

Suggestions on Adding Family Planning to the Curriculums of Medical Schools

DONALD T. RICE, M.D., M.P.H.

DURING the past 5 years there has been a crescendo of interest in the teaching of population dynamics and family planning in the medical colleges of India. Some factors responsible for the greatly heightened interest are India's population problems, its Government's extensive family planning program, and the support of the Government's policy and program by the Medical Council of India, a quasi-governmental medical college accreditation and physician-licensing body. Surveys in 1964 by Bali (1) and by O'Connor and O'Connor (2) and in 1967 by Rice (3) and Anand (4) showed that the medical colleges in India have been increasing their teaching of family planning. A survey of 93 colleges I made in 1969, more comprehensive than those previously mentioned, showed further marked interest and activities in family planning. The detailed results of the survey are being published in the *Indian Journal of Medical Education*.

Other indications of the tempo and inten-

Dr. Rice is chief of the Family Planning and Public Health Division of the U.S. Agency for International Development's Mission to Nepal. He was formerly a Ford Foundation consultant in training and health education to the Department of Family Planning, Government of India. From 1956 to 1960 he was professor of social and preventive medicine at the Christman Medical College, Ludhiana, Punjab.

This paper is adapted from one published in the Indian Journal of Medical Education, vol. 8, pages 249-257, September 1969.

sity of concern in India are the carefully controlled experimental teaching of the subject reported by Anand (4), a paper Gopalan read at the Seminar on Teaching of Social and Preventive Medicine at Trivandrum in 1966 (5), articles on teaching content and methods by Malhotra (6) and by Anand and Kanwar (7), the actions of the Director General of Health Services and the Medical Council of India as reported by Raina (8) and Anand (4), and the curriculum in family planning prepared for the Third Conference of Deans and Principals and adopted by the Medical Council of India (9).

In Colombia much interest and activity has been spearheaded by the Division of Population of the Colombian Association of Medical Schools. More recently this national unit has expanded into a division of the Pan American Federation of Associations of Medical Schools. Now its function is to stimulate interest and activity in teaching population dynamics and family planning in approximately 200 medical schools in the Americas. The federation sponsored the Pan American Conference on the Teaching of Demography in Medical Schools, held in Bogotá in June 1968 (10).

In the United States, the 1964 survey of medical schools by Tietze and co-workers (11) showed that less than half of the responding schools spent 2 hours on this subject. No more recent survey has been published, but teaching of population dynamics and family planning was the subject of conferences sponsored by the Josiah Macy, Jr. Foundation in 1964 (12) and

Health and Human Development, Public Health Service, in 1967 (14), and by the American Association of Medical Colleges in March 1969. This interest has been concurrent with the development of an increasing number of family planning programs in the United States.

The Macy conference held in Italy in 1967 developed a set of recommendations for the teaching of family planning (15), and the International Federation of Obstetricians and Gynecologists has been working on a looseleaf teaching manual for use by departments of obstetrics and gynecology.

The International Planned Parenthood Federation sponsored a survey on the teaching of family planning and population dynamics. Returns from 10 countries were summarized in its medical bulletin of October 1968 (16). In other issues of the bulletin are a report of a 1968 conference in the United Kingdom which has caused concerted thinking and planning on how the subject might be taught in Britain (17) and a report of the first special course on family planning that the Faculty of Medicine at the University of Paris arranged in November 1968 (18).

The 1964 New Delhi Workshop on Methods of Teaching Family Planning in Medical Colleges (19) and the Macy conferences of 1964 and 1966 (12, 13) considered how the departments in a medical college could participate in this teaching. However, none of these groups developed a concise summary of topics which various departments should cover, a description of the way in which each department could integrate these topics into its regular teaching, or suggestions for optimal coordination between departments.

This paper will provide one set of suggestions on how teaching family planning and population dynamics may be incorporated in the curriculums of the medical colleges of India. Following most of these suggestions requires little additional teaching time. A few minutes explicitly relating family planning to a topic already on the teaching schedule would usually be enough. Occasionally an hour lecture, summing up ways in which each department can contribute to family planning, would be helpful. Frequent references to the topic and short con-

ferences on family planning will help students realize the pervasiveness and importance of the subject.

In preclinical subjects, the emphasis on practical aspects of family planning should be a welcome diversion to both students and faculty. In clinical subjects, there are wide opportunities to relate the subject to everyday life, to teach comprehensive patient care, and to call attention to the effects of socioeconomic factors on the treatment of a wide range of diseases.

There may be some repetition, but what harm is done if several departments consider the need for family planning for patients with leprosy or the need for genetic counseling of families with hereditary disease? Nevertheless, coordination between departments is highly desirable. The impact on students will be greater if several professors consider the subject important. Those who write examination questions for universities can exert the most influence by including a question that relates population dynamics and family welfare planning to each subject in the medical school curriculum.

Unfortunately, no comprehensive textbook on the many facets of family planning exists; teaching aids such as charts, filmstrips, films, and programmed instruction are available, however, and additional materials are being produced. These can be used in conjunction with my suggestions to aid the faculty in preparing new physicians for more effective participation in India's most critical program—family planning.

Family Planning in Various Departments

Anatomy and embryology. These departments can relate family planning to several phases of teaching. For instance, when genetically linked diseases are discussed, how family welfare planning can prevent new cases can be mentioned. When growth and development of the fetus is described, the need for adequate prenatal nutrition and its relationship to the spacing of children can be discussed. In teaching applied anatomy of the reproductive system, the techniques of sterilization operations can be demonstrated. Also, methods of contraception, their mode of action, their advantages

cations for their use can be reviewed.

Physiology and biochemistry. It is appropriate, in connection with the topics of endocrine control of the menstrual cycle and the variations of the basal temperature, to discuss the rhythm methods of contraception, including the temperature method and the physiology of oral contraceptives.

Family welfare planning can be related to the nutritional needs of mother and child. Spacing and limiting the number of pregnancies can be indicated as a way of preserving the meager nutritional resources of the average Indian woman and child. Some departments discuss physiological psychology. The effects of drives, instincts, memory, intelligence, motivation, and emotion can be directly related to fertility and the place of family planning in maintaining psychological balance.

Pharmacology. Oral contraceptives are, of course, related to the hormonal regulation of the menstrual cycle, the prevention of ovulation, and the control of the properties of the cervical mucus. The various orals can be discussed in terms of types, doses, derivations, mode of action, side effects, indications and contraindications, advantages and limitations, and of matching the patient with the various combinations of hormones and dosages.

In taking up the toxicology of household chemicals and chemicals common in contraceptive foams and jellies, there are numerous possible demonstrations, such as an experiment showing the effects of time and concentration of NaCl and other spermicides on semen.

Pathology and microbiology. Family welfare planning and population control are logically related to genetics and the control of inherited diseases.

Discussion of growth disturbances of childhood and adolescence—such as retardation attributable to poor nutrition, neglect, or abuse of children—can lead to mention of family welfare planning's role in preventing such conditions.

When discussing immunity, teachers can describe that portion of the research on conception control in the sphere of immunology.

In teaching communicable disease control, part of prevention is to reduce the contributing

factors, and family welfare

planning can be mentioned in this connection.

Preventive and social medicine. This department is usually responsible for a large share of teaching on population dynamics and family planning. The course in statistics and demography must include teaching about the registration and reporting of births and deaths, birth rates, death rates, fertility rates, pregnancy rates, gross and net reproduction rates, and surveys of couples eligible for family planning. These are the essence of population dynamics.

The need for population control and family welfare planning naturally comes up when discussing the socioeconomic position of India and of the individual Indian family.

Study of the structure of the health services and of the interrelationships of family planning with maternal and child health and other health service programs naturally includes India's family welfare planning program.

Social, cultural, and psychological aspects of family planning can easily be woven into discussions of sociology, psychology, and anthropology as these pertain to Indian cultures. Specific topics which are closely related to family planning are social and legal changes in age at marriage, abortion, children's education, child labor, acceptance of birth control, women's education and employment, incentives and disincentives to family limitation, income tax laws, and old age security.

The need to space children and avoid improvident maternity can be discussed along with normal growth and development, economic and cultural aspects of an adequate diet for mothers and children, their psychological and emotional needs, and responsible parenthood.

While teaching the individual, group, and mass approaches employed in health education and communication, the specific motivational steps for family welfare planning can be used as illustrations.

If inherited diseases and eugenic counseling are part of the preventive and social medicine curriculum, family welfare planning can logically be emphasized in connection with these subjects.

When medical care and health services for workers in industry, mines, agriculture, unions,

and in large government and private establishments are discussed, the place of family welfare planning in each of these can be included.

Departments of preventive and social medicine may emphasize the place of voluntary agencies in the health care system of India. The Christian Medical Association, the Family Planning Association of India, and the other agencies which have family planning projects can be mentioned.

In teaching epidemiology, the epidemiology of abortion might be used as an illustration, and steps to prevent criminal abortion could be discussed.

When health education programs for school children are being considered, population education, family life education, and sex education are appropriate topics.

Obstetrics and gynecology. The major responsibility for teaching the medical aspects of family welfare planning is usually assigned to this department because family planning is related to many portions of the curriculum.

In teaching how to take histories from obstetrics and gynecology patients, some additional questions would enable students to determine which patients need advice in family planning.

Professors normally teach medical students certain manners and customs which make their treatment of patients in obstetrics and gynecology appropriate to the patient's culture. Observing these customs is extremely important in giving advice on family planning.

Teaching about pessaries and IUCD's can be done early in the curriculum, soon after the technique of vaginal examination and the detection of pelvic pathology have been taught.

Because obstetrics and gynecology is the department primarily concerned with teaching about menstrual difficulties, the rhythm method and the use of oral contraceptives can be covered.

The teacher should not fail to point out the relationships between spacing and limitation of children and the physiology of pregnancy, risks of pregnancy, cumulative damage of multiple pregnancies, and prevention of abortion, as well as the marital instability and family disruptions that arise from too many children. The need for spacing can be supported by statistics which show that stillbirths are more frequent when the birth interval is relatively short, as

are prematurity and neonatal and infant mortality, that puerperal mortality and morbidity rates increase with age and multiparity, and that there is a clear association between the incidence of cancer of the cervix and high parity.

When reviewing anatomy in regard to surgery of the pelvic region, one of the most common of all gynecologic operations, tubal ligation, can be included.

Maternal and child health and family welfare planning can be integrated in teaching about antenatal and post partum care.

Teaching about counseling on sexual and marital adjustment can include the timing of marriage and of pregnancies.

When discussing the treatment of patients who need evacuation of incomplete abortions, the effects of repeated abortions and the importance of family planning in preventing abortion must be discussed. The discussion might also include legal aspects of abortion including the possibility of liberalized laws.

In teaching about the causes, prevention, and treatment of infertility, the right to have children and the need to space children can be discussed.

Surgery. Teaching the technique of vasectomy and its possible complications should also encompass the preparation of families for vasectomy and followup of the patients. Although the psychological complications of the operation may be the primary responsibility of the psychiatry department, the teacher of surgery should also cover these.

Family welfare planning can be touched upon when discussing the treatment and rehabilitation of persons with handicapping diseases and disabilities. The physical and economic reasons for limiting procreation should be clearly pointed out to medical students. Little additional time would be required to accomplish this, but it is particularly important because the influence of the surgeon on the attitudes of medical students is very strong.

Pediatrics. Families of pediatric patients often have pressing needs for family welfare planning, and parents are nearly always available. Therefore, pediatricians have many opportunities to illustrate to medical students the importance of family planning.

Pediatric history-taking should include ques-

tions on the number, age, and health of other children in the family and its economic and housing conditions. These data may be used as a basis for recommendations to parents about family planning. The recommendations may be part of the treatment of the pediatric patient himself.

The necessity for spacing and limiting the number of children could be emphasized when teaching about emotional, physical, and mental growth and development, child care, mental stimulation, the effects of child care by older siblings, and the economics of food, clothing, schooling, housing, and medical care.

When problems of nutrition, such as infant feeding, weaning, childhood nutrition, and kwashiorkor are discussed, it is logical to emphasize the effect of too many or too closely spaced children.

In discussing communicable diseases such as tuberculosis, other respiratory infections, gastrointestinal infections, and trachoma in children, the hypersusceptibility of patients who live in crowded homes can be mentioned, along with the need to prevent crowding.

Finally, the integration of maternal and child health and family planning services, the organization of well-child and sick-child clinics, and the provision of counseling for infant and child care all lend themselves to discussions of family planning.

Psychiatry. This department is responsible for teaching about sexual development, sexuality, sex modesty norms, and normal and abnormal sexual behavior, all closely related to cultural aspects of fertility control. Furthermore, when discussing post partum and other psychoses, mental deficiencies, the aggravation of mental disease caused by childbirth, child care, or economic burden upon either partner, psychiatry can argue strongly for family planning.

Psychiatry is also involved in teaching the proper therapy for psychological complaints after vasectomy (such as impotency), the complaints following IUCD insertion, and the feeling of sexual inadequacy which may occur after tubectomy. Further, it is more important that psychiatrists teach medical practitioners and students ways to prevent these complications.

Medicine. Although the syllabus circulated by

the Medical Council of India does not specifically list teaching possibilities for the department of medicine, several possible contributions are suggested. In the teaching of systematic history taking, a slight modification in the usual form will yield additional data needed to make a diagnosis of a particular patient's or family's need for family planning. Since medicine is responsible for the initial instruction and much of the followup on history taking, this contribution is basic. Furthermore, in the summation of each case, teachers could insist that students consider the need for family planning as part of the recommended treatment of the total patient.

Without spending much additional time, medicine can contribute by calling the attention of students to the fact that one way to prevent additional impairment of patients with certain medical conditions is to prevent another pregnancy. Pregnancy is contraindicated for persons with diseases of the cardiovascular and renal systems, epilepsy, grave degrees of anemia, hemolytic disease, hypertension, diabetes, cancer, multiple sclerosis, psychosis, and muscular dystrophy.

Furthermore, in such communicable diseases as leprosy, tuberculosis, and syphilis the necessity and desirability of preventing further pregnancies can be emphasized.

Often neglected is the need for family planning for patients suffering from a disease which limits the ability to earn an adequate income or to do housework.

In discussing the economics of medical care it can be pointed out that large families usually have a higher incidence of disease, much of which might be prevented by limiting the number of children.

Genetics and genetically transmitted diseases may also be discussed by other departments, but the necessity for family planning in such patients can be emphasized by the department of medicine.

Forensic medicine. Neither the syllabus of the Medical Council of India nor my survey considered the part that departments of forensic medicine might play in teaching population dynamics and family planning. Obviously, a national family planning program is closely tied to current laws and possible changes in the laws regarding registration of births and deaths,

abortion, infanticide, child abuse, consent for sterilization operations, compulsory sterilization of persons with certain defects, age at marriage, polygamy, and inheritance.

Suggestions for Coordinated Teaching

Shared teaching. During the preclinical terms, case conferences including the clinical departments may be organized around patients who illustrate the preclinical subjects and needs for family planning. A woman with rheumatic heart disease, a child with muscular dystrophy, or a man with tuberculosis of the spine are such patients.

During the last 2 years of medical school, clinical conferences involving several departments should center on patients whose conditions allow teachers to emphasize family planning's role in the prevention of specific diseases, in the essential treatment of some illnesses, and in the rehabilitation of certain conditions.

Block teaching. If teaching in all departments can be coordinated, most of the material on family planning mentioned previously could be taught in a few weeks. Assigning a block of time would probably allow for more thorough coverage and produce a greater impact on students and faculty.

Internship. All assignments should emphasize the importance of family planning and ways in which it applies to patients in all wards and clinics. The surgery posting should provide opportunity for each intern to observe and perform a specified number of vasectomy operations. The obstetrics and gynecology and rural postings should provide opportunity to observe IUCD insertions and tubectomy operations, to perform a specified number of IUCD insertions, and to participate in family planning, antenatal, postnatal, and well-child clinics. The assignments should also allow students to study the organization and function of rural and urban health and family planning centers, to survey urban slum dwellings and village homes, and to practice motivating patients and others to adopt family planning.

Conclusions

Teachers have the responsibility of guiding and shaping the minds and attitudes of students so that they become physicians most suitable to

meet the needs of their communities. Medical graduates must be concerned about the population explosion and should be equipped with the medical knowledge and skills which are essential to their being able to alleviate the problems of overpopulation in individual families and the nation.

The best way to develop the necessary knowledge, attitudes, and skills is for all teachers to use every opportunity that presents itself and to seek other opportunities to emphasize the need and means for family planning.

Most of the suggestions contained in this paper can be integrated into teaching which is already being done, so that not much additional time will be required.

A wide variety of teaching aids is available. Others could be prepared and distributed. Their use would make teaching easier and more effective.

Coordinated teaching during the preclinical, clinical, and internship periods will contribute much to the students' comprehension of this subject.

REFERENCES

- (1) Ball, P.: Review of existing curriculum contents in family planning teaching at undergraduate medical students' level. *In* Methods of teaching family planning in medical colleges. Report of the workshop, edited by D. Anand. Association for Advancement of Medical Education and the Central Family Planning Institute, New Delhi, 1964, pp. 137-142. Mimeographed.
- (2) O'Connor, R. W., and O'Connor, T.: Asian medical students and family planning. *J Med Educ* 42: 949-957, October 1967.
- (3) Klee, D. T.: Asian medical colleges and fertility control. *JAMA* 204: 106-110, May 6, 1968.
- (4) Anand, D.: Methods of teaching family planning in medical colleges. Central Family Planning Institute Report Series-3. New Delhi, August 1967.
- (5) Gopalan, C.: Family planning in the undergraduate curriculum. *In* Report on the seminar on teaching of social and preventive medicine. St. Josephs Press, Trivandrum, 1966, pp. 40-45.
- (6) Malhotra, P.: Introducing family planning in the medical school curriculum in India. *Indian J Med Educ* 4: 1-3, July 1965.
- (7) Anand, D., and Kanwar, K.: An approach to integrated teaching. *Indian J Med Educ* 5: 1-3, July 1966.
- (8) Raina, B. L.: Family planning in medical education. Central Family Planning Institute, New Delhi, 1968. Mimeographed.

- (9) Medical Council of India: Syllabus for family planning. New Delhi, 1968. Mimeographed.
- (10) Conferencia panamericana sobre enseñanza de la demografía en las facultades de medicina. Federación panamericana de asociaciones de facultades-escuelas-de medicina, Bogotá, junio 1968.
- (11) Tietze, C., et al.: Teaching of fertility regulation in medical schools. JAMA 196: 20-24, Apr. 4, 1960.
- (12) Macy Conference: Teaching the biological and medical aspects of reproduction to medical students. Harper & Row, Publishers, New York, 1960.
- (13) Macy Conference: Teaching of family planning to medical students. Josiah Macy, Jr. Foundation, New York, 1968.
- (14) National Institute of Child Health and Human Development: Teaching of family planning in medical schools. Washington, D.C., 1967. Mimeographed.
- (15) Macy Conference: Recommendations for teaching family planning in medicine. Josiah Macy, Jr. Foundation, New York, 1967.
- (16) International Planned Parenthood Federation: Planned parenthood in medical education. IPPF Med Bull 2: 4, Oct. 1, 1968.
- (17) International Planned Parenthood Federation: Family planning in medical education. IPPF Med Bull 2: 2, May 1, 1968.
- (18) International Planned Parenthood Federation: French medical students get family planning course. IPPF Med Bull 3: 1, Mar. 3, 1969.
- (19) Anand, D., editor: Methods of teaching family planning in medical colleges. Report of the workshop. Association for Advancement of Medical Education and the Central Family Planning Institute, New Delhi, 1964, pp. 1-156. Mimeographed.

Tearsheet Requests

Donald T. Rice, M.D., Family Planning and Public Health Division, Kathmandu (ID), Department of State, Washington, D.C. 20521

Only One Drop of Blood Needed for Diagnostic Tests

A single drop of blood is all medical scientists now need to test for the chemical factors indicating one of a wide range of diseases, among them diabetes, gout, and many kidney diseases.

University of Wisconsin Prof. Ronald H. Laessig has refined the measurement and testing of blood so that 25 microliters (1 drop) run through an automatic analyzer will indicate the level of blood glucose (diabetes), blood urea nitrogen (kidney disease), and uric acid (gout, rheumatoid disease). Scientists have found that an increase in the level of uric acid may also predict future coronary artery disease.

The new method is simple and almost painless. The fingertip or ear is pricked and a tiny, premeasured capillary tube is then placed in an Unopette—a flexible-walled mini-bottle containing a diluting solution. A squeeze of the bottle suctions the blood from the tube and mixes it. The bottle is sealed and stored.

At a convenient time, the top of the bottle

is snipped off and the diluted blood is run through the AutoAnalyzer. Minutes later the results are reported. The new procedure saves pain, blood, and time, and it can be run by less skilled technicians, thus decreasing the medical labor problem. Because of its newness and the cost of an AutoAnalyzer, the microtest is not yet in general use. However, it has been pressed into service in unique situations.

Twins were recently born at the Wisconsin Medical Center with an enzyme defect which can lead to mental retardation. The treatment required blood uric acid tests every day for the first 2 weeks of life. Ordinarily, in a newborn blood is taken directly from the jugular vein or the femoral artery, but neither of these will withstand daily puncture in the infant. Professor Laessig related that with the new analysis they had only to prick the infants' heels.

The method is also used in health screening programs and in clinical tests that have to be repeated often on the same patients.