from urban, 4 from the slum and just one was from the rural area. In the 0-3 years age group breath holding spells, pica, behavior disorder NOS, speech delay and epilepsy constitute the most common diagnosis in all axes put together.

5) Only in 37.5% of the cases did the parents feel that their child had a behavior /emotional /developmental problems. In 15.4% of cases who had symptoms but no diagnoses the family members felt that they had a problem. When asked directly, 63.5% felt a doctor would help them.

6) When diagnosis in subject by age and sex is tabulated, the overall prevalence is 13.4%. The prevalence here did not include epilepsy & BHS. In the age group 4-6 years, prevalence is significantly higher ($p<0.05$) in girls than in boys. In other age groups, prevalence is higher (but not significant) in boys than among girls.

7) When diagnosis in subjects by type of area and sex are taken, prevalence rate among urban male children was significantly higher ($p<0.05$) as compared with males in other areas.

8) Abnormal Psychosocial Situations: Physical abuse and mental disorder /deviance in the family were the only 2 abnormal psychosocial situations, which were significant when cases and non-cases were compared. Only in 37.5% of the cases did the family members feel that their child had a problem. Scholastic problems are often-repeated complaints of parents and teachers, which needs separate attention. There is a need to follow- up the cohort to understand the outcome and plan intervention.

Lucknow centre:

1) 282 children were identified as having psychiatric disorder in study sample of 2325 children in age range of 0 – 16 years giving prevalence rate of 12.1 %. It was found that 17 (o.7%) children had diagnosis only on axis-II (Developmental delay), also 17 (o.7%) children had diagnosis only on axis-III (Intellectual level), 184 (7.9%) had one diagnosis on axis-I (psychiatric disorder), 53 (2.3%) had more than one diagnosis on axis-I, and 11(0.5%) children had diagnosis on more than one axes of multiaxial diagnostic classification. The boys significantly ($p<0.05$) had more psychiatric disorders (13.72%) than the girls (10.69%) and the difference was constituted mainly by axis I psychiatric. This difference was maximum in adolescents (boys11.79%, girls 3.55%, $p<0.01$).

2) Prevalence of psychiatric disorder in the children and the type of residential area were not significantly related. Also there was no relationship between sex and prevalence of a single or multiple disorders. More children in slum areas were likely to have multiple psychiatric disorders than in rural or urban non-slum areas but this was just short of statistical significance.

3) 52 (2.25%) children had only one diagnosis of unspecified mental disorder. In this category the disorders were behavioral problems, a developmental disorder, enuresis, pica, pain syndromes, over activity, inattention, nail biting, insomnia and separation anxiety.

4) Nocturnal enuresis was the commonest diagnosis (96, 4.16%) followed by pica (55, 2.38%)conduct disorder (41, 1.78%) specific developmental disorders (29,1.26%), mental retardation (26, 1.13%) and stuttering (19, 0.62%) dissociative disorder was the next in order (4,0.17%) 28 (1.2%) children received a diagnosis unspecified mental disorder as a second or third diagnosis.

5) Specific reading disorder was found in 12(0.52%) children. Expressive and receptive language disorder were each present in 8(0.35%) children. Mild mental retardation with or without behavioral problems was found in 19(0.82%) children.

6) Mental retardation was often comorbid with enuresis and oppositional defiant disorder. Specific developmental disorders were found comorbid with elimination disorder, stammering and pica. Conduct disorders were comorbid with disorders like enuresis, stammering, unspecified disorders, emotional and depressive disorder. Enuresis was comorbid with

conduct disorder, mental retardation and unspecified disorder. Pica was comorbid unspecified behavioral problem.

7) Oppositional defiant disorder was significantly more ($p<0.05$) among boys in rural and urban slum areas. There was no difference in any other diagnostic category.

Physical Disorders:

13 (2.49%) boys, 11(2.11%) girls or total of 24 (4,60%) out of total 522 (293 screen positive and 229 screen negative) children had a physical disorder . These physical disorder were seizure disorders 9(1.72%), breath holding spell 7(1.34%), febrile fits 2(0.38%), microcephaly 2(0.38%), poliomyelitis lower limbs 1(0.19%), visual impairment 1(0.19%) and hearing impairment 2(0.38%). These conditions were not mutually exclusive.

Global functioning:

CGAS (applicable in children 4-16 years) rating showed very good functioning to only some difficulty in a single area in 98 (78%) children having no psychiatric disorder. In comparison, this was so in 84.86%of children with one or more psychiatric disorder, and definite impairment (CGAS rating <70) was found only in 15.14% psychiatric disordered children. Among children with multiple psychiatric disorders, 25% showed a definite impairment.

Treatment needs:

The responses to 7 questions on the need of the family regarding management of their psychiatrically disordered children revealed that:

1) 61.70% parents have no awareness regarding their child's psychiatric disorder.

2) 93.26% think that the child will not out grow his problem without additional help

3) 97.87% say that they will not need additional help to care for the child at home.

4) However 63.83% think that the child will not be cured with the doctor's help.

5) But 99.29% (nearly everyone) think that hospitalization is not needed.

6) 98.80% disagree with the statement that alternative medicine will not be of any help.

7) 62.06% parents do not think that their child will become independent if given proper Training.

In general, parents of children with specific developmental disorders have lesser awareness or hope that the doctor can cure the child or that the child will become independent with the treatment.

Abnormal psychosocial situations:

In the study of families with one or more children with psychiatric disorder per family, the psychiatric illness was not found to be associated with abnormal psychosocial situations. Presence of one or more abnormal psychosocial situations and the number of children with no, one or more psychiatric disorder were not found associated with each other.

STUDY OF PSYCHOSOCIAL DETERMINANTS OF DEVELOPMENTAL PSYCHOPATHOLOGY IN SCHOOL CHILDREN

The project was carried out at PGIMER, Chandigarh with following main objectives: to study the extent and nature of psychiatric symptoms in school children and understand the course of these symptoms during development, (ii) to study psychosocial determinants of developmental psychopathology in children with special reference to temperament of children, life stress, patterns of parental handing of children.

Sample Selection:

Stratified random sampling technique was used to select schools out of the total list of 175 in Union Territory Chandigarh and then for children from each selected school. Out of the 18 schools selected at the first stage, 15 schools gave permission to study children from their schools. Children in the age range of 4-12 years were included for study, which covered classes from Nursery to Class VI. They were categorized in to 4 age brackets of 4-6 years, 6-8 years, 8-10 years and 10-12 years. Total number of children in each age category in each school was taken from the respective attendance registers of the classes. All the sections of the class were included, wherever there was more than one section. Out of the total pool of eligible children in each class 20% (one in five) were selected by random numbers.

Out of 15 schools included in the study, there were 7 government schools and all co-educational, out of which 362 children were selected. Government aided schools were also all co-educational and 248 children were selected from these schools. Among the two private schools included in the study, one was an all girls' school and the other was an all boys' schools. 157 children were selected from girls' school and 106 from boys' school. Thus a total of 873 children were finally included in the study.

Tools Used:

1. Sociodemographic data sheet
2. Rutter-B scale for completion by teachers (Rutter 1967).
3. Pre-school Behaviour Checklist (McGuire & Richman, 1985).
4. Childhood Psychopathology Measurement Schedule (Malhotra et al 1988).
5. Temperament Measurement Schedule (Malhotra & Malhotra 1988).
6. Parental Handling Questionnaire (Malhotra 1984).
7. Life Events Scale for Indian Children (Malhotra 1989).
8. Case History Sheet
9. Socioeconomic Status Scale (Gupta & Sethi, 1978).
10. Malin's Intelligence Scale for Indian Children (Malin, 1968).
11. Vineland Social Maturity Scale (Malin, 1972).

Observations

(i) In a randomly selected representative sample of 963 school children in 4-12 years age range in the city of Chandigarh and Union Territory the prevalence of overall psychiatric disorders was 9.34%.

(ii) Disorders were more in boys, and in children from lower SES categories. Rates of disorders were significantly higher in the government schools than the government aided private schools or private schools. Within the SES category, schools did have different rates of disorders.

(iii) Teachers reported psychiatric disorder in 11.23% of all children by use of the standard cut-off point, which gave an overestimate of actual rate of disorder.

Because out of these only one third were confirmed to have psychiatric disorder. Parents reported psychiatric disorder in 10.88% of children on CPMS out of which two thirds were finally confirmed to have psychiatric disorder.

Overlap between teachers' assessment and parents' assessment of psychiatric disorder was very low (only in about one quarter of cases).

Out of the cases who were found positive on both teacher's assessment as well as parent's assessment 92% were concordant with final clinical assessment.

(iv) Rates of psychiatric disorders are highest in middle childhood with a peak at 6-8 yrs age. Problems of anxiety, depression and low intelligence with behavior problems increased with age whereas special symptoms decreased with age.

Rates of conduct disorder, somatization and physical illness with emotional problems remains relatively constant across age different age groups in children. 11.11% of children had associated physical illness, which was significantly more in males.

(v) Rates of physical illness did not differ in relation to age or SES.

(vi) Psychiatrically disordered children had overall lower IQ than normal children.

Significantly higher proportion of low I.Q. children was from low SES in the sick group. Distribution of I.Q. among normal children followed a normal distribution.

(vii) Temperamentally children showed an increase in sociability and rhythmicity and a decrease in distractibility with age. Emotionality and energy showed no change. Negative emotionality, high energy, low rhythmicity and low distractibility were correlated with psychopathology.

(viii) Disordered children were found to have a greater parental control. High parental control was associated with negative temperament traits. Patterns of care did not differ in disordered and normal children. Disordered children encountered significantly more number of life events and greater stress score.

(ix) Prevalence rates of various psychiatric diagnoses indicates enuresis 2.28%, Conduct disorder in 1.66%, ADHD in 1.35% Specific developmental disorder in 0.93%.

Disorder of emotions in 0.62%, mild mental retardation in 0.41%, somatoform & conversion disorder in 0.20%, adjustment disorder in 0.20%.

(x) Thirteen children had dual diagnosis and 2 had three diagnoses. Dual diagnosis was more in males and the commonest condition was enuresis.

While the study documents the rates of psychiatric disorder in India, it is interesting to note that the prevalence rates are much lower than what are reported from Western countries. The reasons for this could be related to socio-cultural and family factors.

Follow-up study

A follow up study of the positive identified cases as well as a sub sample of negative cases was carried out to study the natural history of psychiatric problems and disorders in children. Models of intervention for parents and teachers for the childhood psychiatric problems were developed in this longitudinal study.

All positive cases identified at school or at home in the ongoing epidemiological study were contacted again at their homes after five years of their initial assessment. A small proportion of negative subjects (10%) were also followed up. All cases found to have clinical disorder were registered in the Child and adolescent Psychiatry Clinic at the department of Psychiatry and managed as per need.

Course and outcome:

Some important observations on course of psychiatric problems during follow-up are presented in tables 1-5.

The most frequently present problems in children were 'enuresis' followed by behavioural and conduct problems, emotional problems and scholastic problems. Most of these problems had considerably improved on the first follow-up.

Table 1. Main problems on first assessment and their course.

Problems Present in 1992-1995	*Problems present*	*Course on Follow-up*					
		Worsened		*Persisted Improved*	*Slightly*	*Considerably improved*	*Dis-apeared*
	No.	*%*	*No.*	*No.*	*No.*	*No.*	*No.*
Emotional Problems	11	16.67	1	1	0	5	4
Behavioral Conduct Problems	21	31.82	5	3	1	7	5
Habit Disorders	7	10.61	0	0	0	3	4
Scholastic Problems	10	15.15	1	3	1	4	1
Psychosomatic Problems	1	1.52	0	1	0	0	0
Developmental Problems	1	1.52	0	0	0	1	0
Organic Problems	3	4.55	1	0	0	1	1
Attention Deficit	0	0	0	0	0	0	0
Hyperactive	4	6.06	1	0	0	3	0
Speech Problems	4	6.06	0	2	0	1	1
Compulsive Habits	0	0	0	0	0	0	0
Social Phobia	0	0	0	0	0	0	0
School Refusal	1	1.52	0	0	0	1	0
Enuresis	23	34.85	2	2	1	8	10
Others	4	6.06	1	0	0	1	2

Table 2: Duration of persistence of problems (n=66)

Duration in months	*Positive Cases*	
	No.	%
0-24	8	12.12
24-48	7	10.61
48-72	5	7.58
72-96	3	4.55
96-120	2	3.03
120-144	6	9.09
144-168	3	4.55
168-192	2	3.03

Table 3: Frequency and Percentage of parents reporting the following new problems that has occurred (n=66)

	No.	*%*
Whether new problems have occurred in the child	12	18.18
Names of the new problems:		
Physical Ailments	3	4.55
Scholastic problem	3	4.55
Others	7	10.61

Most of the problems persisted for a duration of 1-4 years. Minor physical ailments and the scholastic problems were mainly the new problems that occurred in the child.

Course of problems on follow-up after intervention:

Follow-up was carried out during 1999-2000 after active intervention for cases found positive on second assessment. The description of intervention is given in the appendix. Evaluation results of intervention regarding psychiatric problems of children are given in tables 4-5.

The Respondents gave multiple responses

The most frequently present problems in children on the first follow-up visit were 'behavioural and conduct problems' followed by emotional problems. Most of the problems had considerably improved or disappeared after the interventions given during 6 months-1 year.

The respondents gave multiple responses

Minor physical ailments and scholastic problems were the new problems that occurred in the children.

The School Mental Health Program that has been initiated in the purview of this study has also evoked a good response from other schools in the city. One of the future directions definitely indicates the need for the same program at other schools in the area in order to enhance

Table 4: Previous problems and their present status (N=44)

Problems Present in Previous Assessment (1998-on first F/U visit)	*Problems present in second follow-up visit after intervention*	*Worse ned*	*Persisted*	*Slightly improved*	*Considerably improved*	*Dis-appeared*
	No.	*No.*	*No.*	*No.*	*No.*	*No.*
Emotional Problems	13	1	1	2	7	7
Behavioral And conduct Problems	14	0	3	2	7	2
Habit disorders	7	0	1	1	2	3
Scholastic Problems	15	0	6	3	4	2
Psychosomatic Problems	4	0	1	1	2	0
Developmental Problems	1	0	0	0	0	1
Organic Problems	0	0	0	0	0	0
Attention deficit	4	0	2	0	0	2
Hyperactive	2	0	1	1	0	0
Speech problems	1	0	0	0	1	0
Compulsive Habits	1	0	0	0	1	0
Social phobia	1	0	0	0	1	0
School refusal	1	0	0	0	1	0
Enuresis	6	0	1	0	0	5
Others	4	0	0	0	4	0

Table 5: Frequency and percentage of parents reporting that their children developed new problems (n=44)

	F	%
New problems developed in the child	8	18.18
Names of the new problems Physical ailments	4	9.09
Scholastic problems	4	9.09
Others	0	0

and maintain sound mental health in school children. This program has also helped to establish a positive cooperative relationship between teachers and parents.

An important need that emerged in the study is for the training of the parents in handling their children and their problems. Practical Training Manuals and Workshops should be organized to take care of parental training.

Short and focused therapies have been of great help to parents in dealing with the problem behaviour of the child.

Another suggestion emanating from this study indicates the need to have coverage in the school curriculum of the understanding of mental health and ways to enhance the same.

This project was carried out as an adhoc project of ICMR at PGIMER, Chandigarh. It was not a task for a project, but its summary has been included in this monograph as it is also a major project of the Council adding to the data base necessary for evidence based development of child and adolescent mental health services.

INTERVENTIONAL PLAN

Intervention plan took care that the treatment could mainly be directed at the person who was directly looking after the child - parents, teachers, or both. The children were also counseled as to what they should do about their problems.

The treatment plan devised was highly individualized so that each specific need and problem of the child's mental, physical and social life was addressed and intervened into.

The Treatment plan was prepared under the supervision of a Consultant. Treatment plan was based on the experience gained from intervention given to those cases that had psychiatric disorder or problem.

Assessment of the treatment needs involved the assessment of:

i) Nature of the problem

ii) Severity/persistence of the problem

iii) Frequency or intensity of the problem

iv) Duration or type of the problems

v) Attitude of children and parents to the problems

vi) Possible causes of problems i.e. emotional state, physical state of the child, and development of child, character and personality of the child.

To set the goal of the therapy: Focus was clearly on

i) The existing symptoms and current life situation

ii) The enhancement of social – adaptive functions.

To decide on intervention strategy: Treatment strategy was chosen according to the nature of the problem, whether a single mode of treatment was needed or a package of treatment was required.

Specific therapies:

i) Drugs – as required

ii) Psychotherapy (supportive) was given with the aim of:

(a) Correction of situational problem,

(b) Restoring or strengthening defenses,

(c) Prevention of emotional breakdown.

iii) Behavior therapy or modification aimed:

a) To alter the child's behavior and modify or remove the symptoms

b) To stop inappropriate behavior,

c) To develop new behavior

d) To maintain new behavior

iv) Guidance and counseling was done with special focus on:

a) Parental expectations/handling

b) Children's expectations/behavior

v) Cognitive therapy aimed at:

a) Exploring cognitive themes and distortions

b) Providing alternatives

c) Cognitive restructuring

vi) Life Skills Training: Intervention modules were framed on the basis of the problem areas reported by the children in their day to day life: anger management, positive thinking, methods for effective study, memory and concentration, handling adolescence and effective communication.

Parental/Family counseling: Counseling of parents was done on certain issues like:

a. Education

i) Increasing awareness about normal development of the children

ii) Psychological needs of the child

iii) Individual differences with respect to intelligence, temperament, etc.

iv) Factors effecting psychopathology

- Constitutional factors
- The effects of physical disease/injury
- Temperamental factors
- Environmental factors

b. Attitude and perception of parents towards the problems:

i) Changing attitudes and maximizing resources,

ii) Resolving conflicts and inconsistencies in the management of problem

iii) Appropriate method of handling of emotional and behavioral problems through

- Reward
- Making play contingent with studies
- A daily schedule
- Less criticism, more appreciation
- Ways of prevention
- Practical and easily understandable suggestions about management
- Healthy parental handling
- Acceptance
- Affection

c. Enhancement of the mental health

Advice on training in:

i) Healthy life style

ii) Positive outlook

iii) Life Skills Training

DRUG / SUBSTANCE DEPENDENCE

A STUDY ON THE EFFECTS OF INTERVENTION PROGRAMME ON NON-MEDICAL USE OF DRUGS IN THE COMMUNITY

The effectiveness of health education programme depends on many explicit and implicit factors. The explicit factors amongst them are (a) a realistic target group, (b) clearly stated rigorous methodology, both in planning and execution, (c) selection of appropriate material and planned execution of the programme, (d) built in evaluation mechanisms (e) objective criterion of evaluation, (f) possibilities of midcourse corrections (g) combination of education with treatment and (h) community mobilization.

The present project combined some of the above stated elements, and others emerged as lessons. The aims and objectives of the study flowed from the Government of India official report, 'Drug Abuse in India' (1977) which emphasised that educational prevention models should be developed for the country on priority basis. The salient aspects of the study are given below:

The aims and objectives of the study were:

(i) To obtain base line data on (a) prevalence and incidence of non-medical use of drugs (b) existing knowledge and attitudes towards such drug use, (c) Perceived drug related problems in rural, urban, industrial communities and (d) to study the socio-demographic characteristics of users, and

(ii) To develop appropriate pre-tested health education materials and intervention strategies, with a view to study their impact on the base line non-medical use data in the community.

Development of educational material:

The intervention programme was developed keeping in view the following basic guide lines:

(i) Development of materials: The message should be target audience specific, keeping in view the composition of the group.

(ii) The target group should be able to identify with characters in the audio-visuals.

(iii) The message should be objective, factual, conveying problems related to alcohol and tobacco use. They should not be value judgemental.

(iv) The material prepared should be open to mid-course corrections, based on the audience feed back.

Why focus on alcohol and tobacco :

Alcohol and tobacco, were selected for the following reasons:

(a)These were the most commonly used substances in the community. (b) They were most commonly interwoven with individual's life styles and social and ceremonial use situations. (c) The health hazards of these drugs were clearly identified. (d) It would not be possible to develop intervention materials for all drugs at one time. (e) Theoretically in a society like ours where abstinence is still a cherished norm, the messages should find easier community acceptance.

The study has another important conceptual dimension that if the use of licit drugs i.e. alcohol and tobacco can be reduced or minimized, it would have a snow-balling effect on use of illicit drugs. Therefore, if a feasible strategy for alcohol and tobacco use prevention could be designed, developed and evaluated, it would provide a vehicle for bringing in other illicit drugs in the intervention programme network. It would also help in providing a rationale for prevention/educational programmes, related to these drugs.

Research Design: The study adopted before and after design along with control group, i.e. both the experimental and control groups were to be assessed on drug use patterns and knowledge etc. as enumerated in the aims and objectives. Both the groups were again to be evaluated on the same parameters at the end of the study. The experimental group was to be assessed more often following each intervention and a sleeping period.

The study initially was conceived as a multi-centric, to be conducted in different geographical regions of the country, i.e. Delhi (North), Bangalore (South), Dibrugarh (East) and Goa (West). These centres were selected on the basis of their geographical locations and availability of research expertise and infrastructure at the respective institutions. The institutions involved in the study were All India Institute of Medical Sciences (New Delhi), Agriculture University and National Institute of Mental Health and Neuro Sciences (Bangalore), Assam Medical College (Dibrugarh) and Goa Medical College (Panaji, Goa) which was later shifted to Central Institute of Psychiatry, Ranchi on the request of the Principal Investigator of the centre.

Specific groups of the population, viz. Urban, rural, industrial, tea plantation and tribal groups were selected. The basis of selection of these groups was their vulnerability and their peculiar drug problems.

The distribution of these groups according to each centre is given below :

1. Bangalore : Heavy Industry and Rural Population
2. Delhi : Medium Industry and Urban resettlement population
3. Dibrugarh : Tea Plantation and Rural Population
4. Ranchi : Urban and rural tribal population

Experimental and control groups: The study design avoided the common error of earlier health intervention programmes by including a comparable control group. The effects of the intervention hence could be measured by comparing the changes in both experimental and control groups in the study, as also repeat monitoring of the experimental group after intervention. The control groups were not selected in the industrial populations at Bangalore and Delhi centres primarily due to difficulty in obtaining matching controls that were sufficiently separated and due to distance and financial managerial constraints. The industrial groups hence served as their own controls longitudinally.

Sample size : The sample size required for the intervention programme focusing on alcohol and tobacco was estimated utilizing the available data from the studies conducted on the prevalence and pattern of drug abuse in the county at that time. In order to reduce the prevalence rates to half of the existing rates and taking in to consideration design effect for cluster sampling, the minimum sample required was approximately 1000 adults above 15 years. An equal sample size was selected for the respective control groups.

Since it was a longitudinal study involving health education intervention which is a group activity, a cluster of samples was preferred instead of randomly selected scattered population. In the urban areas a cluster of two blocks providing a population of about 1500 persons, yielding a population of 1000, above the age of 15 years was selected as an experimental area for intervention programme. Another cluster of two blocks in the urban area of approximately the same size, situated at a distance of 15 to 20 kilometers. From the experimental area and approximately matched on socio-economic status was included as control sample. In the rural population, the basis of selection of the sample was village with a general population of 1500 or 1000 persons above the age of 15 years, while another village of the same size having similar socio-economic background, situated at a distance of 15-20 kilometers was selected as a control area. As regards the samples of industrial workers, an industry having approximately 1000 workers was included an experimental area for longitudinal assessment.

The intervention phase could be carried out only at Delhi centre.

The experimental and control groups at Delhi center were selected from the following areas:

Delhi (a) Urban

Experimental : J.J. Colony Khanpur

Control : J.J. Colony, Inderpuri

(b) Industry M/s.Kelvinator of India Ltd. Faridabad (Haryana)

The intervention programme aimed at :

- Increasing awareness about drug problems
  - Attempting change in attitudes
  - Altering drug use behavior (specially alcohol and tobacco)
  - Motivating abstinent or reduce use of tobacco and alcohol.

(b) Preventing fresh induction to substance use through

- Information dissemination
- Assimilation of information
- Increase in the level of knowledge
- Increased motivation of users towards non use.
- Change in the existing attitude towards drug use
- Reduction in drug use.

Impact Evaluation:

The following is the outline of the programme and evaluation strategy adopted in the study:

Baseline survey Jnuary to August 1982	1st exposure of intervention material - December 1983 to April 1984	Immediate Impact evaluation December 1983 to April 1984
	2st exposure of intervention meterial - October 1984 to January 1985	
Short term assessment (Resurvey - 1) December 1984 to March		Long term assessment October 1985 to March 1986

An important outcome of any health education programme is reflected by the extent to which the freshly acquired knowledge is utilized by the target group (community) in future decision making or problem solving situations. In this respect the present study have been presented in two cohorts. Firstly, individuals who had been assessed at the Base line (B) and Resurvey I (RSI) (short term impact evaluation) immediately after the first exposure of the intervention material and a gap of 8 to 10 months after the first health education intervention. Secondly, those who had participated in both the baseline and Resurvey II (RS II long term impact evaluation), i.e. after a gap of 12 months of the second exposure of the intervention programme. A separate assessment was also carried out along with the first exposure of the material i.e. 'immediate impact evaluation'.

Evaluation:

It was found that 16% of alcohol users stopped alcohol use and 27% cut down alcohol use in urban area exposed to health education intervention from base line to resurvey - I.

These results were significantly better as compared to urban control area (table 1). This improvement was sustained up to second resurvey also (table 2).The study sample also included an industrial area that was exposed to health education intervention. It was found that about one third of respondents either stopped or reduced alcohol use after exposure to educational intervention. However no control area could be included from industrial area as stated earlier.

The impact of health education intervention for tobacco use showed that 10% of tobacco users stopped and 40% cut down use of tobacco from base line to resurvey - I. These results were significantly better as compared to urban control area (table 3). It was found at resurvey - II that 9% of smokers had stopped and 27% cut down tobacco use. The results in urban experimental area were significantly better as compared to urban control area (table 4). In the industrial area exposed to health education intervention, over 40% of respondents either stopped or reduced tobacco use.

Table 1. Number and percentage of male alcohol users according to status of drinking (frequency) from Base line to Resurvey - I.

Status of drinking (frequency)	Urban Expt.	Urban Control	Industrial
Stopped	21 (16.4)	7 (4.0)	89 (18.8)
Cut down	35 (27.3)	26 (14.9)	62 (13.1)
Status quo	51 (39.8)	94 (54.0)	283 (59.7)
Increased/Started during This period	21 (16.4)	46 (26.4)	40 (8.4)
Not specified	-	1 (0.6)	-
TOTAL	128 (100.0)	174 (100.0)	474 (100.0)

Table 2. Number and percentage of male alcohol users according to status of drinking (frequency) from Base line to Resurvey – II.

Status of drinking (frequency)	UE	UC	MI
Stopped	20 (16.4)	11 (7.2)	91 (21.4)
Cut down	26 (21.3)	7 (4.6)	63 (14.8)
Status quo	58 (47.5)	94 (61.4)	231 (54.2)
Increased/started during this period	18 (14.8)	40 (26.1)	41 (9.6)
Not specified	-	1 (0.6)	-
Total:	122 (100.0)	153 (100.0)	426 (100.0)

Table 3. Distribution of male tobacco users according to pattern of change in smoking ' From Base line to Resurvey -I.

Status of smoking	Urban Expt.	Urban control	Industrial
Stopped during this period	20 (10.5)	7 (3.5)	79 (14.8)
Cut down	76 (40.0)	32 (15.9)	181 (33.8)
Status quo	73 (38.4)	85 (42.3)	218 (40.7)
Increased/Started during this period	21 (11.1)	77 (38.3)	55 (10.3)
NR	-	-	2 (0.4)
TOTAL	190 (100.0)	201 (100.0)	535 (100.0)

Table 4. Distribution of male tobacco users according to pattern of change in smoking from Base line to Resurvey - II.

Status of smoking	Urban Expt.	Urban Control	Industrial
Stopped during this period	16 (8.7)	6 (3.4)	63 (12.8)
Cut down	50 (27.3)	29 (16.7)	141 (28.5)
Status quo	89 (48.6)	101 (58.0)	223 (45.1)
Increased/started during this period	27 (14.8)	37 (21.3)	63 (12.8)
NR	1 (0.5)	1 (0.6)	4 (0.8)
Total	183 (100.0)	174 (100.0)	494 (100.0)

With the modest achievement through health education modality, the study has paved way for such programmes. There is need to supplement this programme with other health components, i.e., treatment and management of drug dependent individuals. There is a need to develop adequate training programmes and modules for primary care workers not only in rural but also urban conglomerates and industry.

The country is too wide and diverse to permit the development of a single module. Similar experience at other centers would certainly enrich this educational intervention.

COLLABORATIVE STUDY ON NARCOTIC DRUGS AND PSYCHOTROPIC SUBSTANCES

Reports on rapidly spreading problem of heroin and other opium derivates in the press and other mass media focused attention and were cause of considerable concern for the government and people of our country since early 1980's. The Narcotic drugs and Psychotropic substances act was passed in 1985. There was a felt need for monitoring use of these drugs in the community. The Council convened a task force group to initiate work in the area. The members of the group felt that all drugs and substances of abuse should be studied, and not only heroin and opiates. As regards health hazards of substance abuse, tobacco use is important risk factor. Then problem of alcohol dependence is also quite serious. Therefore consensus was to study all narcotic drugs, psychotropic substances, alcohol and tobacco. The feasibility of developing a drug abuse monitoring system was discussed. A drug abuse reporting system will be useful only if there is a network of institutions/centres that are in contact with drug users, and they must be willing to participate in the reporting system. This required a feasibility study in a few cities where several treatment/counseling centres exist. It was obvious that only a small percentage of drug users contact any treatment agency in our country, and the reporting system alone will not be able to provide estimates of magnitude of the drug use problem in the community. Therefore, it was decided to undertake community survey also. The members of the task force group felt that study on evaluation of existing treatment modalities for drug dependence was also very important. Thus, the T.F. group initiated a multifaceted project to carry out the following studies:

1. Feasibility study for Drug Abuse Monitoring System (D.A.M.S)
2. Drug abuse survey in selected areas.
3. Treatment evaluation of drug dependence (alcohol and opiates)

The project was carried out at three centres: Delhi, Jodhpur, Lucknow. Each of the three centres also coordinated activities of one component that is monitoring component- Delhi Center, community survey- Lucknow center and treatment evaluation- Jodhpur center.

DRUG ABUSE MONITORING SYSTEM: The basic purpose of monitoring component was to develop methodology and test feasibility for implementing monitoring of drug abuse in the existing working system of treatment centres/agencies. Drug abuse monitoring systems help in identification and description of drug users, the emerging risk groups, mode of drug intake etc. The data is also an indirect indicator of magnitude of the problem and treatment load on health care delivery system. This project has tested the feasibility of using a simple proforma for monitoring drug abuse. This proforma contains 33 items divided into 3 sections. It has undergone field-testing and implementation over 3 years in three cities of North India. Of the 33 items, 15 can be filled up by a record clerk and the rest by a trained volunteer or any clinical staff of an agency. Opinion of a medical doctor is required to fill two items only. The treatment centres /agencies that participated in drug abuse monitoring, did so without any additional staff strength. The important thing was motivation. Cost of such an exercise is minimal, and can be absorbed by the cost of implementation of drug abuse control programmes. A training manual has also been developed to help in the implementation of D.A.M.S,. It is hoped that it would be possible for drug abuse control programme of the government to initiate D.A.M.S. in metropolitan cities, where a number of treatment centres/ agencies already exist, using the methodology developed in this project. As the intravenous drug abuse is already serious problem in North-Eastern provinces, and this mode of drug use might spread to other parts of the country, it is suggested that the government initiates D.A.M.S. in metropolitan cities and other selected areas soon. The severity of problem in cases of alcohol use and opiate use reporting at treatment centres is shown in table 1 below. The opiate users at Delhi center were mostly heroin users while in Jodhpur and Lucknow people used raw opium.

TABLE 1: Severity of mental / physical dysfunction among drug users.
(CLINIC BASED STUDY)

PROBLEMS	ALCOHOL USED			OPIATE USED		
	Delh	Jodhpur	Lucknow	Delhi	Jodhpur	Lucknow
Severe Mental/ physical dysfunction	167 (31.39)	2 (0.98)	0 (0)	561 (32.09)	10 (3.14)	0 (0)
Moderate mental/ physical dysfunction.	136 (25.56)	2 (0.98)	49 (65.33)	255 (14.59)	4 (1.26)	73 (58.87)
Mild mental / physical dysfunction.	143 (26.88)	89 (43.63)	26 (34.67)	525 (30.03)	141 (44.34)	44 (35.48)
No mental / physical dysfunction.	77 (19.47)	111 (54.41)	0 (0)	371 (21.22)	163 (51.26)	7 (5.65)
Total	532	204	75	1748	318	124

(figures in parenthesis indicate percentage)

Community survey:

Community survey on drug abuse in selected localities in the three cities were carried out as supplementary component to treatment facility based D.A.M.S. A sample of about 10,000 persons (aged over 10 years) was studied at each center. The percentage rates for use of any drug/substances (including tobacco) varied from 34% to 42% among males at the three centres. These rates are reduced to about half, that is 17% to 23%, if only tobacco users are excluded.

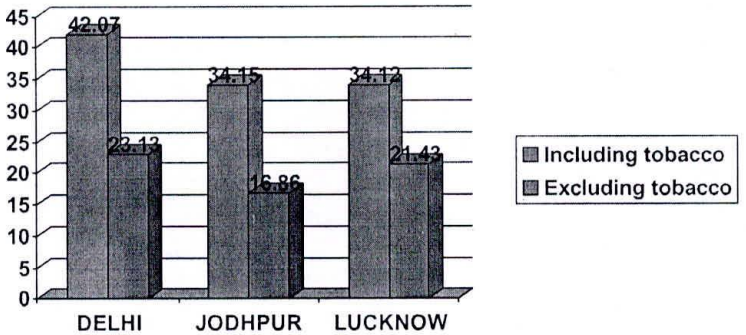


Fig 1: Percentage rates of drug/substance use (within last one month) among males in community survey.

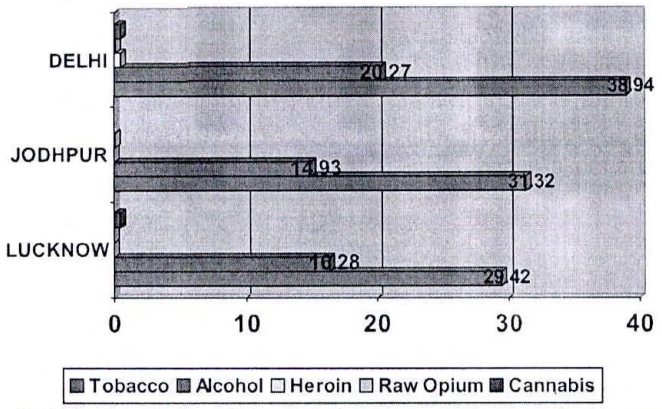
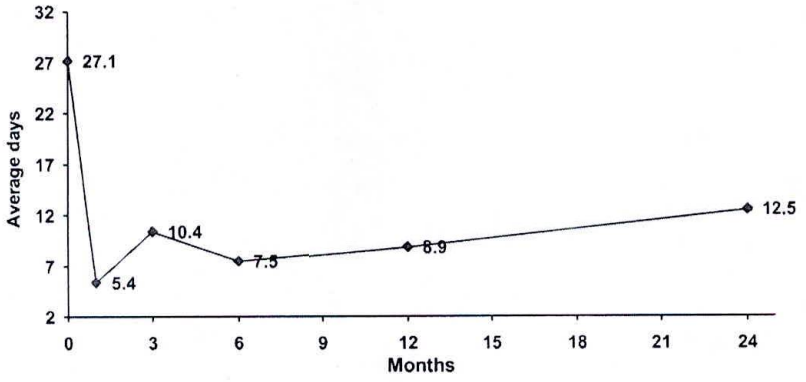


Fig. 2: Percentage users of different kinds of drugs/substances among males (community survey)

Fig 3: Average no. of days of alcohol use in last 30 days



The breakup of data substance-wise shows that percentage of alcohol users vary from 15% to 20% while percentage of tobacco users vary from 29% to 39% among males in the three cities. Further information on alcohol use suggests that roughly one third of total alcohol users (that is 5 % to 7% of males in the study sample) were to some extent dependent on alcohol use or they had formed a habit of alcohol use. Less than 1 % males at each centre used other drugs/substances except that raw opium was used by 1.19% at Jodhpur center. 0.5% males at Delhi, 0.04% at Lucknow and none at Jodhpur used heroin. Cannabis was used by 0.27% to 0.50% in study area of three centres. Hallucinogens, barbiturates, cocaine and amphetamine were not used by any one in the study samples in three cities. Heroin was used through chasing and smoking, and oral use was the mode for raw opium. There was only one individual in the entire study sample who used the drug intra-muscular, 4% to 9% females used tobacco. Use of other substances was negligible among females. Surveys may be used in place of, or in addition to reporting system, depending on the network of treatment agencies in the area that are in contact with drug users. While surveys are valuable for determining hat proportion of a study population have used drugs, the reporting system helps in studying patterns of heavy drug use, and for assessment of treatment load on the health care infrastructure.

Treatment evaluation

Follow-up studies were carried out to evaluate treatment in admitted cases fulfilling DSM III-R criteria of alcohol and opiate dependence. After detoxification, group re-educative therapy was provided to all cases in groups of 6-10 cases. This included sharing experience, discussion on medical and psychological complications, social and family problems, treatment process and recovery, craving and relapse, structuring of free time and future plans. Outcome was evaluated on frequency of drug use at various follow up stages, change in life function, change in problems, and employment related problems. Most of the cases discontinued drug use following treatment, but some of them relapsed at subsequent follow up. The observations at follow up for alcohol users and and opium users are shown in graphs given below. The drug related problems also showed considerable decline, but there was relapse in some cases. There is need for more studies on treatment evaluation of drug dependence.

It was observed during the study period that drug dependent subjects had shown positive change towards help seeking behaviour. There is need for further study on factors that prevent relapse and those which contribute towards relapse.

A SURVEY OF DRUG DEPENDANTS IN THE COMMUNITY IN URBAN MEGAPOLIS DELHI

In our country, earlier epidemiological studies on drug use focused only on defining a category of user / non user in study population . No data was available that could provide estimates either of dependent or non-dependent users of psychoactive drugs. A task force study was initiated by ICMR at AIIMS Delhi with following objectives:

a) to develop an instrument and methodology for obtaining reliable data on dependent /non dependent drug users in a general population.
b) To ascertain the magnitude of drug dependent and non -dependent use in the general population of Delhi.
c) To assess the change in trends of drug use over a period of time.

A rapid population survey instrument based on DSM III -R operationalised criteria and methodology was developed to estimate the prevalence of substance abuse (dependent and non- dependent use). The instrument and methodology were pre-tested and non - medical interviewers trained in collecting the data. In the pilot phase, the information on drug use obtained by interviewing only head of the house hold (about all family members) was compared with the information obtained from individuals interviews with individual family members. It was found that reliable information on drug one can be obtained by interviewing HOH(head of house hold) only.

The dependent - nondependent drug use as diagnosed were further evaluated by a qualified clinician who independently interviewed a sub sample of the population . The concordance was found to be high.

A survey and resurvey (with time interval of one year) were carried out in representative sample in urban mega polis Delhi. A stratified multistage sampling scheme was adopted for the survey. The union territory was stratified in to five strata; unauthorized colonies , resettlement colonies , regularized colonies , urban villages, and other colonies . A total of 72 colonies were randomly selected from the five strata at the first stage. One hundred households were selected by simple random sampling from each of the selected colony at the second stage for the first survey. A resurvey was carried out after an interval of one year. It was decided to select 50 old households already included in the study sample from each of the selected colonies, and 40 new households from the same 72 colonies for the resurvey. An additional study sample from 8 colonies in the walled city was also selected for the resurvey as this area was not adequately represented during the first survey.

The households were the basic unit of the sample and the information was collected from the head of the household regarding use of dependence producing drugs by him and other members of the family over the past 30 days. All members of either sex above the age of 10 years were included in the study. Drug use was found to be exclusively a male phenomenon in the present study. The types and combinations of drug use found in survey and resurvey are shown in the table 1 below:

Table 1. Distribution by type of drug use among males.

Type of drug use	I - SURVEY		II - SURVEY	
	Number	%	Number	%
Only tobacco	2129	17.7	1999	19.3
Only alcohol	385	3.2	258	2.5
Alcohol & tobacco	1112	9.3	873	8.4
Tobacco & cannabis	7	0.1	9	0.1
Tobacco &opiates	20	0.2	23	0.2
Multiple drug use	22	0.2	28	0.3
Total study sample	11995		10,353	

The observations from the survey bring out that non user rates among males was around 60 - 80 % depending upon the type of housing cluster . Secondly, the voluntary abstention from all substance use by the women. The use of drugs still appeared to be a man's prerogative. Third, is the absence of use of cannabis except in urban villages where it was a part of traditional lifestyle. The opioid use did not appear to be a major problem. On the face value these estimates appeared to be under estimates for opioid dependents but they correspond closely to the number of opioid dependents who sought help form all treatment agencies in Delhi (ICMR, 1992). The relationship of drug use and sociodemographic characteristics showed that drug use was positively related to age. It increased with increase in age. Education showed a negative correlation suggesting that drug use declined with rise in educational attainments. Being married or single was not related with drug use. Drug use increased with individual income.

The dependent and non- dependent use of drugs in different types of residential colonies are shown in fig. 1. the drug use was high in urban villages, resettlement colonies and unauthorized colonies.

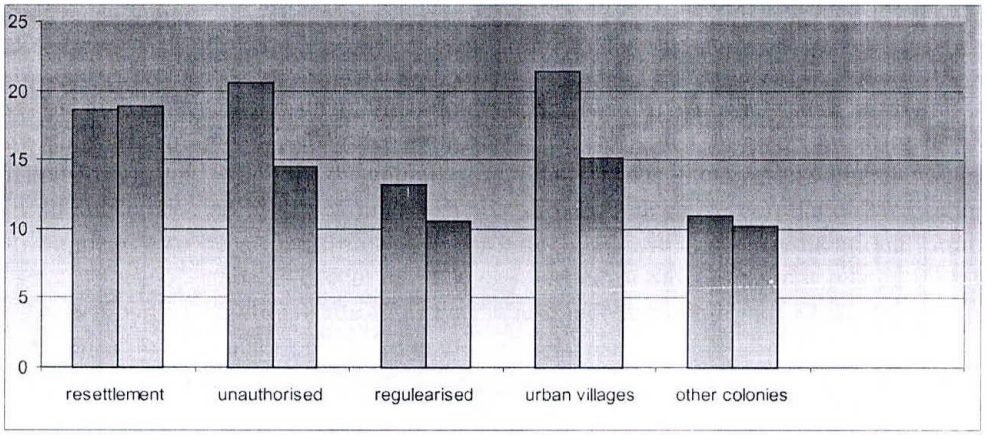


Fig.1 Dependent and non- dependent drug use (among males) by type of residential Colonies.

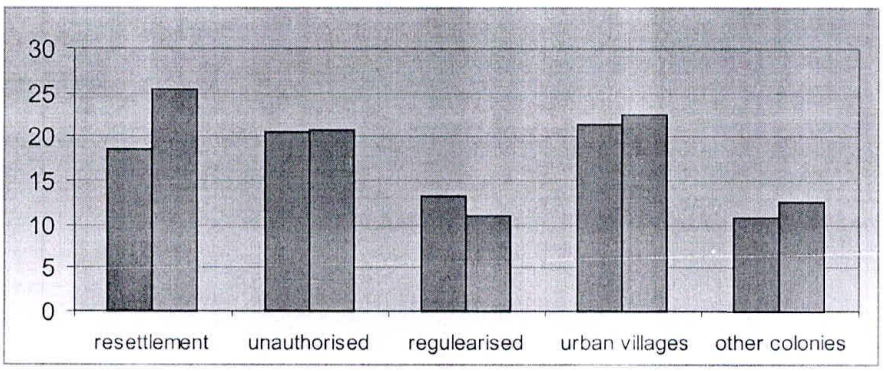


Fig.2 Change in dependent drug use (among males) from 1st survey to 2nd survey .

Change in trends of drug use were assessed by surveying same house holds in each type of colony after a period of one year. The overall rates of abuse of different drug categories remained unaltered. Changes were observed within the colony type, mainly for alcohol and tobacco use. Fig.2. shows the changes in dependent drug use from 1st survey to 2nd survey. It is seen that dependent drug use increased significantly in one year time duration from 1st survey to 2nd survey in resettlement colonies.

Just as a society is constantly changing, so do the patterns of drug use and its distribution in various population groups. Longitudinally it is expected that changes in drug use in any country may occur quickly and without any prior warning therefore it is important to use epidemiological surveys at frequent intervals to monitor the current rates of use and characteristics of users to understand the distribution and diffusion of tobacco, alcohol and illicit drug use in various population groups. The method of survey evolved in the project is cost effective and reliable.

SUICIDE BEHAVIOUR

HOSPITAL BASED STUDY ON SUICIDE BEHAVIOUR

A hospital-based study on suicide behaviour was under taken by ICMR center for advanced research at medical college, Madurai with following objectives:

- To delineate the patterns of social, psychological, psychiatric and pineal, cortisol profiles in suicide attempters.
- To assign the cohort to diagnostic categories as per the DSM III criteria by a consensus of two psychiatrists
- Prevention of repetition of suicide attempt by intervention (e.g. lithium prophylaxis in depression)
- To study the contributory roles of psycho -social, psychiatric and biological factors (pineal and cortisol) towards the repetition of the attempts.

Two hundred and fifty consecutive cases comprising suicide attempters (first attempt n=234;male 128, female106) and suicide completers (n=16; male 11,female5) were recruited from the medical, surgical wards and the intensive care unit of the govt. Rajaji hospital, Madurai. The cases were also enlisted from among those attending the OPD, Institute of Psychiatry, Govt. Rajaji Hospital, Madurai. The ratio of completers and the attempters is estimated at 1: 15. The project staff including medical officers, social workers and the psychologists were combing these words every day (morning and evening) for collection of the sample. After recruitment in the study, the cases were interviewed along with available key persons from among the family members. The specially prepared proformae were completed in all the cases to obtain information on demographic, social, psychological and clinical variables in accordance with the objectives of the study. The DSM III criteria were adhered to for clinical diagnosis. The concurrence of the two research psychiatrists was required in arriving at a diagnosis.

The modes of suicidal attempts are given below in table 1:

Table 1. Mode of suicide attempt

MODE	NUMBER	%
Organo phosphorus (Bug killer/rat killer/mosquito killer/insecticide/pesticide/kerosene/ Caustic soda/copper sulphate)	160	68.4
Oleander seeds and other herbal poison.	43	18.4
Tablets (Diazepam/ Imipramine /phenobarbitone /others)	16	6.8
Hanging	8	3.4
Oleander seeds + tablets	1	0.4
Tablets+ glass pieces	1	0.4
Jumping into the well	1	0.4
Others (cutting the throat/powdered glass)	4	1.8
Total	234	100.0

Organophosphorous outnumbered all other types of poison (68.4%). Second came the oleander seed poison (18.4%) followed by tablets poison (6.8%). There were 8 instance of hanging.

Diagnosis on multiple axis

The diagnosis on axis-1 (clinical syndrome), axis II (personality factor), axis III (physical illness), axis IV (psychosocial stress), axis V (level of pre morbid adjustment) is given in table 2.

Table – 2 Diagnosis (DSM-III) (n=234)

	No	%
AXIS -I (CLINICAL SYNDROME)		
Schizo -affected disorder	1	0.43
Adjustment disorder with depressive mood	19	8.12
Dysthymic disorder	9	3.85
Family circumstances	20	8.55
Marital problem	20	8.55
Parent child problem	16	6.84
Occupational problems	25	10.68
Interpersonal problem	25	10.68
Academic problem	9	3.85
Life problems	37	15.81
Major Depression Melancholia	23	9.83
Major Depression without Melancholia	1	0.43
Chronic Alcoholism	9	3.85
Atypical psychosis	3	1.28
Cannabis abuse	3	1.28
Homosexuality-ego syntonic	1	0.43
Mental retardation	2	0.85
Schizophrenia (hebeprenia)	6	2.56
Grief reaction	1	0.43
None	37	15.81
Axis II (PERSONALTY FACTORS)		
Immature	18	7.69
Inadequate	44	18.80
Atypical mixed	4	1.71
Mixed	1	0.43
Neurotic	4	1.71
Dependent	5	2.14
Impulsive	21	8.97
Passive aggressive	7	2.99
Histrionic	3	1.28
Cyclothymic	2	0.85

Antisocial	2	0.85
Sensitive	10	4.27
Hysterical	6	2.56
Delinquent	2	0.85
Anxiety	8	3.42
Introvert	23	9.83
Depressive	1	0.43
Obsessional	6	2.56
Avoidant	4	1.71
Schizoid	4	1.71
Borderline	1	0.43
None	68	29.06
Axis-III (PHYSICAL ILLNESS)		
Peptic ulcer	26	11.11
Premenstrual syndrome	15	6.41
Pain abdomen (unclassified)	33	14.10
Dysmenorrhoea	4	1.71
Dysfunctional uterine bleeding	5	2.14
Chest pain	3	1.28
Bronchial asthma	3	1.28
Chronic Headache	2	0.85
Old case of cranial stenosis	1	0.43
Grandmal epilepsy	1	0.43
Fibroid uterus	1	0.43
Skin infection	1	0.43
Sexual problems	1	0.43
Epilepsy	1	0.43
Acute Appendicitis	1	0.43
Gastritis	2	0.85
Allergic wheezing	1	0.43
Myalgia	1	0.43
Abdominal colic	2	0.85
Liver damage	1	0.43
Chronic Diarrhoea	1	0.43
Alcohol withdrawal	1	0.43
Pelvic infection	1	0.43

None	130	55. 55
AXIS - IV (PSYCHOSOCIAL STRESS)		
Nil	3	1.28
Minimal	10	4.27
Mild	52	22.22
Moderate	58	24.78
Severe	100	42.73
Extreme	7	2.99
Catastrophic	2	0.85
Unspecified	2	0.85
AXIS -V (LEVEL OF PRE MORBID ADJUSTMENT)		
Superior	0	0
Very good	0	0
Good	48	20.51
Fair	88	37.61
Poor	85	36. 32
Very poor	4	1.71
Grossly impaired	9	3.85

Management of cases:

Clinical management_of cases was carried out with 67.5% of the cases being given counseling followed by 24.8%of the cases receiving brief supportive psychotherapy. In addition subjects with psychiatric problems were managed with anti- depressants (15.4%) and other psychotropic drugs (12%) others with gynecological and other physical problems were referred to respective departments for investigations and treatment.

Table – 3. Management of cases

TREATMENT	Number	%
Counseling	158	67.5
Psychotherapy (brief supportive)	58	24.8
anti depressants	36	15.4
Minor tranquilizers	17	7.3
Major tranquilizers	11	4.7
Others (referral)	43	18.7

Suicide ideation

Suicide ideation was found persisting in 18 cases. The nature of ideation was a wish to be dead in 10, a wish to be killed in 5, and a wish to kill in 3. There were 3 re-attempt in the series up to one-year follow up.

Outcome:

The overall assessment of outcome of the 155 cases that completed 1year follow up revealed that 70 had completely recovered, 51 were found to be improving, 29remaining unchanged, 4 having worsened and one mortality (from suicide)

The diagnosis -wise outcome is given in table below:

TABLE 4. OUTCOME ON FOLLOW-UP (N=155)
AXIS- I (Clinical Diagnosis - DSM - III)

Clinical syndrome/ Diagnosis	Completely	Improving	Unchanged	Relapse following recovery	Worsening	New	Changed
Schizophrenia	11	-	-	-	-	-	-
Paranoid schizophrenia	-	1	1	-	-	-	-
Catatonic schizophrenia	-	-	1	-	-	-	-
Acute Psychosis	-	-	-	-	-	-	1
Schizo-affective disorder	-	1	-	-	-	-	-
Dysthymic disorder	1	3	1	-	-	1	3
Major depression	18	1	-	2	-	-	3
Adjustment disorder with depressive mood	8	4	2	-	-	-	2
Anxiety	-	-	-	-	-	13	-
Ch. Alcoholism	3	3	2	-	-	-	-
Mental retardation borderline	-	-	1	-	-	-	-
Homosexuality	-	1	-	-	-	-	-
Life circumstances	14	8	2	-	-	-	-
Family circumstances	8	4	2	-	-	2	-
Interpersonal problems	10	5	1	-	-	3	-
Marital problems	6	5	3	-	-	2	1
Parent child problem	10	4	-	-	-	-	-
Academic problem	3	-	-	-	-	-	-
Occupational problems	7	4	2	-	-	1	-
Inadequate information	-	-	-	-	-	-	5

Pain especially chronic abdominal pain from duodenal ulcer and gynecological disorders has figured importantly as a "cause" for suicide attempts and suicides. Many of the patients with physical illness are in contact with non-psychiatric medical professionals like internists, general practitioners, medical professionals and gynecologists. They need to be screened for suicide risk. An easy -to-administer questionnaire has been developed that enables detection of suicide potential for psychiatric referral. The questionnaire is addressed to the patients with chronic pain, including abdominal pain, during routine clinical examination. The assessment of suicide risk in this group will give a new direction to suicide prevention. The questionnaire is given in the appendix. This does not suggest, "medicalizing" suicide; rather it adds one more factor to the list determining such behavior.

Screening questionnaire for general practitioners for eliciting suicidal risk in chronic pain patients.

1. Physical illness

a) Is your pain chronic? If yes, duration?

b) Has the pain already been diagnosed?

c) Does the pain persist/ recur despite adequate medical therapy?

d) Do you feel hopeless about the improvement from your present illness?

e) Do you think that things cannot improve?

f) Do you feel all treatments have been tried and nothing else can be done?

2. Life problems

g) Were there any (one or more) life events within the past 6 months that caused you distress? If yes, please specify.

h) Have there been any marital problems?

i) Do you feel that the above problems will not be resolved in future?

3. Psychiatric illness

j) Do you have crying spells, sleep disturbance, or feel lethargic?

k) Do you feel life to be "worthless" and feel "hopeless" about the future?

a) Do you think that everything you do is a failure?

b) Do you feel that your life is full of confusion?

c) Do you feel that your life is a disappointment?

d) Do you feel discouraged about the future?

e) Do you feel you are very sad or unhappy about your life?

f) Do you feel you are a totally unlucky person or useless?

g) Do you feel life is not worth living?

h) Does the future appear very bleak to you?

j) Has there been any earlier history of psychiatric illness?

l) Has there been any history of psychiatric illness/ suicide attempt in the family?

4. Suicide intent

m) Do you entertain suicidal ideas from time to time?

n) If yes indicate whether they are wish to die/ wish to be killed /wish to kill.

m) Have you made any suicide attempts before?

A STUDY OF DOMESTIC BURNS IN YOUNG WOMEN

This study was an offshoot of the ICMR projects - A study of suicide behavior, carried out on 250 cases of attempted suicide. That study in its cohort of 250 cases included just 2 cases of burns. It was felt that burn wards had not been screened and cases of domestic burns remained uninvestigated. Therefore a separate study on domestic burns was undertaken with following objectives:

a) To analyze female burn cases and to find frequency of suicide, homicide and accidents among them.

b) To ascertain the 'cases' of suicide with special reference to dowry related problems.

c) To analyze and manage the problems of survivors of suicide attempt and also their family members regarding psychological and psychiatric aspects.

d) To suggest broad outlines for prevention of suicide.

100 consecutive cases of female burns were recruited from 16th march-16th October 1988 from the burns wards of the department of plastic surgery, Govt. Rajaji hospital, Madurai. All the cases were contacted soon after their admission into the wards and detailed information, as much as possible was collected considering the sensitive nature of clinical setting, the procedure of psychological autopsy was carried out in all cases of mortality with a view to ascertain the circumstances leading to the burn injuries. This involved eliciting information from key members of the family and others through visits to their homes as often as possible after the fatal events. The magisterial authorities obtained dying declarations. The treatment for those surviving the burn injuries was instituted by plastic surgeons. Weekly meetings were held and these were attended by the project officer and the staff of the center and co-investigators from the departments of plastic surgery and forensic medicine. Each case was discussed in detail and the decision on the nature of burns (accidental, suicidal, homicidal, not classifiable) was arrived at. The nature of burns is shown in table below:

Table –1. Nature of burns (N =100)

CLASSIFICATION	ALIVE	EXPIRED	TOTAL
Accident	19	6	25
Suicide	3	67	70
Homicide	-	3	3
Not Classifiable	-	2	2
TOTAL	22	78	100

Table –2. Reasons / causes for burns

ACCIDENTS (N=25; 25%)	
a) Carelessness:	21
b) Inexperience in handling the cooking device	7
c) Epilepsy:	1
d) Rushing to save and put off the fire:	1
e) Depressive symptoms:	2
HOMICIDE (N=3; 3%)	
1) Interpersonal adjustment problems with relatives	1
2) Interpersonal adjustment problems with husband:	1
3) Mental illness in husband	1
SUICIDE (N=70; 70%)	
MENTAL ILLNESS (N=16; 23%)	
a) Schizo - affective disorder	1
b) Adjustment problems with depressed mood	2
c) Paranoid schizophrenia	1
d) Mental retardation	1
e) MDP - depression	1
f) Immature personality	6
g) Impulsive personality	3
PHYSICAL ILLNESS (N=10; 15%)	
1) Chronic pain abdomen	3
2) Epilepsy	2
3) Dysmenorrhoea	2
4) Premenstrual syndrome	2
5) Hysterectomy (gynecological anomalies)	1
MARITAL PROBLEMS (N=36; 51%)	
1) Alcoholic husband and wife beating	16
2) Extra-marital relationship (self or spouse)	15
3) Adjustment problems with husband	19
DOWARY RELATED PROBLEMS (N=5; 7%)	
1) Interpersonal problems with in-laws in Connection with dowry related issues	5
OTHER STRESSFUL FAMILY AND LIFE CIRCUMSTANCES (N=26; 37%)	
1) Interpersonal adjustment problems with Parents, sister, and in-laws	22
2) Love affair and illicit relation	2
3) Academic problems	5
INADEQUATE INFORMATION (N=2; 3%)	
Cause not known	2

TASK FORCE PROJECT ON SUICIDE BEHAVIOUR

Suicide is a leading cause of death for young adults. It is among the top three causes of death in the population aged 15-34 years. The first scientific attempt to understand the rationale behind suicide started in 1763 with the work of Merian who emphasized that suicide was neither a sin nor a crime, but a disease. At the beginning of 20th century, Gaupp, R reported for the first time that there were some peculiar and unique personality traits among people committing suicide. Research over last several decades indicates that it is the state of mind along with all external influences, which result in suicide.

The ICMR centre at Madurai had carried out studies on suicide behaviour by studying those who made suicide attempts and were brought to hospital. It was felt that there was need for a community-based project to study the entire range of suicide behaviour from suicidal ideation to suicide attempts.

A pilot study on suicide behaviour has been undertaken at two centres – Delhi and Thiruvananthapuram with following objectives:

a) To adapt/develop and pre-test study instruments for the task force project on suicide behaviour.

b) To work out fieldwork logistics and referral system for the project.

c) To establish project work logistics for hospital based study.

d) To prepare guidelines for intervention.

e) To prepare guidelines and manuals for training of research staff.

The main study will be initiated on completion of the pilot study to address the following objectives:

Overall Objective:

To study the descriptive epidemiology of suicidal ideation and behaviour.

Specific Objectives:

1. To study occurrence of suicidal ideation in the community.
2. To study the factors and processes contributing to suicidal ideation.
3. To study factors and processes contributing to suicidal attempt.
4. To identify what are the additional diagnoses among suicide attempters (hospital cohort) as compared to suicide ideators found in the community cohort.
5. To study the course and outcome in individuals with suicidal ideation.

MENTAL HEALTH CONSEQUENCES OF DISASTERS

MENTAL HEALTH CONSEQUENCES OF DISASTERS MENTAL HEALTH STUDIES IN MIC EXPOSED POPULATION OF BHOPAL

The project was undertaken with following general Objectives:

1. To study the prevalence of psychiatric disorders in MIC exposed and non-exposed areas.
2. To study the factors associated with psychiatric disorders.
3. To study the course and outcome of disease in identified cases (at first survey).
4. To carry out annual (2nd, 3rd, 4th and 5th year) prevalence surveys on independently drawn sample.

METHODOLOGY:

The design of present study falls under the category of ex-post facto inquiries.

The staff were provided training to administer mental health item sheet of Verghese and Beig (1973). The psychiatrists / psychologists were trained to administer Present State Examination (PSE). The inter-rater reliability between R.O. and S.R.O. ; R.O./SRO and co-investigator were carried out from time to time to ascertain the reliability of data.

Selection of cases :

A random sample of 700 families from each area, i.e. severely exposed area, mildly exposed area and control area was surveyed for each rotational survey independently. This random sample was generated by the computer center of BGDRC, Bhopal from its cohort.

The head of the selected families was approached by the team. The team comprised of psychiatrist, psychologist, sociologist and a social worker. The mental health item sheet of Verghese and Beig (1973) was administered to the head of the family, also information on the same schedule regarding other adult members of the family (aged 16+) was gathered. If any member of the family was rated positive on three or more items, the case was examined further. Semi-structured proformae on psychiatric history, personal history, pre-morbid personality were also completed. Subjects identified as having psychiatric problems were administered Present State Examination, and they were referred to psychiatrist (also co-investigator of Hamidia Hospital Bhopal for management (treatment). The inter-rater reliability was tested.

Locked houses were revisited twice. Migrated families, locked houses (even after three visits) were replaced by additional families. The list of additional families was obtained from computer section of Bhopal Gas Disaster Research Centre (BGDRC) on random sampling basis.

During first year of data collection, all the 700 families of severely exposed area were surveyed and thereafter 700 families of mildly exposed area and 700 families of control area approached.

Table I – Prevalence rates of psychiatric disorders in each rotational survey.

Year	SEVERE			MILD			CONTROL		
	Total sample	Cases detected	Prev /1000	Total sample	Cases detected	Prev /1000	Total sample	Cases detected	Prew /1000
1985-86	2099	279	132.92	2460	148	60.16	1891	47	24.85
1986-87	2179	133	61.03	2440	100	40.98	1845	30	16.26
1987-88	2212	95	42.95	2329	90	38.64	1729	30	17.35
1988-89	2119	102	48.13	2261	108	47.77	1752	26	14.84
1989-90*	1478	41	45.02	1685	79	46.88	1146	16	13.96

*(From Sept.1, 1989 to 31st March, 1990)

Table 2 – Year wise distribution of psychiatric disorders in exposed and non exposed areas.

Year	exposed						Nonexposed					
	Anxiety	Prev/ 1000	Neurotic	Prev /1000	Others	Prev /1000	Anxiety	Prev /1000	Neurotic	Prev /1000	Others	Prev /1000
1985-86	143	31.4	86	54.8	34	7.5	14	7.4	22	11.6	11	5.8
1986-87	72	15.6	125	27.1	36	7.8	6	3.3	17	9.2	7	3.8
1987-88	62	13.7	116	25.5	7	1.5	9	5.2	15	8.7	6	3.5
1988-89	128	29.2	71	16.2	11	2.5	10	5.7	14	7.9	2	1.1
1989-90*	93	29.4	23	7.3	4	1.3	12	10.5	2	1.7	2	1.7

* Up to 31st March 1990

The members of Project Advisory Committee recommended that the survey in the control area should be undertaken simultaneously with the survey in the severe and mild area i.e. 10 days for severe area, 10 days in mild and 10 days in control area in a month. This pattern was followed thereafter.

During the initial survey (1985-86) prevalence rate in the MIC exposed area was 96.66 per thousand whereas prevalence in non-exposed area was 24.85 / 1000. The prevalence in the MIC exposed area was about four times higher than the non exposed area.

The prevalence rate of psychiatric disorders decreased gradually over a period of time. In the exposed area it is from 93.66/1000 to 37.94/1000, similarly 24.85/1000 to 13.96/1000 in the non-exposed area.

It is revealed from table 2 that Anxiety state and Neurotic depression were the most common diagnosis in the exposed area as well in the non-exposed area. The overwhelming incidence of Anxiety state and Neurotic depression in the exposed population is striking.

ORGANIC BRAIN DAMAGE

A study to determine any evidence of organic brain damage in toxic gas exposed persons was carried out on a sub sample of the main study. A computer print out of all adult family members with at least one death due to MIC gas disaster was obtained from the Bhopal Gas Disaster Research Centre. Thereafter a manual screening

was carried out to determine severity and persistence of physical symptoms by personal interview of each subject using an initial screening proforma. Thus 75 cases were identified that met the following inclusion criteria: death in the family, presence of severe and persistent physical symptoms, age above 16 years and educational level VIth standard. and above.

Twenty five cases were selected also from the study population from exposed area, but with no persistent physical symptoms and no death in the family due to MIC exposure. This sub-sample was drawn to enable comparison between severely exposed population with and without physical symptoms.

The control group of 100 subjects was a randomly drawn sample from the non-exposed control area of Bhopal. These persons were also above 16 years of age with educational level VIth standard. and above.

Exclusion criteria was that the subjects should not have pre-existing dementia. A dementia questionnaire was devised and used for the purpose.
Study instruments:

(i) Screening proforma.

(ii) Dementia Questionnaire.

(iii) Semi-structural Proforma for medical, general and systemic examination with special emphasis on neurological system and mental status examination.

(iv) Luria-Nebraska Neuropsychological Battery (LNNB).

Observations and discussion:

1. The distribution of identified organic brain damage cases in the three study samples is presented in table 1.

   It is seen that the percentage of organic brain damage cases is significantly higher ($p<0.05$) in the severe exposed area (having physical symptoms) as compared to the control area. The percentage of brain damage cases identified in the severely exposed area is almost two times higher than the control area. It indicates that MIC gas has caused organic brain damage.

2. A very high number of organic brain damage cases (27%) in the control area could be because of the following reasons:

(a) Cases identified as having equivocal or diffuse damage could be taken as borderline cases of damage and if these are dropped out from the actual count of organic brain damage cases, then the percentage of cases will drop down to 14% in control group and 21.3% in severe exposed group.

Table 1 : Number of organic brain damage cases identified in each area

Brain damage	Severe Exposed (with physical symptoms)		Exposed(without physical symptoms)		Control	
	No.	%	No.	%	No.	%
Present	39	52.0	9	36.0	27	27.0
Absent	36	48.0	16	64.0	73	73.0
Total	75	100.0	25	100.0	100	100.0

(b) When localization break up of organic brain damage cases of the control area was studied, it was found that there was a concentration of cases in the left parieto-occipital area. Left parieto-occipital localization scale has a very high correlation with educational achievement. Items which best identify injuries in this area of the brain are items that measure reading, writing, arithmetic and intelligence. As a result, the individual with a history of school problems may show isolated elevation on this scale, which confirms nothing by itself, except that the person probably did have school problems (Golden etal.,1983).

(c) L.N.N.B is capable of detecting very soft neurological signs related to higher cortical functions. Abnormal profiles or organic brain damage by the exposure of MIC has generally caused impairment of the cerebrum or higher cortical functions.

3. No significant association was found between psychiatric illness (mainly Neurotic Depression and Anxiety State) and organic brain damage.

4. Neurological examination performed on each of the organic brain damage cases did not show any signs of central nervous system deficit. This may be due to the fact that LNNB identified cases of organic brain damage especially of the higher cortical functions. Functions, which are so subtle that they may not be detected by clinical neurological examination.

5. No specific lateralization pattern has emanated from the lateralization scales. It indicates that MIC has not caused damage to any specific hemisphere.

6. The above findings of inconsistent lateralization pattern is further substantiated by the localization scale findings. MIC has not affected any particular lobe in the brain damage cases.

HEALTH CONSEQUENCES OF EARTHQUAKE DISASTER WITH SPECIAL REFERENCE TO MENTAL HEALTH

Marathwada earthquake disaster of 30 September 1993 was one of the worst human tragedies of modern times that captured global attention because of the massive impact it had in terms of loss of life and property. The quake, that measured 6.5 on the Richter scale, claimed 8000 lives and left 14,000 injured. Sixty seven villages were razed to ground while large number of houses were damaged in another 886 villages. Size of the affected population was 1,70,000. Property in excess of rupees three hundred crore was destroyed. Prompt large-scale relief operations were undertaken involving civilian and military personnel. There was 'convergence' of volunteers and NGOs from all over the world. Affected community received a comprehensive long term rehabilitation package of Rs. 1100 crore which included compensation for human loss and injuries, reconstruction of 52 villages wherein 26,000 houses meeting safety requirements were built, and infrastructure and socioeconomic development.

Recognizing the dearth of systematic information about psychosocial and health consequences of such major disasters in India and from other developing nations, Indian Council of Medical Research initiated a Centre for Advanced Research on health consequences of earthquake disaster with special reference to mental health at the Maharashtra Institute of Mental Health, Pune.

There were two main objectives of this study. The first one was concerned with determination of nature and prevalence of psychiatric morbidity, physical health complaints and vital statistics in the disaster affected population through a longitudinal epidemiological study. Assessment of various dimensions of disaster exposure (human and material losses, injuries, experiences of threat, etc.) and subsequent stresses as well as mediating factors in the form of life events and social support and their association with the mental health outcome constituted another important objective.

Study sample: The study employed a modified cohort design in which the sample of exposed and non exposed (control) subjects was selected after the exposure occurred. Control group came from an area located remotely (300 km.) from the disaster affected region. Family was the basic unit of study. The disaster affected area from which the sample was selected was defined by the State Administration as zone -A comprising of villages in Latur and Osmanabad districts where extensive destruction including human loss had taken place. Proportional allocation strategy was adopted in sampling for population living in large, medium and small villages in A-zone. Selection of villages was carried out at the first stage and then about 150 families were selected from each of these villages at the second stage. The sample finally consisted of 1661 family units; 910 from disaster affected area and 751 from the control area generating a cohort of 8557 individuals.

Psychiatric assessment: Two stage assessments comprising of screening stage and confirmation stage were employed. Modified SRQ (Self Reporting Questionnaire) and SCAN (Schedules for Clinical Assessment in Neuropsychiatry) were the psychiatric screening and confirmation tools in adults. First phase of the study was carried out during one and half years to two and half years post-disaster. Follow-up was undertaken four and half to five years post-disaster.

OBSERVATIONS: Following were the important observations of the first phase of the study:

(i) Exposure to the disaster: Villages with varying disaster death ratios from very high (480.7) to low (1.5) had found representation in the study. This gradient was also reflected in the sample. One third of families (32.09%) in the affected sample had suffered human loss, which was multiple in the case of majority (64.04%) of them. There was a preponderance of female gender (58.13%) and younger age group among the deceased. 31.75% subjects had sustained disaster injuries which were minor in majority of the cases (61.23%). 15.61% adults and 5.90% children in the sample were hospitalized for treatment of their injuries. Gradient and

clustering was also observed with regards to injuries. Since the disaster struck at an early hour (3.53 A.M.), most of the people were still asleep in their homes. 34.9% adults and 27.0% children were trapped in the debris. A large proportion of adults (35.9%) and few children were also exposed to body handling, multiple ones in several instances. All persons in study sample were rendered homeless and in addition, majority reported loss of means of livelihood in terms of loss of farming equipment, damage to irrigation facilities, loss of livestock, loss of merchandise, etc.

(ii) Significant increase in psychiatric morbidity in the disaster affected group (tables 1 and 2). Excess morbidity was observed in both the genders in the disaster affected group. Overall prevalence of 139 per thousand in the affected sample was significantly higher than 68 per thousand in the control sample. 21.46% adult males in the affected group received psychiatric diagnosis compared to 13.14% in the control group. Corresponding figures for adult females were 14.99% and 5.05%; for male children 7.67% and 4.26%; and for female children 6.70% and 3.17% respectively. Differential distribution of cases was noticed in the affected villages paralleling the gradient of disaster losses. There was a clustering of cases within families.

(iii) Nature of psychiatric morbidity: Higher prevalence rate in adult males as compared to females in both types of areas was accounted for by the category of Alcohol dependence. Bulk of cases in the disaster affected group (11.89% in males and 9.40% in females) belonged to the category 'Other reactions to severe stress' and had sub threshold depressive and anxiety features. Post Traumatic Stress Disorder (PTSD) and Major Depression were the other important categories found in the disaster affected area. Major depression was more prevalent in females (1.99% as compared with 1.44% in males) while as PTSD was diagnosed in 1.60% males and 0.95% females. Cases of sleep disturbance formed an important group in children in addition to 'Other reactions to severe stress'.

(iv) Physical health complaints and vital statistics: More respondents reported their health to be 'bad' in the affected sample. Musculoskeletal complaints were the commonest physical symptoms reported. The affected group recorded a significantly higher birth rate of 35.7 compared to 21.77 of the control group. There was no difference in age and gender controlled mortality rates in two groups.

(v) Post-disaster increase in nuclear type of families was observed (from 5.04% to 61.54%). Proportion of single member families was also significantly higher in the affected sample. A noticeable trend of addition to the families through marriages and births was observed, contributed by remarriages of widowers (60%) while there was no widow remarriage.

(vi) Disaster affected subjects reported less number of desirable and more undesirable life events than their controls. Significantly higher proportion of respondents in the affected sample reported dissatisfaction with social support while as those reporting 'feeling very satisfied' were also more in the same group.

Sample coverage at the first phase was 96.38% and 95.75% for the two study areas. 7.91% adult cases and 6.95% child cases in the affected sample were lost to follow-up mainly due to death and migration. Age and gender distribution as well as diagnostic break-up of these was uniform. Corresponding attrition rates in the control group were 10.0% and 2.0%.

Important findings of the follow-up:

(1) While as birth rate in the affected sample continued to be high (42.80%), reversal towards the pre-disaster values was noticed on other parameters like gender ratio, family type, single member families, family size etc.

(2) Remission of psychiatric morbidity: 68.5% adult male cases and 70.76% female cases had remitted. Remission rate was even higher in children (82.76% in male children and 91.84% in female children). Due to this, the number of cases in the two study groups has become comparable. The diagnosis wise outcome of psychiatric cases are shown in tables 3 and 4.

Case control study was carried out on 'nested' sample for determination of risk factors for psychiatric

morbidity at both the phases. Age and gender matched controls were selected through simultaneous one-to-one matching. Univariate and multivariate analyses were undertaken. Stepwise logistic regression identified following risk factors at the first phase: disaster injury, occurrence of disaster death in the family, trapping experience and dissatisfaction with social support in case of adults and occurrence of disaster death in the family in case of children. At the follow-up, satisfaction with social support, occurrence of desirable life events and absence or minimal severity of disaster injury emerged as significant protective factors.

Outcome study: More number of desirable life events and less number of undesirable life events reported at the follow-up were found to be associated with recovery in adult psychiatric cases detected at the first phase of the study.

Table 1 Nature of Psychiatric morbidity in adults in disaster affected and control areas

		Disaster affected		Control	
ICD-100	Diagnostic categories	Males n=1244	Females n=1254	Males n=1004	Females n=1188
F 10	Mental and behavioural disorder due to use of alcohol/ Dependence syndrome	54+10 (5.14 %)	00	98+1 (9.86%)	00
F 12	Mental and behavioural disorder due to use of cannabinoids	08+4 (0.96%)	00	02 (0.19%)	00
F 20	Schizophrenia	07+1 (0.64%)	1 (0.07%)	00	3 (0.25%
F 22	Persistent Delusional disorders	01 + 1 (0.16%)	3 (0.23%)	01+1 (0.19%)	00
F 31	Bipolar affective disorder	01 (0.08%)	1 (0.07%)	01 (0.09%)	00
F 32	Depressive episode	18+3 (16.88%)	25 (1.99%)	01 (0.09%)	2 (0.16%)
F 34.1	Persistent mood disorder	4 (0.32%	13 (1.03%)	02 (0.19%)	10 (0.84%)
F 40.2	Specific (isolated) phobias	00	00	00	1*(0.08%)
F 41.0	Panic disorder	00	00	05 (0.49%)	1 (0.08%)
F 43.1	Post traumatic stress disorder	20 (1.6%)	12 (0.95%)	00	00
F43.2	Adjustment disorders	09 (0.72%)	14 (1.11%)	14 (1.39%)	37 (3.11%)
F 43.8	Other reactions to severe stress	138+10 (11.89%)	115+3 (9.40%)	00	1 (0.08%)
F44.2	Dissociative disorders		2 (0.15%)		1 (0.08%)
F 45.8	Other somatoform disorders	02 (0.16%)	00	00	00
F 51	Non organic sleep disorders insomnia	02 (0.16%)	1 (0.07%)	00	1 (0.08%)
F 51.3	Sleepwalking (somnambulism)	01 (0.08%)	1 (0.07%)	00	00
F 52.4-	Premature ejaculation & Other				
52.8	sexual dysfunction	00+02 (0.16%)	-	03 (0.29%)	-
F 54	Psychological & behavioural 00 factors associated with disorder or diseases classified elsewhere	00	00	1	(0.08%)
F 70-79	Mental retardation	02 (0.16%)	00	5 (0.49%)	3*(0.25%)
F 98.5	Stuttering	00+1 (0.08%)	00	00	00
	Total	n=267 (21.46%)	n=88 (14.99%)	n=132 (13.14%)	n=61 (5.05%)

Table 2 Nature of Psychiatric morbidity in children in disaster affected and control areas

		Disaster affected		Control	
ICD-100	Diagnostic categories	Males N=808	Females N=790	Males N=704	Females N=629
F 32	Depressive episode	1 (0.12%)	00	00	00
F 43.1	Post traumatic stress disorder	2 (0.24%)	3 (0.37 %)	00	00
F 43.8	Other reactions to severe stress	24+2 (3.2%)	12+1 (1.64%)	00	00
F 44.2	Dissociative disorder	1 (0.12%)	1 (0.12%)	00	00
F 51	Non organic sleep disorders insomnia	7+1 (0.9%)	12+1 (1.64%)	00	00
F 51.3-4	Sleepwalking (somnambulism)	5 (0.61%)	4 (0.50%)	6+1 (9.9%)	1+1 (0.31%)
F 70-79	Mental retardation	3 (0.37%)	2 (0.25%)	4 (0.49%)	3 (0.47%)
F 80.0	Specific speech articulation disorder	2+1 (0.85%)	2 5 (0.79%)	6 (0.37%)	5 (0.25%)
F 81.0	Specific reading disorder	1 (0.12%)	00	00	00
F 91.0	Conduct disorder	4 (0.49%)	00	00	00
F 93.0	Separation anxiety disorder of childhood	1 (0.12%)	00 (0.95%)	00	00
F 98.0	Non-organic enuresis	6 (0.74%)	10+1 (1.3%)	9+1 (1.4%)	8 (1.27%)
F 98.3	Pica of infancy and childhood	3+ 3 (0.74%)	3 (0.37%)	00	00
F 98.5	Stuttering	00	00	2 (0.28%)	1 (0.15%)
	Total	n=62 (7.67%)	n=53 (6.7%)	n=30 (4.26%)	n=20 (3.17%)

Table 3 Outcome of adult cases according to Psychiatric diagnosis

		Males		Females	
ICD-100	Diagnostic categories	Baseline	Follow-up	Baseline	Follow-up
F 10	Mental and behavioural disorder due to use of alcohol / Dependence syndrome	54	37 (68.5%)	0	0
F 12	Mental and behavioural disorder due to use of cannabinoids / Dependence syndrome	8	4 (50%)	0	0
F 20	Schizophrenia	8	7 (87.5%)	1	1
F 22	Persistent Delusional disorders	1	1	3	2 (66.7%)
F 31	Bipolar affective disorder	1	1	1	1
F 32	Depressive episode	18	2 (11.11%)	25	4 (16.0%)
F 34.1	Persistent mood disorder; Dysthymia	4	6 (150%)	13	18 (138%)
F 43.1	Post traumatic stress disorder	20	0(0.00%)	12	0(0.00%)
F43.2	Adjustment disorders	9	4 (44.4%	14	5 (35.7%)
F 43.8	Other reactions to severe stress	138	1 (0.8%)	115	18 (15.7%
F44.2	Dissociative disorders	0	0	2	1 (50%)
F 45.8	Other somatoform disorders	2	1 (50%)	0	0
F 51	Non organic sleep disorders insomnia	3	1 (33.3%)	2	0
F 70-79	Mental retardation	2	2	0	0
F 98.5	Stuttering	1	1		
	Total	267	78 (29.2%)	108	50 (26.6%)

Table 4 Outcome of child cases according to Psychiatric diagnosis

		Males		Females	
ICD-100	Diagnostic categories	Baseline	Follow-up	Baseline	Follow-up
F 32	Depressive episode	1		0	
F 43.1	Post traumatic stress disorder	2	0	3	0
F 43.2	Adjustment disorders	1	0	1	0
F 43.8	Other reactions to severe stress	24	0	12	0
F 44.2	Dissociative disorder	1	0	1	0
F 45.8	Other somatoform disorder	1	0	2	0
F 51	Non organic sleep disorders insomnia	7	0	12	0
F 51.3-4	Sleepwalking (somnambulism)	5	0	4	0
F 70-79	Mental retardation	3	3	2	2
F 80.0	Specific speech articulation disorder	2	2	2	1
F 81.0	Specific reading disorder	1	1	0	0
F 91.0	Conduct disorder	4	2	0	0
F 93.0	Separation anxiety disorder of childhood	1	0	0	0
F 98.0	Non-organic enuresis	6	2	10	0
F 98.3	Pica of infancy and childhood	3	0	3	1
F 98.5	Stuttering				
	Total	62	10 (16.13%)	53	4 (7.54%)

The study concluded that:

1. Moderate increase in psychiatric morbidity was observed in medium term in the disaster affected group which for most part had subsided by the follow-up stage five years post-disaster.

2. Socio-demographic indicators provided valuable information to complement psychiatric assessment as measures of distress and recovery of the affected community.

3. Case-control and outcome studies highlighted the relative importance of primary exposure variables in genesis of morbidity in early phase while the secondary and mediating factors (life events and social support) assume significance as time passes by.

Important strengths of the study are: It is a community based cohort study with long observation period, adequate sample size and 'independent' control group that employed standard tools of assessment and achieved high response rate of above 90%. Assignment of physical disorder diagnosis was constrained due to logistic difficulties.

MENTAL HEALTH ASPECTS OF THE EARTHQUAKE IN GUJARAT

In response to the devastating earthquake on 26th January 2001, a pilot study on "Mental Health Aspects of the Earthquake in Gujarat" was initiated by ICMR with IHBAS, Delhi as the Coordinating Centre. The study was carried out in collaboration with mental health personnel from Ahmedabad, Bhuj and Jamnagar. Objectives of the pilot study were as follows:

1. To assess the immediate mental health service needs of the earthquake affected population.

2. To study the strength and weaknesses of mental health services, both governmental and non governmental, and feasibility of establishing linkages with different agencies in the community.

3. To generate initial data/experience on community perceptions about mental health services, coping mechanisms, response patterns and protective factors in the affected population.

4. To collect preliminary data/ experience on need for development of models for psychological and emotional support for the relief providers.

5. To examine the feasibility of long term project on mental health service needs in earthquake affected areas at Gujarat. To formulate research questions, and draw research plan for the long term project.

The pilot study involved a rapid assessment of a broad range of psychological experiences, emotional states and behavioural patterns of different individuals and groups in various parts of the earthquake affected areas. Initially, for two weeks, intensive field work was carried out collectively by teams of IHBAS and Gujarat during 4th and 5th week post disaster period. Field work was further continued by Gujarat teams alone in different areas and at times with the investigators from IHBAS who joined them during their visits to Gujarat. Besides carrying out assessment of various mental health aspects, the field team also provided mental health services to the people identified during the study.

The common emotional states, behavioural states identified in a sample of 178 persons by method of free listing are shown in Table 1.

Table 1: Common emotional states/behavioural states following earthquake disaster

Sl.No.	During First 24 hours	After one week	After 20 days
1.	Fear	Fear	Fear
2.	Crying	Worry	Worry
3.	Running around	Hope	Relief measures
4.	Fear of entering building	Thinking of future	Normalcy
5.	Worried	What will happen now	confused
6.	Palpitations	Weep	Thought of future
7.	Leave the place	Loss of sleep	Nature's play
8.	Terrorized due to destruction of buildings	Remembering God	Collective efforts
9.	Unable to think	Involved in rescue work	Brotherhood
10.	Sadness	Sadness	After shocks

A pilot survey was carried out using General Health Questionnaire (GHQ) on 417 persons. 99 cases of psychiatric disorders were confirmed after clinical evaluation. The pattern of psychiatric morbidity profile of these 99 cases in the earthquake affected area is shown in Table 2.

Table 2: Psychiatric morbidity profile (n=99)

	DISORDER	FREQUENCY
1.	Moderate Depressive episode without somatic syndrome	29
2.	Acute stress reaction	26
3.	Mixed Anxiety and Depressive Disorder	14
4.	Generalised Anxiety Disorder	9
5.	Panic Disorder	8
6.	P.T.S.D.	4
7.	Non-organic insomnia	4
8.	Adjustment Disorders	2
9.	Other non-org. sleep disorders	1
10.	Undifferentiated Schizophrenia	1
11.	Dissociate disorder (convulsions)	1

The pilot study also used a number of other qualitative research methods such as Focus group discussions, Semi structured interviews, Key informant interviews and participant observations.

Existing Service Delivery Models:

Following service delivery models were found to be existing in the earthquake affected areas:

(a) OPD services in psychiatric hospitals/departments of medical colleges.

(b) Specific counseling centres – exclusively providing mental health services.

(c) Counseling provided along with general relief measures by (untrained) general relief providers.

(d) Camp approach to provide mental health services to the people at the community level .

(e) Mental health relief occurring as a result of group activities in the community such as prayers, spiritual religious discussions, yoga etc.

Conclusions:

According to assessment of the pilot study, 70-90 % of population in the affected area had transient psychological disturbances 4-5 weeks after the earth quake. 30-50 % of population was expected to have moderate to severe psychological/ psychiatric signs and symptoms, subsyndromal problems and acute stress related disorders 3-6 months after the earthquake. 5-15 % of population was expected to have long term mental health morbidity.

The research team reported that the communities and populations could take care of their emotional and psychological needs with their own resources to a considerable extent. The mental health service needs of large proportions of the affected population can be served by relief and rescue workers and health care providers, as well as by strengthening and supporting the socio cultural coping mechanisms of the local communities. Relief and rescue workers were as a general pattern, sensitive to the emotional and psychological needs of

the population. They made spontaneous efforts to assist the population in dealing with psychological disturbances. These efforts can be enhanced by training. Specialist mental health expertise can be useful and is required for (a) services for a relatively smaller proportion of the population which is severely affected, (b) sensitization and training of the rescue/relief workers and health care providers who can take care of the needs of larger proportion of the affected population.

Physicians and other health care providers who worked under constraints of the enormity of work load, were moderately or less than moderately sensitive to the emotional and psychological aspects. No noticeable efforts were seen for mental health care on the part of health care providers except for a few individuals or teams. There is a need for sensitization and training here. There is a long term need to continue to focus on the mental health service needs of the disaster affected population.

It should be possible to combine the service delivery and research aspects within the long term plans of Gujarat Government and other national and international agencies. There are research opportunities available for generating highly useful scientific information, which need to be appropriately utilized with due consideration to the ethical obligations to individuals and communities.

Multi-centric Task Force Project:

After completion of the pilot study, a multi centric Task Force Project has been initiated at Bhuj, Jamnagar, Rajkot and Ahmedabad with a coordinating centre at IHBAS, Delhi. The general objectives of the Task Force Project are to study the mental health service needs of and to study various service delivery models for the earthquake affected people of Gujarat.

The specific objectives of the multi centric project are as follows:

1. To study the prevalence of psychological symptoms and psychiatric disorders in earthquake affected population in Gujarat.

2. To identify the different levels of mental health care required to fulfill the mental health needs of earthquake affected population in Gujarat.

3. To assess the existing mental health service and service delivery models for their relevance, usefulness and acceptance in the earthquake affected area of Gujarat.

4. To study the psychological problems and needs of relief providers.

5. To develop service delivery modules to address the psychological problems of earthquake affected population.

6. To study the effect of various factors related to earthquake, relief measures and early psychosocial intervention on the mental health consequences of the earthquake in Gujarat.

7. To study the effect of socio-demographic factors related to individual resilience, social support and past experience on the mental health consequences of earthquake in Gujarat.

CONTRIBUTION OF ICMR's RESEARCH TO MENTAL HEALTH CARE

CONTRIBUTIONS OF ICMR's RESEARCH TO MENTAL HEALTH CARE

The efforts to develop mental health programme for the country began in 1960s. The Mental Health Advisory Committee constituted in 1962 had meetings in 1963, 1965 and 1966 to consider the various aspects of mental health needs in the country. Subsequently a national level workshop was organized in 1981 to consider a draft mental health plan to formulate National Mental Health Programme. The National Mental Health Programme was finally approved by the Central Council of Ministry of Health & Family Welfare in August 1982. The ICMR research efforts facilitated these developments by generating the necessary data base and demonstrating the feasibility of integrating mental health care with primary health care. Some of the important land mark studies during this period were;

1. The first large scale psychiatric epidemiological study in Agra in 1960s ;
2. ICMR-DST collaborative study on severe mental morbidity focusing on integration of mental health in primary health care during 1976-82,
3. Study on child psychiatric disorders;
4. Study on psychiatric problems for the elderly

These studies provided major inputs for development of National Mental Health Programme. An Advanced Centre on Community Mental Health was then initiated by the Council at NIMHANS, Bangalore to develop and evaluate modules for integration of mental health care with primary health care. The advanced centre also carried out training programmes for mental health programme managers, state level workshops for the health directorate personnel, sensitization and involvement of the state level programme officers, and preparation of support materials in the form of manuals, health records for different types of health personnel, and health education materials.

During the last decade, the District Mental Health Programme (DMHP) was launched at the national level. The DMHP was launched in 1996-97 in four districts, one each in Andhra Pradesh, Assam, Rajasthan and Tamil Nadu. The DMHP was extended to 22 districts in 20 states in the ninth five year plan, and it is proposed to extend it to 100 more districts in the duration of tenth five year plan. The approach adopted in the current programme includes (a) training of mental health team at identified nodal Institutes within the states, (b) increase awareness about mental health problems, (c) provide services for early detection and treatment of mental illness, and follow-up of cases discharged from hospitals in the community, (d) to develop data system at community level for future planning, improvement in services and research.

A major lacunae in mental health care has been inadequate exposure of general physicians to common mental disorders. This need has been repeatedly expressed in a number of expert committees and other forums without a significant change in situation.

With reference to mental health care, the World Health Report-2001 has made following recommendations for mental health care in primary care: (a) Recognize mental health as a component of primary health care (b) provide refresher training to primary care physicians (c) develop locally relevant training material (d) include the recognition and treatment of common mental disorders in training curriculum of all health personnel (e) Improve effectiveness of management of mental disorders in primary health care (f) improve referral patterns. The ICMR research programmes have addressed these issues at the level of demonstration projects.

CLINICAL STUDIES:

The ICMR study on phenomenology of acute psychosis established acute psychosis as a unitary hitherto unrecognized disease in entity separate from schizophrenia and manic depressive psychosis. It showed that acute psychosis defers from the two established categories of schizophrenia and manic depressive

psychosis on the basis of their clinical picture, normal pre morbid personality, and an excellent recovery rate suggesting that this may be a benign type of acute psychosis which tends to recover rapidly within weeks or months without any residual symptoms. This research has led to the inclusion of acute psychosis as a distinct diagnostic category. In ICD-8 and ICD-9, acute psychosis could be classified under the broad category of schizophrenias indicating a conceptual position on the nature of these disorders. Acute psychosis was classified as acute schizophrenic episode (295.4). The ICD-10 removed acute psychosis from the broad category of schizophrenias and it was covered as a specific diagnostic entity – acute and transient psychotic disorders (F23). ICD-10 also defines the time limit for the onset (within two weeks) as well as for the duration of illness (up to three months). Unlike ICD-9, the ICD-10 excludes cases with acute onset and brief duration of schizophrenic symptoms from the diagnostic category of schizophrenia. If PHC doctors are trained in the identification and management of patients of acute psychosis, this will help in management of such cases in the community.

The study on factors associated with course and outcome of schizophrenia has shown that there are a number of factors influencing in course and outcome of schizophrenia which are amenable to intervention, such as treatment at an early stage, good drug compliance, positive and supportive attitude of family members and provision of some kind of regular occupational schedule. If these aspects are incorporated in the training of medical and paramedical personnel, this will go a long way in improving the prognosis of the disorder.

The study on psychopathology of depression has found higher risk for recurrence of depression in patients with persistence of cognitive abnormality, notwithstanding clinical remission. A dip in nocturnal melatonin levels was found to be a feature of depression and its reversal towards normal the index of recovery. Failure to register a nocturnal rise in melatonin level seems characteristic of patients with persistent negative cognitions even while they had recovered from depression. This finding on association between recurrence in depression and persistence of cognitive abnormality provides a better insight for management of cases of depression.

DEVELOPMENT OF INTERVENTION MODULES:

Development of intervention modules was a part of all major epidemiological studies in mental health. A task force study on mental health care of rural aged determined not only the physical and psychiatric morbidity among the elderly but also developed a manual for health care of the elderly, physical as well as mental, in the PHC set up. Study of developmental psychopathology in school children has developed an interventional plan that focused at the persons who were directly looking after the child that is parents, teachers, or both.

Alcohol causes substantial health as well as social and economic problems. It is well known that alcohol use causes a variety of physical and psychological problems and these are all seen in India. However a number of additional problems have been identified in Indian population using alcohol. These include nutritional problems, infections and malignancies. One problem that is somewhat peculiar to India is adulteration of alcoholic drinks with poisonous substances including methyl alcohol. Every year, many people die from this reason alone and many more suffer major disabilities including blindness. ICMR task force project developed and evaluated health educational interventions to help users of alcohol and tobacco in the community to quit or reduce substance use. A drug abuse monitoring system was developed for the purpose of on going evaluation of alcohol and drug use using clinic based data.

Indicators of mental health were developed that can be used for monitoring mental well being of the community and for evaluation of social intervention programmes. Subjective Well Being Inventory was developed to measure subjective well being at individual level. An assessment tool Home Risk Card was developed to assess well being at family level. The measures of quality of community life were also developed to assess the quality of life at the community level. Psychosocial interventions were developed to enhance the subjective well being at the individual and family level. These interventions also demonstrated a positive effect of cognitive development and nutritional status of children in the family.

A simple measurement instrument was developed for assessment of emotional stress experienced by people. It can be used for assessment of persons of all age groups and found different strata of society. It assesses the stress in day-to-day life as well as due to presumed stressful life event, and can also be used for study of emotional stress as risk factor for various non communicable diseases.

The study on suicide behavior has developed a simple questionnaire for use by general physicians to identify persons with suicidal risk as it was found that a large percentage of persons who attempted suicide were in contact with treatment facility for some time before suicide attempt. It is expected that the further ongoing research on suicide behavior will help in evolving strategy for suicide prevention. Similarly, the other major ongoing research programmes on urban mental health and the mental health studies in earthquake affected areas of Gujarat, are also aiming at evolving suitable mental health care strategies that may be suitable in those areas.

APPENDICES

Appendix – I

Members of First Advisory Committee on Mental Health

Dr. J.S. Neki	(Chairman)
Dr. R.L. Kapur	
Dr. D.N. Nandi	
Dr. S.M. Lulla	
Dr. B.B. Sethi	
Dr. D. Mohan	
Dr. G.G. Prabhu	

Members of Second Advisory Committee on Mental Health

Dr. J.S. Neki	(Chairman)
Dr. N.N. Wig	(Co-Chairman)
Dr. R.L. Kapur	
Dr. D.N. Nandi	
Dr. V.N. Bagadia	
Dr. R.S. Murthy	
Dr. D. Mohan	
Dr. G.G. Prabhu	

Special invitees:

Dr. D.B. Bisht
Dr. P.N. Chuttanni
Dr.P.N. Tandon
Shri J.C. Jetli

Appendix – II

LIST OF CONSULTANTS FOR TASK FORCE PROJECTS & C.A.R.

Dr. M Aghi
Dr. A.K.Agrawal
Dr. A. Avasthi
Dr. J.S. Bajaj
Dr. N.E. Bharucha
Dr. S.M. Channabasvanna
Dr. S. Parvathi Devi
Dr. K.C. Dube
Dr. E. Hoch
Dr. B.C. Goshal
Dr.Mohan K. Issac
Dr. J. Jairaman
Dr. Alok Kalla
Dr. R.L. Kapur
Dr. P. Kulhara
Dr. K. Kuruvilla
Dr. G. Lakshamipathy
Dr. Savita Malhotra
Dr. S.C. Malik
Dr. S. Roshan Master
Dr. Manju Mehta
Dr. M. Sarda Menon
Dr. A.K. Mukherjee
Dr. G.C. Munjal
Dr. R.S. Murthy
Dr. K.K. Mutatkar
Dr. R. Nagpal
Dr. D.N. Nandi
Mr. G. Narain
Dr. Usha Nayar
Dr. J.S. Neki
Dr. J.N. Pande
Dr. N. Prabhakaran
Dr. G.G. Prabhu
Dr. R. Raghurami
Dr. L. Ramachandran
Dr. V. Ramachandran
Dr. A. Venkoba Rao
Dr. G.N. Narayana Reddy
Dr. S.K. Sahu
Dr. K. Satyavathi

Dr. Kusum Sehgal
Dr. H. Sell
Dr. B.B. Sethi
Dr. Anil V. Shah
Dr. S.D. Sharma
Dr. A. K. Singh
Dr. Baldev Singh
Dr. Gurmeet Singh
Dr. I.P. Singh
Dr. D.N. Sinha
Dr. Amresh Srivastava
Dr. R.K. Srivastava
Dr. P.N. Tandon
Dr. J.K. Trivedi
Dr. S.K. Varma
Dr. V.K. Varma
Dr. R. Venkatrathnam
Dr. Abraham Verghese
Dr. N.N. Wig

Appendix - III

List of CAR And Task Force Projects (1982-2002)

	Title And Duration	Name Of The Principal Investigators
	CENTRE FOR ADVANCED RESEARCH	
1	Centre For Advanced Research In Community Mental Health Duration: 1984-90	Dr. R.Srinivasa Murthy Professor Department Of Psychiatry National Institute Of Mental Health And Neurosciences Hosur Road P.B.2900 Bangalore-560029
2	Centre For Advanced Research In Health And Behaviour Duration: 1985-93 Studies Carried Out: - Psychopathology Of Depression - Study Of Suicide Behaviour - Study Of Domestic Burns In Young Women - A Clinical Study Of The HIV Infected Patients	Dr. A.Venkoba Rao Professor (Psychiatry) Madurai Medical College And Government Rajaji Hospital Madurai 625020
3	Centre For Advanced Research on Health Consequences Of Earthquake Disaster With Special Reference To Mental Health Duration: 1995-2000	Dr Mohan Agashe Professor And Director , MIMH, Sasoon General Hospital Station Road Pune 411001 Dr. Neha R.Pande Professor Department Of Psychiatry B.J.Medical College And Sasoon General Hospital Station Road Pune 411001

TASK FORCE PROJECTS

4 Collaborative Study On Severe Mental Morbidity
Duration: 1976-83

1. Dr. A.B.Khorana
Professor
Department Of Psychiatry
Medical College And
S.S.G.Hospital
Vadodara- 390001

2. Dr. Gurmeet Singh
Professor
Department Of Psychiatry
Government Medical College And
Rajendra Hospital
Patiala- 147001

3. Dr R.L Kapoor
Professor And Head
Department Of Psychiatry
National Institute Of Mental
Health And Neurosciences
Hosur Road
P.B.2900
Bangalore- 560029

4. Dr. Mohan K.Isaac
National Institute Of Mental
Health And Neurosciences
Hosur Road
P.B.2900
Bangalore- 560029

5. Dr. D.N.Nandi
R.G.Kar Medical College
And Hospital
Belgachia Road
Kolkata-700004

2. Dr. C.Shamasundar
Additional Professor
Department Of Psychiatry
National Institute Of Mental
Health And Neurosciences
Hosur Road
P.B.2900
Bangalore- 560029

		3. Dr. Jacob K.John Professor Department Of Psychiatry And Psychological Medicine Christian Medical College And Hospital Vellore- 632004
6.	Study On The Problems Of The Aged Seeking Psychiatric Help Duration: 1981-82	Dr. A.Venkoba Rao Professor (Psychiatry) Madurai Medical College And Government Rajaji Hospital Madurai- 625020
7	Health Care Of The Rural Aged Duration: 1984-88	1. Dr. A.Venkoba Rao Professor And Head (Psychiatry) Madurai Medical College And Government Rajaji Hospital
8	Collaborative Study On Phenomenology And Natural History Of Acute Psychosis Duration: 1981-85	1. Dr. Gurmeet Singh Professor Department Of Psychiatry Government Medical College And Rajendra Hospital Patiala-147001 2. Dr. L.N.Gupta S.P.Medical College And Associated Group Of Hospitals Bikaner- 334003 3. Dr. K.Kuruvilla Christian Medical College And Hospital Vellore- 632004 4. Dr. J.M.Fernandez Assistant Professor Institute Of Psychiatry And Human Behaviour Panaji- 403001 Madurai 0625020
9	Study Of Factors Associated With Course And Outcome Of Schizophrenia Duration: 1981-88	1. Dr. Abraham Verghese Professor And Head Department Of Psychiatry Christian Medical College And Hospital Vellore-632004

		2. Dr. B.B.Sethi Former Director Sanjay Gandhi Postgraduate Institute Of Medical Sciences Post Box. No.375 Rae Bareli Road Uttrathia Lucknow- 226014 3. Dr. S.Rajkumar Former Additional Professor Department Of Psychiatry Chennai Medical College And Government General Hospital Deemed University Chennai- 600003
10	Study On Illness Behaviour In Patients Presenting With Pain And Its Relationship With Psychosocial And Clinical Variables Duration: 1981-83	Dr. V.K.Varma Department Of Psychiatry Postgraduate Institute Of Medical Education And Research Sector 12 Chandigarh- 160012
11	Study On Development Of Modernity Scale Duration: 1981-83	Dr. A.K.Singh Professor And Head Department Of Psychology University Of Ranchi Ranchi- 834008
12	Health Modernity Education Project Duration: 1985-89	Dr. A.K.Singh Professor And Head Department Of Psychology University Of Ranchi Ranchi- 834008
13	Study On Indicators Of Mental Health Duration: 1987-92	1.Dr S.M. Channabasavanna Director, National Institute Of Mental Health And Neurosciences Bangalore- 560029 2. Dr. Prabhat Sitholey Department Of Psychiatry K.G's Medical College, Lucknow

	Dr. S.D.Sharma Prof. & Medical Suptd. Safdarjang Hospital New Delhi- 110029 Dr B.B Sethi S.G.P.G.I. Lucknow 226003
14 Measures Of Quality Of Community Life Duration: 1994-97	1. Dr. Shuba Kumar Social Scientist Clinical Epidemiological Unit Chennai Medical College And Government General Hospital Deemed University Chennai- 600003 2. Dr. A.K.Agarwal Professor Department Of Psychiatry K.G's Medical College Lucknow- 226003
15 Development Of An Instrument For Psychosocial Stress Duration: 1993-96	1. Dr. D.M.Pestonjee Indian Institute Of Management Vastrapur, Ahmedabad 2. Dr. A.K.Srivastava Reader Department Of Psychology Banaras Hindu University Varanasi- 221005
16 Study On The Pattern Of Child And Adolescent Psychiatric Disorders Duration: 1981-83	1. Dr. Jaya Nagaraja Professor Department Of Psychiatry Andhra Medical College And King George Hospital Visakhapatnam- 530002 2. Dr. Shiva Parkash Assistant Professor Department Of Psychiatry National Institute Of Mental Health And Neurosciences Hosur Road P.B.2900, Bangalore- 560029

		3. Dr. Prabhat Sitholey Professor And Head Department Of Psychiatry K.G's Medical College Lucknow- 226003
17	Epidemiological Study Of Child And Adolescent Psychiatric Disorders In Urban And Rural Areas Duration: 1995-00	1. Dr. Shobha Srinath Additional Professor Department Of Psychiatry National Institute Of Mental Health And Neurosciences Hosur Road P.B.2900 Bangalore- 560029 2. Dr. Prabhat Sitholey Professor And Head Department Of Psychiatry K.G's Medical College Lucknow- 226003
18	Study On The Effects Of Intervention Programme On Non-Medical Use Of Drugs In The Community Duration: 1981-86	1. Dr. Davinder Mohan Professor And Head Department Of Psychiatry All India Institute Of Medical Sciences Ansari Nagar New Delhi- 110029 2. Dr. B.R.Bhadra Former Associate Professor Department Of Psychology College Of Basic Sciences And Humanities Bangalore- 560001 3. Dr. S.D.Sharma Former Director, Central Institute Of Psychiatry Kanke Road Ranchi- 834006 4. Dr. I.Dutta Former Professor Department Of Psychiatry Assam Medical College Dibrugarh- 786002

19 Collaborative Study On Narcotic Drugs And Psychotropic Substances Duration : 1987-92	1.Dr. Prabhat Sitholey K.G's Medical College ,Lucknow 2. Dr. Davinder Mohan Professor And Head Department Of Psychiatry All India Institute Of Medical Sciences Ansari Nagar, New Delhi- 110029 3. Dr. D.R.Purohit Professor Department Of Psychiatry Dr.S.N.Medical College And Associated Hospitals Shastri Nagar Jodhpur- 342005
20 A Survey On Drug Dependence Duration: 1989-93	Dr. Davinder Mohan Professor And Head Department Of Psychiatry All India Institute Of Medical Sciences Ansari Nagar
21 Mental Health Studies In M.I.C. Exposed Population At Bhopal1. Duration: 1985-92	Dr. B.B. Sethi S.G.P.G.I., Lucknow 2. Dr. Ashok Bhiman S.G.P.G.I., Bhopal
22 A Pilot Study Of Organic Brain Damage In Toxic Gas Exposed Population Duration: 1988-90	1. Dr. Ashok Bhiman Sanjay Gandhi Postgraduate Institute Of Medical Sciences Lucknow.
23 Psychosocial And Health Correlates Of Self-Esteem Among Young Women Duration: 1989-93	1. Dr. S.D.Sharma Prof. & Medical Suptd., Safdarjang Hospital New Delhi 110029
24 Task Force Project On Suicide Behaviour (Ongoing)	Dr N.G.Desai Professor and Head (Psychiatry) I.H.B.A.S. Delhi Dr K.A.Kumar Professor and Head (Psychiatry) Medical College, Thiruvanathapuram

25	ICMR-WHO Project On Urban Mental Health	Dr N.G.Desai Professor And Head (Psychiatry) I.H,B,A,S, Delhi Dr S.C. Tewari Professor of Psychiatry. K.G.M.C. Lucknow Dr Palaniappan Medical Superintendent Institute Of Psychiatry Chennai
26	Task Force Project On Mental Health Service Needs Of Earthquake Affected People In Gujarat (Ongoing)	1. Dr N.G.Desai Professor and Head (Psychiatry) I.H.B.A.S., Delhi 2. Dr. Ajay Chauhan Institute Of Mental Health Ahmedadbad 3. Dr. Chitra Somasundram M.P. Shah Medical College, Jamnagar 4. Sanjeev Gupta Hospital for Mental Health, Bhuj. 5. Dr.M.J. Samani Professor of Psychiatry, Govt. Medical College, Rajkot.

Appendix – IV

LIST OF AD_HOC PROJECTS

Title and Duration	Principal Investigators
CLINICAL STUDIES	
1 Emotional Arousal And Wakefulness In Schizophrenics- A Psychophysiological Study Duration: 1982-84	Dr. C.R.Mukundan Assistant Professor Department Of Clinical Psychology National Institute Of Mental Health And Neurosciences Hosur Road P.B.2900 Bangalore- 560029
2 Lithium And Aggression Duration: 1983-85	Dr. B.B.Sethi K.G's Medical College Lucknow- 226003
3 Clinical And Biochemical Correlates Of Tardive Dyskinesia Duration: 1983-86	Dr. Sanjay Dube Lecturer Department Of Psychiatry K.G's Medical College Lucknow- 226003
4 Correlation Of Clinical State And Serum Prolactin Levels In Patients Suffering From Functional Psychosis Duration: 1985-88	Dr. Alice Kuruvilla Professor Department Of Pharmacology Christian Medical College And Hospital Vellore- 632004
5 Coping Behaviour In Relation to Auditory Hallucinations In Schizophrenics - A Study Of Psychosocial And Phenomeno-Logical Correlates Duration: 1985-88	Dr. A. Ramanathan Assistant Surgeon Institute Of Mental Health Kilpauk Chennai- 600010
6 Psychophysiological Correlates Of Recovery In Schizophrenia Duration: 1985-88	Dr. C.R.Mukundan Assistant Professor Department Of Clinical Psychology National Institute Of Mental Health And Neurosciences Hosur Road P.B.2900 Bangalore- 560029

7	A Prospective Study Of Psychiatric Disorders In Pregnancy And The First Postnatal Year Duration: 1988-91	Dr. Parmanand Kulhara Additional Professor Department Of Psychiatry Postgraduate Institute Of Medical Education And Research Sector 12 Chandigarh- 160012
8	Depression In Schizophrenia : A Study On Phenomenology And Predictive Variables Duration: 1992-95	Dr. Parmanand Kulhara Additional Professor Department Of Psychiatry Postgraduate Institute Of Medical Education And Research Sector 12 Chandigarh- 160012

BIOLOGICAL PSYCHIATRY

9	Renal Functions And Lithium Duration: 1981-83	Dr. B.B.Sethi K.G's Medical College Lucknow- 226003
10	A Biochemical Study Of Human And Animal Cannabis Users	Dr. B.B.Sethi K.G's Medical College
11	Platelet Monoamine Oxidase Activity In Chronic Schizophrenia Duration: 1983-86	Dr. J.K.Trivedi Professor Department Of Psychiatry K.G's Medical College Lucknow- 226003
12	Platelet Radioreceptors Assay Of Biogenic Amines In Patients Of Affective Disorders And Schizophrenia Duration: 1983-85	Dr. B.B.Sethi K.G's Medical College Lucknow- 226003

FAMILY STUDIES

13	A Neuropsychiatric Study Of Children Of Schizophrenics Duration: 1985-86	Dr. M.Sarada Menon Former Director Schizophrenia Research Foundation (India) R/7a North Main Road West Anna Nagar Extn. Chennai- 600102

14 Families Of Head Injured Patients-Their Attitudes, Experienced Burden And Psychopathology Duration: 1987-88	Dr. S.Sabhesan Tutor (Infection Diseases) Madurai Medical College And Government Rajaji Hospital Madurai- 625020

THERAPIES

15 Determination Of Dosage Schedule Of Lithium To Indian Patients And Indicators Of Response To Lithium Therapy In Case Of Affective Disorders Duration: 1979-83	Dr. S.M.Channabasavanna Former Director National Institute Of Mental Health And Neurosciences Hosur Road P.B.2900 Bangalore- 560029
16 Propranolol In Neuroleptic Resistant Schizophrenics Duration: 1983-85	Dr. B.B.Sethi K.G's Medical College Lucknow- 226003
17 A Study Of The Evaluation Of The Effectiveness Of Brief Inpatient Family Intervention Versus Outpatient Intervention For Mentally Retarded Children Duration: 1991-94	Dr. S.C.R.Girimaji Associate Professor Department Of Psychiatry National Institute Of Mental Health And Neurosciences Hosur Road P.B.2900 Bangalore- 560029
18 Survey On The Motor Disturbances Induced By Neuroleptic Drugs Duration: 1992-94	Dr. Jacob K.John Professor Department Of Psychiatry And Psychological Medicine Christian Medical College And Hospital Vellore- 632004
19 Sleep Polysomnography As A Predictor Of Response To Electroconvulsive Therapy In Depression Duration: 1996-99	Dr. B. Gitanjali Associate Professor Department Of Pharmacology Jawaharlal Institute Of Postgraduate Medical Education And Research Dhanvantari Nagar Pondicherry- 605006

20	Influence Of Stimulus Variables On EEG Seizure Parameters During ECT :An Intra-Individual Cross-Over Study Duration: 1997-00	Dr. B.N.Gangadhar Additional Professor Department Of Psychiatry National Institute Of Mental Health And Neurosciences Hosur Road P.B.2900 Bangalore- 560029
21	Development Of A Simple Regime Of Play Therapy And To Assess The Impact Of This On Growth And Development Of Institutionalized Children In An Orphanage Setting Duration: 1/2001-31/2001	Dr. Jacob M.Puliyel Head Department Of Paediatrics And Neonatology St.Stephen's Hospital Tis Hazari Delhi- 110054

MEDITATION AND YOGA

22	Physical,Physiological,Biochemical & Psychological Correlates Of Experience In Consciousness By Pranayama,Transcendental Meditation & Kundalini Duration: 1983-90	Dr. T.Desiraju Late Professor Department Of Neurophysiology National Institute Of Mental Health And Neurosciences Hosur Road P.B.2900 Bangalore- 560029
23	Study Of Patanjali Yoga Through Personal Experience Duration: 1983-88	Dr. R.L.Kapur Indian Institute Of Science Sir C.V.Raman Avenue Bangalore- 560012
24	The Efficacy Of Yogic Therapy In The Treatment Of Psychogenic Headache Duration: 1985-89	Dr. S.Prabhakar Professor And Head Department Of Neurology Postgraduate Institute Of Medical Education And Research Sector 12 Chandigarh- 160012
25	Effects Of Yoga On The Health Of Nurses Duration: 1986-89	Dr. Inderjit Walia Assistant Professor College Of Nursing Postgraduate Institute Of Medical Education And Research Sector 12 Chandigarh- 160012

26 Yoga Therapy With Anxiety Neurotics
Duration: 1986-88

Smt. Gurminder Sahasi
Clinical Psychologist
Department Of Psychiatry
All India Institute Of
Medical Sciences
Ansari Nagar
New Delhi- 110029

27 Comparative Study Of Progressive Relaxation & Yogic Relaxation Techniques In The Management Of Anxiety Neurosis
Duration: 1989-92

Smt. Gurminder Sahasi
Clinical Psychologist
Department Of Psychiatry
All India Institute Of
Medical Sciences
Ansari Nagar
New Delhi- 110029

28 Role Of Yoga In The Treatment Of Essential Hypertension
Duration: 1992-95

Dr. V.K.Varma
Former Professor
Department Of Psychiatry
Postgraduate Institute Of
Medical Education And Research
Sector 12
Chandigarh- 160012

CHILD PSYCHIATRY

29 Childhood Mental Disorders In Rural School Children
Duration: 1988-91

Dr. Manju Mehta
Additional Professor
Department Of Psychiatry
All India Institute Of
Medical Sciences
Ansari Nagar
New Delhi- 110029

30 Study Of Psychosocial Determinants Of Developmental Psychopathology In Children In The Community
Duration: 1992-95

Dr. Savita Malhotra
Professor And Head
Department Of Psychiatry
Postgraduate Institute Of
Medical Education And Research
Sector 12
Chandigarh- 160012

31 Community-Based Follow Up And Treatment Of Children Identified To Have Psychiatric Disorders
Duration: 1998-02

Dr. Savita Malhotra
Professor And Head
Department Of Psychiatry
Postgraduate Institute Of
Medical Education And Research
Sector 12
Chandigarh- 160012

32 Stress In Children
Duration: 1997-00

Dr. Manju Mehta
Additional Professor
Department Of Psychiatry
All India Institute Of
Medical Sciences
Ansari Nagar
New Delhi- 110029

MENTAL RETARDATION

33 Care Of Mentally Handicapped Children Through Anganwadi Workers
Duration: 1982-85

Dr. K.Krishnamurthy
Former Assistant Professor
Department Of Psychiatry
Osmania Medical College And
Associated Hospitals
Koti
Hyderabad- 500001

34 Development Of A Home Care Programme For Mentally Retarded Children
Duration: 1985-87

Dr. V.K.Varma
Former Professor
Department Of Psychiatry
Postgraduate Institute Of
Medical Education And Research
Sector 12
Chandigarh- 160012

35 Training Mothers Of Mentally Retarded Children : Evaluation Of Variables Determining Success
Duration: 1985-87

Dr. Manju Mehta
Additional Professor
Department Of Psychiatry
All India Institute Of
Medical Sciences
Ansari Nagar
New Delhi- 110029

36 A Study Of The Evaluation Of The Effectiveness Of Brief Inpatient Family Intervention Versus Outpatient Intervention For Mentally Retarded Children
Duration: 1991-94

Dr. S.C.R.Girimaji
Associate Professor
Department Of Psychiatry
National Institute Of Mental
Health And Neurosciences
Hosur Road
P.B.2900
Bangalore- 560029

ALCOHOL AND DRUG DEPENDENCE

37 Cannabis And Health
Duration: 1980-83

Dr. B.B.Sethi
K.G's Medical College
Lucknow- 226003

38 Mental Health Problems Of Cannabis Abusers
Duration: 1985-88

Dr. V.Ramachandran
Late Neuropsychiatrist
Department Of Psychiatry
Institute Of Mental Health
Kilpauk
Chennai- 600010

PSYCHIATRIC EPIDEMIOLOGY

39 An Epidemiological Study Of Mental Illnesses Prevalent In An Urban Community – Migrant Sindhi Population
Duration: 1981-84

Dr. P.S.Gehlot
Former Professor
Department Of Psychiatry
S.M.S.Medical College
And Hospital
Jaipur- 302004

40 Mental Health Survey In & around Calcutta To Ascertain Magnitude Of Mental Health Problems & Aetiological Significance Of Environmental Factors*
Duration: 1983-84

Dr. Ajita Chakraborty
Institute Of Postgraduate
Medical Education And Research
And S.S.K.M. Hospital
244,Acharya J.C.Bose Road
Kolkata- 700020

41 Severe Mental Disorder : A Prospective Five-Year Follow Up Study
Duration: 1985-88

Dr. V.K.Varma
Former Professor
Department Of Psychiatry
Postgraduate Institute Of
Medical Education And Research
Sector 12
Chandigarh- 160012

42 Longitudinal Study Of Functional Psychosis In An Urban Community
Duration: 1985-89

Dr. S.Rajkumar
Former Additional Professor
Department Of Psychiatry
Chennai Medical College And
Government General Hospital
Deemed University
Chennai- 600003

43 Geropsychiatric Morbidity In Rural Area
Duration: 1988-91

Dr. S.C.Tiwari
Professor
Department Of Psychiatry
K.G's Medical College
Lucknow- 226003

DELIVERY OF MENTAL HEALTH SERVICES

44 Training Of Primary Health Care Physicians In The Delivery Of Mental Health Services To The Community
Duration: 1982-84

Dr. N.N.Wig
Former Professor
Department Of Psychiatry
All India Institute Of Medical Sciences
Ansari Nagar
New Delhi- 110029

45 Comparative Study Of Efficacy Of Training Material And Development Of Record System For Primary Mental Health Care
Duration: 1983-84

Dr. Shiv Gautam
Professor And Head
Department Of Psychiatry
S.M.S.Medical College
And Hospital
Jaipur- 302004

46 Community Mental Health: Service-Cum-Research And Training Programme
Duration: 1985-87

Dr. Mukul Sharma
Former Lecturer
Department Of Psychiatry
Sanjay Gandhi Postgraduate Institute Of Medical Sciences
Post Box. No.375
Rae Bareli Road
Uttrathia
Lucknow- 226014

PSYCHOMETERY

47 Standardization Of Hindi Adaptation Of Wais – R Verbal Scale
Duration: 1981-83

Dr. T.R.Shukla
Associate Professor
Department Of Clinical Psychology
Central Institute Of Psychiatry
Kanke Road
Ranchi- 834006

48 Use Of Psychometric Assessment In Brain Dysfunction Cases
Duration: 1981-84

Dr. Dwarka Pershad
Associate Professor
Department Of Psychiatry
P.G.I.M.E.R
Chandigarh- 160012

49	Translation Of Eysenck Person-Ality Questionnaire (Epq) Into 3 South Indian Languages (Tamil, Telugu And Malayalam) And Their Standardisation Duration: 1985-87	Dr. Annamma Abraham Senior Lecturer Department Of Psychiatry Christian Medical College And Hospital Vellore- 632004
50	The Development Of A Neuropsychological Battery For Use Of Hindi Knowing Patients Duration: 1988-91	Sh. Surya Gupta Additional Professor Deptt. Of Clinical Psychology All India Institute Of Medical Sciences Ansari Nagar New Delhi- 110029
51	Neuropsychological Localization Duration: 1993-96	Sh. Surya Gupta Additional Professor Deptt. Of Clinical Psychology All India Institute Of Medical Sciences Ansari Nagar New Delhi- 110029

SOCIO-CULTURAL AND CLINICAL PSYCHOLOGY

52	The Impact Of The Handicap In Speech, Vision And Hearing On School Achievement And Emotions Of Children Between The Age Groups 6-13 Duration: 1980-83	Dr. R.B.Vachhrajani Late Honorary Director Health Research Institute Gujarat Research Society Samshodhan Sadan 16th Road, Khar Mumbai- 400052
53	Phenomenology Of A Culture Bound Syndrome And Its Social-Psychological Significance: A Study Of Mediumistic Trance Behaviour In Rajasthan Duration: 1985-87	Dr. Y.S.Vagrecha Reader(Psychology) B.S.Centre Of Neuro-Psychology And Counselling Dr.Hari Singh Gour Vishwavidyalaya Gour Nagar Sagar- 470003 Sector 12 Chandigarh- 160012
54	A Study Of Impact Of Thalass-emia And Other Comparable Non-Genetic Types Of Anaemia Children On Cognitive Information Processing Duration: 1986-89	Dr. M.L.Sharma Former Professor Department Of Pathology S.M.S.Medical College And Hospital Jaipur- 302004

55	A Study Of Spirit Medium With Reference To Their Role In Health, Especially Mental Health Duration: 1/1988-12/88	Dr. D.N.Kakar Associate Professor Department Of Community Medicine Postgraduate Institute Of Medical Education And Research Sector 12 Chandigarh- 160012
56	Psychological Outcomes Associated With Severe Iodine Deficiency Duration: 1988-91	Dr. B.D.Tiwari University Of Gorakhpur Gorakhpur- 273009
57	Psychological Aspects Of Infertility Due To Various Causes: A Prospective Study Duration: 1989-92	Dr. G.I.Dhall Postgraduate Institute Of Medical Education And Research Sector 12 Chandigarh- 160012
58	Investigation Of Cases Of The Reincarnation Type With Birth Marks/Birth Defects Duration: 1996-99	Dr. Satwant Pasricha Additional Professor Department Of Clinical Psychology National Institute Of Mental Health And Neurosciences Hosur Road P.B.2900 Bangalore- 560029
59	Recidivism : A Study To Identify Risk Factors To Formulate Preventive And Rehabilitative Strategies Duration: 1998-02	Dr. S.C.Tiwari Professor Department Of Psychiatry K.G's Medical College Lucknow- 226003

Appendix - V

List of Fellowship Projects

	Title And Duration	Guides Of Research Fellows
1	Psychological Profile Of Male Civil Pensioners And The Consequent Hazards For Their Mental Health. Duration: 1981-83	Dr. Ram Singh Professor Postgraduate Department Of Medicine S.N.Medical College And Hospital Agra- 282002
2	A Study Of Anxiety. Duration: 1981-84	Dr. P.K.Chatterjee Professor And Head Department Of Psychology University College Of Science And Technology University Of Calcutta 92, A.P.C.Road Kolkata- 700009
3	An Experimental Study Of Arousal Mechanisms In Schizophrenics. Duration: 1981-82	Dr. C.R.Mukundan Assistant Professor Department Of Clinical Psychology National Institute Of Mental Health And Neurosciences Hosur Road P.B.2900 Bangalore- 560029
4	Biochemical Studies On Blood, Brain And Spinal Fluid Of Patients Suffering From Schizophrenia And Affective Disorders. Duration: 1981-83	Dr. Diptis Sengupta Professor Department Of Biochemistry University College Of Science 35,Ballygunge Circular Road Kolkata- 700019
5	A Study On The Effect Of Psychological Treatment In Epileptics. Duration: 1983-87	Dr. K.Jagannathan Chennai Medical College And Government General Hospital Deemed University Chennai- 600003

6	Cancer : Is It A Psycho-Social Problem ? Duration: 1983-87	Dr. P.K.Chatterjee Professor And Head Department Of Psychology University College Of Science And Technology University Of Calcutta 92, A.P.C.Road Kolkata- 700009
7	Construction And Standardization Of A Test For Assessment Of Disability In Urban And Rural Psychiatric Patients Duration: 1985-88	Dr. P.B.Behere Institute Of Medical Sciences Banaras Hindu University Varanasi- 221005
8	Behavioural Analysis And Therapy Of Coronary-Heart-Disease-Prone Persons Duration: 1986-89	Dr. Sandhya.S.Kaushik Reader Department Of Psychology Mahila Maha Vidyalaya Banaras Hindu University Varanasi- 221005
9	Bio-Feedback: A Therapeutic Aid To Cancer Patients Duration: 1988-91	Dr. P.K.Chatterjee Professor And Head Department Of Psychology University College Of Science And Technology University Of Calcutta 92, A.P.C.Road Kolkata- 700009
10	A Study Of Drug Addiction In Northern India (Its Genesis & Consequences) Duration: 1988-92	Dr. Jitendra Mohan Professor Department Of Psychology Mohanjitendra@Hotmail.Com Panjab University Sector 14 Chandigarh- 160014
11	The Effect Of Marriage On Existing Mental Disorder. Duration: 1989-92	Dr. S.N.Sharma Reader Department Of Psychiatry Institute Of Medical Sciences Banaras Hindu University Varanasi- 221005