

**The Gender and Reproductive Health Research Initiative  
Mapping a Decade of Reproductive Health Research in India**

**Women's Morbidity in India  
An Annotated Bibliography  
of Selected Studies (1990-2000)**

*Meena Gopal*

Rural Women's Social Education Centre (RUWSEC)

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CREA empowers women to articulate, demand and access their human rights by enhancing women's leadership and focusing on issues of sexuality, reproductive health, violence against women, women's rights and social justice.

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## CONTENTS

Background	1 - 2
Glossary	3 - 4
Table	5 - 16
Abstracts	17 - 90
Bibliography	91- 94

# WOMEN'S MORBIDITY IN INDIA: AN ANNOTATED BIBLIOGRAPHY OF SELECTED STUDIES (1990-1999)

## Background

This annotated bibliography lists studies carried out during 1990-2000 on selected aspects of women's morbidity in India as part of a series of annotated bibliographies on gender and women's reproductive health. These bibliographies are part of the *Gender and Reproductive Health Research Initiative* sponsored by the Ford Foundation.

In September 1998, the Ford Foundation in New Delhi hosted interested individuals involved in women's health issues as activists or researchers to discuss their concerns about the future of reproductive health research in India. The attendees spent a day sharing their experiences and briefly reviewing the content, nature and geographical distribution of studies in reproductive health in India that Ford Foundation had funded over the past few years. After discussion, the attendees decided on a process for identifying gaps in research on reproductive health and for promoting future research that would address issues that had not been addressed or adequately explored.

The agreed upon process was to have the following stages:

- Prepare annotated bibliographies of social science research or clinical studies referring to social dimensions on six major areas of reproductive health, drawing mainly on published research over the period 1990-2000.
- Based on the annotated bibliographies, prepare critical reviews of literature on each of the six areas of reproductive health. This review would examine, from a gender perspective, the entire body of research covered by the annotated bibliographies and identify the content gaps, methodological issues and ethical concerns.
- Disseminate the critical reviews as widely as possible to women's groups and NGOs, to those involved in women's studies, and to university departments dealing with health/population issues and reproductive health, in order to encourage the participation of a wide cross-section of actors in future research in the area.
- Invite brief research proposals to carry out studies that will address the research gaps identified by the reviews. Proposals will be short-listed by a team of experienced activists and researchers. The next step may consist of a workshop to help develop these proposals into fully fledged research plans.

The importance of involving a wide cross-section of people working for women's health and women's reproductive health from a gender perspective will govern the short-listing of proposals. Every effort will be made to encourage first-time researchers and activists to participate in the process, and to counter the notion that research is a 'specialist' concern and activity.

The following subject areas were chosen for the annotated bibliography series:

1. Selected aspects of reproductive health: maternal health, reproductive tract infections and contraceptive morbidity
2. Selected aspects of general morbidity in women, especially the interface between communicable and non-communicable diseases and reproductive morbidity
3. Sexuality and sexual health
4. Abortion
5. HIV/AIDS
6. Reproductive health services

## Scope and Format

The annotated bibliography of studies contained in this volume covers selected aspects of women's general morbidity: causes of morbidity; communicable diseases such as malaria, filariasis, tuberculosis and leprosy; non-communicable diseases such as hypertension, heart diseases, diabetes, osteoporosis and cancers; mental health; and morbidity associated with the living and working environment. Studies that may not be specifically about women, but also provide sex-specific data have been included for two reasons: one, in many areas of morbidity, there are very few studies on women's morbidity; and second, and more importantly, data on both sexes help understand the relative risk for females as compared to males.

The period chosen for the annotated bibliography is 1990-2000. Articles included are from the following journals:

- *Economic and Political Weekly*
- *Indian Journal of Tuberculosis*
- *Indian Journal of Malariology*
- *Indian Heart Journal*
- *Indian Journal of Cancer*
- *International Journal of Cardiology*
- *Journal of Epidemiology and Community Health*
- *Journal of the Indian Medical Association*
- *Journal of Obstetrics and Gynaecology of India*
- *Journal of Communicable Diseases*
- *Journal of Maternal and Child Health*
- *Journal of the Association of Physicians of India*
- *Leprosy Review*
- *Medico Friends Circle (MFC) Bulletin*
- *Newsletter of the Foundation of Research on Community Health*
- *Social Science and Medicine*
- *The National Medical Journal of India*
- *World Health Statistics Quarterly*

In addition to these publications, 17 unpublished reports including Masters' degree dissertations and reports of studies conducted by NGOs were also included. Seventy-nine articles or studies from the sources listed above are included in this volume. Of these, five were all-India reviews. Thirty studies were from Southern India, mainly Tamil Nadu (16), followed by Karnataka, Kerala, Pondicherry and Andhra Pradesh. Twenty-two studies were from the western part of the country, mainly Maharashtra (13), followed by Gujarat and Goa. There were 17 studies from Northern India, Uttar Pradesh, Delhi, Punjab, Rajasthan, Chandigarh and Himachal Pradesh. Very few studies were from Eastern India, West Bengal (2) and Orissa (2), and there were no studies from the north-eastern states.

Just over half of the studies are health-facility based (43/81). Community-based studies formed about 23 percent (26/81) of the studies and included both clinical studies and health-interview surveys based on self-reported morbidity. The remaining studies included reviews (5), secondary data analyses (2) and hospital-cum-community-based studies (3).

The Summary Tables in the following pages provide a summary overview of the

- nature of the study
- geographic region covered
- objectives and methodology
- salient results

The annotated bibliographies follow these Summary Tables. These are organised into the following fields:

**Abstract number:**  
**Author(s):**  
**Title:**  
**Source:**  
**Place of study:**  
**Period of study:**  
**Aims and objectives:**  
**Study conducted by:**  
**Nature of study:**  
**Methodology:**  
**Findings:**  
**Reviewer's notes (optional):**

## GLOSSARY

<b>amenorrhoea</b>	absence or stoppage of menstruation; normal after menopause, before puberty, during pregnancy and lactation
<b>ARI</b>	annual rate of infection
<b>biopsy</b>	excision of a small piece of tissue for microscopic examination
<b>BMI</b>	Body Mass Index
<b>bronchiectasis</b>	dilatation of bronchic, usually secreting large amounts of offensive pus
<b>carcinoma in situ</b>	cancer at a particular point
<b>carcinoma</b>	cancer
<b>cervical intraepithelial neoplasia</b>	growth of cancerous cells in the cervical wall
<b>clinicopathological</b>	through the usage of clinical analysis and other laboratory procedures in the diagnosis and treatment of disease
<b>colposcopy</b>	examination of the inner recesses of the vagina and cervix
<b>cor pulmonale</b>	failure of right ventricle of the heart
<b>coronary</b>	relating to the blood vessels of the heart that supply blood to its walls
<b>cystadenomas</b>	cancer of certain glands with growth of cysts
<b>cytodiagnosis</b>	diagnosis of pathogenic conditions by study of cells
<b>cytohistological</b>	pertaining to structure of cells
<b>cytology</b>	study of cells
<b>dementia</b>	irrecoverable deteriorative mental state
<b>dysgerminoma</b>	malignant growth of cells in ovary
<b>encephalopathy</b>	any dysfunction of the brain
<b>endometrium</b>	mucous membrane lining the inner surface of the uterus
<b>FGDs</b>	focus group discussions
<b>FHH</b>	Female-headed households
<b>HbAsg</b>	Indicator of Hepatitis B infection
<b>hepatic coma</b>	coma due to liver dysfunction
<b>histological</b>	pertaining to microscopic tissue anatomy
<b>hydrocele</b>	accumulation of serous fluid in a saclike cavity near the genitals, usually seen in men resulting from filariasis
<b>hypercholesterolemia</b>	excessive amount of cholesterol in the blood
<b>hypertension</b>	high blood pressure
<b>invasive carcinoma</b>	cancer cells invading into other tissues

<b>ketoacidosis</b>	excessive accumulation of ketone bodies in the blood disturbing the acid balance of the body
<b>KII.</b>	key informant interview
<b>leucoplakia</b>	formation of white spots or patches on the mucous membrane of the tongue or cheek
<b>leucorrhoea</b>	an abnormal white or yellowish mucous discharge from the cervical canal or the vagina
<b>menarche</b>	onset of menses
<b>metastasis</b>	spread of cancer cells in a new location from a primary location
<b>MHH</b>	male-headed households
<b>morphological</b>	pertaining to structure and form
<b>multigravida</b>	woman who has borne children two or more times
<b>multipara</b>	woman who has borne more than one child
<b>myocardial infarction</b>	development of an infarct (formation of dead tissues due to stoppage of blood supply) in the cardiac muscle tissues, often due to coronary thrombosis (i.e., formation of blood clot in the blood vessels of the heart)
<b>oesophagus</b>	food pipe
<b>oligomenorrhoea</b>	scanty or infrequent menstrual flow
<b>optic fundus</b>	the larger part, base or inner part of the eye
<b>osteoporosis</b>	increased porosity of the bones, of enlarged bone spaces
<b>parasitaemia</b>	parasitism, state or condition of being infected or infested with parasites
<b>perimenopausal</b>	around menopause
<b>persistant dysplasia</b>	persistent abnormal development of tissue
<b>primigravida</b>	woman during her first pregnancy
<b>primipara</b>	woman who has had or who is giving birth to her first child
<b>PYLL</b>	person years of life lost
<b>serum total cholesterol</b>	total fat in blood
<b>SES</b>	socio -economic status
<b>systolic blood pressure</b>	pressure of blood pumped by the heart on the wall of the artery
<b>teratoma</b>	congenital tumour containing embryonic tissue
<b>tryglicerides</b>	a portion of fatty cells present in the blood
<b>type 2 diabetes</b>	non-insulin dependent diabetes mellitus
<b>visual inspection/ per speculum</b>	through the speculum
<b>WYLL</b>	work years of life lost



## SUMMARY TABLE

ABS. NO.	NATURE OF STUDY	PLACE OF STUDY	OBJECTIVES & METHODOLOGY	FINDINGS
<b>WELLBEING AND MORBIDITY</b>				
1	Community	Gujarat	Study the subjective well being of rural women and factors that may influence it. Sample: 3 villages of high, medium and low status, and 48, 40 and 37 women, further subdivided into 3 age-groups and 2 socio-economic status (SES) groups, type of family and religious groups. Subjective well-being inventory used to measure 11 factorial dimensions and questionnaire for SES and demographic data.	Subjective well-being of married women was not greater than that of unmarried women; women belonging to higher SES have greater social well-being than their counterparts from lower SES; social well-being did not increase with age.
2	Community	Maharashtra	Explore the totality of women's health problems in relation to their lives and work using a household health interview survey. Sample: 430 households, including 252 slum and 178 non-slum households.	With probing, prevalence of women's morbidity was three-and-a-half times as high as male morbidity overall, and exceeded male morbidity in every age group. Morbidity rates for slum dwellers of all age groups was more than double that of their counterparts in non-slum households.
3	Community	Maharashtra	Study the socio-economic profiles of female-headed households: their resource base, income levels, expenditure pattern and their survival strategies; to assess the nutritional and health status of women and children. Sample: 55 women from female-headed households (FHH) compared with 30 women from male-headed households (MHH). Interview survey, anthropometric measurements, food and nutrition survey used for data collection.	Total and per capita incomes of the FHHs were almost half that of MHHs. In FHHs there was higher incidence of daily purchase of non-perishables and frequent food shortages. This was resolved by borrowing food or money, or both, from employers, relatives, neighbours and shopkeepers or even going without food. Using Body Mass Index (BMI), women from MHHs were better off than those from FHHs, but in term of nutrient intakes compared, children from FHHs were better off than those from MHHs. Women from FHHs enjoyed greater decision-making power. In FHHs where the husband lived with the family, the incidence of wife beating was 7 times greater compared to MHHs.
4	Community	Tamil Nadu	To describe the health status of rural female adolescents in terms of physical, reproductive and psychosocial health; to determine their knowledge on the above, and their view on the health services. Focus group discussions (3 with adolescents and 1 with mothers) and key informant interviews in 4 villages. In addition 190 girls randomly selected, 13-19 years, personal interviews and demographic schedules, clinical examination.	Of 190 girls, 124 had attained menarche, 6 were married. Headache, bodyache, general fatigue and anaemia were the common complaints, more among older ones. A third of them complained of leucorrhea, more among the older girls. Despite prevailing traditional attitudes and soc-economic constraints, many girls were self-confident showing a positive attitude towards life; many agreed knowledge was poor and expressed interest to know more, while others felt that information on reproductive health matters could be postponed till they were married.

COMMUNICABLE DISEASES				
5	Community	Rajasthan	Examine the prevalence of tuberculosis infection in the population aged 0-14 yrs. BCG scan status recorded and Tuberculin test. Sample: 16 of 33 villages. 5,296 children (0-14 years) M-51.6%, F-48.4%.	Except for children of 0-4 years, the prevalence rates were higher for males than females. Caseload was estimated assuming an annual rate of infection of 1.52%.
6	Hospital-based	Uttar Pradesh	Study the occurrence of endometrial tuberculosis and its correlation with gynaecological complaints among patients of pulmonary tuberculosis. Sample: 156 patients in the 15-40 age group who had tested positive.	Pathological examination showed that endometrial tuberculosis was seen in 11.5% of the pulmonary tuberculosis cases (18/156). The most common menstrual abnormality was amenorrhoea (42.2%) and oligomenorrhoea (25%). Sterility was found in 39/156 (25%) of the cases but of these 12 out of 18 were in the endometrial TB cases.
7	Hospital-based	Orissa	Systematic investigation of the genital tract of females suffering from pulmonary TB so as to achieve optimal management of TB. Sample: 100 consecutively hospitalised females. Detailed clinical and gynaecological examinations.	95 were married. 24 cases of tuberculosis of the genital tract were found and all had tubal tuberculosis. Highest number of genital affectations were detected in those patients whose duration of Pulmonary TB was less than one year.
8	Hospital-based	Uttar Pradesh	Review clinicopathological experience in eastern U.P. Sample: 5,016	3.22% found to have genital tract tuberculosis. Distribution of lesions involved the endometrium, cervix, fallopian tube and ovaries.
9	Hospital-based	Pondicherry	Review cases of TB in the female genital tract. Sample: 60	Abdominal pain, white discharge and menstrual abnormalities were the most common presenting symptoms (in one-third of the women). Endometrium and fallopian tubes were the common sites. Outcomes of medical treatment was successful (60%).
10	Hospital-based	Karnataka	Retrospectively analyse maternal deaths due to jaundice. Sample: 23 maternal deaths	Constituted 10.4% of the overall maternal deaths. Hepatic coma was the major cause of death.
11	Hospital-based	Uttar Pradesh	Determine the percentage of pregnant women positive for markers of Hepatitis B and infected. Sample: 157 pregnant women. Detailed history and testing of maternal blood and cord blood.	Prevalence of HBsAg in mothers over different trimesters, was 16/157 (10%) and in cord blood of 8 newborns 5%. Transplacental transmission was found in 8 out of the 16 (50%) HBsAg positive mothers.
12	Hospital-based	Rajasthan	Examine the prevalence rate of Hepatitis B virus infection among pregnant women. Sample: 252 pregnant women	9 (3.6%) were found to be positive for HBsAg.
13	Hospital-based	Madhya Pradesh	Examine the prevalence of malaria in pregnant women and define some of its effects. Sample: 831 pregnant and 800 non-pregnant. History of fever, clinical findings, treatment and response noted.	145 positive malaria cases among the 831 pregnant women (Plasmodium vivax [Pv]=41, Plasmodium falciparum [Pf]=104) and 79 among the 800 non-pregnant (Pv=33, Pf=46). Prevalence was greater during the second trimester in both primigravidas and multigravidas. Cerebral malaria occurred in 23 women (Pf) of which 16 died (case fatality=15%) while in non-pregnant women the case fatality in Pf was only 2.5%.

14	Hospital-based	Gujarat	Examine the effects of malaria infection on progress and outcome of pregnancy. 8,960 pregnant women, sample blood smears of 322. Fever, urinary tract infections, respiratory tract infection, premature labour, hypertension in past pregnancy and parity recorded.	186 (57.7%) were found to be positive. Out of this, 116 (62.4%) were of Pf and 70 (37.6%) of Pv infection. Pregnant women were highly susceptible to the infection (seropositivity rate, 57.7) compared to the general population (seropositivity rate, 18.6) Primigravidae seemed to be at a greater risk as the mean parasitaemia level was higher (39%) and the outcome poor as compared to multigravidae (29%).
15	Hospital-based	Gujarat	Study the incidence of malaria in pregnancy. Sample: 445 patients with malaria in pregnancy	Incidence of P.falciparum infection is predominant in both primigravidae and multigravidae being 97.27%. Heavy parasitaemia was seen in 27.14% primigravidae and 48.57% multiparae.
16	Hospital-based	Maharashtra	125 (M=81, F=44) cases of malaria were autopsied. 86 diagnosed clinically and were treated. Twenty-two out of 36 females were pregnant. Seventy-one patients died within 24 hours after admission.	Blood smear for malarial parasite was done in 53 cases. Out of 41 cases, 6 were positive for both P.falciparum and P.vivax, 2 for P.vivax and remaining 33 were positive for P.falciparum. 68 cases (54%) were of cerebral malaria (39=M, 29=F). 18 out of 22 pregnant women died of cerebral malaria.
17	Community	All-India	Study the multifaceted problems encountered by women with acute and chronic lymphatic filariasis in India and the effects of the disease on children. Informal interviews, sample of convenience, 88 women and 39 children.	During acute attacks (characterised by fever, lymphangitis, low-grade recurring oedema, inflammatory nodules, etc.) they were unable to work in the fields or continue their household work and they were also unable to do childcare. Socially, also women suffered from low self-esteem and feared rejection. For the patients attending the clinics, the majority were men and in some clinics only 30% of the patients were women. Among the children and adolescents who attended clinics 80% were boys and only 20% were girls.
18	Community	Tamil Nadu	Estimate incidence and prevalence of elephantiasis, socio-economic status and demographic characteristics of the cases, to find out the age of onset, duration and difference in manifestation of the left and right side, and to compare the prevalence in 1989 and 1992. Sample: 39 elephantiasis cases detected in 1986 in an enumeration, a survey conducted in 1989. In 1992 a door-to-door survey was carried out and a separate pre-tested schedule was administered to the cases.	3.5/1,000 was the prevalence of chronic filarial disease (seen as oedema of limbs, hydrocele and elephantiasis), F - 4.8/1,000 and M - 2.2/1,000. 65% had less than 10 years duration, 76.6% had only one leg affected. 18.2% had both, right leg was more affected than left. As age increased, prevalence increased both among males and females.
19	Community and hospital-based	Maharashtra and Bihar	Examine the process of "dehabilitation" (leaving or being sent away from home because of leprosy) among male and female leprosy patients and particularly gender difference within marriage and family. Questionnaire survey of 2,495 respondents, Bihar=46%, Mah=54%.	Males (72%) who were household-heads in non-dehabilitated households wielded sufficient power in the family despite their affliction compared to women heads (15%). Women were isolated more often from all activities. 49% of males and 63% of females said that it was the fear of deformity that compelled them to leave. Girls with leprosy found in more difficult to marry than boys, and that they made more compromises in the choice of partners.

20	Community	Maharashtra	Study the role of gender on the impact of leprosy. Data obtained from 606 questionnaires. A stratified random sample of patients above the age of 18 were selected using age, gender and deformity status as the main strata.	Knowledge gained about the causation of the disease, which has increased among women, has not necessarily helped them in reducing the delay in seeking treatment. Relatively more women (26%) compared to men (21%) tended to hide the disease mainly because of fear of social stigma or debilitation.
21	Hospital-based	Tamil Nadu	Study the prevalence of disabilities and deformities among leprosy patients; compare the socio-demographic and disease characteristics of patients with and without disability. Sample: 225, M-63 (72.4%) F-62 (27.6%) Disabilities proforma, clinical or histological examination, disability index	Overall prevalence of disabilities and deformities in this study was 47.6%; females had a lower disability index (DI) than males (F - 38.7%, M-50.9%); factors seen to be significantly associated were age more than 40 years, manual labour, no education or only primary level education, low socio-economic status, residence in rural area, and longer duration of disease
<b>NON-COMMUNICABLE DISEASES</b>				
22	Community	Tamil Nadu	Examine the prevalence and determinants of hypertension. Determinants: age, body weight, pulse rate, salt intake, meat intake and socio economic status were assessed. Convenience sample: 1,027 (M=456, F=571).	Prevalence = 12.5%. Most positive determinants: age, body weight and pulse rate. Prevalence of hypertension and mean blood pressure were greater in men than in women until the 5th decade - the pattern was reversed in subsequent age groups. Prevalence in highest socio-economic strata - 22.5% and lowest - 8.8%.
23	Community	Maharashtra	Examine the prevalence of hypertension and risk factors. Survey of 12 villages (total population - 9,605). Detailed history, physical examination and information on age, sex, occupation, physical activity and smoking habits.	The prevalence of hypertension was very low (34.12 per 1,000, M-28.92 and F-40.6 per 1,000). Moderate and light activity population was more prone (1.49 times in males and 1.69 times in females). 'Not poor' group showed higher prevalence compared to 'poor' in both sexes.
24	Meta-analysis	Various places in India	Meta-analysis to determine time-trends in prevalence of Coronary Heart Disease (CHD) and changes in age and sex. 14 epidemiological studies, rural and urban.	The prevalence of CHD increased in urban populations from 1.05% in 1960 to 9.67% and 7.90% in 1995. In rural areas, 2.06% in 1974 to 3.7% in 1995. Increase in men (rural and urban) in 20-29 and 30-39 years, and women in rural areas in 20-29, 30-39, and in 40-49 years.
25	Review of studies	Three studies: Delhi, Rajasthan and Kerala	Review recent studies reporting prevalence of CHD and profile of risk factors, using the three studies.	Prevalence in Delhi=96.7/1,000, Jaipur=76/1,000, and Trivandrum=74/1,000. Risk factors identified: smoking, obesity, hypertension, and diabetes, with smoking to top the order in men and obesity and hypertension in women.
26	Community	Punjab	Examine the prevalence of coronary heart disease (CHD) and important risk factors in rural population. Sample: 1,100 of 1,617 individuals who were above the age of 30 in a stable rural population of three villages.	Prevalence rate of CHD was 30.9/1,000 population (3.1%). Women (37.7/1,000) higher than men (25.6/1,000). Hypertension (16/34) was four times higher in the CHD group whereas hypercholesterolemia (7/34) was four times higher, and a positive family history (2/34) was fifty times more prevalent in the CHD group.

27	Community	Delhi	Study the prevalence of Coronary Heart Disease (CHD) in different communities (here religious) and risk factors. Chest pain assessed by Rose questionnaire, Myocardial Infarction (MI) and Electrocardiogram (ECG) changes. Sample: 13,650 adults between ages 25-64 years	On clinical basis per 1,000 adults (age 25-64) prevalence was the highest in Sikhs (47.3) (M=64.3, F=33.6), lowest in Muslims (22.8) (M=27.8, F=19). On the basis of ECG prevalence was high in Muslims (89.5) (M=94.8, F=85.2) and Sikhs (87.3) (F=114.5, M=54.4), low in Christians (25.0). On clinical diagnosis, M > F in all communities, while silent CHD, F > M (Hindus and Sikhs, not Muslims).
28	Community	Kerala	Examine the prevalence of some indicators of Coronary Heart Disease (CHD) and some of its major risk factors. Sample: probability proportionate to size (PPS) cluster sample of 500 households from five villages	Possible evidence of CHD - 74/1,000. ECG changes suggestive of CHD as 36/1,000, Rose questionnaire angina 48/1,000 with prevalence greater in females (25-54 years), and definitive evidence of CHD 14/1,000. Major risk factors: hypertension 179/1,000, smoking 219/1,000, diabetes 40/1,000, and obesity 55/1,000.
29	Community survey and hospital records	Karnataka	Study associations between size at birth and the Coronary Heart Disease (CHD). Tracing birth records and identified 517 born between 1934 and 1954. Rose questionnaire, the ECG and other investigations.	25 (9%) men and 27 (11%) women had CHD. Prevalence was higher in men and women who had low birth weights, short birth lengths or small head circumferences. In those 45 years and over, each of these trends was statistically significant; highest prevalence (20%) was in people who weighed 5.5 lbs. or less at birth and whose mothers weighed less than 100 lbs.
30	Community	Uttar Pradesh	Examine the association of socio-economic status (SES) with Coronary Artery Disease (CAD) and risk factors. Random survey of 1,806 adults in an urban population.	Overall prevalence of CAD was 9% (n=163), M-11% (n=100), F-7% (n=63). The prevalence of CAD and coronary risk factors hypercholesterolemia, hypertension, diabetes, and sedentary lifestyle were significantly higher among higher and middle income groups. Social class was positively associated with CAD.
31	Hospital-based	Karnataka	Study the clinical profile of Myocardial Infarction (MI) in Indian women. Sample: 350 admitted for Acute Myocardial Infarction (AMI) were studied.	35.4% patients in 51-60 years. 94% presented with moderate to severe chest pain. Most infarctions (80%) occurred in post-menopausal period. Common risk factors were hypertension 49%, diabetes 34% and obesity 18%.
32	Hospital-based	Tamil Nadu	Study the clinical profile, management and outcome of Acute Myocardial Infarction (AMI) in women, and to compare risk factors for AMI between men and women. Sample: all 314 patients admitted to the coronary care unit of the general hospital (254 men and 60 women).	254 - M and 60 - F (14 pre- (23.3%) and 46 post-menopausal (76.7%)). Chest pain was common symptom in all. MI more common in men than women (4:2.1). AMI less common in pre- than in post-menopausal women. Risk factors: diabetes, systolic hypertension, hypercholesterolemia and obesity were high among women, (it was greater in the pre-menopausal than post-menopausal women) compared to men.
33	Hospital-based	Tamil Nadu	Clinically and biochemically evaluate perimenopausal diabetic women with and without Ischaemic Heart Disease (IHD). Sample: 40 patients (22-IHD and 18 controls)	Diabetes frequently causes IHD to develop in women approximately 20 years before the average age for IHD in non-diabetic women. Perimenopausal women with IHD showed differences in terms of duration of diabetes, body fat distribution, systolic blood pressure, optic fundus findings, etc.

34	Community	Kerala	Examine the prevalence of diabetes (>20 yrs) in urban colony. Fasting plasma glucose, serum triglycerides, cholesterol, height, weight and blood pressure measured. Sample: not mentioned	Overall prevalence of type 2 diabetes in 16.3%. Gender differences negligible. Greater prevalence is associated with advancing age, body mass index above 24.99, sedentary habits, serum total cholesterol>239, serum triglycerides>149, hypertension and smoking.
35	Review	All-India	Reveal clinical features of osteoporosis in Indians, and highlight nutritional factors.	Osteoporosis occurs in both males and females in India. Osteoporotic fractures occur more commonly in males than females and they usually occur 10-20 years earlier in men and women here compared to Caucasians in the West. Seems possible that a subclinical calcium and vitamin D deficiency is present in a significant proportion of the general population
36	Hospital-based	Tamil Nadu	Examine the incidence of osteoporosis in young diabetics. Sample: 25 patients. Symptomatology: age of onset, duration, family history, dietary habit, no. of episodes of ketoacidosis, prolonged immobilisation, other associated diseases and drug intake.	Percentage of osteoporotic changes in diabetics <20 years is higher (25%) than those in 21-30 (23.1%) years. Male predominance: M=29.4%, F=12.5%. No correlation between duration, severity of diabetes and osteoporotic changes or degree of bone loss and also bone calcium content.
<b>CANCERS</b>				
37	Secondary-data analysis	Maharashtra	Study the trends, sex and socio-economic differentials in cancer incidence and mortality, and survival rates. Sample: cancer registry. Simple decrement and multiple decrement life table techniques for survival rates.	Incidence, mortality and fatality rates greater in males than females. Leading cancer incidence sites, Males = 1- lung cancer, 2 - oesophagus, Females = 1- breast, 2 - cervical cancer.
38	Secondary-data analysis	Maharashtra	Epidemiological study of cancer in detail, leading causes of death, classifying the Person Years of Life Lost (PYLL) and Work Years of Life Lost (WYLL) by different sites. Analysis of the data from Annual Health Reports of the Bombay Municipal Corporation (BMC) and Cancer Society Publications.	Based on total PYLL, leading site of cancer in males was lung, oesophagus, stomach, larynx and tongue, and in females breast, cervix, oesophagus, ovary and stomach. According to WYLL the leading sites of cancer were tongue, oesophagus, stomach, larynx and lung for males and breast, cervix, ovary, oesophagus and stomach for females.
39	Review	All-India	Epidemiological observations on cancer of the oesophagus, its incidence and mortality, trends, high risk groups and associated habits.	Incidence generally among the elderly, and males > females. The mortality rates were estimated to be 8.9 - M and 6.7 - F per 100,000 population. Many case-control studies have implicated chewing and smoking as risk factors (2-fold to 16-fold higher for chewers).
40	Hospital-based	Maharashtra	Assess relationship between multiparity and cancer of cervix. Sample: 230, control: 230	There was a significant association between multiparity and cancer of the cervix.

41	Secondary-data analysis	Maharashtra, Karnataka and Tamil Nadu	Examine the reduction in the incidence rate of cancer of the uterine cervix as a result of the change in the proportion of women married in a specific age group (15-19 years) during the past decade.	The reduction in the incidence rate was found to be marginal.
42	Hospital-based	Pondicherry	Study the role of male risk factors in the causation of cervical cancer. Sample: 54 couples, control : 54 couples	52% of the sample husbands had multiple sex partners vis-a-vis 17% of control. 85% of the sample husbands had poor genital hygiene, 27.7% had genital lesions as compared to 9% in controls.
43	Hospital-based	New Delhi	Investigate role of male behaviour in cervical carcinogenesis among women. Sample: 137 (with persistent dysplasia) , control: 174	Pre-marital (relative risk - 1.97) and extra-marital (relative risk - 2.7) relationships were the risk factors. Sexual abstinence for 40 or more days after wife giving birth or having abortion provided protection.
44	Hospital-based	Uttar Pradesh	Detect cancerous and pre-cancerous conditions in women attending a hospital. Sample: 515 (with cervical erosion)	1 per cent has invasive carcinoma. 1.36% carcinoma in situ, 31.5% dysplasia and 33.4% inflammatory lesions. Normal findings were observed among those with the least duration of married life.
45	Hospital-based	Uttar Pradesh	Evaluate the value and accuracy of cytodiagnosis in cervical cancer. Sample: 400 women	Cytohistological correlation in inflammation, cervical intraepithelial neoplasia and invasive malignancy was 85%, 80.3% and 95.6% ,respectively. Overall diagnostic accuracy was 85.2%.
46	Hospital-based	Gujarat	Study the cytopathology of uterine in Intra-uterine contraceptive device (IUCD) users. Sample: 621 IUCD follow-up cases	Leucorrhoea - 26%, menstrual irregularity - 25%, pain in the lower abdomen - 21%, prolapse - 2%, and leucoplakia - 0.3%. No remarkable pathology was revealed in 81% of the subjects.
47	Community and hospital-based	Karnataka	Compare and correlate visual inspection/ per speculum examination with cytology reports. Sample: 4,034	11.1% of the abnormal smears were found to be negative on subsequent colposcopy/ biopsy. Agreement between general practitioners and gynaecologists was 62% and with that of health workers 54%.
48	Hospital-based	New Delhi	Determine cytological findings in relation to gross visual examination by Auxiliary Nurse Midwives. Sample: 2,102	Highly suspected/malignant - clinical examination sensitivity - 81.7% and specificity - 97.3%. Abnormal cervix - clinical examination sensitivity - 92.5% and specificity- 37.4%.
49	Community and hospital-based	New Delhi	Compare and correlate visual inspection/ per speculum examination with cytology reports. Sample: 700 asymptomatic women, 535 at gynaecology clinic and 750 hospital-based	Abnormal per speculum findings were common in the gynaecology clinic group. Dysplasia and carcinoma were detected in normal looking cervix. About 50% of the per speculum abnormalities were missed by paramedics in ideal hospital conditions.
50	Hospital-based	Gujarat	Review the experience of radical hysterectomy for adenocarcinoma for cervix. Sample: 40	Incidence of adenocarcinoma was 7.5%. Overall recurrence rate was 17.5% while none was observed with pre-operative radiotherapy.

51	Hospital-based	Kerala	Report survival experience and factors influencing survival among those with malignant ovarian tumours. Sample: 90 cases	Overall 2 years survival rate was 36% and depended on the clinical stage of the disease. Adequate surgery in stage I and II resulted in acceptable survival while in stage III debulking surgery showed better survival (stages indicate the progress in disease when surgical intervention has an implication for survival rate).
52	Hospital-based	Goa	Study common morphological and histological types of ovarian tumours. Sample: 343 cases	Most common benign tumours were cystadenomas (67.5%) and among malignant-cyctadenocarcinomas (57%). Metastasis was seen in 71% of the malignant tumours.
53	Hospital-based	West Bengal	Study clinical and morphological variations of ovarian neoplasms. Sample: 190	68% were benign and 32% were malignant. Cystic or partly cystic consistency was common in benign tumours while it was solid in the case of malignant tumours.
54	Hospital-based	Goa	Delineate the various types teratomas seen and their respective incidence. Sample: 634	17% incidence of teratomas was seen. 95% of the teratomas were benign cystic teratomas, 4% were malignant and 1% were specialised.
55	Hospital-based	Gujarat	Histological review of Dysgerminoma. Sample: 12 cases	6/12 cases were in stage IA, 1/12 in stage IC, 3/12 advanced IIIC and 2/12 had recurrent disease.
56	Hospital-based	Gujarat	Review clinical and pathological profile of malignant mixed mesodermal tumour (MMMT) of the female genital tract. Sample: 7 cases	Post-menopausal bleeding was the most common symptom. FIGO pathological staging ranged from I to IV. Stage I and II had better outcomes than in the other two stages.
57	Hospital-based	Kerala	Identify role of sonography in deciding ovarian masses needing surgery. Sample: group I - 556, group II - 60	93% of the ovarian enlargements were amenable to pre-operative sonographic diagnosis.
58	Hospital-based	Chandigarh	Delineate experience of treating gynaecological malignancies with high dose rate intravaginal brachytherapy. Sample: 100	Local control was achieved in 96% and 74% endometrial carcinoma and carcinoma cervix patients, respectively.
59	Hospital-based	Punjab	Seek to find relative frequency of breast cancer (BC) vis-a-vis cervical cancer (CC).	1988 : BC - 18.8%; CC - 13% 1989 : BC - 16%; CC - 13% 1990 : BC - 16.5%; CC - 10%
60	Hospital-based	New Delhi	Evaluate factors responsible for late presentation of women with symptoms of tumours in the breast. Sample: 100	Only 20% were aware of their status. Duration of illness ranged from 1 week to 10 years. Delay between contact with doctor and then with hospital was 4.6 months. 43% were initially inadequately operated elsewhere and recording by the previous doctor was very poor.



61	Hospital-based	Maharashtra	Assess Molybdenum, Xanthine oxidase and riboflavin levels in use of the non-steroidal antiestrogenic drug Tamoxifen for treating post-menopausal women with breast cancer. Sample: 40, control: 20	A significant increase was seen in Serum Xanthine oxidase and riboflavin after 3 and 6 months, respectively, and a non-significant increase in Molybdenum.
62	Hospital-based	Tamil Nadu	Determine the patients' perception of the nursing intervention in meeting the emotional needs (safety and security, social affiliation and self-esteem) and relation to their demographic data. 30 women hospitalised with breast cancer in surgical wards.	86.7% received inadequate care in pre-operative period to meet self-esteem needs but in post-operative only 53.3% had inadequate care. Answering question regarding care and clearing doubts in pre-operative care (16.7%) and post-operative period (76.7%). 83.3% received inadequate care in pre- and post-operative care. Nurses' 'explanation' about pre-operative care was 93.3% but post-operative care it became 65%.
<b>MENTAL HEALTH</b>				
63	Hospital-based	Tamil Nadu	Study the neurological disorders complicating pregnancy and puerperium.	In this year-long study, neurological disorders complicating pregnancy occurred in 166 out of 16,506 deliveries (1% incidence). Hypertensive encephalopathy was the most common neurological presentation which constituted nearly 103 out of 166 cases.
64	Community	Tamil Nadu	Estimate the prevalence of primary infertility, and compare psychiatric morbidity among infertile women with fertile women; 60 fertile and control; GHQ 28 for psychiatric morbidity.	Infertility prevalence = 2.4%. Prevalence of psychiatric morbidity in infertile women was 45% (15% in fertile women). Odds greater for those infertile married for <10 years than for those married >10 years, and greater in those belonging to lower SES and it decreased as SES improved.
65	Community	Himachal Pradesh	Unravel the idiom of hysteric women by examining cases of conversion hysteria and dissociation (possession) hysteria in terms of their stress and personality. Sample consisted of 13 women with Conversion Hysteria, 17 with Dissociation Hysteria, 11 men with Dissociation Hysteria, as well as the parents and siblings of the female cases.	Negative life experiences were significantly higher for female hysteria subjects when compared with their siblings or male subjects, and females among the dissociation subjects had also lesser stress from positive life events in comparison with males. Distribution among the items reported as negative stress indicate that marriage and family happen to be more supportive structures for men than women. Serious illness or injury of close family is more stressful for women, as also a major change in financial status.
66	Hospital-based	Tamil Nadu	Examine gender-related differences pertaining to symptom pattern, course and disability in schizophrenia; 76 patients, M-40, F-36 who were first break schizophrenia patients attending the psychiatry department.	Males were more symptomatic at intake with higher frequency in few of the Present Status Examination (PSE) syndromes, but only difference in nuclear syndrome was statistically significant. At end of 10 years there is a fall in all PSE syndromes though none of these were significant, though males again showed a higher frequency. Women tended to have more relapses (30/36: 20/40) while more men had continuous illness (3/40: 1/36). Men had higher scores in occupational role performance and global disability.

67	Hospital-based	Tamil Nadu	Estimate disability and illness status of women with chronic mental illness and who have been separated or divorced; examine the attitude of care-givers; qualitative and quantitative methods used. Sample: 100 women. Study conducted over 12 months, from different sites.	Many families viewed the woman's strange oddities of manner as something that would be set right by marriage. The stigma of being divorced/separated is often more acutely felt both by the families and the patients than that of mental illness per se. Very negative attitudes of family members who distance themselves and this leads to separation and abandonment.
68	Community	Kerala	Investigate how common dementing disorders are among the elderly in a rural population and their distribution, psychosocial correlates and risk factors. Sample size: 2,067 persons over 60 years of age.	Prevalence rate of dementia of 31.9/1,000. 58% of the dementia cases were vascular dementia and 41% satisfied the criteria for ICD-10 dementia in Alzheimer's disease. Prevalence of dementia increased proportionately with age in both gender groups. Alzheimer's disease was more prevalent in women compared to men (ratio 3:1).
69	Hospital-based	Maharashtra	Examine the sequence of events that leads to attempted suicide in women; nature of family violence, coping mechanisms, precipitating factors and networks of support; 6 case studies of women who attempted suicide, using interview guide and observation, in psychiatric and burns ward of respondent and family members.	Suicide was perceived as an alternative (i.e., a means and not a resulting situation from any crisis); it followed in a series of coping mechanisms used to handle a situation. The number of networks of communication had decreased and for their own reasons were not effective. Coping strategies included indifference, ignoring, rebellion, gentle communicating, persuasion, withdrawing; bodily abuse came last in the series.
<b>MORBIDITY ASSOCIATED WITH LIVING AND WORKING ENVIRONMENT</b>				
70	Hospital-based	Karnataka	Study the exposure to domestic smoke from cooking fuel and the various respiratory diseases presented. Sample: 100 women randomly selected from 3 hospitals; history, physical exam and investigation; exposure index calculated.	73% were working in poorly ventilated kitchens. 65% used wood alone as fuel, 32% used kerosene and wood. While all did housework, 37 were also doing beedi rolling, 13 were agricultural labourers and 8 did manual labour, 15 did other part-time jobs; Chronic Obstructive Pulmonary Disease (COPD) and Cor pulmonale were most observed in the age group 60-69 years (40% of COPD cases and 54.5% of the Cor pulmonale cases). Most cases of bronchiectasis were in the 50-59 age group (33.3% of cases), while pulmonary tuberculosis and bronchial asthma (76.5% of cases) were in the 20-49 age group.
71	Community	Tamil Nadu	Population-based prospective follow-up of Chronic Obstructive Pulmonary Disease (COPD). Total population was 22,847 distributed between 4,262 families residing in 16 hamlets. 1,542 symptomatics were detected. 211 patients were detected to have COPD.	Period prevalence - 13.1/1,000. Patients with COPD were 198 males and 130 females. Significantly higher prevalence (40.8/1,000) for males than that (25.5/1,000) for females.

72	Community	Pondicherry	Study the effects of exposure to indoor air pollution from the use of cooking fuels on lung functions and respiratory symptoms in women aged 15-60 years; a house-to-house survey was conducted and 1,117 women selected by a fuel- and age-stratified random sampling technique; interview, clinical examination, consulting previous health centre records and doing laboratory investigations; observation of entire cooking process to log time spent in front of stove.	97 women using biofuels, 100 using kerosene, and 98 using liquid petroleum gas (LPG) completed the study. Biofuel users spent a larger proportion of cooking time near the stove than kerosene or LPG users. The overall presence of respiratory symptoms during the study period was higher for women using biofuels (23%) compared to those using kerosene (13%) or LPG (8%). Lung functions in kerosene users also were significantly poorer when compared with LPG users.
73	Community	Tamil Nadu	Estimate the prevalence of chronic respiratory diseases (CRD), socio-economic status, knowledge and attitude, and treatment in the rural area among the middle aged (35-64 years) and the elderly (65 + years). Sample: 235 households, systematic sampling technique; population=1,147, house visit and interview schedule.	The overall prevalence of chronic respiratory diseases was 12.2 per 1,000 (14/1,147); asthma was 9.59/1,000 and TB 1.74/1,000; M-19.89/1,000, F-5.05/1,000; all showed positive attitude to go for treatment. 29% to allopathy as it was curable, 42.84% preferred allopathy because of free treatment and concessional rates. Only 14.28% said homoeopathy was better, as it was expensive and they felt better after treatment, hence valuable.
74	Community	Gujarat and Madhya Pradesh	Report on four studies examining occupational health problems of four self-employed groups of women: garment workers, bidi workers, masala workers and agarbatti workers. Sample size: 556. No control group. Self-reported morbidity.	Pain in the limbs and back pain was reported most commonly by all groups; masala workers spoke of blisters and callouses as a result of handling hot chillies. A number of gynaecological problems were reported by all women; pain in the abdomen, white discharge and burning sensation while urinating.
75	Community	Maharashtra	Examine occupation-related health problems of women rag-pickers. Sample: 40 women, 10 men and children, total = 50.	90% of the women worked until their 9th month of pregnancy and resumed work within 3 months. Occupation-related problems reported were backache and pelvic pain: 82%, bodyache and headache: 74%, skin diseases: 64%, bites and cuts: 94%, and sun strokes: 60%. Many gynaecological symptoms were reported. 94% reported their mental state as feeling gloom, fear of being sexually harassed, anxiety about children's future.
76	Community	Maharashtra	Examine occupation-related health problems of women in the fish/prawn processing industry; in-depth interviews with 20 women, group discussions with 90 women, interviews with 7 doctors, 4 contractors and 5 supervisors.	The women stood all day at work, and were in damp and ice. Numbness in hands and feet, fungal infections, cracked skin and skin infections, anaemia, frequent colds and chest infection were most common. Mental health problems included depression.
77	Community	Tamil Nadu	Highlight hazards to women's health in the leather-tanning industry based on self-reported morbidity. In-depth interviews of workers in tanneries in 3 pockets in the state (65 women/106 workers, 41/59, 33/33).	Nearly 225 chemicals were used in the tanning process, giving rise to a variety of problems including dermatitis, nervous disorders, respiratory problems, fissure in the fingers, toes, mouth and nose. Several gynaecological problems were reported.

78	Community	Tamil Nadu	Discuss health problems arising from the nature of work in the home-based beedi industry. Survey of 600 households, in-depth interviews with 212 women, 34 case studies.	Women reported the following symptoms as related to their work: aches and pains because of posture; breathlessness; burning when passing urine; white discharge; and mental worry.
79	Community	Andhra Pradesh	Examine the relationship between women's work and their reproductive health. 1,124 households from a low-income settlement covered by repeated health interview surveys over a one-year period.	506/1,625 households contacted in 6 rounds reported women's morbidities. This included 30% gynaecological morbidity, 13% general feeling of ill-health, and 18% pregnancy or surgery (sterilisation) related problems. 51% did not take any action for their health problem, 12.5% sought low-cost care from government facilities, while about 13% tried home remedies or medication from the pharmacist. 19% went for private health care. Private sector was used mainly for acute problems such as fevers (51%), upper respiratory infections (20%), and gastro-intestinal problems (35.3%). Women were willing to pay a price (Rs 33) to be able to get back to work soon. 88% of the women had antenatal check-ups when pregnant, mainly from government health facilities.

## ABSTRACT NO. 1

- Author(s)** : Meghani, Shamim
- Title** : Subjective Well-Being of Women: A Study in Rural Gujarat
- Source** : M. Phil. dissertation in social sciences, Tata Institute of Social Sciences, Mumbai
- Place of study** : Junagadh district, Gujarat
- Period of study** : 1992-94
- Aims and objectives** : To study the subjective well-being of rural women and study the factors that may influence their well-being.
- Study conducted by** : Tata Institute of Social Sciences, Mumbai
- Nature of study** : Community survey

### Methodology:

The study analysed three villages of high, medium and low development status (based on natural resources available to the villagers, access to nearby towns, health facilities, education facilities, electricity, water sources and other infrastructure).

From the high, medium and low development status villages, 48, 40 and 37 women, respectively, from 15 to 35 years (20 percent of the universe of all women) were obtained from a previous demographic survey conducted in 1988. The sample was further divided by:

- three age groups (15-20 years, 21-25 years, and 26-35 years)
- two socio-economic status groups (based on literacy, occupation, land holding, family size, income, livestock, type of house and other assets)
- type of family (nuclear or joint)
- religious groups (Ismaili and non-Ismaili)

The subjective well-being inventory developed by Nagpal and Sell (1985) was used to measure 11 factorial dimensions: subjective well-being positive effect, expectation-achievement congruence, confidence in coping, transcendence, family group support, social support, primary group concern, inadequate mental mastery, perceived ill-health, deficiency in social contacts, and general well-being negative effect.

Apart from this, the study used a questionnaire to obtain socio-economic and demographic data. A pre-testing was done and some of the terms were replaced by colloquial terms in the inventory.

### Findings:

The following hypotheses were proved correct:

- Women belonging to higher Socio-economic status (SES) have greater social well-being than their counterparts from lower SES.
- Social well-being of women belonging to the Ismaili religious group is greater than the social well-being of women belonging to the non-Ismaili group.

The following hypotheses were found to be false:

- The subjective well-being of married women is greater than the subjective well-being of unmarried women.
- Women belonging to a joint family have greater social well-being than women belonging to a nuclear family.
- Social well-being of women increases with age.

The interaction between all the independent variables revealed significant factors affecting the social well-being of rural women. The subsequent analysis revealed that women with higher social well-being were young, unmarried, Ismaili from higher SES and a joint family.

**Reviewer's note:**

The sample size was small, and the authors note that only two-way interactions were possible to analyse.

**ABSTRACT NO. 2**

- Author(s)** : Madhiwalla, Neha, and Amar Jesani
- Title** : Morbidity among Women in Mumbai City: Impact of Work and Environment
- Source** : Economic and Political Weekly, vol. 32, no. 43, October 25-31, 1997, Review of Women's Studies, WS38-WS44
- Place of study** : Mumbai City, Maharashtra
- Period of study** : Not specified
- Aims and objectives** : To explore the totality of women's health problems in relation to their lives and all aspects of their work using the household level health survey.
- Study conducted by** : CEHAT, Mumbai
- Nature of study** : Community survey

**Methodology:**

This was a pilot study (prior to the actual study in Nasik district) in the Jari Mari area, Kurla, Mumbai, where 430 households were surveyed. The households were classified into slum (252) and non-slum (178) households. Women above 12 years were the respondents. The survey was supplemented with in-depth interviews with eight women.

The household health survey was significantly modified to place a special emphasis on women's health problems. The women respondents were asked about all episodes of illnesses experienced by all family members, and specific symptoms were probed for all women above 12 years.

**Findings:**

- Without probing, women reported nearly twice as many episodes of illnesses for themselves as for the male population. After probing, the female morbidity rate becomes three and a half times as high.
- In every age group the female morbidity was higher than the male morbidity.
- Reproductive problems formed the largest group (28.2 percent) for women including menstrual problems, low backache, lower abdominal pain and uterine prolapse.
- Respiratory problems were the next most important (19.4 percent). Aches and pains (12.5 percent), and weakness (10.9 percent) followed.
- Morbidity rates of slum dwellers of all age groups were more than double that of their counterparts in non-slum households. Also while the morbidity rates for housewives in the slum was high (971 episodes), it was even higher (980) for women workers from the slums, who were either home-based workers or worked in small industrial units close by.

## ABSTRACT NO. 3

- Author(s)** : Thakur, Aarati
- Title** : Health and Nutritional Status of Women and Children from Female-Headed Households
- Source** : M.Sc. Dissertation, Food Science and Nutrition, Dept. of P. G. Studies and Research, SNDT Women's University, Mumbai
- Place of study** : Mumbai City
- Period of study** : 1995-96
- Aims and objectives** : To compare the socio-economic profiles and the nutritional and health status of women and children in female-headed households with those headed by men.
- Study conducted by** : SNDT Women's University, Mumbai
- Nature of study** : Community survey

### Methodology:

The study area included Gilbert Hill, Gamdevi and Dongri slum areas of Mumbai. The study was carried out over a period of five months. A sample of 55 women from female-headed households were studied and compared with 30 women from male-headed households. Of the 55 female-headed households, 20 were where the woman lived alone, 15 where there were children and dependent elderly, and in 20 there were non-contributing able-bodied male adults.

The researcher used an interview schedule for data on family background occupation, activities of the woman, food and nutrition security, dietary patterns (24 hours recall), morbidity pattern of the child (15 days recall), anthropometric measurements, decision-making power and coping strategies.

### Findings:

- The majority of the female-heads were illiterate and worked outside the home in the unorganised sector. The total and per capita incomes of female-headed households were almost half that of male-headed households.
- In female-headed households there was a higher incidence of daily purchase of non-perishables and frequent food shortages. Food shortages were resolved by borrowing food, money, or both from employers, relatives, neighbours, shopkeepers or even going without food.
- The time spent by female-heads on childcare activities was only half that spent by women from male-headed households. Only 50 percent of the female heads took leave of absence when their child was ill, fearing deduction in salary or loss of work.
- Using Body Mass Index as an indicator of nutritional status, women from male-headed households were better off than those from female-headed households. But in terms of nutrient intake, children from female-headed households were better off than those from male-headed household.
- Women from female-headed households enjoyed greater decision-making power than women from male-headed households. In female-headed households where the husband lived with the family, the incidence of wife beating was seven times more as compared to male-headed households.

## ABSTRACT NO. 4

- Author(s)** : Reg. No. 1108, MD General Medicine, Christian Medical College, Vellore, March 1996
- Title** : Health Needs and Concerns of Rural Adolescent Girls: A Survey Done in Kaniyambadi Block of North Arcot Ambedkar District, Tamil Nadu
- Source** : Christian Medical College, Vellore, Tamil Nadu
- Period of study** : 1995-96
- Aims and objectives** : To describe the health status of rural female adolescents in terms of physical health, reproductive health and psycho-social health to determine their knowledge on the above specific aspects of health; and to ascertain views on health care services available to meet their needs.
- Study conducted by** : Christian Medical College, Vellore
- Nature of study** : Community survey

### Methodology:

#### Definitions

- *Physical health*: included general health and nutritional status and perceived illness such as tiredness, body aches and pains, sleeplessness, loss of appetite, poor vision and hearing.
- *Reproductive health*: included age at menarche, menstrual irregularities or morbidity and pregnancy-related morbidities.
- *Psycho-social health*: included factors stemming from behavioural and psychological characteristics of the individual such as self-esteem and family relationships.

Quantitative and qualitative methods were used. Qualitative methods included focus group discussions and key informant interviews. Three focus group discussions were conducted with adolescents from three different villages, and three with mothers of adolescents in one of the villages. Five key informant interviews were conducted with the leader of a village women's group and local health functionaries.

For the quantitative study, 190 girls (13-19 years) were randomly selected from four villages. Demographic, social and economic details, health perceptions and health concerns and issues, and information on the knowledge and utilisation of the community hospital were collected through personal interviews.

Each adolescent was measured for height, weight and blood pressure. Clinical exams were carried out to detect nutritional deficiencies and general health status.

### Findings:

- Of the 190 adolescent girls, 124 had attained menarche and 6 were married. The mean age at menarche was 13.8 years.
- The girls frequently suffered from headaches, body aches, general fatigue and anaemia. The individual survey identified palpitations, poor appetite and respiratory problems. Complaints were more common among older (16-19 years) adolescents than those who had not yet attained menarche and in those with lower educational status.
- The most common reproductive health problems were dysmenorrhoea, premenstrual tension and menstrual irregularities. A third of the girls complained of leucorrhoea. This was more among older (16-19 years) adolescents.
- Despite prevailing traditional attitudes and socio-economic constraints, more girls appeared to be self-confident showing a positive attitude towards life. Those not in school had a less positive outlook, were more worried and had lower self-esteem.



- The study showed that the girls had poor knowledge with regard to several issues: menstruation, pregnancy, contraception and common public health problems. Many agreed that knowledge related to health was poor and expressed interest in knowing more. Others felt that reproductive health matters could be postponed until they were married. Knowledge of health issues did not bear any correlation with schooling or educational status.
- Girls were particular about having a female physician examine them for reproductive health problems. They preferred having separate reproductive health clinics and separate timings for adolescent girls and not to have these combined with the MCH clinic.

## ABSTRACT NO. 5

- Author(s)** : Siddiqui, Dibha, Sanjay Ghose, M. S. Krishnamurthy, and A. N. Sashidhara
- Title** : Tuberculosis Infection Rate in a Rural Population of Bikaner District
- Source** : Indian Journal of Tuberculosis, vol. 4, 1996, pp. 91-97.
- Place of study** : Bikaner district, Rajasthan
- Period of study** : January 1991 - February 1993
- Aims and objectives** : To obtain the prevalence of tuberculosis infection in the population aged 0-14 years, and to estimate the annual risk of tuberculosis infection (ARI).
- Study conducted by** : URMUL Trust, Rajasthan
- Nature of study** : Community survey

### Methodology:

The study was conducted in 16 of 33 villages covered by URMUL Trust, an NGO, in Lunkaransar Tehsil of Bikaner district, Rajasthan. Villages were arbitrarily selected for logistic and economic convenience, and were contiguous.

Children were registered through house visits. Their BCG scan status was recorded and the tuberculin test was administered. The results were noted within 72-96 hours by four URMUL health staff trained to conduct the tuberculin survey at the National Tuberculosis Institute, Bangalore.

5,296 children (0-14 years) were registered, of which 51.6 percent were male and 48.4 percent were female. Of children without the scar (unvaccinated), 2,167 (87.3 percent) were tuberculin-tested and their indurations read. These 2,167 formed the population for the study.

Two methods, A and B, were used for demarcating the infected from the uninfected.

'A' - The anti-mode in the frequency distribution of the tuberculin indurations among the unvaccinated children was observed. Children having induration sizes to the right of the antimode in the frequency distribution were considered as infected, and the rest as uninfected. The calculation was based on counting 14mm or more as positive reactors. 'B' - The number of children to the right of the second mode in the frequency distribution was doubled to have the number of those infected, as described by Bleiker (1989).

Annual Risk of Infection (ARI) was calculated by converting the prevalence of infection by application of a formula  $ARI = (1 - (1 - P)^{1/A})$ , P=prevalence of infection, A=average age of group under consideration.

**Findings:**

- Except for children 0-4 years, the prevalence rates were higher for males than females.
- By method A, prevalence rates were 2.22 percent for males and 3.03 percent for females in the 0-4 years age group, 13.6 percent and 11.08 percent in the 5-9 years age group, and 20.58 percent and 18.53 percent, respectively in the 10-14 years age group.
- For method B, the corresponding rates were: 1.94 percent and 3.26 percent, 13.6 percent and 10.29 percent, and 16.4 percent and 14.9 percent for males and females in the 0-4 years, 5-9 years and 10-14 years age group, respectively.
- Estimating caseload: With an ARI of 1.52 percent it could be suggested that 22-23 new sputum smear positive cases would arise annually for the entire project area of 30,000 population.
- The success of the Trust's anti-tuberculosis programme would depend on its ability to treat diagnosed cases through closely supported and supervised therapy programmes, rather than on escalating the efficacy of case-finding.

**ABSTRACT NO. 6**

- Author(s)** : Mukherji, P. K., V. K. Mishra, J. Nath, et al.
- Title** : A Study of Endometrial Tuberculosis in Hospitalised Patients of Pulmonary Tuberculosis
- Source** : Indian Journal of Tuberculosis, vol. 38, no. 4, Oct.1991, pp. 197-199
- Place of study** : Lucknow, Uttar Pradesh
- Period of study** : Not specified
- Aims and objectives** : To estimate the occurrence of endometrial tuberculosis and its correlation with gynaecological complaints among patients of pulmonary tuberculosis and who had gynaecological complaints.
- Study conducted by** : KG Medical College, Lucknow
- Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

The study consisted of 156 patients in the 15-40 age group who had tested positive (sputum) for pulmonary tuberculosis, having gynaecological problems and admitted to the TB ward of the KG Medical College, Lucknow. Acute pelvic inflammatory patients were excluded.

**Findings:**

- Pathological examination showed that endometrial tuberculosis was seen in 11.5 percent of the pulmonary tuberculosis cases (18/156).
- The most common menstrual abnormality of all patients was amenorrhoea (42.2 percent) and oligomenorrhoea (25 percent).
- Sterility was found in 39/156 (25 percent) of the cases. Of these, 12 were endometrial tuberculosis cases.
- The authors conclude on the note that tuberculosis of the endometrium is common in younger females (citing two studies from the 1950s, one Indian and one British) producing various gynaecological problems leading to development of sterility.

- Author(s)** : Tripathy, S. N., and S. N. Tripathy
- Title** : Genital Affection in Pulmonary Tuberculosis
- Source** : Indian Journal of Tuberculosis, vol. 38(4), Oct.1991, pp. 191-196
- Place of study** : Cuttack, Orissa
- Period of study** : February 1987 -- July 1988
- Aims and objectives** : Systematic investigation of the genital tract of females suffering from pulmonary TB so as to achieve optimal management.
- Study conducted by** : VSS Medical College, Burla, Cuttack, Orissa
- Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

The sample consisted of 100 consecutively hospitalised females admitted to the tuberculosis section of the hospital. The selection criteria included cases of freshly diagnosed, untreated cases of bacillary pulmonary tuberculosis (PT) in the age group 15-45 years with no complaints of systemic or genital disorders. Data were obtained through detailed clinical and gynaecological examination.

**Findings:**

- Ninety-five of the 100 women were married, 4 unmarried, 1 divorced.
- Fifty-three belonged to the lower class and 47 to middle class (classified according to the criteria specified in Kuppaswamy in Park and Park, 1983).
- From the different investigative procedures a total of 24 cases of tuberculosis of the genital tract were found and all of them had tubal tuberculosis.
- In this study using a multiplicity of investigative tools (laparoscopy, hysterosalpingography, endometrial aspiration cytology and endometrial culture), the genital TB rate had risen to 24 percent when compared to 13 percent utilising endometrial biopsy and laparotomy in a preliminary study.
- The highest number of genital affectations were detected in those patients whose duration of pulmonary tuberculosis was less than one year. The shorter the duration of pulmonary infection, the greater the probability of genital involvement ( $p < .01$ ).
- Not only organic involvement but indirect functional disturbances were even more common.
- Menstrual irregularity, especially amenorrhoea (60 percent) was found in 84 percent of the women.
- Irregular cycles were reported in 15 percent, oligomenorrhoea in 7 percent and menorrhagia in 2 percent.
- A total of 47 cases out of 100 could be followed up of which in 34 cases (72 percent) the ovarian function had returned to normal and 12 conceived.
- The involvement of the genital tract did not depend on the age of the case, parity, duration of symptoms or the extent of disease in the lungs.
- In terms of diagnostic tools, the study shows that laparoscopy is an efficient method of detecting tubal TB followed closely by hysterosalpingography. However, endometrial aspiration cytology is the best method for detecting endometrial tuberculosis.

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**ABSTRACT NO. 8**

- Author(s)** : Misra, Rajiv, S. P. Sharma, R. Jina, et al.
- Title** : Female Genital Tract Tuberculosis with Special Reference to Sterility in Eastern U. P.
- Source** : Journal of Obstetrics and Gynaecology of India, 1996, pp. 104-109
- Place of study** : Gorakhpur, Uttar Pradesh
- Period of study** : 1988-92
- Aims and objectives** : To review the clinico-pathological experiences of cases of female genital tract tuberculosis.
- Study conducted by** : RRD Medical College, Gorakhpur
- Nature of study** : Prospective, hospital-based, clinical/pathological

**Methodology:**

The study examined 5,016 gynaecological specimens. Light microscopic details were reviewed, and Zheil Neilsen staining for acid-fast bacilli done.

Follow-ups of endometrial biopsies in 30 cases after 12-18 months of anti-tubercular treatment were also studied.

**Findings:**

- 162/5,016 (3.22 percent) were found to have female genital tract tuberculosis.
- The rate of incidence showed a declining trend, from 4.6 percent in 1988 to 2.25 percent in 1992.
- Of the 162 patients with female genital tract TB, 90 percent had infertility as their chief complaint: 47.9 percent had primary infertility and 52.1 percent had secondary infertility.
- Distribution of lesions involved the endometrium (86.42 percent), cervix (9.26 percent), fallopian tube (2.47 percent) and ovaries (1.85 percent).
- Tubercular bacilli are very rarely found in endometrial and cervical granulomas even with the use of fluorescent techniques. However, the study's follow-up of endometrial biopsies in 30 patients showed that granulomas that were present initially tended to disappear with anti-tubercular treatment. Hence, these were clearly cases of genital tuberculosis.
- Use of polymerase chain reaction (PCR) for rapid diagnosis of female genital tract tuberculosis could be a promising approach for the future.

**ABSTRACT NO. 9**

- Author(s)** : Rani, Reddy P., T. Pandiarajan, S. Soundararaghavan, and P. Rajaram
- Title** : TB of the Female Genital Tract: Review of 60 Cases
- Source** : Journal of Obstetrics and Gynaecology of India, 1994, pp. 248-252
- Place of study** : Pondicherry

**Period of study** : 1981-90

**Aims and objectives** : To review cases of tuberculosis in the female genital tract.

**Study conducted by** : Jawaharlal Nehru Institute for Post Graduate Medical Research, Pondicherry

**Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

The sample consisted of 60 cases of genital tuberculosis seen over a ten-year period in the hospital.

**Findings:**

- The most common presenting symptom was abdominal pain (21/60), followed by white discharge (19/60) and menstrual abnormalities (14/60).
- Infertility was present in 18/60 cases, and included 15 cases of primary and 3 cases of secondary infertility.
- 14/60 had systemic symptoms like fever and weight loss.
- Fallopian tubes (28/60) and endometrium (23/60) were the most common sites of involvement. Other sites were cervix (18/60), ovaries (13), Peritoneum/Omentum (10) and vulva (1).
- Medical treatment was effective in all but 24 women who required surgical intervention.
- Prognosis was good and only three patients died in a two-year follow-up period.
- None of the infertile patients conceived following the treatment.

**ABSTRACT NO. 10**

**Author(s)** : Kulkarni, Sunanda

**Title** : A Five Year Study of Maternal Mortality in Jaundice

**Source** : Journal of Obstetrics and Gynaecology of India, 1997, pp. 492-496

**Place of study** : Bellary, Karnataka

**Period of study** : 1991-95

**Aims and objectives** : To analyse maternal deaths due to jaundice.

**Study conducted by** : District hospital, Bellary

**Nature of study** : Retrospective, hospital-based

**Methodology:**

Retrospective analysis of all maternal deaths occurring during the study period due to jaundice was carried out. Twenty-three maternal deaths due to jaundice formed the study group.

**Findings:**

- There were a total of 12,723 deliveries, of which 223 ended in maternal deaths, giving a maternal mortality ratio of 1,752 per 100,000 live births. Jaundice accounted for 23 maternal deaths, or 10.4 percent of all maternal deaths, and 30 percent of all maternal deaths from indirect causes (there were 77 maternal deaths from indirect causes).

- There were 82 jaundice patients in all. Thus, the proportion of deaths due to jaundice was 28 percent (23/82).
- Fifteen of the 23 deaths occurred in women who were more than 28 weeks pregnant (9 deaths) or in the puerperium (6 deaths). Seven deaths were in women who were in the 21-27 week of gestation, and only one death occurred in a woman who was less than 20 weeks pregnant.
- 15/23 were admitted with jaundice while 8 were admitted without jaundice.
- 14/23 died after delivery of which 7 had stillbirths. Of the 14 who died, 7 had premature labour and 7 delivered near term. In 2/23 the outcome was abortion while 7/23 died undelivered.
- The majority of the patients died within 1-3 days after admission.
- 14/23 died due to hepatic coma, 3 each died due to postpartum haemorrhage and hepato-renal failure, 2 died due to sepsis and 1 due to embolism.

**Reviewer's note:**

Jaundice in pregnancy may be classified as:

- jaundice peculiar to pregnancy, caused by endotoxic shock, toxæmia of pregnancy, acute fatty liver, and so forth.
  - jaundice from causes unrelated to pregnancy: infective hepatitis, biliary cirrhosis, haemolytic jaundice.
- The present study does not specify the cause of jaundice in women who died.

**ABSTRACT NO. 11**

- Author(s)** : Sharma, Rajyashri, Abida Malik, Ashok Rattan, et al.
- Title** : Hepatitis B Virus Infection in Pregnant Women and Its Transmission to Infants
- Source** : Journal of Tropical Paediatrics, vol. 42(6), 1996, pp. 352-354
- Place of study** : Aligarh, Uttar Pradesh
- Period of study** : April 1987-- July 1988
- Aims and objectives** : To determine the percentage of pregnant women positive for markers of Hepatitis B; to determine the percentage of infants infected; and to document the magnitude of intra-uterine infection, in order to understand the magnitude of perinatal transmission and prevent it.
- Study conducted by** : Jawaharlal Nehru Medical College, Aligarh
- Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

A sample of 157 pregnant women was randomly selected from the hospital. Detailed histories were taken with emphasis on past history of jaundice, blood transfusions, and so forth. 5ml of maternal blood and cord blood were taken at time of delivery, and where possible, mothers' blood was taken in the 2nd and 3rd trimester. RPHA (Reverse Passive Haemagglutination) Test was done after serum was separated, testing for Hepatitis B antibodies (HbsAg). Those samples found positive by RPHA were further analysed for presence of other markers of the infection, namely, HBc and IgM anti-HBc by ELISA test, at the National Institute of Communicable Diseases, Delhi.

**Findings:**

- The overall prevalence of HBsAg in mothers over different trimesters, was 16/157 (10 percent) and in cord blood of 8 newborns (5 percent). Thus, the transplacental transmission was found in 8 out of the 16 (50 percent) HBsAg positive mothers.
- Anti-HBc was present in 12 out of 16 (75 percent) HBsAg positive mothers and seven (58 percent) neonates. IgM anti-HBc was present in 7/8 (88 percent) HBsAg positive neonates, suggesting active in-utero infection.
- 14/16 (88 percent) neonates born to HBsAg positive mothers were alive and healthy, one was stillborn and one had a congenital anomaly.

**ABSTRACT NO. 12**

- Author(s)** : Jain, D. C., R. K. Jain, R. L. Ichhpujani, and R. S. Sharma
- Title** : Prevalence of Hepatitis B Virus Infection in Pregnant Women
- Source** : Journal of Communicable Diseases, vol. 26(4), December 1994, pp. 233-234
- Place of study** : Alwar district, Rajasthan
- Period of study** : Not specified
- Aims and objectives** : To determine the prevalence rate of Hepatitis B virus infection among pregnant women attending antenatal clinics
- Study conducted by** : District hospital, Alwar, Rajasthan
- Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

The study included 252 pregnant women attending the antenatal clinic of the District Hospital, Alwar. Detailed histories and sera samples on filter paper were collected. The sera samples were analysed at the Microbiology division, National Institute for Communicable Diseases, Delhi, for serological markers of Hepatitis by RPHA test (Reverse Passive Haemagglutination).

**Findings:**

- Out of the 252 samples collected, 9 (3.6 percent) were found to be positive for HBsAg. The authors also state that other studies have quoted lower prevalence rates compared to their findings.

- Author(s)** : Singh, Neeru, M. M. Shukla, R. Srivastava, and V. P. Sharma
- Title** : Prevalence of Malaria among Pregnant and Non-Pregnant Women of District Jabalpur, Madhya Pradesh
- Source** : Indian Journal of Malariology, vol. 32(1), March 1995, pp. 6-13
- Place of study** : Jabalpur, Madhya Pradesh
- Period of study** : 1991
- Aims and objectives** : To elucidate the prevalence of malaria in pregnant women in an area of stable malaria, and define some of its effects in pregnancy.
- Study conducted by** : Malaria Research Centre, Jabalpur
- Nature of study** : Prospective, hospital-based

**Methodology:**

831 pregnant women were selected who attended the malaria clinic in the obstetrics and gynaecology department of the Government Medical College at Jabalpur. All were screened for malaria parasite by peripheral blood smear. 800 non-pregnant women of childbearing age from the same hospital who attended the emergency OPD during the same period were chosen to serve as a control. They were matched with the pregnant women for age, parity and geographical origin. History of fever, clinical findings, treatment and response were recorded.

**Findings:**

- There were 145 positive malaria cases among the 831 pregnant women (P.vivax=41, P.falciparum=104) and 79 among the 800 non-pregnant women (P.vivax=33, P.falciparum=46).
- Malaria prevalence was significantly higher in pregnant women (17.45 percent) as compared to non-pregnant women (9.8 percent),  $p < 0.01$ .
- Malaria prevalence was greater during the second trimester in both primigravidas (51/200) and multigravidas (94/631).
- 53.8 percent of the pregnant women with malaria were anaemic (Hb < 9g), and of these, 11.7 percent had a haemoglobin level below 5g. The corresponding figures for pregnant women without malaria were 26.7 percent and 5.7 percent, respectively.
- Among the 145 pregnant women with malaria, cerebral malaria occurred in 23 women of whom 16 died (case fatality=15 percent) while in non-pregnant women only 5 had cerebral malaria, of which 2 died. The case fatality rate in non-pregnant women was only 2.5 percent.
- All 16 pregnant women who died had P.falciparum infection. Of the remaining 88 (of 104 P.falciparum cases in pregnant women), 3 had miscarriages, 11 had intra-uterine foetal death and there was one case of neonatal death.
- Among pregnant women, the consequence of malaria was more severe for primigravidae than for multigravidae. Of 51 primigravidae with malaria, 14 (27 percent) had cerebral malaria, and 9 (17.6 percent) died. Seven (13.7 percent) had stillbirths, 3 miscarriages, and 1 neonatal death. Eleven women (21 percent) developed severe anaemia and 27 (53 percent), moderate anaemia.
- Of the 94 multigravidae testing positive for malaria, 9 (10 percent) developed cerebral malaria and 7 (7.5 percent) died. Another 7 had stillbirths, and 2 had miscarriages. Six women (6.4 percent) developed severe anaemia, and 51 (54 percent), moderate anaemia.



- Author(s)** : Nair, Lathika S., and A. S. Nair
- Title** : Effects of Malarial Infection on Pregnancy
- Source** : Indian Journal of Malariology, vol. 30, December 1993, pp. 207-214
- Place of study** : Surat, Gujarat
- Period of study** : 1987-88
- Aims and objectives** : To study the effects of malaria infection on the progress and outcome of pregnancy.
- Study conducted by** : Medical College Hospital, Surat
- Nature of study** : Prospective, hospital-based

**Methodology:**

Pregnant women who attended the antenatal clinic at the Medical College, Surat with a history of fever were considered for the study.

Blood smears (thick and thin) were collected from them in accordance with the standard prescribed under the National Malaria Eradication Programme and these were examined for malaria parasites. Of a total of 8,960 pregnant women who attended the antenatal clinic during the study period, blood smears of 322 with a history of fever were examined.

Detailed history of fever, urinary tract infections, respiratory tract infection, premature labour, hypertension in past pregnancy and parity were elicited and recorded in a prescribed proforma. A temperature chart was maintained. Obstetrical examination and examination of respiratory, cardiovascular and alimentary system were done and observations recorded. Signs of threatened abortion and pre-term labour were examined and foetal heart sounds were recorded. Routine laboratory investigations including complete haemogram, blood group, urinalysis and investigation for anaemia were done. In complicated cases, other investigations, such as blood urea, blood sugar, liver function tests and lumbar puncture, were also carried out.

**Findings:**

- From the 322 blood smears examined, 186 (57.7 percent) were found to be positive for malaria parasites. Out of this, 116 (62.4 percent) were of *P.falciparum* and 70 (37.6 percent) of *P.vivax* infection.
- Pregnant women were highly susceptible to the infection with a slide positivity rate (SPR) of 57.7 percent when compared to the general population (SPR, 18.6 percent).
- Among pregnant women with malaria, *P.falciparum* infection was predominant (62.4 percent).
- The infection rate was also found to be higher (SPR, 72.2 percent) in second trimester as compared to first (SPR 38 percent) and third trimesters (SPR 47 percent). Primigravidae seemed to be at a greater risk as the mean parasitaemia level was higher (39 percent) and the outcome poor as compared to multigravidae (29 percent).
- Infection in pregnancy caused severe maternal complications such as abortions (9.7 percent), premature labour (59.6 percent), and stillbirths (5.7 percent), which were higher in *P.falciparum* infection.
- 41.3 percent of the infected cases had less than 8g haemoglobin, as compared to 25 percent in the control group. 51.8 percent of the falciparum cases had Hb levels less than 8g, while the corresponding rates for vivax cases was 29.2 percent.
- Foetal outcome in the infected group was as follows: 21.2 percent resulted in normal, full-term deliveries (82.7 percent in control group), 59.6 percent were pre-term (control group: 15.4 percent), 9.7 percent ended in miscarriages (control group: 1.9 percent), 5.7 percent in stillbirths. There were four maternal deaths in the infected group.

- Those with falciparum infection had poorer foetal outcomes when compared to those with vivax infection. All four maternal deaths were in those infected with falciparum. Only 8.9 percent of falciparum infected had normal deliveries, 10.7 percent were miscarriages, 10.7 percent were stillbirths, and 62.6 percent were pre-term deliveries. The corresponding figures for the vivax infected were 35.4 percent, 8.4 percent, 0, and 56.2 percent, respectively.
- The mean birth weight of babies in the infected group was 600g less than those in the control group ( $p < 0.001$ ); and babies born to falciparum infected mothers had a mean weight 390g lower than babies born to vivax infected mothers ( $p < 0.05$ ).

## ABSTRACT NO. 15

- Author(s)** : Maitra, Nandita, Medha Joshi, and Maya Hazra
- Title** : Maternal Manifestations of Malaria in Pregnancy: A Review
- Source** : Journal of Maternal and Child Health, 1993, vol. 4(4), pp. 98-101
- Place of study** : Baroda, Gujarat
- Period of study** : 1990-91
- Aims and objectives** : To find out the incidence of malaria in pregnancy, rates of maternal morbidity and mortality, and the perinatal outcome.
- Study conducted by** : Sri Sayajirao General Hospital, Baroda
- Nature of study** : Prospective, hospital-based

### Methodology:

The sample consisted of a total of 445 patients with malaria in pregnancy attended by the hospital during the study period.

Tools of diagnosis of malaria were presence of asexual forms of *P.falciparum* or *P.vivax* on peripheral blood smear examination, parasite density, and response to antimalarial therapy.

### Findings:

- The incidence of *Plasmodium falciparum* infection was predominant (97.8 percent), and the remaining 2.2 percent were *P.vivax* infection.
- 260 (58.4 percent) had various degrees of anaemia, and of these, severe anaemia was seen in 59 women (22.7 percent).
- The overall foetal wastage was 31.08 percent. Fifty percent of those infected in the first trimester lost the pregnancy, 75 percent in the second trimester and about 18 percent in the third trimester. Foetal wastage was significantly higher among multiparae than among primiparae.

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**ABSTRACT NO. 16**

- Author(s)** : Chodankar, C. M., and K. P. Deodhar
- Title** : Malaria - Still a Master Killer?
- Source** : Journal of Association of Physicians of India. 403(4), pp. 261-262
- Place of study** : Bombay (Mumbai)
- Period of study** : 1988-93
- Aims and objectives** : The aim of this study was to analyse the cases dying from malaria since there was a major resurgence from 1990, and by the end of 1992, there were about 12,000 positive cases of malaria in Bombay.
- Study conducted by** : Lokmanya Tilak Municipal General Hospital, Sion, Bombay
- Nature of study** : Retrospective, hospital-based

**Methodology:**

One hundred and twenty-five cases of malaria autopsied during the period of 1988-93 were analysed in this study. Of these, 86 cases had been diagnosed clinically.

**Findings:**

- There were a total of 125 deaths from malaria during the study period. The male to female ratio of malaria deaths was 1.6:1 (M=81, F=44 from 0-90 dispersed in 10 year intervals).
- The maximum number of deaths were between the second and fourth decades of life: 14 between 11-20 years (M=9, F=5), 39 between 21-30 years (M=19, F=20) and 27 deaths between 31-40 years (M=16, F=11).
- 68 cases (54 percent) were cerebral malaria (39=M, 29=F).
- Twenty-two out of 36 females who died and were between 11 and 40 years old, were pregnant. Eighteen out of 22 pregnant women died of cerebral malaria.
- Out of a total of 86 diagnosed cases, peripheral blood smear for malarial parasite was done in 53 cases. Forty-one were positive and 12 were negative for malaria parasite. Out of 41 cases, 6 were positive for both *P.falciparum* and *P.vivax*, 2 for *P.vivax* and remaining 33 were positive for *P.falciparum*.
- Seventy-one of the 125 patients died within 24 hours after admission. Only 6 patients survived for more than one week.

**ABSTRACT NO. 17**

- Author(s)** : Bandhopadhyay, Lalita
- Title** : Lymphatic Filariasis and the Women of India
- Source** : Social Science and Medicine vol. 42(10), May 1996, pp. 1401-1410
- Place of study** : Rural and urban endemic areas of India

**Period of study** : 1987

**Aims and objectives** : To review the role of gender in lymphatic filariasis.

**Study conducted by** : Author

**Nature of study** : Qualitative community study

**Methodology:**

Eighty-eight women and 39 children were interviewed. A qualitative approach was used. Informal interviews were conducted, which enabled the individuals to talk about the disease and also relate how the disease had affected their lives. However, a checklist of questions was used. Interviews were conducted in the local language or in languages familiar to the individuals interviewed. In a few cases female health care personnel helped as interpreters.

A sample of convenience was used. The snowballing method was also used and it proved to be very useful in areas where there was low clinic attendance among women. The interviews were held at filaria control clinics, primary health centres, schools, mobile clinics (which were held in remote rural areas) and during home visits.

**Findings:**

- The socioeconomic status and the level of education of the women and children interviewed varied. The age group of the children ranged from 8 to 17 years. All of the 88 women had either acute or chronic filariasis (90 percent), with the latter characterized by persistent oedema and elephantiasis.
- *Knowledge about the disease:* Knowledge of women regarding the cause of the disease was low. Ninety-two percent of the women (who were interviewed) were unaware that mosquitoes transmitted the disease and were unaware about the prevention and therapeutic aspects of the disease. Seventy percent of the women had no idea about the cause of the disease and 22 percent of the women had misconceptions about the cause of the disease.
- Among the children, 50 percent of those who were interviewed were aware that the disease was mosquito-borne and had acquired this information from their schools or health camps (e.g., in Kerala). It appears that there is a correlation between literacy and knowledge of disease.
- *Impact on daily life:* The women said that during acute attacks (characterized by fever, lymphangitis, low-grade recurring oedema and inflammatory nodules) they were unable to work in the fields or continue their household work. They were also unable to perform child-care activities.
- Women with chronic filariasis were unable to perform their household chores and they depended on others such as friends or female family members for self-care and child-care. They considered themselves to be permanently disabled if unable to pursue their jobs. They blamed themselves for the loss. In many instances, family members reacted unfavourably towards these women for bringing an economic loss to the family.
- Socially, women suffered from low self-esteem and feared rejection by their families and husbands. A couple of women said that their genitalia had been affected by oedema. They were afraid to discuss it because of taboo, shame and embarrassment. Adolescents became withdrawn and were concerned about their future especially their marriage prospects.
- Of the patients attending the clinics, a majority were men and in some clinics only 30 percent of the patients were women. Among the children and adolescents who attended clinics, 80 percent were boys and only 20 percent were girls. Almost 80 percent of the cases among young girls were found during home visits. They did not attend clinics due to social constraints. In some areas one out of three men patients said they knew a female family member (either daughter, mother, sister, aunt or grandmother) with filariasis. 7 out of 8 women with nodules in their breasts or whose genitalia had been affected as a result of lymphatic filariasis, had never before visited a health care provider.
- In some communities, especially in the rural areas, the women and children did not know about control programs of lymphatic filariasis, while others such as in south Kerala were aware.
- According to the author, lymphatic filariasis does not receive attention since it is not a fatal disease and control programs have not targeted the needs of women.

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**ABSTRACT NO. 18**

- Author(s)** : Rajarathinam, Jolly, and Abel Rajarathinam
- Title** : A Report of Elephantiasis Cases in K.V. Kuppam Block
- Source** : RUHSA department, Christian Medical College, Vellore, unpublished report
- Place of study** : Vellore, Tamil Nadu
- Period of study** : 1989-92
- Aims and objectives** : To estimate the incidence and prevalence of elephantiasis in K. V. Kuppam block, and to find out the age of onset, duration and differences in manifestation of the disease.
- Study conducted by** : RUHSA department, Christian Medical College, Vellore
- Nature of study** : Community-based

**Methodology:**

In 1986 a complete enumeration of K. V. Kuppam block was done in which 39 elephantiasis cases were detected from 5 peripheral service units (PSUs). In 1989 a survey was conducted in these five PSUs. To update this, in 1992 a door-to-door survey was carried out. A separate pre-tested schedule was administered to the elephantiasis cases, for age of onset, swelling of legs, duration, affected part, as well as socio-economic variables.

Incidence = number of persons who had onset of swelling within previous year of interview. Low prevalence = < 1/1,000, medium = 1.1 to 4/1,000 and high > 4.1/1,000.

**Findings:**

- 381 of 110,287 persons suffered from chronic filarial disease seen as oedema of limbs, hydrocele and/or elephantiasis. The prevalence rate was 3.5/1000.
- Of the 381 persons affected, 118 were males and 263 were females. Prevalence among females was higher (4.8/1,000) as against 2.2/1,000 for males.
- Incidence in one year was 0.5/1,000 for females and 0.2/1,000 for males.
- Prevalence rates increased with age among both males and females. Highest prevalence rates were in ages 40-59 (5.2 M, 10.5 F), 60-69 (8.7 M, 15.9 F), 70-90 (6.0 M, 17.4 F).
- In 65 percent of those affected, the infection was of less than 10 years duration (2-5=22.6 percent, 6-10=32.5 percent). Mean age of onset was 39.6, ranging from 5 to 76 (SD 14.7). For male onset 38 (5-69) and females 41 (15-79).
- 76.6 percent had only one leg affected. 18.2 percent had both. Right leg was more affected than left, while 1.6 percent had right hand affected.

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**ABSTRACT NO. 19**

- Author(s)** : Vlassoff, Carol, Seemantinee Khot, and Shoba Rao
- Title** : Double Jeopardy: Women and Leprosy in India

- Source** : World Health Statistics Quarterly, vol. 49(2), 1996
- Place of study** : Bihar and Maharashtra
- Period of study** : Not specified
- Aims and objectives** : To study gender differences in the family responses to leprosy patients, and especially in the process of "dehabilitation"--leaving or being sent away from home because of leprosy.
- Study conducted by** : Authors
- Nature of study** : Community survey

**Methodology:**

A questionnaire survey of 2,495 respondents from Bihar and Maharashtra was conducted. The sample consisted of 934 non-dehabilitated patients (59 percent M, 41 percent F); 1,071 dehabilitated patients (63 percent M, 37 percent F) (i.e., who had to leave their family, community or job, or in most instances all of these) due to leprosy; 100 rehabilitated patients (55 percent M, 45 percent F); 300 members of the families of non-dehabilitated patients; and 90 health workers who were treating these patients.

In-depth interviews and 25 case studies (13 males and 12 females) supplemented the structured questionnaires. These samples were taken from registered leprosy cases rather than from a population survey.

**Findings:**

- Male (72 percent in non-dehabilitated compared to 15 percent female) household heads wielded sufficient power to maintain their position in the family despite their affliction.
- Negative reactions of the spouse such as fear, shame or blame prevailed in both the dehabilitated and non-dehabilitated groups, but these reactions were more frequent with respect to females than males.
- Women were isolated more often from all activities. They were restrained from their roles of cooking and caring for children. They felt redundant in the family and decided to leave. It was touch, more than anything, that women longed for, and the loss of this intimate female right symbolised isolation and rejection. 49 percent of males and 63 percent of females said that it was the fear of deformity that compelled them to leave.
- The qualitative data indicate that girls with leprosy found it more difficult to marry than boys, and that they made more compromises in the choice of partners. Children of leprosy patients also had difficulty marrying and again, girls seemed to suffer more.
- Those who reported that they were married were not necessarily with their original spouses, especially those in the leprosy colonies. More women than men reported that they were married. They did so as a security mechanism. All the women who had joined a new union had settled down with severely handicapped men.
- Women and health workers alike were unaware of the possible side-effects of other drugs. Their interpretation of the medicines received, in terms of perceived attributes, such as colour, size and smell, was also interesting.
- *Issues relating to improved leprosy control:*
  - 1) A possible entry point for detection of leprosy being that of skin disease.
  - 2) About perceptions of medicines: Smaller pills may be viewed as less effective, or be confused with contraceptive pills.
  - 3) Women should be informed about the risks of pregnancy when they have leprosy.
  - 4) Gender sensitisation for leprosy workers may be an important step to more effective disease control.

- Author(s)** : Rao S., V. Garole, S. Walawalkar, et al.
- Title** : Gender Differentials in the Social Impact of Leprosy
- Source** : Leprosy Review, 1996 vol. 67(3), pp. 190-199.
- Place of study** : Maharashtra
- Period of study** : Not specified
- Aims and objectives** : To highlight the role of gender on the impact of leprosy and demonstrate the potential for improved disease control.
- Study conducted by** : Not specified
- Nature of study** : Community survey

**Methodology:**

The study was carried out in four districts of Maharashtra, and included four urban and four tribal or rural sectors.

A stratified random sample of patients above the age of 18 were selected using age, sex and deformity status as the main strata from a complete list of current and released-from-treatment patients. The study sample size was 606.

A structured questionnaire was used for information on personal demographic variables, the details of disease status at detection, reactions of self, family members and others on detection, treatments sought, participation in social life, and so on. Each interview was carried out over 2-3 visits.

**Findings:**

- The total delay in initiating the formal treatment was as high as 32 months for new female patients compared to 24 months for male patients. This was chiefly due to the exclusive dependence of females on non-formal treatments, such as religious approaches or traditional healers, in the initial stage of the disease.
- Relatively more women (26 percent) than men (21 percent) tended to hide the disease. Women expressed the fear of social stigma or debilitation more than men (9 percent versus 6.4 percent).
- Upon starting the medical treatment, females were seen to be more compliant than males, but the benefits of regularity appeared to be outweighed by the initial delay in seeking treatment.
- Women were more isolated and restricted from all activities than men. Isolation from touching others was again a strong reaction that women (84 percent) faced, unlike men (17.7 percent).
- Isolation from vital domestic roles developed women's self-image of being a useless member of the family. Such restrictions clearly reduce the mobility of women and affect their treatment.
- *Suggestions for improving treatment and disease control:*
  - The educational component needs to be strengthened in order to reach all women in India.
  - The personal interaction of the leprosy worker with the patient while delivering the drugs is important.
  - More women need to be involved as leprosy workers and counsellors.
  - Short-term courses could be planned to train local traditional healers to identify early symptoms of the disease and to make subsequent referrals for early detection of women patients.

- Author(s)** : Pulimood, Susanne
- Title** : Survey of Disabilities and Deformities in Leprosy
- Source** : No. 923 MD Dermatology Br. XII, dissertation, M.G.R. Medical University, Chennai, March 1993
- Place of study** : Vellore, Tamil Nadu
- Period of study** : August 1991-August 1992
- Aims and objectives** : To study the prevalence of disabilities and deformities among leprosy patients attending a referral hospital; to compare the socio-demographic and disease characteristics of patients with and without disability.
- Study conducted by** : Christian Medical College, Vellore
- Nature of study** : Prospective, hospital-based

**Methodology:**

The sample consisted of all 225 newly registered leprosy patients during the study period. Of these, 163 (72.4 percent) were males and 62 (27.6 percent) were females. The socio-demographic details, history, physical findings and disability were recorded in a disabilities proforma. Skin smears were done for all patients. The patients were classified according to the Job and Chacko classification. When a clinical classification was not possible, histological examination of the skin or nerve and lepromin tests were done.

For grading disabilities, the WHO grading (Brandsma) with incorporation of muscle weakness as grade 2 disability was used. Disability Index (DI) was calculated using the Bechelli and Dominquez disability index 2. Modification was made by incorporating corneal anaesthesia as grade 1, muscle weakness as grade 2 and total facial palsy as grade 3 disability in calculation of DI.

**Findings:**

- The overall prevalence of disabilities and deformities in this study was 47.6 percent. The mean disability index (DI) was 1.37, comparable to other hospital based studies.
- The prevalence of disabilities of the hand was 29.7 percent, the foot 30.6 percent, eye 8.8 percent, and deformities involving the face 10.7 percent. The most common disabilities seen were plantar and palmar anaesthesia (57.9 percent and 57 percent, respectively). Ulnar nerve paralysis was the most common type of nerve paralysis (47.6 percent). Isolated median and radial nerve palsies, which are rare in leprosy, were seen in two and one patient, respectively. Paralytic disabilities were commonly seen in the borderline spectrum of the disease.
- Age above 40 years and engagement in regular manual labour were seen to be significantly associated with a higher prevalence of disabilities and deformities.
- Females had a lower DI than males (F - 38.7 percent, M - 50.9 percent).
- Women tended to suffer from the non-lepromatous type of leprosy.



- Author(s)** : Gilberts, C. A. M. Ericus, Marinus J. C. W. J. Arnold, Diederick E. Grobbee
- Title** : Hypertension and Determinants of Blood Pressure with Special Reference to Socioeconomic Status in a Rural South Indian Community
- Source** : Journal of Epidemiology and Community Health, vol. 48(3), 1994, pp. 258-261
- Place of study** : North Arcot district, Tamil Nadu
- Period of study** : Not specified
- Aims and objectives** : To establish the prevalence of hypertension and to assess determinants of blood pressure with special reference to socio-economic status in a rural South Indian community.
- Study conducted by** : Authors
- Nature of study** : Community survey with clinical examination

**Methodology:**

A rural south Indian community, K. V. Kuppam panchayat in north Arcot district of Tamil Nadu, was chosen because there were sufficient numbers of subjects belonging to the different socio-economic groups. The total population of the area was 3,500.

All those above 20 years and present at the time of the survey were asked to participate (mean age 39.5). The convenience sample had 1,027 (M-456, F-571). Out of 697 families, 487 were visited. In a door-to-door cross-sectional survey, two observers took blood pressure measurements. WHO criteria were used to determine hypertension: a systolic blood pressure  $\geq 160$ mmHg or diastolic blood pressure  $\geq 95$ mmHg, or both.

The researchers assessed the following determinants of hypertension: age, body weight, pulse rate, salt intake, meat intake and socio-economic status. Regarding salt and meat intake, the amount of salt bought by each household in a month was divided by the number of persons in that household, and meat intake in a week was also determined and the animal fat and protein intake calculated. The socio-economic status was ascertained according to land and livestock ownership, and the type of roof. Information was also obtained on occupation and number of employed persons in the household.

**Findings:**

- The prevalence of hypertension was 12.5 percent. Using multiple linear regression analysis, the most important positive determinants of high blood pressure were age, body weight and pulse rate. Salt and meat intake were not significantly associated with hypertension.
- The prevalence of hypertension and mean blood pressure was greater in men than in women until the 5th decade. The pattern was then reversed in subsequent age groups.
- A steeper curve in blood pressure was observed with advancing age in women. The authors believe that this may be due to gain in body weight or other changes after menopause.
- The prevalence of hypertension in the highest socio-economic group (22.5 percent) was more than twice that in the lower socio-economic group (8.8 percent). When adjusted for body weight, the mean (SEM) difference in systolic blood pressure between the highest and lowest socio-economic classes was 5.83 mmHg (1.63). The authors conclude that hypertension is not yet as important a health problem in rural southern India as it is in western societies. Those particularly at risk of hypertension, however, are the elderly and overweight people of high socio-economic class.

## ABSTRACT NO. 23

- Author(s)** : Jajoo, U. N., S. P. Kalantri, O. P. Gupta, et al.
- Title** : The Prevalence of Hypertension in Rural Population around Sevagram
- Source** : Journal of Association of Physicians of India, vol. 41(7), 1993, pp. 422-424
- Place of study** : Sevagram, Maharashtra
- Period of study** : Not specified
- Aims and objectives** : To assess the prevalence of hypertension in an asymptomatic rural population and to define its risk factors.
- Study conducted by** : Not specified
- Nature of study** : Community survey with clinical examination

### Methodology:

Twelve villages (total population 9,605) were screened within a 15 kilometre radius of Sevagram. The population was predominantly poor, more than 50 percent of the families survived on casual wage earnings that were Rs 5 for men and Rs 3 for women.

A house-to-house survey was conducted to register persons aged above 20 (total sample 4,045). A detailed history was taken, physical examination conducted and information on age, sex, occupation, physical activity and smoking habits.

The economic land-holding per family as per government of Maharashtra, was the cut-off to divide the population into 'poor' and 'not poor.' For those with cash income the poverty line as defined by the GOI was used as a dividing line for 'poor' and 'not poor' categories. Physical activity was graded (Dewan et al.) into heavy, medium and light activity. Bidi smokers were likewise divided into 'heavy, medium and light smokers.' The duration of smoking was noted. The ratio of weight to height squared (body mass index) was noted. Blood pressure was measured using an electronic instrument to avoid investigator bias. Twelve lead ECG was noted in subjects above 30 years.

### Findings:

- The prevalence of hypertension was very low in this rural community (34.12 per 1,000: M-28.92 and F-40.6 per 1,000). With increase in age, prevalence increased in both sexes.
- Moderate and light activity population was more prone to have hypertension (1.49 times in males and 1.69 times in females) compared to the heavy workers.
- Men and women in the 'not poor' group showed higher prevalence compared to 'poor' ( $p < 0.01$  for males,  $p < 0.05$  for females). A positive correlation between a higher body mass index and hypertension was noted.
- The chance of being hypertensive was 1.4 times higher among smokers when compared to non smokers.

## ABSTRACT NO. 24

- Author(s):** Gupta, Rajeev, and V. P. Gupta
- Title:** Meta-analysis of Coronary Heart Disease Prevalence in India

**Source** : Indian Heart Journal, May-June 1996, pp. 241-245

**Place of study** : All India

**Period of study** : 1960-95

**Aims and objectives** : To determine the time-trends in the last four decades in the prevalence of coronary heart disease in India including age and sex-specific changes.

**Study conducted by** : Authors

**Nature of study** : Review, meta-analysis

**Methodology:**

A meta-analysis was done of epidemiologic studies of coronary heart disease prevalence carried out in India. To qualify, the study had to be population-based using well-defined randomisation techniques. The diagnostic criteria for coronary heart disease were either a history of documented angina or infarction and previously diagnosed disease or affirmative response to the WHO Rose questionnaire, or electrocardiographic (ECG) findings. Fourteen such studies carried out between 1960 and 1995 were included in the analysis, eight in urban and six in rural areas. Data analysis for urban and rural studies was done separately.

Many studies did not report sex-specific prevalence rates. Three urban studies gave sex-specific information: Chandigarh (1968), Rohtak (1978) and Jaipur (1995). Four rural studies provided sex-specific information: Haryana (1974), Vidarbha (1988), Punjab (1994) and Rajasthan (1994).

**Findings:**

- The prevalence of coronary heart disease was 1.05 percent (Agra) in 1960, 9.67 percent (Delhi) in 1990, and as high as 12.65 percent in 1995 (Thiruvananthapuram) in urban populations. In rural areas the prevalence was 2.06 percent in 1974 (Haryana) and 3.53 percent in 1995 (Rajasthan).
- In rural areas the studies conducted at different points in time and in different locations showed a significant increase in the prevalence of coronary heart disease in men in the age groups 30-39 years (0 percent in 1974, 0.25 percent in 1988 and 2.63 percent in 1994) and 40-49 years (0.96 percent in 1974, 3.28 percent in 1994). In women in the 30-39 age group the prevalence was 0 percent in 1974, and 3.01 percent in 1994.
- In urban areas, the prevalence rate for men showed a steep increase in the 30-39 age group: from 2.43 percent in a 1968 study to 5.35 percent in a 1995 study. One study that included the 20-29 age group showed a significant prevalence also in this age group (3.42 percent). For urban women, prevalence rates recorded in the 30-39 age group are much higher than that for men: 6.37 percent in the 1968 study and 7.64 percent in the 1995 study. Further, the prevalence rate was 5.88 percent in the 20-29 age group.

**Reviewer's note:**

An attempt has been made, despite the limited number of studies over the four decade span, to do a meta-analysis. The authors put in a disclaimer that meta-analysis so widely distributed in time has its limitation but that such systematic reviews were necessary to synthesise information.

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**ABSTRACT NO. 25**

- Author(s)** : Bhatia, M. L.
- Title** : Prevalence of Coronary Heart Disease in India: A Contemporary View
- Source** : Indian Heart Journal, 1995, vol. 47, pp. 339-342
- Place of study** : Not applicable
- Period of study** : 1990-95
- Aims and objectives** : To review recent studies reporting prevalence of coronary heart disease and profile risk factors.
- Study conducted by** : Authors
- Nature of study** : Review of studies

**Methodology:**

Three population-based surveys on the prevalence of coronary heart disease have been reviewed. The studies included are: Chadda et al. 1990 (Delhi), Raman Kutty et al. 1993 (rural Thiruvananthapuram, Kerala) and Gupta et al. 1995 (Jaipur).

The population covered and inclusion criteria used in these studies are as follows:

<b>Study</b>	<b>Population</b>	<b>Criteria</b>
Delhi (1990)	Urban, 25-64 yrs, Men: 6,372, Women: 7,351	Clinical, past diagnosis and ECG
Kerala (1993)	Rural, > 25 yrs	Questionnaire H/O nitrate intake ECG
Jaipur (1995)	Urban, > 20 yrs, Men: 1,415, Women: 797	Questionnaire ECG, past diagnosis

**Findings:**

- The overall prevalence in the Delhi study was 96.7 per 1,000. Based on clinical history alone the prevalence was estimated as 31.9/1,000 (39.5/1,000 in men and 25.3/1,000 in women). ECG evidence of coronary heart disease in asymptomatic males was 56.3/1,000 and in females, 75.1/1,000.
- The estimated prevalence in the Trivandrum study was 74/1,000 persons with probable coronary heart disease, but with more specific and definitive criteria, the prevalence was higher in men than in women (139 versus 84).
- The overall prevalence in the Jaipur study was 76/1,000 (men 60/1,000 and women 104/1,000). More women (84/1,000), than men (35/1,000) had ECG evidence of coronary heart disease.
- Smoking, obesity, hypertension and diabetes were the major risk factors, with smoking topping the order in men, and obesity and hypertension in women.

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**ABSTRACT NO. 26**

- Author(s)** : Wander, G. S., S. B. Khurana, R. Gulati, et al.
- Title** : Epidemiology of Coronary Heart Disease in a Rural Punjab Population: Prevalence and Correlation with Various Risk Factors
- Source** : Indian Heart Journal, 1994, vol. 46(6), pp. 319-323
- Place of study** : Pohir, Rural Punjab
- Period of study** : Not specified
- Aims and objectives** : To find the prevalence of coronary heart disease and associated risk factors in a rural population.
- Study conducted by** : Dayanand Medical College, Ludhiana
- Nature of study** : Community survey with clinical examination

**Methodology:**

1,100 of 1,617 individuals who were above the age of 30 in a stable rural population of three villages were screened, giving a 68 percent coverage. The principal source of income in these villages was agriculture. A complete house-to-house survey was conducted and a detailed history with special emphasis on occupation, past events, level of physical activity, dietary habits and family deaths was noted. History of chest pain, height and weight measurements, blood pressure recording, cardiovascular examination and a twelve lead ECG were recorded and a blood sample drawn by a team of doctors.

**Findings:**

- Thirty four individuals were found to have probable coronary heart disease by Epstein's criteria, giving a prevalence rate of 30.9/1,000 population (3.1 percent). There was a higher prevalence in women (37.7/1,000) than in men (25.6/1,000 population).
- The prevalence of hypertension (16/34) was four times higher in the coronary heart disease group, whereas hyper cholesterolemia (7/34) was four times higher, and a positive family history(2/34) was fifty times more prevalent in the coronary heart disease group. The difference in prevalence of these risk factors was found to be highly significant in the two groups.
- There was no correlation between smoking, obesity and coronary heart disease in the present study.
- Knowledge in the general population about risk factors associated with coronary heart disease is poor. Of the 34 individuals with coronary heart disease, only 13 (38.2 percent) knew that they had coronary heart disease.

**ABSTRACT NO. 27**

- Author(s)** : Gopinath, N., S. L. Chadha, P. Jain, et al.
- Title** : An Epidemiological Study of Coronary Heart Disease in Different Ethnic Groups in Delhi Urban Population
- Source** : Journal of Association of Physicians of India, 1995, vol. 43(1), pp. 30-33

**Place of study** : Delhi  
**Period of study** : 1985-87  
**Aims and objectives** : To test the hypothesis that coronary heart disease is associated with race [for which they substitute here 'ethnic groups' and equating it with different religious groups in this instance] influenced by socio-economic status or genetic factor.  
**Study conducted by** : Sitaram Bhartia Institute of Science and Research, Delhi  
**Nature of study** : Community survey with clinical examination

**Methodology:**

The sample included 13,650 adults aged 25-64 years of different ethnic groups residing in Delhi. The sampling and sub-sampling (for ECG and blood exam) are not indicated (the paper states that this is published elsewhere).

Diagnostic criteria specified include: history of chest pain assessed by official English version of Rose Questionnaire; myocardial infarction; and ECG changes. The study also assessed hypertension, diabetes, body mass index, height, weight and blood lipids level.

Apart from this the subjects were divided into three groups based on nature of work (on type of physical activity). Other variables considered included smoking, consumption of alcohol, dietary patterns, educational levels and occupational groups.

**Findings:**

- The prevalence rate of coronary heart disease on clinical basis per 1,000 adults was the highest in Sikhs (47.3, M=64.3, F=33.6), lowest in Muslims (22.8, M=27.8, F=19), and almost equal for Hindus (31.8, M=39.4, F=25.2) and Christians (31.2, M=37.0, F=27.0).
- The prevalence rate of coronary heart disease on the basis of ECG was high in Muslims (89.5, M=94.8, F=85.2) and Sikhs (87.3, F=114.5, M=54.4), low in Christians (25.0, numbers too small for disaggregation by sex) and medium in Hindus (60.9; F=60.9, M=50.4).
- Thus, the prevalence rate of coronary heart disease based on clinical diagnosis was higher in males than in females in all communities, while silent coronary heart disease was higher in females than in males for Hindus and Sikhs, but not Muslims. Among Christians no males had silent coronary heart disease.
- In associating risk factors to prevalence rate among the communities, there is no definite pattern, though the authors say that the high prevalence for Sikhs may be attributed to higher prevalence of risk factors, such as positive family history, hypertension, diabetes and obesity compared to other communities.

**ABSTRACT NO. 28**

**Author(s)** : Raman, Kutty V., K. G. Balakrishnan, A. K. Jayashree, and Jessy Thomas  
**Title** : Prevalence of Coronary Heart Disease in the Rural Population of Thiruvananthapuram District, Kerala, India  
**Source** : International Journal of Cardiology, 1993, vol. 39, pp. 59-70

- Place of study** : Rural Thiruvananthapuram, Kerala
- Period of study** : March 1990 - September 1991
- Aims and objectives** : To obtain estimates of the prevalence of some indicators of coronary heart disease and some of its major risk factors in a rural population.
- Study conducted by** : Sree Chitra Thirunal Institute for Medical Sciences and Technology, Thiruvananthapuram
- Nature of study** : Community-based, survey with clinical examination

**Methodology:**

A field survey was done on a probability proportionate to size (PPS) of 500 households from five villages. The sample was of 1,253 individuals who were more than 25 years of age, of which 1,130 (90 percent) responded.

The survey instruments included a household questionnaire on Socio-Economic Status (SES), the Malayalam translation of the Rose questionnaire for individuals, and Twelve lead ECG, blood pressure measured using a mercury sphygmomanometer, and routine anthropometric measurements.

**Findings:**

The prevalence rates estimated differed according to the different criteria used:

- ECG changes suggestive of coronary heart disease were prevalent in 36/1,000. The prevalence was higher for males in the younger (25-34 years: M-12, F-4) and older (above 54 years: M-85, F-80 and M-115, F-89) ends of the age spectrum, and higher for females in the 35-54 age bracket (M-17, F-23 and M-32, F-44).
- Rose questionnaire revealed angina prevalence to be 48/1,000. In every age group between 25-54 years, prevalence of angina according to Rose questionnaire was higher among females than in males: 25-34 years: 12 for males and 26 for females; 35-44 years, 8 for males and 60 for females; 45-54 years: 53 for males and 89 for females. Male prevalence was higher in the 55-64 age group: 153/1,000 as compared to 89/1,000 for females. In the 65+ age group, again, the prevalence was higher for females: 76 as compared to 33/1,000 for males.
- Chest pain lasting more than 30 minutes was prevalent in 12/1,000.
- Definitive evidence of coronary heart disease, which includes ECG changes plus either (2) or (3) above, or documented evidence of the disease, was prevalent in 14/1,000. This was present only in those above 45 years of age, and was higher for males than for females in every age group above 45 years.
- Possible evidence of coronary heart disease: ECG changes, or identification of angina by Rose questionnaire, or prescription of nitrates was prevalent in 74/1,000. The prevalence was higher for females in the 25-54 years age bracket, and the trend reversed thereafter. The figures are as follows: 25-34 years: M-23, F-30; 35-44 years: M-25, F-83; 45-54 years: M-43, F-122; 55-64 years: M-153, F-100; and 65+: M-164, F-152.
- Prevalence of major risk factors were hypertension 179/1,000, smoking 219/1,000, diabetes 40/1,000 and obesity 55/1,000.
- The objective criteria indicate a lower prevalence of coronary heart disease in rural Thiruvananthapuram district when compared to studies from urban centres from India. The authors state that the difference in prevalence is probably attributable to the differences in lifestyles.

- Author(s)** : Stein, C. E., C. H. D. Fall, K. Kumaran, et al.
- Title** : Fetal Growth and Coronary Heart Disease in South India
- Source** : The Lancet, 1996, vol. 348, Nov. 9, pp.1269-1273
- Place of study** : Mysore, Karnataka
- Period of study** : 1993
- Aims and objectives** : To explore the association between size at birth and coronary heart disease in adulthood.
- Study conducted by** : Holdsworth Memorial Hospital, Mysore and Southampton General Hospital, Southampton, UK
- Nature of study** : Review of hospital records and household survey with clinical examination.

**Methodology:**

Since 1934 birthweight, length and head circumference have been recorded routinely for babies born in the hospital. The birth records also contain the parents' names, occupations, address, religion, caste and the mother's obstetric history.

8,883 babies were born alive in Holdsworth Memorial Hospital between 1934 and 1954. In 1993 people born in the hospital during this time were identified by carrying out a house-to-house census in a two square mile area around the hospital. Four fieldworkers visited 7,800 households. 1,311 people said that they had been born as singletons in hospital during the 20-year period. Birth records of 536 of them were identified. 517 (96 percent) of the 536 people agreed to take part in the study. Tools were the Rose questionnaire, the ECG and other investigations.

**Findings:**

- The age range of the 517 men and women was 38-60 years (mean 47 years).
- 25 (9 percent) men and 27 (11 percent) women had coronary heart disease. The prevalence of coronary heart disease rose with age, from 8 percent in men younger than 45 years to 10 percent in men aged 45 years and over; and from 6 percent to 13 percent in women of the same ages.
- Prevalence of coronary heart disease was higher in men and women who had low birthweights, short birth lengths or small head circumferences. Among participants aged 45 years and over, each of these trends was statistically significant.
- Mothers of lower weight had babies who were smaller in each birth measurement and, as adults, had a raised prevalence of coronary heart disease. The highest prevalence of coronary heart disease (20 percent) was in people who weighed 5.5 lb. or less at birth and whose mothers weighed less than 100 lb.
- This study therefore provides further evidence that the foetal growth failure that leads to coronary heart disease is a consequence of foetal undernutrition. Foetal growth depends on the supply of nutrients, and better growth may therefore require improvement in the nutrition and health of young women.



- Author(s)** : Singh, R. B., M. A. Niaz, A. S. Thakur, et al.
- Title** : Social Class and Coronary Artery Disease in an Urban Population of North India in the Indian Lifestyle and Heart Study
- Source** : International Journal of Cardiology, 1998, vol. 64(2), pp. 195-203
- Place of study** : Moradabad, Uttar Pradesh
- Period of study** : Not specified
- Aims and objectives** : To examine in detail in an urban population, whether social class based on various attributes of Socio-Economic Status (SES) is associated with coronary risk factors and coronary artery disease.
- Study conducted by** : Centre of Nutrition, Medical Hospital and Research Centre, Moradabad
- Nature of study** : Community-based, survey with clinical examination

**Methodology:**

A random selection of 20 out of 180 streets considered urban in Moradabad City was taken and 1,806 adults aged 25-64 years (904 men and 902 women) were invited to participate in this study. Survey methods included physician and dietician-administered questionnaire, physical examination and ECG.

Coronary artery disease was diagnosed based on clinical diagnosis of myocardial infarction or angina pectoris according to criteria of cardiovascular health study (published elsewhere by the authors). All subjects were divided into social classes 1-5 based on attributes of education, occupation, per capita income, housing condition and consumer durables and other family assets. Social classes 1, 2 and 3 were mainly high and middle income groups and 3 and 4 were low-income groups.

**Findings:**

- The overall prevalence of coronary artery disease was 9 percent (n=163) with a prevalence of 11 percent (n=100) in males and 7 percent (n=63) in females.
- Multivariate logistic regression analysis after adjustment of age revealed that social class was positively associated with coronary artery disease.
- The sex and class-specific data for prevalence of CAD are presented below:

Social Class	Male (N=904)	Female (N=902)
1	53 (17.6%)	34 (11.7%)
2	21 (11.2%)	14 (7.6%)
3	13 (7.3%)	7 (4.2%)
4	10 (6.2%)	6 (3.3%)
5	3 (3.7%)	2 (2.4%)
P value	< .001	< .001

- Overall, social classes 1, 2 and 3 have a higher prevalence of coronary artery disease as well as coronary risk factors such as hypercholesterolemia, hypertension, diabetes mellitus and sedentary lifestyles in both sexes.
- High-density lipoprotein cholesterol was higher and tobacco consumption, significantly lower among females than in males. However, overweight, obesity and sedentary lifestyle were significantly higher in females. About one-third of the males and half the females had a body mass index greater than 23 kg/m<sup>2</sup>.

- As social class became higher, so did the trend of prevalence of hypercholesterolemia, hypertension, diabetes mellitus and sedentary lifestyle, in both males and females. Smoking, however, was slightly greater in lower social classes.

### ABSTRACT NO. 31

- Author(s)** : Yavagal, S. T., R. Rangaran, Prabhavathi
- Title** : Clinical Profile of Acute Myocardial Infarction in Women
- Source** : Journal of the Indian Medical Association, 1994, vol. 92(9), pp. 283-284
- Place of study** : Bangalore, Karnataka
- Period of study** : Not specified
- Aims and objectives** : To study the clinical profile of myocardial infarction admitted to a referral facility.
- Study conducted by** : Sri Jayadeva Institute of Cardiology, Bangalore
- Nature of study** : Prospective, hospital-based, clinical

#### Methodology:

Three hundred and fifty women admitted to the hospital for acute myocardial infarction constituted the study population, which was 17 percent of total cases of acute myocardial infarction admitted to the hospital. The male to female ratio of total admissions was 5:1.

History, clinical features, laboratory findings, possible risk factors involved and the prognosis of the cases were noted. All patients were continuously monitored in ICCU during the first three days. The patients were studied during their hospital stay, which was of 10 days duration on average.

#### Findings:

- The youngest patient was 21 years and the oldest was 90 years. The highest number of patients was in the age group of 51-60 years (35.4 percent), followed by 20 percent in the 41-50 years age group.
- Most patients (94 percent) presented with moderate to severe retrosternal chest pain, the duration of which varied from 15 minutes to 3 days.
- History of previous illnesses was noted in 73 percent of patients. Most infarctions (80 percent) occurred in postmenopausal period. The common risk factors for acute myocardial infarction were hypertension 49 percent, diabetes (fasting blood sugar level is more than 120mg) 34 percent, and obesity (weight above 15 percent of the ideal weight) 18 percent.
- Of 27 women below the age of 40 years, the serum cholesterol level was more than 250mg% in 8, and between 210 and 250mg% in 7 women.
- Mortality was high (18 percent), the most common cause being cardiogenic shock.

**Author(s)** : Reg. No. 236 MD, General Medicine, Madras Medical College, Chennai

**Title** : Study of Acute Myocardial Infarction in Women

**Source** : MD Dissertation, MGR Medical University, March 1997

**Place of study** : Chennai, Tamil Nadu

**Period of study** : January 1995 - May 1996

**Aims and objectives** : To study the clinical profile, management and outcome of acute myocardial infarction in women; to compare risk factors, treatment modalities offered and outcome of acute myocardial infarction between men and women; to compare risk factors for acute myocardial infarction between pre-menopausal and post-menopausal women.

**Study conducted by** : Madras Medical College, Chennai

**Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

The study included all acute myocardial infarction patients admitted to the coronary care unit of the Government General Hospital Chennai, during the study period. All patients satisfying diagnosis of acute myocardial infarction based on: (a) history of chest pain, and b) ECG criteria for myocardial infarction were included. Patients were classified by sex, and female patients were classified by menopausal status. Women were evaluated in detail. Chest pain, radiation of pain, nausea, sweating, giddiness and time lag in reaching hospital after development of symptoms, were noted.

Risk factors such as diabetes, hypertension, hypercholesterolemia, obesity, myxoedema and smoking were evaluated and recorded. Serial ECG and routine bio-chemical investigations were done. Treatment modalities offered, course of illness during hospitalisation, and mortality if any were also recorded.

**Findings:**

- 314 patients were admitted during the study period. Of these, 254 were men and 60 were women: 14 pre-menopausal (23.3 percent) and 46 post-menopausal (76.7 percent).
- There was no difference in symptomatology between pre- and post-menopausal women.
- Chest pain was the most common symptom present in all patients. Myocardial infarction was found to be more common in men than in women (4.2:1). Among women, acute myocardial infarction was less common in pre- than in post-menopausal women.
- The prevalence of risk factors such as diabetes, systemic hypertension, hypercholesterolemia and obesity was high among women compared to men and higher in pre- than post-menopausal women.

Risk factors	M(%)	W(%)
Diabetes	26.4	31.7
Sys. Hypertension	19.3	28.3
Hypercholesterolemia	15.7	40.0
Obesity	3.5	21.7
No risk factor	24.0	3.3
LVF	40.6	50.0
Thrombolysis	34.3	18.3
Death	11.0	13.3

- Mortality rates were higher for women than for men, and highest for post-menopausal women.

	<b>Total</b>	<b>Mortality</b>	<b>%</b>
Men	254	28	11
Pre-menopausal Women	14	2	14.3
Post-menopausal Women	46	6	13

### ABSTRACT NO. 33

- Author** : Register No. 273, M.D. Br. I, General Medicine, Stanley Medical College, Chennai
- Title** : A Study of Ischaemic Heart Disease in Perimenopausal women: A Clinical and Biochemical Evaluation
- Source** : MD Dissertation, MGR Medical University, Chennai, September 1997
- Place of study** : Chennai, Tamil Nadu
- Period of study** : 1995-96
- Aims and objectives** : To clinically and biochemically evaluate perimenopausal diabetic women with and without ischemic heart disease, and to compare and contrast the findings in these two groups.
- Study conducted by** : Stanley Medical College, Chennai
- Nature of study** : Prospective, hospital-based, clinical

#### Methodology:

Forty women patients aged between 46-56 years and suffering from Non-Insulin Dependent Diabetes Mellitus (N-insulin dependent diabetes mellitus) were selected from the Diabetes Clinic of Government Stanley Hospital, Chennai.

Twenty-two patients were found to have ischaemic heart disease on basis of symptoms, history of documented evidence of hospitalisation or abnormal resting ECG. Another 18 were free of ischaemic heart disease and were age-matched controls. The average age of ischaemic heart disease patients = 52 and of controls = 45.7. Duration of diabetes varied from 6 to 19 years.

Detailed history was taken of co-existing diseases, ischaemic heart disease, parity, age at menopause, family history of diabetes and ischaemic heart disease, and medication. Physical exam was done and 12 lead ECG recorded. Blood sugar was measured, and blood urea calculated. Urine protein was detected, and lipid profile and glycosylated haemoglobin evaluation done.

#### Findings:

- Perimenopausal diabetic women with ischaemic heart disease tend to exhibit the following differences vis-a-vis age-matched controls who have diabetes but not ischaemic heart disease:
  - a) A longer duration of diabetes.
  - b) A more androgenized pattern of body fat distribution with a higher hip/waist ratio.
  - c) Higher average systolic blood pressure value.

- d) Abnormal findings on examination of optic fundus.
- e) Overall poor glycaemic control as evidenced by higher average blood and urine sugar levels, and haemoglobin A1 values.
- f) A lipid profile with higher total cholesterol and triglyceride levels and lower high density lipoprotein (HDL) levels.
- No significant differences were observed between the two groups with regard to parity, age at menopause, family history, medications, renal function parameters, albuminuria or absolute obesity (BMI).
- A careful evaluation of perimenopausal diabetic women using easily assessed clinical and biochemical parameters should help identify those at increased risk of ischaemic heart disease

**Reviewer's note:**

The combination of diabetes and ischaemic heart disease is not uncommon in perimenopausal women. Diabetes frequently causes ischaemic heart disease to develop in women approximately 20 years before the average age for ischaemic heart disease in non-diabetic women.

**ABSTRACT NO. 34**

- Author(s)** : Ramankutty, V., Aleyamma Joseph, and C. R. Soman
- Title** : High Prevalence of Type 2 Diabetes in an Urban Settlement in Kerala, India
- Place of study** : Thiruvananthapuram, Kerala
- Period of study** : Not specified
- Aims and objectives** : To estimate the prevalence of diabetes among persons 20 years or older in an urban housing colony and study the management of the disease in subjects affected.
- Study conducted by** : Health Action by People, Thiruvananthapuram
- Nature of study** : Community survey with clinical and laboratory examinations

**Methodology:**

The sample consisted of all willing residents aged 20 years and over, from an urban housing settlement in Thiruvananthapuram, the capital of Kerala. Fasting plasma glucose, serum triglycerides, cholesterol, height, weight and blood pressure were measured, and a detailed questionnaire administered to ascertain previous diabetic status and management.

**Findings:**

- Overall prevalence of type 2 diabetes was 16.3 percent. In the 30-64 age group, age standardised prevalence was 13.7 percent. These represent very high prevalence rates when compared to other Indian urban studies.
- Greater prevalence was associated with advancing age, body mass index above 24.99, sedentary habits, serum total cholesterol>239, serum triglycerides>149, hypertension and smoking.
- Gender differences in prevalence were negligible.

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**ABSTRACT NO. 35**

- Author(s)** : Gupta, A.
- Title** : Osteoporosis in India: The Nutritional Hypothesis
- Source** : The National Medical Journal of India, 1996, vol. 9(6), 1996 pp. 268-274
- Place of study** : All India
- Period of study** : Not applicable
- Aims and objectives** : A review of studies to examine the hypothesis that calcium deficiency and subclinical deficiency of vitamin D are important causative factors associated with osteoporosis in India.
- Study conducted by** : Author
- Nature of study** : Review and summary of published studies

**Methodology:**

Indian studies starting from the 1960s were included in this review.

**Findings:**

- India seems to have the highest reported prevalence of osteoporosis in the world, perhaps equaled only by Japan.
- Osteoporosis occurs in both males and females in India, and manifests itself as hip fractures at an early age, with males outnumbering females. Osteoporotic fractures usually occur 10-20 years earlier in Indian men and women, compared to Caucasians in the West.
- Since the 'oestrogen' factor would not explain the high rate of prevalence of osteoporosis in Indian men, the nutrition hypothesis needs to be examined more closely.
- Dietary deficiency of calcium, beginning early in life, leading to a lower peak bone mass, may be responsible for early occurrence of osteoporosis. Subclinical deficiency of vitamin D leading to malabsorption of calcium may be another factor.

**ABSTRACT NO. 36**

- Author** : Reg. No. 0118, M.D. Br. I General Medicine, Stanley Medical College, Chennai
- Title** : A Study on Osteoporosis in Young Diabetics with Special Reference to Insulin Dependent Diabetes Mellitus
- Source** : MD Dissertation, MGR Medical University Chennai, 1990
- Place of study** : Chennai, Tamil Nadu
- Period of study** : 1989-90

**Aims and objectives** : To study the incidence of osteoporosis and skeletal fracture in cases of young diabetics with insulin dependent diabetes mellitus; and to study the association between severity, age of onset and duration of diabetes with osteoporosis.

**Study conducted by** : Stanley Medical College, Chennai

**Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

Twenty five patients with juvenile onset of diabetes of various duration and of both sexes attending the department of diabetology, metabolism and yoga of Government Stanley Hospital, Chennai were randomly selected. The degree of control of diabetes was graded as mild (<200 mg/dl), moderate (200-300 mg/dl) and severe (>300 mg/dl). Other biochemical parameters to exclude renal pathology like blood urea, serum creatinine level were also detected. Biochemical parameters like serum calcium, inorganic phosphorus, albumin, total protein, and so forth were estimated.

Plain x-rays of five regions were taken in each patient. A detailed history including symptomatology, age of onset, duration, family history, dietary habit, number of episodes of ketoacidosis, prolonged immobilisation, other associated diseases, and drug intake were all noted.

**Findings:**

- The majority of the patients (68 percent) were in poor glycemic control and also grossly underweight. The percentage of osteoporotic changes in insulin dependent diabetes patients below 20 years was higher (25 percent) than those in the 21-30 years group (23.1 percent).
- Osteoporotic changes were higher in males, with an incidence of 29.4 percent as compared to 12.5 percent incidence in females.
- Normal renal protection and bone biochemical parameter excluded hyperparathyroidism as a cause of osteopenia. There was no correlation between duration and severity of diabetes and osteoporotic changes or degree of bone loss and also bone calcium content. The exact aetiology of significant osteopenia in young diabetic patients has not yet been established. No definite preventive means are available. Quality of metabolic control is a major factor in determining mineral content in insulin-treated patients. Therefore, striving for the best possible control of diabetes remains the only way for the present.

**ABSTRACT NO. 37**

**Author(s)** : Venkata, Rama Prasad P.

**Title** : A Study of Cancer Patients in Greater Bombay: A Survival Analysis

**Source** : M. Phil. in Population Studies, International Institute of Population Sciences, 1994, Mumbai

**Place of study** : Bombay (Mumbai), Maharashtra

**Period of study** : 1982-91

**Aims and objectives** : To study the trends in incidence and mortality from cancer by sex in Greater Bombay for the period 1982-91; to examine differentials in cancer incidence, survival rates and mortality according to major sites of cancer by sex and socio-demographic variables.

**Study conducted by** : International Institute of Population Sciences, Bombay

**Nature of study** : Analysis of secondary data from the Cancer Registry

**Methodology:**

The simple decrement and multiple decrement life table techniques were applied to estimate the survival probabilities of cancer patients for different groups. The proportional hazards model (seen as a multivariate life technique where risk is dependent on various characteristics of the individual, besides time) was used to assess the association of socio-economic, biological and treatment factors on survival of cancer patients

**Findings:**

- The total number of cancer cases during the study period was 7,363 (M-3,804, F-3,559). The incidence, mortality and case-fatality rates of males were more than of females during the period 1982-91.
- Among all the leading sites of cancer incidence, lung cancer ranked first followed by oesophagus for males, whereas the corresponding ranks for females were breast and cervical cancer.
- Among the religious groups, Parsi males and females had reported a higher crude incidence rate compared to other groups. Unlike other groups, the leading site of cancer incidence in Parsi males was stomach. For Parsi females, breast cancer was the leading site, as in the case of all other groups.
- There were differences in leading sites for cancer incidence by marital status. Among unmarried males, lymphatic cancer incidence ranked first, whereas the corresponding rank for married males with spouse was lung cancer and for married males without spouse it was hypopharynx. On the other hand, breast cancer occupied first rank among unmarried and married women with spouse, whereas for married women without spouse cervix ranked first as the site of cancer.
- The relative risks of cancer incidence and mortality rates increased with age in both sexes. Only 3.7 percent of cancer incidence cases and 3.2 percent of cancer deaths are recorded under the age of 15, whereas this age group consists of 33.6 percent of the general population. On the other hand, 39 percent of registered cases and 50 percent of total cancer deaths occurred in persons 60 years and above, which is only 5 percent of the general population.
- Females had higher survival chances compared to males without respect to months of exposure for almost all cancers. A more or less similar picture was observed for individual groups, except group I for males and group V for females. By and large, lower risks of survival were noticed among married with and without spouse as compared to unmarried females for all groups (except III).
- The relative risk of cancer incidence and mortality rates for Parsis (both sexes) was higher than for Hindus, Muslims and Christians taken together.

**ABSTRACT NO. 38**

**Author(s)** : Murali, Dhar

**Title** : Leading Causes of Death and Leading Sites of Cancer, Greater Bombay, 1984

**Source** : M. Phil Dissertation, International Institute of Population Sciences, Bombay, 1991

**Place of study** : Bombay (Mumbai), Maharashtra

**Period of study** : 1984



**Aims and objectives** : To present a demographic and epidemiological profile of Greater Bombay with main emphasis on cancer prevalence; to classify leading sites of cancer according to Person Years of Life Lost (PYLL) and Work Years of Life Lost (WYLL).

**Study conducted by** : International Institute of Population Sciences, Bombay

**Nature of study** : Analysis of secondary data from the Cancer registry

**Methodology:**

Data on the age distribution of deaths in Greater Bombay due to various causes and different sites of cancer were analysed. The concepts of PYLL and WYLL were reviewed and methodological modifications made in their calculation for application to the data set under consideration.

Age specific work participation rates for Greater Bombay and age distribution of population from the *Annual Report of the Executive Health Officer of Bombay Municipal Corporation* and the publication of Indian Cancer Society, "Cancer Morbidity and Mortality in 1984," were used.

**Findings:**

- Cancer was one of the first ten leading causes of death in Greater Bombay in 1984. According to the total PYLL, it was the eighth leading cause of death in males and sixth in females.
- Lung was the leading site of cancer incidence followed by oesophagus, hypopharynx, larynx and stomach in males. In females, breast was the leading site, followed by cervix, oesophagus, ovary and stomach. This remained more or less the same in both the sexes when frequency of deaths was compared.
- Based on total PYLL, lung remained the leading site of cancer in males followed by oesophagus, stomach, larynx and tongue. In females breast remained the leading site followed by cervix, oesophagus, ovary and stomach.
- When ranked according to WYLL, tongue, oesophagus, stomach larynx and lung were the top five leading sites of cancer in males and breast, cervix, ovary, oesophagus and stomach in females.

**ABSTRACT NO. 39**

**Author(s)** : Rao, D. N., P. B. Desai, and B. Ganesh

**Title** : Epidemiological Observations on Cancer of the Oesophagus: A Review of Indian Studies

**Source** : Indian Journal of Cancer, 1996, vol. 33(2), pp. 55-75

**Aims and objectives** : To summarise, based on studies from India, the epidemiology of cancer of the oesophagus, its incidence and mortality, time trends, high-risk groups, and associated tobacco habits and dietary factors.

**Study conducted by** : Tata Memorial Hospital, Bombay

**Nature of study** : Review

**Methodology:**

Data from the Hospital Cancer Registries of the Tata Memorial Hospital, Bombay, the National Cancer Registry Report of the Indian Council for Medical Research for four other hospitals and the Hospital Cancer Registry of the Assam Medical College, Dibrugarh, were used.

**Findings:**

- The clinical epidemiology shows that the disease is known to occur generally among the elderly, and predominantly among males compared to females, though in areas of high incidence the rates in females may exceed those in males.
- Oesophageal cancer as a proportion of all cancers seen in three cancer hospitals was 6.2 percent (Madras), 6.3 percent (Bombay) and 8.5 percent (Bangalore), and in three general hospitals was 3.7 percent (Trivandrum), 5.1 percent (Chandigarh) and 15.8 percent (Dibrugarh).
- In Maharashtra, an attempt was made based on hospital data and three population-based registries to assess the magnitude of the problem. The incidence rates for males were higher than females (M-14.5, F-12.4 per 100,000 in Pune 1978-82, and M-14.3, F-9.1 per 100,000 in Nagpur in 1980-82).
- One of the earliest reports on incidence (survey of cancer cases in different railway zones) states that a high incidence of oesophageal cancer was seen in the western zone and stomach cancer in the southern zone. With the availability of incidence data for metropolitan cities, the data showed that the incidence rates in males/females varied from 14.5/12.4 per 100,000 in Pune to 7.6/6.3 in Madras to 9.9/5.6 in Ahmedabad.
- Data for Bombay on time trends show that the age adjusted incidence rate in males in 1964-72 was 13.7 per 100,000 and it decreased to 10.3 per 100,000 persons over a period of 25 years. The decreasing trend was almost similar in females.
- Some of the known associated factors with cancer of the oesophagus include tobacco use, alcohol consumption and diet. A study of 3,255 cancer patients seen during the period 1963-71 and 5,266 hospital controls (Paymaster et al. 1973) assessed the risk factors in both sexes according to major segments of the oesophagus. The relative risk for males chewing pan with tobacco was 2.2, and without tobacco, 1.6. For females, the comparable figures were 2.7 and 1.8, which indicates an enhanced risk for women pan chewers. Similarly, the relative risk for male smokers (who don't chew pan) of bidi was 2.2, and for females, it was 3.4. The differences were significant,  $p < .001$ .
- Regarding diet, the intake of very spicy food (increased use of red chilli powder in the diet) was found to enhance the risk two-fold compared to nil/moderate use of spices in food. Intake of pulses, vegetables and fruit showed a protective effect. Intake of flesh food (except fish) did not show any positive effect.

**ABSTRACT NO. 40**

- Author(s)** : Gawande, Vaishali, S. N. Wahab, S. P. Zodpey, et al.
- Title** : Parity as a Risk Factor for Cancer Cervix
- Source** : Indian Journal of Medical Sciences, 1997, pp. 147-150
- Place of study** : Nagpur, Maharashtra
- Period of study** : 1995-96
- Aims and objectives** : To examine the relationship between multiparity and cancer of the cervix.

**Study conducted by** : Government Medical College, Nagpur

**Nature of study** : Prospective, hospital-based

**Methodology:**

The cases included 230 women with cancer of the cervix confirmed by histopathology. An equal number of women admitted to hospital for conditions other than gynaecological cancer and having a Pap smear within normal limits (Bethesda system) were taken as controls. The controls were group matched for age groups.

Interview technique was used as a tool of data collection, which included relevant details of risk factors. Multiparity was defined as having more than three children.

**Findings:**

- 170 (73.8 percent) cases were multiparous, while 124 (53.9 percent) controls were multiparous. The mean parity among cases was 4.8, and mean parity among controls was 3.8. The difference was statistically significant with a  $\chi^2$  value of 19.94 and p value for chi square of 0.000008.

ABSTRACT NO. 41

**Author(s)** : Prabhakar, A. K., and Geeta R. Menon

**Title** : Age at Marriage and Cervical Cancer Incidence

**Source** : Indian Journal of Cancer, 1995, vol. 32, pp. 63-68

**Place of study** : Bangalore, Bombay and Madras

**Period of study** : 1985

**Aims and objectives** : To discuss the reduction in the incidence rate of cancer of the uterine cervix as a result of change in the distribution of the proportion of women married in the specific age group 15-19 years during the past decades.

**Study conducted by** : Indian Council for Medical Research, New Delhi

**Nature of study** : Analysis of secondary data

**Methodology:**

Data used included age distribution of female population estimated from the Census and Sample Registration System, and the age-specific incidence rate of cervical cancer available from the data of National Cancer Registry Programme for the year 1985 for the three cities, Bangalore, Bombay and Madras. The proportion of women married in the 15-19 age group for each cohort was also estimated from the Census.

The relative risk of developing cervical cancer in women marrying below the age of 17 years was assumed to be 2.0 years. The number of observed cases ( $O_i$ ) of cervical cancer attributable to age at marriage below 17 years was estimated for each of the quinquennial age groups worked out by calculations. The reduction in the number of cervical cancer cases as a result of increase in age at marriage was obtained by taking the difference between the expected number of cervical cancer cases and the observed number of cervical cancer cases.

In India during the last eight decades, the age at marriage in women has shown an increasing trend from as low as 14 years in 1901 to 18 years in 1981. Thus, the estimates for such reduction in incidence rate have to be worked out by assuming a constant age at marriage or constant proportion of women marrying below 17 years of age in the previous decades. The proportion ever married in the age group 15-19 years provides an estimate of women marrying below 17 years of age to specific birth cohort born 15-20 years back. The proportion married below 17 years of age remained constant around 88 percent up to 1941. This proportion has been utilised for estimating the expected number of cervical cancer cases in each age group.

#### Findings:

- The expected number of cervical cancer cases attributable to early age at marriage was 33,035. The observed number was 30,939. The reduction in the number of cervical cancer cases as a result of increase in age at marriage was 2,097. Both the expected and observed crude cervical cancer incidence rates were almost similar indicating that the reduction in cancer incidence attributable to increase in age at marriage is marginal.
- It can be postulated from this finding that if the age of marriage is adopted as an alternative strategy for control of cervical cancer, it will require a very long period to observe a moderate change in the incidence rate of cervical cancer. The authors emphasise secondary prevention by adopting Pap smear screening for detection of early cancerous lesions and effective management of these cases.

### ABSTRACT NO. 42

- Author(s)** : Arora, Raksha Eliamma, Rani Reddy, et al.
- Title** : Case Control Study of Male Risk Factors for Cervical Cancer in Developing Country
- Source** : Journal of Obstetrics and Gynaecology of India, 1996, pp. 766-769
- Place of study** : Pondicherry, South India
- Period of study** : May 1992 - August 1993
- Aims and objectives** : To investigate the role of male risk factors in the causation of cervical cancer.
- Study conducted by** : Jawaharlal Nehru Institute of Post Graduate Medical Education and Research, Pondicherry
- Nature of study** : Prospective, hospital-based, case control study

#### Methodology:

The study group consisted of 54 women aged 20-50 years with a histologically confirmed cervical carcinoma and their husbands. The control group had 54 women with no cervical cancer, matched for age, and their husbands. All the women had single lifetime partners.

The husbands of the women were interviewed personally and physically examined for genital lesions. A structured proforma was also filled in. Details collected included age, educational status of the husband, occupation, addictions, number of marriages, sexual partners, history of genital lesions, use of condoms for long periods, mobility away from home and unstable sexual relationship or broken marriage.

**Findings:**

- Mean age of the women was 38.75 years (25-48 years) and that of the men was 47.35 years (35-63 years).
- The mean age at marriage and first coitus in the females was 17.25 years (study group) and 18.35 years (control group).
- 28/54 (51.85 percent) case husbands had multiple sex partners compared to 9/54 (16.6 percent) of the controls.
- 46/54 (85.1 percent) case husbands were with poor genital hygiene compared to 14/54 (25.9 percent) in the controls.
- 15/54 (27.7 percent) case husbands had genital lesions in the form of ulcers, penile scars, leukoplakia and hydroceles as against 5/54 (9.25 percent) in the control group.
- Condoms were not used by the majority of the case husbands (92.58 percent) as compared to 81.4 percent in the control group.

**ABSTRACT NO. 43**

- Author(s)** : Agarwal, Shyman S., Ashok Sehgal, Sarita Sardana, et al.
- Title** : Role of Male Behaviour in Cervical Carcinogenesis among Women with One Lifetime Sexual Partner
- Source** : Cancer, 1993, vol. 72(5), pp. 1666-1669
- Place of study** : New Delhi, North India
- Period of study** : 1976-87
- Aims and objectives** : To investigate the role of male sexual behaviour in cervical cancer among women.
- Study conducted by** : Maulana Azad Medical College, New Delhi
- Nature of study** : Prospective, hospital-based, case control

**Methodology:**

A cohort of 1,107 women with different grades of dysplasia and 1,070 age-matched and parity-matched controls with normal or inflammatory Pap smear were recruited to the study from women attending gynaecology outpatient departments in six major hospitals. The study was initiated in 1976. In 1986, the 1,107 were screened again, and 174 were found to have persistent dysplasia. Of these, 137 reported having sex only with their husbands. These women and their husbands constituted the study sample. A control group of 174 women and their partners was also selected from the original control group. All male partners (husbands) completed a questionnaire that included details regarding sexual behavior, contraceptive practices, reproductive history, marital history, practices pertaining to genital hygiene and smoking history. Information on STDs was obtained, and given a colour atlas of different penile lesions.

**Findings:**

- A history of sexual contact with one or more women other than their wives at any time during their lives was reported by 49.6 percent of the patients' husbands as compared to 32.8 percent of controls' husbands. The difference is statistically significant.

- Risk also increased with husbands having three or more extramarital sexual partners. (RR: 2.75; CI: 1.411-5.394). History of premarital or extramarital sex with a commercial sex worker, however, did not increase this risk.
- Contraction of an STD before marriage was reported by 17 of the patients' husbands (12.4 percent) and by 8 of the control subjects' husbands (4.6 percent). (RR: 2.99, p=0.02). Thirteen husbands of patients (9.5 percent) and three husbands of control subjects (1.7 percent) acquired an STD after marriage (RR: 5.9, p= 0.009).
- Sexual abstinence for 40 or more days after the wife gave birth or had an abortion was associated with a reduced risk. Thirty seven of the patients' husbands (27 percent) and 29 of the control subjects' husbands (17.1 percent) abstained from sex for fewer than 40 days postpartum. The difference was statistically significant (RR: 1.8, p=0.04).

#### ABSTRACT NO. 44

- Author(s)** : Dwivedi, S., G. Singh, N. Singh, et al.
- Title** : Cytoepidemiological Study of Cervical Dyskaryosis amongst Women with Cervical Erosion
- Source** : Indian Journal of Maternal and Child Health, 1991, 2(1), pp. 18-22
- Place of study** : Allahabad, Uttar Pradesh
- Period of study** : Not specified
- Aims and objectives** : To detect cancerous and pre-cancerous conditions among women attending a hospital and analyse the causal relationship of social, personal and medical variables with cervical dyskaryosis.
- Study conducted by** : SRN Hospital, Allahabad
- Nature of study** : Prospective, hospital-based, clinical study

#### Methodology:

The sample consisted of 515 women, 315 non-pregnant and 200 pregnant, attending the gynaecology clinic with symptoms of cervical erosion. Vaginal smears from cervical erosions were obtained during cytological screening. The evaluation was done using cytomorphological criteria described by Papanicolaou.

#### Findings:

- Of all the screened cases, 5 women (0.97 percent) were found to have invasive carcinoma and 7 cases were found to be of carcinoma in situ (0 stage). Dysplasia was seen in 31.46 percent cases, which included mild (20.39 percent), moderate (8.93 percent) and severe (2.14 percent) grades of dysplasia. One hundred and seventy-two women (172) had inflammatory lesions (chronic cervicitis) and 169 (32.82 percent) showed normal vaginal cytology.
- Only non-pregnant women showed presence of carcinoma in situ (2.22 percent) and invasive cancer (1.59 percent) as compared to none among pregnant women.
- The mean age of women with normal findings was found to be 25.31 years, while for women with cancer it was 42 years and for cancer in situ, 31.57 years. There was significant correlation between increasing age and severity of dysplasia ( $r=+0.11$ ,  $p < 0.001$ ).

- Normal findings were observed for those having the least duration of married life, while all five cases of invasive carcinoma detected were from women with a duration of marriage of greater than 20 years.
- The cases of chronic cervicitis and mild dysplasia were concentrated among women with 6-10 years of married life. Moderate dysplasia was concentrated in the 11-15 years category while those exhibiting severe dysplasia and carcinoma in situ were in the 16-25 years category.
- Dysplasia of all grades showed more prevalence among the high parity group (7-9: 40.73 percent) followed by those in the 4-6 parity group (35.36 percent), while nullipara women showed the maximum cytology.
- Variables such as advancing age, higher parity, longer duration of married life and prolonged use of contraceptives showed significant correlation with cervical dyskaryosis.

#### ABSTRACT NO. 45

- Author(s)** : Sabzposh, Noor Afshan, R. Sherwani , K. Tewari, et al.
- Title** : Cytomorphological and Histopathological Assessment of Premalignant and Malignant Lesions of Cervix
- Source** : Journal of Obstetrics and Gynaecology of India, 1996, pp. 533-537
- Place of study** : Aligarh, Uttar Pradesh
- Period of study** : Not specified
- Aims and objectives** : To assess and evaluate the value and accuracy of cytodiagnosis for premalignant and malignant lesions of the cervix.
- Study conducted by** : Jawaharlal Nehru Medical College, Aligarh Muslim University
- Nature of study** : Prospective, hospital-based, clinical

#### Methodology:

The sample consisted of 400 women presenting with various gynaecological symptoms and classified as high-risk cases: early marriage, cervical erosion, evidence of HPV infections, high-risk sexual partners. They were subjected to physical and local examination and cervical cytology. Cervical smears were taken. Biopsy was done in 176 cases.

#### Findings:

- Cervix appearance per speculum examination gave a diagnosis of cervical erosion in 36 percent of the women (144/400), chronic cervicitis (96/400, 24 percent), erosion with hypertrophy and cervicitis (40/400, 10 percent), erosion with cervicitis (26/400, 6.5 percent), normal looking (56/400, 14 percent).
- Cervical cytology showed inflammation in 57 percent of cases.
- Cytohistological correlation in inflammation, cervical intra-epithelial neoplasia (CIN) and invasive malignancy was 85.2 percent, 80.3 percent and 95.6 percent, respectively. The overall diagnostic accuracy was 85.2 percent.
- 31.8 percent of CIN cases were associated with Human Papilloma Virus (HPV) infection.

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**ABSTRACT NO. 46**

- Author(s)** : Desai, Pankaj, Monali Desai, Malini Desai, et al.
- Title** : Cytopathology of Uterine Cervix in IUCD Users
- Source** : Journal of Obstetrics and Gynaecology of India, 1994, pp. 267-270
- Place of study** : Baroda, Gujarat
- Period of study** : January 1990 - June 1992
- Aims and objectives** : To study critically the cytopathology of uterine cervix in IUCD users.
- Study conducted by** : SSG Hospital, Baroda
- Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

All patients who came to the clinic for IUCD follow-up in the study period were studied (n= 621). Smears were taken and subjected to Papanicolau staining technique. The Bethesea system was used for classifying the reports and for nomenclature.

**Findings:**

- Leucorrhoea was the most common complaint reported (164/621). Many had more than one complaint: menstrual irregularity (153/621), pain in the lower abdomen (133/621), prolapse (11/621) and leucoplakia (2/621). 190/621 had no complaints.
- 80.7 percent of the subjects did not reveal any remarkable pathology. Dyskariosis was present in 0.97 percent of the subjects. IUCD users were not found to be at an increased risk of developing cervical malignancy.

**ABSTRACT NO. 47**

- Author(s)** : Kushtagi, Pralhad, Kuntal Rao, and Ravikala V. Rao
- Title** : Downstaging of Carcinoma of Uterine Cervix in South Indian Women on the West Coast
- Source** : Journal of Obstetrics and Gynaecology of India, 1996, pp. 666-670
- Place of study** : Manipal, Karnataka
- Period of study** : Mid-1992 - 1993
- Aims and objectives** : To compare and correlate the visual inspection or per speculum examination findings of the cervix with the cytology reports.
- Study conducted by** : Kasturba Medical College, Manipal
- Nature of study** : Prospective, hospital and community-based



**Methodology:**

The sample consisted of 4,034 women drawn from those attending FP clinics, gynaecology outpatient clinics and five cancer detection camps in the community. Clinical examination, Pap smear and all cases with dysplastic smears were evaluated colposcopically and cervical biopsies studied for histopathological conformation. Comprehensive training workshops of two days duration were held for GPs and health workers to identify cervical lesions on speculum, examination and smear taking.

**Findings:**

- A total of 4,034 Pap smears were screened, of which 351 had dysplastic or pre-invasive lesions.
- No abnormal smears were noted in women younger than 30 years. The mean age of cases with dysplasia: mild  $37.5 \pm 6.5$ ; moderate  $39.1 \pm 5.3$ ; severe  $43.3 \pm 7.1$ ; carcinoma in situ  $42.4 \pm 6.9$ ; invasive cancer  $50.8 \pm 11.2$ .
- 39/351 abnormal smears were found to be negative on subsequent colposcopy/biopsy.
- In 78 percent of the cases histopathological diagnosis was in agreement with the colposcopic impression.
- After the workshops, agreement between GPs and gynaecologists was 62.3 percent and with that of health workers 54.2 percent.
- Routine screening in 1993 showed an apparent increase in the detection rate of dysplasias.

**ABSTRACT NO. 48**

- Author(s)** : Bhargava, V. L., K. Verma, R. Sharma, et al.
- Title** : A Hospital Based Study on the Use of Paramedical Personnel for Clinical Downstaging of Cancer Cervix
- Source** : Indian Journal of Medical Research 1993, 98, pp. 65-68
- Place of study** : New Delhi, North India
- Period of study** : July 1998 - June 1991
- Aims and objectives** : To train paramedical workers, determine cytological findings in relation to ANMs' gross visual finding and determine if pre-selection for cytology was possible.
- Study conducted by** : All India Institute of Medical Sciences, New Delhi
- Nature of study** : Hospital-based

**Methodology:**

Two auxiliary nurse midwives (ANMs) were selected and trained to recognise normal and different types of abnormal cervixes.

During the first two years, 2,102 women attending the gynaecology were examined both by the gynaecologist and an ANM. Cytology smear was taken for 2,093 women. In the first year, findings of ANMs were compared with that of gynaecologists and cytology reports. In the second year ANMs were sent to a rural centre, where they examined 153 women on whom cytology smears were done. Finally, in the third year 2,424 women were clinically examined and cervical smears were taken in 1,362 women. This was done to see if the pick-up rate had improved with selected cytology.

Statistical analysis was done using Kappa statistics. The sensitivity, specificity along with positive and negative predictive values of gross findings and cytology was calculated.

### Findings:

- *Correlation of clinical findings of gynaecologists and ANMs:* During the first year the overall agreement between the two was 83.1 percent in the 1,000 women examined, which increased to 97 percent in the second year for the 1,102 women examined. The overall agreement rate was 89.6 percent (Kappa 0.84 with standard error of 0.015 and a significantly large Z value of 55.6).
- Gross examination of 4,679 women attending the gynaecology OPD revealed: normal cervix 49.6 percent; cervical erosion 23.03 percent; cervicitis 23.85 percent; suspected lesions 2.3 percent; and malignant cervix 1.1 percent.
- Adequacy of cytology smears was 97 percent (of 3,608 women).
- *Correlation of clinical findings with cytology:* Comparing the group that was strongly suspected of malignancy by clinical examination with the group suspected of malignancy by cytology, the clinical findings had a sensitivity of 81.7 percent and specificity of 97.3 percent, with a positive predictive value of 42.4 percent, and negative predictive value of 99.6 percent.
- Of the 2,329 women diagnosed to have some abnormality of the cervix on clinical examination, 184 (7.9 percent) had either dysplasia or malignancy, whereas, in 1,279 with normal cervix only 15 (1.17 percent) had dysplasia or malignancy.
- ANMs could be relied upon to do the speculum examination and take smears in cases that are judged to be not normal.

## ABSTRACT NO. 49

- Author(s)** : Rao, Sunanda R., S. Revathy, Sylla G. Malvi, et al.
- Title** : Pitfalls in the Visual Inspection of the Cervix, as a Method of Downstaging Cancer of the Cervix in Developing Countries
- Source** : Journal of Obstetrics and Gynaecology of India, 1996, pp.659-665
- Place of study** : Mumbai, Maharashtra
- Period of study** : Not specified
- Aims and objectives** : To compare and correlate the visual inspection or per speculum examination findings of the cervix with cytology reports.
- Study conducted by** : Tata Memorial Hospital and Streehitakarini, Mumbai
- Nature of study** : Hospital and community-based

### Methodology:

The sample consisted of 1,985 women in the following groups:

- Group 1: 700 asymptomatic women recruited through a house-to-house visit in a low-income settlement.
- Group 2: 535 women who reported to the gynaecological clinic situated in the same settlement from where women in Group 1 were recruited.
- Group 3: 750 women who reported to the department of preventive oncology, Tata Memorial Hospital for a cancer check-up.

All women had a thorough physical examination, per vaginal and per speculum examinations, Pap smear, bacteriological examinations and cultures. In Group 3 visual inspection findings were recorded separately by a gynaecologist and by cytotechnicians who had been taking routine Pap smears for several months and were expected to be familiar with the appearance of the normal and abnormal cervix.

**Findings:**

- Group 1: 40 percent or 280 women had a normal cervix and 60 percent had a diagnosis of abnormality (154/420 - erosion/ectopy; 244/420 - cervicitis infection; 10/420 - benign polyps; 12/420 - suspicious lesions).
- Group 2: 48.4 percent or 259 women had a normal cervix and 51.6 percent abnormal (106/276 - erosion/ectopy; 122/276 - cervicitis infection; 13/276 - benign polyps; 35/276 - suspicious lesions).
- Group 3: 84.4 percent or 633 women had a normal cervix and 15.6 percent abnormal (47/117 - erosion/ectopy; 30/117 - cervicitis infection; 29/117 - benign polyps; 11/117 - suspicious lesions).
- Abnormal Pap smear findings were common in groups 1 and 2, that is, among women from the low-income settlement.
- Cervical infections and abnormalities were common and accounted for about 40-50 percent of the abnormalities detected in the Pap smear.
- Dysplasia and carcinoma were detected in normal looking cervix. Fifteen of the 25 cases of dysplasia and 2 of 4 cases of carcinoma cervix were in women with normal cervix on visual inspection.
- About 50 percent of Pap smear abnormalities were missed by the paramedicals working under ideal hospital conditions.
- The findings clearly show that visual examination is inferior to cytology for downstaging carcinoma cervix. This calls for the strengthening of cytology screening programmes at the community level for more effective prevention efforts.

**ABSTRACT NO. 50**

- Author(s)** : Dave, K. S., A. D. Desai, M. H. Mankad, et al.
- Title** : Radical Hysterectomy for Adenocarcinoma of the Cervix: The Gujarat Cancer and Research Institute Experience
- Source** : Journal of Obstetrics and Gynaecology of India, 1996, pp.146- 150
- Place of study** : Ahmedabad, Gujarat
- Period of study** : January 1977 - December 1993
- Aims and objectives** : To review the outcome of 40 cases of radical hysterectomy.
- Study conducted by** : The Gujarat Cancer and Research Institute, Ahmedabad
- Nature of study** : Retrospective, hospital-based

**Methodology:**

A total of 55 cases of adenocarcinoma of the cervix were selected. Of these, 53 underwent radical abdominal hysterectomy and 2 patients underwent exenterations. One person who died post-operatively and 12 patients without follow-up information were excluded, giving a sample of 40 women.

**Findings:**

- The overall incidence of adenocarcinoma during the study period was 7.5 percent (55/738). In the initial part of the study (1977-88) it was 6.1 percent, but during 1989-93, it rose to 9.5 percent.
- Out of 40 patients in the sample, 21 had adenocarcinoma (16 endocervical, 2 papillary and 3 clear cell) while 19 had adenosquamous carcinoma.

- The recurrence rate was 17.5 percent, and included 4 patients with postoperative radiotherapy (25 percent of the group) and 3 patients with only radical surgery (21.5 percent of the relevant group). No recurrence was observed with the group that underwent pre-operative radiotherapy.
- The recurrence was seen to be reduced through adjuvant therapy before or after surgical treatment.

#### ABSTRACT NO. 51

- Author(s)** : Jacob, Saji, K. Lalitha, Kaveri Gopalakrishnan, et al.
- Title** : Malignant Ovarian Tumours: A Profile
- Source** : Journal of Obstetrics and Gynaecology of India, pp. 413-417
- Place of study** : Trivandrum, Kerala
- Period of study** : January 1988 - March 1992
- Aims and objectives** : To report on survival experiences and factors that influence survival.
- Study conducted by** : Trivandrum Medical College, Trivandrum
- Nature of study** : Prospective, hospital-based

#### Methodology:

Ninety patients treated at the Medical College Hospital during January 1988 - January 1991 were followed up during January - March 1992. The present condition of all live patients was evaluated and survival rates were calculated using Kaplan Meier product limit method.

#### Findings:

- The peak age frequency was seen in 46-55 years age group (mean age 25.35).
- 64.4 percent presented in advanced stage of disease (III and IV), 25.5 percent in stage I and 10 percent in stage II.
- Overall two-year survival rate was 36 percent. The two-year survival rate of malignant tumours depended on the clinical stage of the disease (I-86 percent, II-43 percent, III-21 percent, IV-none) and adequate surgery given (adequate-91 percent, debulking-26 percent, biopsy alone-none).
- Adequate surgery in stages I and II resulted in acceptable survival rate: 91 percent in Stage I and 100 percent in stage II. In stage III debulking surgery had a better two-year survival of 28 percent compared to biopsy alone (none).

#### ABSTRACT NO. 52

- Author(s)** : Couto, Francis, Nisha S. Nadkarni, and Maria Jose Da P. Rebello
- Title** : Ovarian Tumours in Goa: A Clinicopathological Study

**Source** : Journal of Obstetrics and Gynaecology of India, 1994, pp. 408-412

**Place of study** : Goa, Western India

**Period of study** : 1980-89

**Aims and objectives** : To study the common morphological and histological types of ovarian tumours.

**Study conducted by** : Goa Medical College

**Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

343 women with ovarian tumours presenting at the department of pathology of Goa Medical College during the study period formed the study sample. The gross and microscopic features of each tumour and clinical signs and symptoms were noted.

**Findings:**

- Of 343 cases studied, 277 were benign, 58 malignant and 8 on borderline malignancy.
- The most common presenting features were mass of distension of abdomen either singly or associated other symptoms, most commonly pain.
- The most common benign tumours were cystadenomas (187/277) and cystic teratoma (53/277). In the malignant variety cystadenocarcinomas were the most common (33/58).
- Proliferative endometrium was seen in 99 cases, secretory endometrium was seen in 71 cases and atrophic endometrium was seen in 68 cases.
- In general there was no specific correlation between ovarian and endometrial patterns. However, functional ovarian tumours did have a definite effect on the endometrium in the form of hyperplasia and decidual change.

**ABSTRACT NO. 53**

**Author(s)** : Sarkar, Ranu

**Title** : Ovarian Neoplasms: A 14 Years Study

**Source** : Journal of Obstetrics and Gynaecology of India, 1996, pp.146- 150

**Place of study** : Burdwan, West Bengal

**Period of study** : 1980-94

**Aims and objectives** : To review 190 consecutive cases of ovarian neoplasms observed in the hospital during the 14-year study period.

**Study conducted by** : Burdwan Medical College, West Bengal

**Nature of study** : Retrospective, hospital-based

**Methodology:**

The study included 190 cases of ovarian neoplasms, both benign and malignant, recorded in the department of pathology of the hospital. The materials were all surgically resected specimens and were subjected to gross and microscopic examinations.

**Findings:**

- 129/190 (67.9 percent) were benign tumours; 61/190 (32.1 percent) were malignant, of which 7 were of borderline malignancy.
- Cystic or partly cystic consistency was more common among benign tumours (91.4 percent), whereas among the malignant tumours 52.5 percent were solid tumours.
- Mucinous cystadenomas were the most common benign tumour (21.6 percent), followed by serous cystadenomas (19.5 percent) and dermoid cyst of ovary (16.9 percent).
- Serous adenocarcinoma was the most common malignant tumour (11.1 percent), followed by dygerminoma (5.3 percent) and mucinous adenocarcinoma (4.7 percent).

**ABSTRACT NO. 54**

**Author(s)** : Couto, Fransico, Nisha S. Nadkarni, and Maria Jose da P. Rebello

**Title** : The Ovarian Teratomas

**Source** : Journal of Obstetrics and Gynaecology of India, 1995, pp. 773-776

**Place of study** : Goa

**Period of study** : 1980 - mid-1984

**Aims and objectives** : To delineate the various types of teratomas seen and their respective incidence.

**Study conducted by** : Goa Medical College, Goa

**Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

Of a total of 634 ovarian tumours studied in the study period, 107 were ovarian teratomas. Clinical criteria for classification included age, signs and symptoms, menstrual irregularities and signs of metastasis. A gross examination was also done and representative areas studied under the microscope. The WHO classification was used to classify the tumours.

**Findings:**

- 95.33 percent of the teratomas were benign cystic teratomas with main symptoms of mass, pain and bleeding. The age group affected ranged from 1-64 years.
- 3.74 percent of the teratomas were malignant teratomas with main symptom of mass. The age group affected ranged from 22-40 years.
- 0.93 percent of the teratomas were specialised teratomas (Struma ovarii) with main symptom of mass. The age group affected was 65 years.
- The incidence of teratomas was found to be 16.88 percent (109/634). The peak incidence was from 20-49 years with 86 cases in this age group (86/107, 80.37 percent).

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**ABSTRACT NO. 55**

- Author(s)** : Mankad, Meeta A., Ava D. Desai, Kalpana S. Dave, et al.
- Title** : Dysgerminoma: A Review of 12 Cases
- Source** : Journal of Obstetrics and Gynaecology of India, 1995, pp. 114-118
- Place of study** : Ahmedabad, Gujarat
- Period of study** : 1975-90
- Aims and objectives** : To review the outcome of treatment in 12 women with dysgerminoma, a form of ovarian tumour.
- Study conducted by** : Gujarat Cancer and Research Institute, Ahmedabad
- Nature of study** : Retrospective study based on medical records

**Methodology:**

Files of patients of dysgerminoma were reviewed and 12 cases with complete follow-up information were selected for the study.

**Findings:**

- At the time of presentation, 80 percent of the patients were nulliparous. The symptoms were: abdominal pain in 8 women, palpable mass in 6 women and distension of the abdomen in 2 women (more than one symptom simultaneously present).
- 6/12 had stage IA disease, 1/12 had stage IC, 3/12 were advanced IIIC and 2/12 were with recurrent disease.
- On treatment all stage I patients (IA + IC) were free of disease from 24 months up to 168 months except for 1 in whom the disease recurred after 168 months.
- Of the three women in stage IIIC, two were disease free while one died of hepatitis B infection. Of the two recurrent cases one survived while the other died.

**ABSTRACT NO. 56**

- Author(s)** : Dave, K. S., D. Desai, M. H. Mankad, et al.
- Title** : Malignant Mixed Mesodermal Tumour (MMMT) of Genital Tract: A Review of Seven Cases
- Source** : Journal of Obstetrics and Gynaecology of India, 1997, pp. 829-832
- Place of study** : Ahmedabad, Gujarat
- Period of study** : 1983-86
- Aims and objectives** : To review the clinical and pathological data of women with MMMT.
- Study conducted by** : Gujarat Cancer and Research Institute, Ahmedabad

**Nature of study** : Retrospective, hospital-based

**Methodology:**

The sample consisted of seven women with MMMT.

**Findings:**

- 5/7 had homologous MMMT and 2/7 had heterologous MMMT.
- All patients were post-menopausal and multipara. Mean age was 59.2 years.
- 6/7 had associated constitutional factors like obesity, hypertension, diabetes and ischaemic heart disease.
- Abnormal post-menopausal bleeding was the most common symptom in all patients.
- All patients underwent initial surgery in the form of total abdominal hysterectomy or radical abdominal hysterectomy.
- FIGO surgico-pathologic staging ranged from I to IV, and stage I and II had significantly better outcomes than those with stages III and IV. Both patients with stage IV cervical MMMT died, while the two with stage III tumour were under adjuvant treatment following surgery. One of two women with stage II tumour succumbed, while the other was free of disease at 19 months following the surgery. The single patient with Stage I tumour was free of disease at 43 months follow-up.

**ABSTRACT NO. 57**

**Author(s)** : Rajan, R.

**Title** : Management of Ovarian Masses: Decision-Making Based on Endovaginal Sonographic Characteristics

**Source** : Journal of Obstetrics and Gynaecology of India, 1995, pp. 757-763

**Place of study** : Kottayam, Kerala

**Period of study** : November 1991 - May 1994

**Aims and objectives** : To identify the role of preoperative sonographic evaluation in deciding ovarian masses needing surgery, and to arrive at characteristics of masses that will need exploratory laparotomy or operative laparoscopy.

**Study conducted by** : Medical College Hospital, Kottayam

**Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

- Two groups of patients with ovarian masses were studied.
- The first group consisted of 566 women with varied ovarian pathologies that had been studied at surgery and supported by histopathological examination.
- The second group consisted of 60 women whose ovarian masses were studied by endovaginal sonography and, when needed, supplemented by abdominal ultrasound.

**Findings:**

- Of 566 ovarian enlargements, 89.2 percent were ovarian tumours. Most (84.7 percent) of the tumours were benign in nature and 92.2 percent were cystic.



- More than a half (59.14 percent) of the ovarian enlargements occurred in women of the reproductive age group. The incidence of malignancy in this age group is lower than the overall average, ranging from 5.97 percent to 8.5 percent.
- Laparotomy could be avoided in 67.2 percent of ovarian pathologies, and endovaginal ultrasonography used instead.

## ABSTRACT NO. 58

- Author(s)** : Patel, F. D., P. S. Negi, S. C. Sharma, et al.
- Title** : High Dose Rate Intravaginal Brachytherapy in Gynaecological Malignancies
- Source** : Bulletin of the Post Graduate Institute, 1994, 28, pp.153-158
- Place of study** : Chandigarh, North India
- Period of study** : Not specified
- Aims and objectives** : To delineate the experiences of treating with High Dose Rate (HDR) intravaginal brachytherapy (IV).
- Study conducted by** : Post Graduate Institute of Medical Research, Chandigarh
- Nature of study** : Prospective, hospital-based, clinical

### Methodology:

One hundred patients who received HDR IV were analysed. This included 54 patients with endometrial carcinoma and 46 with carcinoma of the cervix. For the purpose of analysis, all endometrial carcinoma patients were staged according to the FIGO staging system.

### Findings:

- Local control was achieved in 96 percent of the endometrial carcinoma patients and 74 percent of those with carcinoma cervix.
- Of those with carcinoma cervix, patients with no palpable disease at the vault at the start of radiation treatment had better local control of their disease than patients who had palpable residual/recurrent disease at the vault (90 percent versus 60 percent).
- 5.1 percent radiation proctitis was seen only in those patients who had external pelvic radiation and IV brachytherapy.
- HDR IV brachytherapy is a good alternative to conventional LDR system. This form of treatment is easy and comfortable and is very well accepted by the patient. It also provides complete radiation protection for the staff.

### Review note:

Intravaginal brachytherapy (IV) plays an important role in the management of gynaecological cancers. It is recommended to complement surgical treatment of patients of carcinoma of the uterus and of the cervix to prevent local vault or surgical recurrences. Conventionally this form of therapy was used with low dose rate (LDR) systems. The high dose rate (HDR) system has recently been introduced.

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**ABSTRACT NO. 59**

- Author(s)** : Bhalla, P., Rituraj Singh, R. K. Sachar, et al.
- Title** : Is the Incidence of Cancer of the Female Breast on the Rise in Punjab?
- Source** : Indian Journal of Maternal and Child Health, 1990, 1(3), pp. 86-87
- Place of study** : Ludhiana, Punjab
- Period of study** : 1988 - April 1990
- Aims and objectives** : To find out the relative frequency of the cancer of the breast vis-à-vis cancer of the cervix in women.
- Study conducted by** : Mohan Dai Oswal Cancer Treatment and Research Foundation, Ludhiana.
- Nature of study** : Retrospective, hospital-based

**Methodology:**

Data was collected from the medical records section of the hospital in which the data are registered as per the WHO International Classification of Diseases, Revision (ICD-9).

The relative frequency of cervical and breast cancer has been compared with registration data from the same hospital for the previous years of 1 April 1984 to 31 March 1986.

**Findings:**

- During 1984-86, a total of 2,298 cases of cancer were registered of which 13.5 percent women had cancer of the breast and 14 percent had cancer of the cervix.
- In the current period of study, the total number of patients registered for cancer were 1,636 in 1988, 2,515 in 1989, and 675 from 1 January 1990 to 30 April 1990.
- Cases of breast cancer were 18.8 percent, 16 percent and 16.5 percent for the respective years, while cases of cancers of the cervix were 12.7 percent, 12.6 percent and 10.3 percent.

**ABSTRACT NO. 60**

- Author(s)** : Goel, A. K., V. Seenu, N. K. Shukla, et al.
- Title** : Breast Cancer Presentation at a Regional Cancer Centre
- Source** : The National Medical Journal of India 1995, vol. 8(1), pp. 6-9
- Place of study** : New Delhi, India
- Period of study** : August - November 1993
- Aims and objectives** : To examine reasons for late presentation of breast cancer cases at the regional center and evaluate the quality of treatment received before referral to the centre.

**Study conducted by** : All India Institute for Medical Sciences, New Delhi

**Nature of study** : Prospective, hospital-based

**Methodology:**

The sample included all women seen over the 12-week period. A proforma was completed for all patients based on personal interviews with patients and relatives. Patients who did not have a palpable lump and those who had an operation in another hospital more than six months previously were excluded from the study. Of a total of 152 women registered, 100 met the inclusion criteria and constituted the study sample.

**Findings:**

- Fifty-seven of the 100 patients were urban women and 43 were rural. Only 20 women, 4 rural and 16 urban, were aware of breast cancer before the onset of their illness. The rural-urban difference was statistically significant at the 5 percent level.
- Total duration of symptoms ranged from 1 week to 10 years (mean 11.3 months).
- The time of first contact from the time of feeling a lump ranged from 1 day to 9.5 years (mean 6.7 months).
- For patients who were aware of breast cancer, the mean time from feeling a lump to their first visit to a doctor was 1.7 months compared to a mean of 8 months for those who were not aware ( $p < 0.05$ ). The mean duration before presentation at the regional cancer centre was 4.2 months as compared to 13 months for those who were not aware of the symptoms. The difference was statistically significant at the 1 percent level.
- All patients had seen one or more doctors previously before presenting at the regional centre. Forty-one patients had seen 1 doctor, 40 patients had seen 2 doctors, and 19 patients had seen 3 to 5 doctors. The first consultation was with a general practitioner in 41 patients, a surgeon (26 patients), a hospital (20 patients), and a practitioner of alternative systems of medicine (13 patients).
- Overall, 57 patients saw a surgeon and 37 had visited a private or government hospital.
- Diagnosis and treatment initiated prior to presentation at the regional center was inadequate in a significant proportion of cases. Fine needle aspiration cytology (FNAC), a simple and efficient procedure that reduces the need for excision and incision biopsy, was used in only 50 cases (33/57 urban and 17/43 rural). However, the accuracy rate was only 78 percent (39/50) and suggests much room for improvement.
- Twenty-five patients had an excision or incision biopsy. The use of staging investigations was rare, although it forms the backbone of treatment planning and prognostication.
- Modified radical mastectomy was the most common operation performed (26/43). A bias towards excessive treatment was observed in cases where records were non-available or of poor quality.

**ABSTRACT NO. 61**

**Author(s)** : Vaidya, S. M., P. L. Kamalkar, and S. M. Kamble

**Title** : Molybdenum Xanthine Oxidase and Riboflavin Levels in Tamoxifen Treated Postmenopausal Women with Breast Cancer

**Source** : Indian Journal of Medical Sciences, 1998, pp. 244-247

**Place of study** : Nagpur, Maharashtra

**Period of study** : Not specified

**Aims and objectives** : To evaluate the blood levels of trace elements such as molybdenum, xanthine oxidase and riboflavin in breast cancer patients treated with tamoxifen. This was examined in order to evaluate if tamoxifen induces tumour regression, since the above vitamins and trace elements have been implicated in tumour growth.

**Study conducted by** : Nagpur Medical College

**Nature of study** : Prospective, hospital-based, clinical study

**Methodology:**

Forty post-menopausal women with biopsy proven breast malignancy constituted the study group. They were in the age range 50-70 years. They were treated with tamoxifen 10mgs twice a day during the pre- and postoperative period of 3 and 6 months. Twenty age-matched patients were the control group and were not suffering from any disease.

Blood samples were drawn after 3 and 6 months of therapy at 12-14 hours of fasting condition. Molybdenum was estimated by atomic absorption method, blood xanthine oxidase by Litwack et al. method and riboflavin by flurometric method.

**Findings:**

- There was nonsignificant decrease in serum molybdenum in untreated patients as compared to controls and significant increase in treated patients after six months as compared to untreated patients.
- There was a significant decrease in serum xanthine oxidase and riboflavin in untreated patients as compared to controls.
- Tamoxifen-treated patients showed nonsignificant increase in molybdenum after three months and significant increase after six months of treatment, and significant increase in xanthine oxidase and riboflavin levels.
- Tamoxifen when given in breast cancer helps to ameliorate the disease condition.

**ABSTRACT NO. 62**

**Author(s)** : Reg. No. 2202, M.Sc. Nursing, Christian Medical College, Vellore, Tamil Nadu

**Title** : Patients' Perception of Nursing Interventions in Meeting the Emotional Needs of Women with Breast Cancer

**Source** : M.Sc. Nursing dissertation, MGR Medical University, Chennai, April 1996

**Place of study** : Vellore, Tamil Nadu

**Period of study** : May-June 1995

**Aims and objectives** : To determine patients' perceptions of the nursing intervention in meeting their emotional needs; to assess the relationship between patients' perceptions of nursing interventions and demographic characteristics of patients such as age, education, income, occupation, religion, marital status and number of children.

**Study conducted by** : Christian Medical College, Vellore

**Nature of study** : Hospital-based, questionnaire-based interviews

**Methodology:**

Operational definitions obtained after interviewing patients on nurse's actions for emotional needs:

- *Safety and security* - answering call, explanation about pre- and postoperative care, information on prosthesis
- *Social affiliation* - encouraging socialization, encouraging family to give support
- *Self-esteem* - respecting the feelings, encouraging verbalization of feeling, clarifying doubts regarding care.

All 30 women hospitalized with breast cancer in general surgical wards and private surgical wards of the hospital were included. The women were able to communicate in English, Telugu or Tamil, and had been admitted for mastectomy. Those with other types of cancer, other complications, other abdominal surgery, terminally ill, unconscious and unable to verbalise were excluded.

Most women were interviewed after 36 hours of admission, up to 3 patients per day. The interview was conducted in two parts. Demographic details came first. Questions on nursing interventions meeting emotional needs. (1, 2, 3 above)

Scoring: 2 - always, 1 - sometimes, 0 - never

Score % = Total of always/total of items in interview guide x 100

**Findings:**

*Self-esteem*

- 86.7 percent received adequate care in preoperative period to meet self-esteem needs, but in the postoperative period only 53.3 percent had adequate care.
- Nurses' encouragement of family members to give support was not adequate.
- Nurses' concern in providing privacy in the preoperative period was only 33.3 percent but in the postoperative period, this rose to 75 percent. Similarly, nurses' role in the answering question regarding care and clearing doubts in the preoperative period was again only 16.7 percent but rose to 76.7 percent postoperatively. These differences were statistically significant.

*Social affiliation*

- 83.3 percent received inadequate care both in the pre- and postoperative periods.

*Safety and security*

- Nurses' explanation about preoperative care was 93.3 percent but postoperatively it became 65 percent. It is possible that the nurses were too busy and did not pay much attention to giving information. Family members were also not encouraged to visit in postoperative period.
- There was no association between demographic characteristics of patients and nursing care given to meet the three types of needs in the pre- as well as postoperative period.

**ABSTRACT NO. 63**

**Author(s)** : Register No. 1, DM Neurology Br. I, Madras Medical College, Chennai

**Title** : Neurological Disorders Complicating Pregnancy and Puerperium

**Source** : Dissertation submitted to MGR Medical University, Chennai, in partial fulfillment of D.M. (Neurology), September 1992

**Place of study** : Chennai, Tamil Nadu

**Period of study** : March 1991 - March 1992

**Aims and objectives** : To study neurological disorders complicating pregnancy and puerperium.

**Study conducted by** : Madras Medical College, Chennai

**Nature of study** : Prospective, hospital-based, clinical

**Methodology:**

The sample consisted of 166 pregnant women who developed or were admitted with neurological complications in maternity hospital, Egmore, MDS, Chennai. A neurologist's opinion was sought when the patient presented with a neurological problem. Those who had pregnancy-induced hypertension were reviewed. If they developed neurological symptoms of cerebral origin, seizures, stupor, stroke, coma or cortical blindness, they were included in the study. Blood pressure was recorded and its relation to clinical symptoms was correlated. Urine also was examined, and ECG and EEG carried out. Fundus were examined for retinal changes. Seizure pattern and seizure disorders presenting during pregnancy were studied. Pregnant epileptics were later asked about family history of seizure, pre-epileptica, postnatal weakness, confusion, drowsiness or aggressiveness and rectal incontinence or injury or physical injury.

**Findings:**

- In this year-long study, neurological disorders complicating pregnancy occurred in 166 out of 16,506 deliveries, or 1 percent incidence.
- Hypertensive encephalopathy was the most common neurological presentation, which constituted nearly 103 out of 166 cases. Seizure disorder occurred in 40/166 cases, 29 of them were known epileptic and 11 out of 40 had seizures for the first time. Vascular catastrophies were seen in 12/166. 2/12 were due to arterial occlusion, and 10 were due to venous thrombosis. Other neurological complications included chorea gravidarum meningo-encephalitis, encephalopathy, meningion, facial palsy, cerebral malaria, sciatica, myelitis and puerperal sepsis with toxic encephalopathy.
- Higher mortality was seen in cerebral venous thrombosis and arterial occlusion, whereas eclampsia and seizure disorders complicating pregnancy had mortality of 4/103 and 2/40, respectively. Two deaths in pregnant epileptics were due to status epilepticus.
- Cerebral venous thrombosis (CVT) occurred more than arterial thrombosis. CVT occurred in the postpartum period. Most of the cases were from poor socio-economic background. The symptomatology is much different in arterial and venous thrombosis. Fatal cases tended to be deeply unconscious from the onset and have extensive paralysis and numerous fits. Etiology was undetermined but it could be due to hypercoagulable state of blood existing during pregnancy.

**ABSTRACT NO. 64**

**Author(s)** : Reg. No. 892, M.D. Community Medicine, Christian Medical College, Vellore

**Title** : A Study on the Prevalence and Psychosocial Aspects of Primary Infertility in a Rural Community in South India

**Source** : M.D. Dissertation, MGR Medical University, Chennai, March 1998

**Place of study** : North Arcot, Tamil Nadu

**Period of study** : 1996-97

**Aims and objectives** : To estimate the prevalence of primary infertility in Kaniyambadi block and to compare the psychiatric morbidity in women experiencing infertility with that among fertile women married for the same duration; to determine social effects of primary infertility on infertile women.

**Study conducted by** : Christian Medical College, Vellore

**Nature of study** : Community health-interview survey

### **Methodology:**

A list of all eligible couples without children was obtained. Those married for two years or less were excluded from the study. The list was cross-checked with health aides' information, and the prevalence rate was calculated on this basis. For the cross-sectional survey, a random sample of 60 women experiencing infertility and an equal sample of fertile women from same village matched for duration of marriage (in completed years) was taken.

General Health Questionnaire 28 (GHQ-28) was used to measure psychiatric morbidity. Those with a score of 5 and above were identified as those with psychiatric morbidity. Socio-economic status included only occupation, education, land owned and type of house. A semi-structured interview was used for data collection on social effects of fertility only in infertile women. The GHQ-28 and the social questionnaires were administered at the same time.

### **Findings:**

- Out of the 100,000 population in the block, 16,000 were eligible couples. 383 couples had never conceived, giving a prevalence of 2.4 percent for this community.
- Prevalence of psychiatric morbidity in women with infertility was 45 percent (15 percent in fertile women). The odds for psychiatric morbidity in women experiencing infertility was 4.6 times greater than that for fertile women. The odds were greater for those married for less than 10 years than for those married for 10 years or more.
- Odds for psychiatric morbidity in women with infertility was greater for those belonging to lower socio-economic status groups, and this decreased as SES improved. But the odds for psychiatric morbidity increased for women with infertility when they were gainfully employed, and the odds for psychiatric morbidity was also greater in non-consanguinous marriages.
- Because of the stigma attached to infertility, childless women were not allowed to attend social functions and even if they attended, they didn't feel able to take an active part in the proceedings.
- Nearly 40 percent of the women with infertility experienced threat to their marriage. This increased significantly as duration of marriage increased and also in non-consanguinous marriages. A significant proportion of infertile women had lost all hope and accepted that infertility was due to fate, significantly higher in those married for 10 years or more.
- Nearly 80 percent of women experiencing infertility had been verbally abused by their neighbours. Forty percent of husbands verbally abused their wives. In 60 percent of families there were family quarrels due to problems of infertility and 15 percent of the couples lived apart from the husbands' family due to pressure and quarrels.
- The most common sexual problem among men was premature ejaculation contributing to 30 percent of infertility.
- Nearly 80 percent women and 60 percent men had undergone some sort of medical treatment for infertility.
- 56 percent of the in-laws thought their daughters-in-law were responsible for childlessness. 50 percent of husbands thought their wives were solely responsible. 25 percent of women thought they were responsible while another 25 percent thought they were not responsible for the childlessness.
- 50 percent of women experiencing infertility said that they would do nothing and that God would provide. Only 37 percent said they would get medically investigated. The proportion willing to get medically investigated decreased with increased duration of marriage. Only 16 percent wanted to seek I-V fertilisation or adoption.

- Author(s)** : Kishwar, Ahmed Shirali, and S. P. Bharati
- Title** : Hysteria in Hill Women: Life Stress and Personality
- Source** : Indian Journal of Clinical Psychology, 1993, vol. 20(2), pp. 93-102
- Place of study** : Six districts of Himachal Pradesh
- Period of study** : Not specified
- Aims and objectives** : The study attempts to unravel the idiom of hysteric women by examining cases of conversion hysteria and dissociation (possession) hysteria in terms of their stress and personality.
- Study conducted by** : Not specified
- Nature of study** : Hospital-based, interviews

**Methodology:**

The concepts of 'conversion hysteria' is explained as per psychological theory and 'dissociation hysteria' is explained as understood by anthropologists, psychologists and sociologists. 'Life stress' for people in rural Himalayas consists of the harsh geo-climatic conditions confounded by poverty, illiteracy, low wages, illness and malnutrition. The authors state that being a woman in a patriarchal society is itself stressful.

The sample consisted of 13 female conversion hysteria cases, 17 female dissociation hysteria cases, 11 male dissociation hysteria cases, as well as the parents and siblings of the female cases from six districts of Himachal Pradesh.

Tools used include Life Experience Survey (LES) for the hysteria subjects, Dogmatism Scale for parents, Thematic Apperception Test (TAT) to all, and schedule for the socio-demographic variables.

**Findings:**

- The data analysis indicates that negative life experiences were significantly higher for female hysteria subjects when compared to their siblings or male subjects. Females also had less stress from positive life events in comparison to males.
- Among female subjects, the dissociation (possession) subjects reported more stress from positive life experiences, proved statistically, than the conversion subjects. Marriage and family happen to be more supportive structures for men than women. Serious illness or injury of close family is more stressful for women. A major change in financial status is also more stressful for women.
- An analysis of the stories depicted by the TAT, in terms of needs and stress (environmental stress) presents a comparative picture that "hysteric women had greater needs of affiliation and sex; but were comparatively passive, like their mothers, on needs of aggression which their fathers and siblings were higher on."
- The authors conclude that these "hysteric . . . women are seeking an idiom in the very grammar politik of their existence, their psychological disease, to heal their very beings."



- Author(s)** : Thara, R., Albert A. Joseph
- Title** : Gender Differences in Symptoms and Course of Schizophrenia
- Source** : Indian Journal of Psychiatry, 1995, vol. 37(3), pp. 124-128
- Place of study** : Chennai, Tamil Nadu
- Period of study** : 1981-82 to 1991-92
- Aims and objectives** : To examine gender-related differences pertaining to symptom pattern, course and disability in a cohort of 76 patients who were completely and prospectively followed up for a period of 10 years.
- Study conducted by** : Schizophrenia Research Foundation, Chennai
- Nature of study** : Longitudinal

**Methodology:**

The sample included 76 persons, 40 males and 36 females. They were first-break schizophrenia patients attending the psychiatry department of the Madras Medical College. Though this sample was not initially meant to study gender differences, the almost equal distribution of males and females fulfilling similar criteria for inclusion made it suitable for comparison. Other characteristics of the sample were that it was urban, consisting of a middle and lower socio-economic group, and most had completed schooling. The clinical and socio-demographic details compared were: age of onset of illness, socio-economic level, marital status, education, occupation, family history of mental illness, all Present Status Exam (PSE) syndromes, pattern of course and disability.

A psychiatrist, a psychiatric social worker and the staff of the department who were trained to use the instruments, collected the data. The instruments used were:

- 1) 9th Edition of the PSE (Present Status Examination) for symptomatology repeated at each year-end;
- 2) PPHS (Psychiatric and Personal History Schedule) for history and socio-demographic information repeated at each year-end;
- 3) Follow-up schedule for clinical and treatment details administered monthly; and
- 4) DAS (Disability Assessment Schedule) administered at the end of the 10th year.

**Findings:**

- No gender differences were seen in most of the socio-demographic features, except in occupational profile since only 5/36 women worked outside the home, the rest being full-time homemakers.
- Regarding symptom patterns, males were more symptomatic at intake, with higher frequency in few of the PSE syndromes, though only the difference in nuclear syndrome was statistically significant. At the end of 10 years, there was a fall in all PSE syndromes though none of these was significant, and males again showed a higher frequency. In course pattern, again there were differences but it did not reach statistical significance.
- Women tended to have more relapses (30/36: 20/40) while more men had a continuous illness (3/40: 1/36).
- In disability score, men had higher scores in occupational role performance and global disability.

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**ABSTRACT NO. 67**

- Author(s)** : Schizophrenia Research Foundation (SCARF), Chennai
- Title** : A Study of Mentally Ill/Disabled Women Who Have Been Separated/Divorced
- Source** : Published by the National Commission for Women, New Delhi, 1997-98
- Place of the study** : Chennai, Tamil Nadu
- Period of study** : Not specified
- Aims and objectives** : To estimate disability and illness status of women with chronic mental illness and who have been separated or divorced; to examine the attitude of care-givers and the burden experienced.
- Study conducted by** : Schizophrenia Research Foundation (SCARF), Chennai
- Nature of study** : Qualitative and quantitative interviews

**Methodology:**

The design combined both qualitative and quantitative methods. Researchers conducted in-depth interviews with both the patients and their care-givers. The sample consisted of mentally ill and divorced or separated women, as well as mentally ill and still married women, from different study sites of different socio-economic and educational backgrounds. The sample size was 100, and the study was conducted over 12 months.

**Findings:**

- Many families had not even been aware that their relatives had been mentally ill and viewed the woman's strange oddities of manner as something that would be set right by marriage.
- Mental illness in a woman appeared to be less tolerated than in a man, and she was pressured to perform all the vital family functions. This exacerbated her condition of mental illness.
- The stigma of being divorced/separated was often more acutely felt both by the families and the patients than that of mental illness per se. Families, however, spoke of issues indicative of a definite change in lifestyle: of becoming increasingly isolated, about socialising less, about finding difficulty in settling marriages of their other children, about increased disruptions in the family on account of the patient's mental illness. Children suffered neglect. Attitudes of husbands (besides immediate care-givers) were very negative, and they often distanced themselves and this led to separation and abandonment. The women's families were largely ignorant of legal redress.

**ABSTRACT NO. 68**

- Author(s)** : Shaji, S., K. Promodu, T. Abraham, et al.
- Title** : An Epidemiological Study of Dementia in a Rural Community in Kerala, India
- Source** : British Journal of Psychiatry, 1996, vol. 168(6), pp. 745-749
- Place of study** : Rural Kerala

**Period of study** : Not specified

**Aims and objectives** : To investigate how common dementing disorders were among the elderly in a rural population and how they are distributed, and to investigate the psychosocial correlates of and risk factors for dementing disorders.

**Study conducted by** : Not specified

**Nature of study** : Community survey

**Methodology:**

A door-to-door survey was conducted to identify people aged 60 years and above in Thiruvaniyoor panchayat with 4,522 houses and a population of 21,564. Tools used were Mini Mental State Examination (MMSE) as the first screener, and the CAMDEX- Section B measuring cognitive functions. Both were translated into the vernacular and the CAMDEX - Section B interview was conducted with a care-giver. Sub-categorisation of dementia was done based on ICD-10 diagnostic criteria.

**Findings:**

- 10.2 percent of the population were aged 60 and above. A total of 66 cases of dementia were identified in a population of 2,067 elderly giving a prevalence rate of 31.9/1,000. The correlated prevalence rate, checking for negative screening becomes 33.9/1,000. 58 percent of the dementia cases were diagnosed as vascular dementia and 41 percent satisfied the criteria for ICD-10 dementia in Alzheimer's disease.
- Prevalence of dementia increased proportionately with age in both gender groups. Alzheimer's disease was more prevalent in women (ratio 1 male:3 female). An opposite tendency was seen in vascular dementia.

**ABSTRACT NO. 69**

**Author(s)** : Jamkhedkar, Shilpa

**Title** : Suicide amongst Women

**Source** : M.A. project report, Tata Institute of Social Sciences, Bombay, 1993

**Place of study** : Bombay (Mumbai), Maharashtra

**Period of study** : 1992

**Aims and objectives** : To understand the causal links in the sequence of events that lead to attempted suicide in women; to study the nature of family violence among families of women who attempt suicide; to investigate the coping mechanisms used by women before the attempt; to identify the precipitating factors; and to explore various types of helping networks needed by the attemptee and her family after the attempt.

**Study conducted by** : Tata Institute of Social Sciences, Bombay

**Nature of study** : Hospital-based, qualitative, case studies

**Methodology:**

Six case studies of women who attempted suicide were examined in a hospital setting by an interview guide and observation of the cases in the medical (recovery) ward, psychiatric ward and burns ward, from the respondent and the family members.

The author notes that the hospital setting had its drawbacks, but the respondents were reluctant about the researcher visiting them at their house because of the stigma and fear of neighbours' enquiries.

'Attempted suicide' was conceptualised as a self-damaging act with the intention of self- destruction, whatever the motives, when not fatal. 'Coping mechanisms' are the reactions and behaviours that an individual resorts to when faced with stressful situations that disturb the equilibrium.

'Crisis' is a situation in which the individual may perceive the stress factor as a threat to her sense of autonomy, or as a loss, or as a challenge (to survival, growth or mastery). 'Violence' is described as a coercive means, physical or psychological, to assert one's will over another to prove or feel a sense of power.

**Findings:**

- Suicide was perceived as an alternative or a means and not a resulting situation from any crisis. Suicide was one of the ways in the repertoire of the respondents, used to deal with the problem when they had reached a stalemate and the problem was causing continuous disequilibrium in the individual.
- Patients resorted to suicide after other coping mechanisms were tried. Suicide followed in a series of coping mechanisms used to handle a situation. There were a series of coping strategies like indifference, ignoring, rebellion, gentle communicating, persuasion and withdrawing. Bodily abuse came as the last coping mechanism.
- All had support mechanisms, but these were not effective. In all cases the number of networks of communication had decreased.
- Violence was present in all cases.
- At the time of the attempt, the predominant emotions were hurt, anger and frustration. Most were (5/6) not aware of counselling centres or NGOs that could provide help.

**ABSTRACT NO. 70**

<b>Author(s)</b>	: Bhat, R., J. S. Sujit
<b>Title</b>	: Respiratory Diseases in Women Exposed to Domestic Smoke
<b>Source</b>	: Journal of the Association of Physicians of India, 1997, vol. 45(12), pp. 923-925
<b>Place of study</b>	: Karnataka
<b>Period of study</b>	: Not specified
<b>Aims and objectives</b>	: To study the association between exposure to domestic smoke from cooking fuel and various respiratory diseases.
<b>Study conducted by</b>	: Kasturba Medical College, Mangalore
<b>Nature of study</b>	: Prospective, hospital-based, clinical examination and interview

**Methodology:**

The sample consisted of 100 women exposed to domestic smoke, selected at random from three hospitals (Government Wenlock Hospital, Mangalore, Kasturba MCH in Bejai and Attavar). Patients with respiratory complaints due to diseases of other systems were excluded. For data collection, a detailed history of the patient was taken (where cooking fuel used and work environment in the kitchen were described); physical examination and investigation was carried out. The exposure index was calculated (hours of cooking per day x years).

**Findings:**

- 73 percent worked in poorly ventilated kitchens. 65 percent used wood alone as fuel. 32 percent used kerosene and wood.
- Occupational data revealed that while all did housework, 37 also did bidi rolling, 13 were agricultural labourers, 8 did manual labour, and 15 did other part-time jobs.
- Age ranged from 20 to 76 years, with 24 in the group 60-69 years and 23 in the 40-49 age group.
- COPD (chronic obstructive pulmonary disease) and cor pulmonale were most observed in the age group 60-69 years (40 percent of COPD cases and 54.5 percent of the cor pulmonale cases). Most cases of bronchiectasis were in the 50-59 age group (33.3 percent of cases), while pulmonary tuberculosis and bronchial asthma (76.5 percent of cases) were in the 20-49 age group. Thus, variation in the diseases was most observed among the older and younger age groups.
- Pulmonary tuberculosis and bronchial asthma were found to be high among bidi rollers.

**ABSTRACT NO. 71**

- Author(s)** : Ray, Debidas, R. Abel, and K. G. Selvaraj
- Title** : A Five-Year Prospective Epidemiological Study of Chronic Obstructive Pulmonary Disease in Rural South India
- Source** : Indian Journal of Medical Research, 1995, vol.101, pp. 238-244
- Place of study** : North Arcot district, Tamil Nadu
- Period of study** : 1981-86
- Aims and objectives** : To conduct an epidemiological study with a population-based prospective follow-up of chronic obstructive pulmonary disease (COPD) in a rural population.
- Study conducted by** : Christian Medical College, Vellore
- Nature of study** : Longitudinal

**Methodology:**

Four villages of the K.V. Kuppam community development block about 20 to 25 kilometres from Vellore were chosen and the study done between 1981 and 1986. The population was predominantly engaged in agricultural work and belonged to the lower income group. The total population was 22,847 distributed between 4,262 families residing in 16 hamlets of these four villages.

The field staff was composed of a female health visitor and two male field workers who visited every home, interviewed all members of the family present and filled in a questionnaire about respiratory symptoms.

Subjects with any of the symptoms (cough with or without sputum, breathing difficulty, fever), were asked to report to the health centre for further interview, examination and investigations that included routine blood tests, sputum for acid fast bacilli (AFB) and also radiography of the chest as necessary. Using the questionnaire described above, 1,542 symptomatics were detected during the period of the study.

Among the symptomatics detected, those who were aged 30 years or more were again specially questioned by medical officers. Those with a history of respiratory symptoms of cough and expectoration of sputum with or without wheeze lasting for a total duration of at least three months for two consecutive years or more were classified as cases of COPD.

After the initial survey, periodic house visits by the field staff were continued and new symptomatics detected were advised to report for further interview and investigations. At the end of the five-year period another house-to-house survey of the population was conducted and completed by 31 March 1986.

#### Findings:

- After the initial survey and examination by December 1981, 211 patients were detected to have COPD. At the end of the final survey in March 1986, among the 24,950 residents, 328 patients were diagnosed to have COPD. This gave a period prevalence of 13.1/1,000. When the 311 surviving patients (17 expired at the final survey) were taken into account, the point prevalence of COPD as of 31 March 1986 was found to be 12.5/1,000 of the total population.
- One hundred and ninety-eight of the 328 patients with COPD were males and 130 were females. The overall age-specific prevalence rate of COPD in this population was 33/1,000 with a significantly higher prevalence of 40.8/1,000 for males than that of 25.5/1,000 for females ( $p < 0.001$ ).
- There was an increase in the prevalence rate with increasing age (trend  $X^2=31.04$ ;  $p < 0.01$ ). Peak expiratory flow rate along with height were measured in 258 patients and compared to the predicted normal values. Most of those tested showed evidence of obstructed airway. Severe defect was observed in 106 patients. Among males, 122 gave a history of smoking; the majority of the heavy smokers among these had severe impairment of peak expiratory flow rate (PEFR). In nearly half of the patients who had chest radiography, changes consistent with COPD were observed. The overall prevalence of COPD observed by this study is comparatively lower.

#### ABSTRACT NO. 72

- Author(s)** : Dutt, D., D. K. Srinivasa, S. B. Rotti, et al.
- Title** : Effect of Indoor Air Pollution on the Respiratory System of Women Using Different Fuels for Cooking in an Urban Slum of Pondicherry
- Source** : The National Medical Journal of India, 1996, vol. 9(3), pp.113-117
- Place of study** : Pondicherry
- Period of study** : June 1991-June 1992
- Aims and objectives** : To study the effects of exposure to indoor air pollution from the use of cooking fuels on lung functions and respiratory symptoms in women aged 15-60 years.
- Study conducted by** : Jawaharlal Nehru Institute for Post Graduate Medical Education and Research, Pondicherry

**Nature of study** : Community survey

**Methodology:**

A house-to-house survey was conducted and 1,117 women in the age group 15-60 years who were involved in cooking were identified. These women were selected by a fuel- and age-stratified random sampling technique. Eventually the sample included 105 women using bio-fuels, 105 using kerosene and 105 using LPG. A woman was selected only if she was a non-smoker, not pregnant at the beginning of the study and not suffering from asthma, tuberculosis, cardiac disease, or chest or spinal deformity. These conditions were excluded by interview, clinical examination, consulting previous health centre records and doing laboratory investigations when required.

To measure the time spent near the stove while cooking, one of the authors observed the entire cooking process of 21 women (7 selected randomly from each fuel group) and logged the time actually spent in front of the stove. To enquire about differences in respiratory illnesses, six home visits were made at monthly intervals and the women were interviewed using the modified American Thoracic Society, Division of Lung Diseases - 78 questionnaire. Forced vital capacity (FVC), forced expiratory volume in the first second (FEV1) and peak expiratory flow rate (PEFR) were measured. The exposure to fuel smoke, ventilation of the kitchen and lung functions was assessed at the first visit. The occurrence of respiratory symptoms/illnesses was noted during all six visits.

**Findings:**

- The average amount of biofuel used was 5.5kg (SD= 1.7). The average amounts for kerosene and LPG used were 0.8kg (SD=0.2) and 0.4kg (SD=0.05), respectively.
- Out of the 315 women initially selected, 97 women using biofuels, 100 using kerosene and 98 using LPG completed the study. The average monthly income in the LPG group (Rs 1050 (SD=358)) was higher than that in the biofuel (Rs 545 (SD=57)) and kerosene (Rs 679 (SD=121)) groups ( $p<0.05$ ).
- Biofuel users spent a larger proportion of cooking time near the stove than kerosene ( $p<0.01$ ) or LPG users ( $p<0.01$ ).
- The overall presence of respiratory symptoms during the study period was higher for women using biofuels (23 percent) compared to those using kerosene (13 percent,  $p<0.05$ ) or LPG (8 percent,  $p<0.05$ ). Complaints of cough and breathlessness were higher among biofuel users ( $p<0.05$  for biofuels compared to LPG).
- Lung functions: Forced vital capacity (FVC), forced expiratory volume in the first second (FEV1) and peak expiratory flow rate (PEFR) were significantly lower in biofuel users compared to both kerosene ( $p<0.01$ ) and LPG users ( $p<0.01$ ). Lung functions in kerosene users also were significantly poorer when compared to LPG users ( $p<0.01$ ).
- Predicted pulmonary functions using multiple regression equations, derived from the data set of the present study, indicated that women using biofuels were more liable to have reduced pulmonary functions than women using kerosene or LPG. The present study confirms earlier observations that exposure to biofuel smoke is associated with increased respiratory symptoms/illnesses and decreased pulmonary functions.

**ABSTRACT NO. 73**

**Author(s)** : Karamarkar, Tanuja D.

**Title** : Prevalence of Chronic Respiratory Diseases (CRD) in Rural South India

**Source** : Diploma in Community Health and Management, Field Study Report, RUHSA Department, Christian Medical College, Vellore, 1991-92

**Place of study** : North Arcot, Tamil Nadu

**Period of study** : October - December 1991

**Aims and objectives** : To estimate the prevalence of chronic respiratory diseases in the rural area among the middle aged (35-64 years) and the elderly (65+ years); to measure their knowledge and attitude on chronic respiratory diseases; and to identify treatment pattern followed and its response.

**Study conducted by** : Christian Medical College, Vellore

**Nature of study** : Community-based, health-interview survey

### **Methodology:**

The sample was selected from four villages, all situated at a distance of 7 to 8 kilometres from RUHSA, selected purposely for sufficient population and rural setting. The study period was three months starting October 1991.

The study population consisted of 1,147 person (40 percent of the total population of the Panchayat). 235 households were selected out of 638 households by systematic sampling technique. The information regarding chronic respiratory diseases, as well as information on the family, smoking habits, and history of cough with expectoration was collected from 1,147 persons from the 235 households, by house-to-house visits.

Those giving a history of cough with expectoration for more than 2-3 weeks or more than one year were further interrogated with a pre-tested schedule. An interpreter was used.

### **Findings:**

- The overall prevalence of chronic respiratory diseases was 12.2 per 1,000 (14/1,147). Of this, asthma prevalence was 9.59/1,000 and TB prevalence was 1.74/1,000.
- Age-specific prevalence of chronic respiratory diseases was:
  - <34 years 2.71/1,000
  - 35-54 years 15.56/1,000
  - 55-64 years 57.69/1,000
  - > 65 years 40.81/1,000
- The overall prevalence of chronic respiratory diseases by sex was 19.89/1,000 for males and 5.05/1,000 for females.
- 92.86 percent of the affected population belonged to Scheduled Castes (42.85 percent) and Backward Castes (49.98 percent). Fifty-eight percent of those affected had no education (29 percent) or were educated up to class V (29 percent). The per capita income of 79 percent was below the poverty line (Rs 720 per month). 57 percent were living under thatched roofed houses.
- 33.3 percent of those affected were heavy smokers (>20 cigarettes a day), 16.1 percent - moderate (10-20 cigarettes a day). All respondents showed willingness to go for treatment. 29 percent showed positive attitude to allopathy, as it was curable. 42.84 percent preferred allopathy because of free treatment and concessional rates. Only 14.28 percent felt that homoeopathy was better because it was less costly and they felt better following the treatment. 50 percent were taking treatment from government hospitals, 21.42 percent from RUHSA and the rest from private hospitals.



- Author(s)** : Chatterjee, Mirai
- Title** : Occupational Health of Self-Employed Women: Some Experiences
- Source** : FRCH Newsletter, vol. VIII, no. 1, Jan-Feb. 1994
- Place of study** : Ahmedabad, Gujarat and Indore, Madhya Pradesh
- Period of study** : Not specified
- Aims and objectives** : To report on four studies examining occupational health problems in four occupational groups of women.
- Study conducted by** : Self-Employed Women's Association, Ahmedabad
- Nature of study** : Qualitative interviews and cross-sectional community health-interview surveys

**Methodology:**

The studies had a participatory design, based on the belief that the best research is done, and best data generated when the workers themselves are involved. The study involved area visits and discussions with workers, local health functionaries, doctors, welfare officers, group meetings, and four cross-sectional (covering the variables of ages, years of work and community) surveys to obtain data on the prevalence of health conditions specific to each of the four occupational groups: ready-made garment workers, *bidi* workers, *agarbatti* (incense sticks) workers and *masala* (Indian spices) makers.

The sample sizes out of estimated total number of workers in the occupation were as follows:

Ready-made garment workers:	100/10,000
Bidi workers:	156/7,000
Agarbatti workers:	150/10,000
Masala workers:	150/2,000

The samples were taken from the cities of Ahmedabad (garment, agarbatti, masala) and Indore (bidi) and there was an attempt to include all major areas where workers live and work.

The data collected were considered relevant by the women workers themselves. Apart from the socio-economic data, the health problems experienced at work, health problems experienced after work, and whether treatment was sought were elicited. No clinical exam was done.

**Findings:**

- The self-employed in this profile were poor and worked long hours for low wages.
- While at work, the majority of garment and bidi workers mentioned pain in limbs (80 percent and 63 percent), back pain (47 percent and 56 percent) and headache (41 percent and 37 percent). And while after work they complained of dizziness (49 percent and 47 percent) and exhaustion (47 percent and 63 percent).
- The majority of the agarbatti workers and many of the masala workers spoke of back pain (73 percent and 39 percent) and pain in the limbs (78 percent and 16 percent). Other problems mentioned included headache (23 percent and 11 percent) and dizziness (11 percent and 23 percent) after work.
- The masala workers also spoke of blisters and callouses after work.
- During the study many women wanted to speak about their gynaecological problems and some of the problems reported were pain in the lower abdomen (80 percent garment, 62-63 percent bidi and agarbatti), white discharge (57 percent garment, 54 percent bidi), burning sensation while urinating (54 percent masala, 33 percent garment). The author makes a series of health-related suggestions for interventions, but there was need for overall improvement of workers' living and working conditions.

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**Reviewer's note:**

The author notes that since the study was not a case-control study over a period of time, there was the limitation of establishing cause-effect relationship between an occupation and health problem conclusively.

**ABSTRACT NO. 75**

- Author(s)** : Pathare, Chethana, and Lakshmi Lingam
- Title** : Women Rag-Pickers and Their Health
- Source** : Paper presented at the CHS-ILO Workshop on 'Women's Occupational and Reproductive Health: Research Evidences and Methodologies,' 23-25 February 1998, Tata Institute of Social Sciences, Mumbai
- Place of study** : Bombay (Mumbai), Maharashtra
- Period of study** : Not specified
- Aims and objectives** : The broader study tried to look at the socio-economic status of rag-picker women and the reasons behind their choice of this occupation, their health and alternatives available for occupational mobility. This paper examines occupation-related issues and their impact on the women's health.
- Study conducted by** : Tata Institute of Social Sciences, Bombay
- Nature of study** : Community survey

**Methodology:**

The sample consisted of 40 women rag-pickers and 10 children and male rag-pickers to provide a comparison with the women. The time constraints of the M.A. programme forced the sample to be limited to 50. The sample was purposely selected from four low-income locations from Chembur and Deonar regions and the largest dumping ground in Mumbai being located there.

**Findings:**

- The living conditions of the rag-pickers were pathetic with inadequate amenities. The women began their work early in the mornings, collecting plastic, paper, glass, iron, clothes and bones from the rubbish dumps, which were then cleaned and sorted. A majority of the women (54 percent) worked for 8 hours a day. Seventy-five percent of the respondents earned between 21-40 rupees a day.
- Ninety percent of the women worked till the ninth month of pregnancy and resumed work within three months. Seventy-two percent of the deliveries took place at home.
- The occupation-related problems of all workers included backache and pelvic pain (82 percent), body and headache (74 percent), skin diseases (64 percent), bites and cuts (94 percent) and sun strokes (60 percent).
- Problems like tuberculosis, respiratory diseases, worms, dysentery, piles and constipation were not only related to working but also to living conditions.
- Gynaecological problems reported were irregular bleeding (63 percent), abnormal vaginal discharges (40 percent) and burning sensation while urinating (35 percent).

- Ninety-four percent also reported on their mental states as feeling numbness, gloom, irritation, worrying and anxieties over their own and children's future, debts, insecurity, fear of being sexually harassed and threat of eviction.

## ABSTRACT NO. 76

- Author(s)** : Mathew, Pauline, and Lakshmi Lingam
- Title** : Migrant Women Workers in the Fish/Prawn Processing Industries, Navi Mumbai
- Source** : Paper presented at the CHS-ILO Workshop on 'Women's Occupational and Reproductive Health: Research Evidences and Methodologies,' 23-25 February 1998, Tata Institute of Social Sciences, Mumbai
- Place of study** : New Bombay (Navi Mumbai), Maharashtra
- Period of study** : Not specified
- Aims and objectives** : This study is part of a larger study that tried to understand the socio-economic conditions, reasons for migration, terms and conditions of work, working and living conditions and health problems of workers in the fish and prawn processing industries. The focus of this paper is on occupational health issues.
- Study conducted by** : Tata Institute of Social Sciences, Mumbai
- Nature of study** : Qualitative in-depth interviews and group discussions

### Methodology:

Due to the sensitive nature of the industry revealed during the pilot visits, only those migrant women/girls from Kerala between 15-35 years, willing to spend time and be interviewed were included in the study. Six married and 12 unmarried women as well as 2 ex-factory and present barmaids participated in the in-depth interviews. Group discussions were held with more than 90 girls. Interviews were also held with seven doctors, four contractors and five supervisors.

### Findings:

- The industry consisted of the following features: only women from Kerala were preferred because they possessed better grading skills; they comprised mainly of migrant women brought on 11-month contracts through agents and provided living facilities at the premises or nearby.
- Living conditions of the workers were dingy, unhygienic and congested. Their social life was restricted to the factory and living quarters, and their social network, to the same contractors and supervisors, who indulged in sexual abuse and exploitation.
- The women workers developed their own subculture at work and in the living quarters, including jargon, topics and subjects for discussion that were different from the local people as well as from their native places.

- At work the women stood all day and worked in ice and water in damp conditions. This caused numbness in the hands and feet, and skin ailments. Apart from this, fungal infections, skin peeling, infection on cracked skin, anaemia, common cold, chest conditions, typhoid, pneumonia, malaria, as also irregular periods were mentioned.
- Among mental health problems reported were convulsions and depression. The meager earnings and the tremendous health problems led a few of the women to move to the bars.

**Reviewer's note:**

There is no mention of the number or percentage of women who had the different health problems reported.

**ABSTRACT NO. 77**

- Author(s)** : Nihila, Millie
- Title** : Marginalisation of Women Workers: Leather Tanning Industry in Tamil Nadu
- Source** : Economic and Political Weekly, 1999, vol. 34, no. 16 and 17, April 17-24
- Place of study** : Five locations in Tamil Nadu
- Period of study** : Not specified
- Aims and objectives** : To verify the hypothesis that gender inequality is in-built in the organisation of the leather industry, and to highlight the hazards to women's health from the tanneries.
- Study conducted by** : The author (for her Ph.D. dissertation)
- Nature of study** : Community survey and qualitative in-depth interviews

**Methodology:**

The survey for the micro-study was conducted in the leather tanning pockets of Dindigul, Tiruchirapalli, Vaniyambadi, Ambur and Pernampet. This was followed by a survey of all leather tanning units in Dindigul, and a second survey of tannery workers was conducted and in-depth interviews (indicated in brackets) in Dindigul (65 women/106), Trichy (41/59) and North Arcot (33/33). The paper does not indicate the manner of sample selection.

**Findings:**

- Nearly 225 chemicals are used in the various processes from tanning to finished leather and these lead to various conditions such as dermatitis, conjunctivitis, nervous disorders, itching of skin, throat, mucous, membrane, chest pain, ulcer, breathing problems, asthma, bronchitis, fissure in fingers, toes, mouth, and nose, frequent fever, headache and stomach upsets.
- Specific gynaecological problems include menstrual disorders, premature deaths, stillbirths and prolapse of the uterus.
- The illegal manner in which the industry expands, the temporary and casual nature of female employment, the hazardous, physically strenuous and mechanically debilitating activities that are handled by these women workers, and the impossibility of claiming legal protection by these workers, bring out the systemic nature of the subordinate status of the women workers and their health problems. These problems cannot be resolved by just implementation of factory or social welfare legislation.

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**Reviewer's note:**

The author does not specify the particular proportions of the health problems among those affected, hence the conclusions remain general observations.

**ABSTRACT NO. 78**

- Author(s)** : Gopal, Meena
- Title** : Health of Women Workers in the Beedi Industry
- Source** : Medico Friends Circle (MFC) Bulletin (Forthcoming)
- Place of study** : Tirunelveli, Tamil Nadu
- Period of study** : Not specified
- Aims and objectives** : To discuss the health problems arising from the nature of work in the home-based bidi industry.
- Study conducted by** : The author (for her Ph.D. dissertation)
- Nature of study** : Community survey

**Methodology:**

With respect to methodology, the paper looks at issues of occupational health through a case study of the bidi industry. The author also mentions that, "we do not attempt here to measure morbidity which requires a separate design and tools, but use categories through which people deal with their illness by addressing the conditions in which they work and live, and the subjective perception of illness." There is also no mention of the stratification of the community, though the paper mentions two groups of households: 'well off' and 'poorer.' The discussion is in terms of indirect and direct implications for health.

**Findings:**

- The indirect implications of health included the adjustments that women made at home and at work with respect to food, rest, leisure, tension-filled routine, exposure to tobacco, and transferred costs in terms of child labour, education of girls, worry and fear of the shop-owners (to whom the bidis had to be given).
- With respect to direct health implications, women perceived and reported symptoms and their causality in very specific terms. The symptoms included the aches and pains related to bidi work, coughs, giddiness, breathlessness, stomach-related pains, as well as others that included urinary burning, white discharge, haemorrhoids and worry.
- Women related these symptoms to postural aspects of work, lack of rest, poor eating habits, constant exertion, heavy work, pregnancies and laparoscopic sterilisation.
- 60 percent of the responses of both the well-off and poorer households attributed 'aches and pains related to bidi work' to the processes of bidi work.

- Author(s)** : Shatrugna, Veena, P. Vidyasagar, and T. Sujatha
- Title** : Women's Work and Reproductive Health
- Source** : Medico Friend Circle Bulletin, no. 197-201, August-December 1993
- Place of study** : Hyderabad, Andhra Pradesh
- Period of study** : Not specified
- Aims and objectives** : This study is part of a larger study exploring the relationship between women's paid work and women's health status, and access to and utilisation of health care.
- Study conducted by** : Authors
- Nature of study** : Community health interview survey with clinical examination of a subsample and in-depth qualitative interviews

**Methodology:**

The study was carried out in a large low-income settlement in Hyderabad. 1,124 households in katcha units were enumerated. With a few modifications, the women from these households were ranked and placed in the following occupation categories based on ILO classifications for the unorganised sector: self-employed, wage labour, unpaid family labour and housewives.

The sample for the study included 340 households from the 1,124 households. The following rounds of information (number of rounds in the year given in parentheses) were collected: background information (1), utilisation of preventive health care (1), morbidity (6), shift in women's occupation (12).

Field investigators were trained to record the symptoms from women with a 15-day recall. A gynaecologist examined a sub-sample of the women who reported illness. To validate the above, qualitative information was collected using case studies and life histories.

**Findings:**

- 506 of 1,625 households contacted in six months reported women's morbidities (Note: no details on the manner of pooling of data). Out of these, 30 percent reported gynaecological morbidities, 13 percent reported a general feeling of ill-health, and 18 percent had pregnancy or surgery-related problems.
- Fifty-one percent did not take any action, while 28 percent sought free or low-cost care from government hospitals (12.5 percent), or tried home remedy (5.9 percent), treatment from neighbours (5.7 percent), paramedics (1.8 percent), or utilised medical shops (2.2 percent). Nineteen percent used private care.
- The private sector was mostly used for acute problems like fevers (51 percent), upper respiratory infections (20 percent) and gastro-intestinal disorders (35.3 percent).
- It seemed that women were willing to pay the price (Rs 33) to get back to work. (Note: presumably calculated from the mean cost of the government and private treatment for all disorders).
- Antenatal care was popular and 88 percent had 3-5 checkups. 73 percent visited government hospitals and 48 percent delivered there. Forty-two percent utilised the private sector for their first pregnancy despite services not being satisfactory.
- The authors note in their findings that the limitations of the curative system was that it did not recognise the relationship of gynaecological, pregnancy-related and other problems with the social, economic and cultural factors. The health care system also needs to pay attention to women's need for better nutrition, rest, help for childcare and housework, a supportive family and sexual relationship, and the complexity of these relationships.
- Occupational problems in the unorganised sector are also not acknowledged, and the low wages are inadequate for better nutrition, support at home, or even the high cost of curative care. A large number of women changed occupations, due to various work-related health problems (physical and emotional) to enable them to recover, and housewives entered or 'resumed' work for economic reasons.

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### **Creating Resources for Empowerment in Action (CREA)**

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Phone: 91-11-4107983, 91-11-6874733  
Telefax: 91-11-6883209  
Email: crea@vsnl.net

### **Rural Women's Social Education Centre (RUWSEC)**

191 A, Nehru Nagar, Vallam Post,  
Chengalpattu 603002, Tamil Nadu  
Phone and Fax: 91-4114- 30682  
Email: rural@md4.vsnl.net.in

### **Talking About Reproductive and Sexual Health Issues (TARSHI)**

49, Golf Links, Second Floor  
New Delhi 110003  
Phone: 91-11-4610711, 4654603, Fax: 91-11-4654210  
Email: tarshi@vsnl.com

### **Tata Institute of Social Sciences (TISS)**

P.O.Box 8313, Deonar,  
Mumbai 400088, Maharashtra  
Phone: 91-22- 5563289-96, Fax: 91-22-5562912  
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### **Women's Health Training Research and Advocacy Centre (WOHTRAC)**

Women's Studies Research Centre  
MS University of Baroda  
Vadodara- 390002, Gujarat  
Phone and Fax: 91-265-792106  
Email: wohtrac@sify.com

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## **The Gender and Reproductive Health Research Initiative**

### **Annotated Bibliographies (1990-2000):**

#### **Abortion**

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#### **HIV/AIDS**

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#### **Reproductive Health Services**

Centre for Enquiry into Health and Allied Themes

#### **Sexuality and Sexual Behaviour**

Women's Health Training Research and Advocacy Centre

#### **Women's Morbidity**

Rural Women's Social Education Centre

#### **Women's Reproductive Health**

Rural Women's Social Education Centre