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Natural Family Planning

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Morbidity and Mortality Weekly Report. U.S. Department of Health and Human Services January 3, 1992, 40:885-887.

Nearly a million adolescent girls become pregnant each year. Eighty six percent of all sexually transmitted diseases (STD's) occur among persons aged 15-29 years. The Centers for Disease Control's Youth Risk Surveillance System periodically measures the prevalence of health risk behaviors among youth. A three stage sample design was used to obtain representative responses from 11,631 students in grades 9-12 drawn from all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands. Students answered anonymous questionnaires in writing which could lend themselves to either over or under reporting.

"Of all students in grades 9-12, 52.4% reported ever having had sexual intercourse; 39.4% reported having had sexual intercourse during the 3 months preceding the survey. Male students were significantly more likely than female students to ever have had sexual intercourse (60.8% and 48.0% respectively) and to have had sexual intercourse during the 3 months preceding the survey (42.5% and 36.4% respectively). Black students were significantly more likely than white or Hispanic students to ever have had sexual intercourse (72.3%, 51.6%, and 53.4% respectively) and to have had sexual intercourse during the 3 months preceding the survey (53.9%, 38.0%, and 37.5% respectively). The percentage of students ever having had sexual intercourse and having had sexual intercourse during the 3 months preceding the survey increased significantly by grade of student from 9th through 12th grade.

Among currently sexually active students, 77.7% of female and 77.8% of male students used contraception (birth control pills, condoms, withdrawal, or another method) during last sexual intercourse. White female students (81.1%) were significantly more likely than black (71.4%) and Hispanic (62.6%) female students to have used contraception.

Four percent of all students reported having had an STD. Black students (8.4%) were significantly more likely to report having had an STD than white (3.1%) or Hispanic (3.5%) students. Among currently sexually active students, 49.4% of male students and 40.0% of female students reported that they or their partner used a condom during last sexual intercourse."

Sources of Information, Experiences and Opinions on Sexuality, Contraception and STD Protection Among Young Swedish Students. E. Persson, B. Sandstrom, and G. Jarlbro. *Advances in Contraception* 1992, 8:41-49.

In Sweden, youth sexuality is accepted and education in sexuality is mandatory in secondary and high schools. Special youth clinics offer contraceptive counseling and education about sexuality, contraception, and STD protection. Despite easy access to contraception, there has been an increase in adolescent abortions. In 1983, the rate of abortions for women below the age of 20 was 17.9 per thousand; in 1989, the rate was 24.4. The incidence of chlamydia infection is 11%.

A representative group of 229 students from 10 high school classes in Stockholm were selected to study the students' knowledge about and experience of sexuality, contraception, and STD protection, as well as attitudes about love and sexuality. Half of the 192 subjects came from academic and half from vocational schools. Their mean age was 17.4 years. Twenty-eight percent (28%) of the males, 31% of the females had had their sexual debut; 34% of students with sexual experience stated that they used contraception at each coitus. Knowledge of the fertile phase as determined by calendar rhythm was judged adequate by the investigators for 72% of the females and 32% of the males. Sixty-one percent (61%) had had a pregnancy scare; 12% experienced pregnancy; 37% had suspected STD; 10% experienced it. While 93% considered oral contraceptives to be a reliable protector against pregnancy; 67% also believed that they caused depression, 61% that they caused weight gain and other problems.

Condoms were considered easy to get hold of and safe for pregnancy and STD protection. However, they were considered difficult to use by the inexperienced, embarrassing to

suggest, too big for teenagers, but cheap. The students rated medical professionals most reliable to ask about contraceptive methods and risks but would confide most in their friends and families on questions about love.

[Editorial note. Two years ago, Family Planning Perspectives *had a highly publicized campaign to extend contraceptive education to teenagers in the US, claiming that contraceptive provision would reduce abortion and STDs as it did in European countries, one of which was Sweden. This study suggests that one reason why teen pregnancy and STDs may be lower in Sweden is because of a later age of sexual debut.]*

A Long-Term Study of Mortality in Men Who Have Undergone Vasectomy. E. Giovannucci et al. *New England Journal of Medicine* May 21, 1992, 326:1392-1398.

In order to evaluate the effect of vasectomy on the health of men who have undergone the procedure, the husbands of members of the Nurses' Health Study were studied by questionnaire: 14,607 men who had undergone vasectomy as of 1976 were compared with an equal number of men who had not. There were 1052 deaths among the vasectomized males who were cancer free at the beginning of the study; 446 died of cardiovascular disease, 341 of cancer, and 265 of other causes. The relative risk of mortality of the vasectomized subjects was slightly lower unless vasectomy had been performed more than 20 years ago. At that point, cancer mortality increased to a relative risk of 1.44. The excessive risk was mainly due to lung cancer. This association held even when data were corrected for smoking habits, body mass index, alcohol consumption, and educational level. *[Earlier studies had found an increase in risk of carcinoma in th prostate. Ed.]*

The Molecular Biology of RU486. Is There a Role for Antiprogestins in the Treatment of Breast Cancer? K. Horwitz. *Endocrine Reviews* May 1992, 13:146-164.

Women whose breast cancers contain functioning estrogen and progesterone receptors may be treated with antiestrogens. Recently RU486 and analogs have been considered for use as progesterone antagonists. The effects of estrogen and progesterone are different on the uterus than they are on the breast. In the uterus, estrogen stimulates cell growth (proliferation) of the endometrial tissue, while progesterone causes the endometrium to secrete a nutritious liquid. On the other hand, in the breast, estrogen and progesterone both have strong proliferative effect, not only on the epithelium but on the growing ends of the breast ducts. While animal and tissue culture studies are difficult to interpret, studies of the rate of cell division (mitotic rate) in breast epithelial cells during the normal menstrual cycle and in women taking oral contraceptives show that the highest rate of cell division occurs during the progestin dominated secretory phase of the menstrual cycle. Thus progestins cannot be considered protective in the breast as they are in the uterus. *[Progestins are the class of compounds which include natural progesterone and the synthetic compounds found in the oral contraceptives, injections, and implants. Ed.]* A lengthy review of molecular biology and DNA binding follows.

RU486 is not the only antiprogestin drug available. R5020 has been used for some time and several newer drugs are available for experimental use in animal models and tissue culture. Besides antitumor activity, the antiprogestin drugs also block the glucous regulating functions of the adrenal cortical hormone. The lower the dose, the less plausibility of interfering with glucose metabolism. Thus far, only two small clinical trials with RU486 have been reported. The French trial involved 22 breast cancer patients who either had their ovaries removed or who were postmenopausal. They had already received chemotherapy and radiation or tamoxifen (an antiestrogen). RU486 at 200mg per day led to partial regression or stabilization of the tumors in 53% of the women after 4-6 weeks of treatment. By 3 months, the response rate had dropped to 18%. Those women who responded were positive for progesterone receptors (PR+), while the nonresponders were negative. RU486 was well tolerated with few symptoms of adrenal dysfunction, but plasma cortisol levels were elevated. Women with bone metasteses had considerable relief of pain. Eleven Dutch postmenopausal women with metastatic breast cancer were treated with 200-400 mg of RU486 for 3-4 weeks after their initial treatment with tamoxifen. Six of the eleven patients had a short term stabilization of the disease and one had an objective response lasting five months. Response was related to the presence of progesterone receptors in the tumors. In the longer study, two women had undesirable side effects associated with the glucocorticoid suppression of the drug which were reversed with dexamethasone. Eventually the tumors developed resistance to all hormones, this was thought to be due to mutations in the hormone receptors of the cells. Resistance to progestins is only beginning to be studied. Progesterone antagonists could have an important place in the treatment of hormone dependent breast cancers. More theoretical work needs to be done but there is sufficient basis for large scale clinical trials. A new formulation of the drug is being designed which maximizes the antiprogestin activity and minimizes the antigluco-corticoid activity. Alternately, the drug may be

given in combination with other drugs which would block production of steroids in the adrenal or the aromitization of the adrenal steroids to estrogen in peripheral blood. Further studies are advocated.

Family Planning, Sexually Transmitted Diseases and Contraceptive Choice. A Literature Update-Part I. W. Cates, Jr. & K.M. Stone. *Family Planning Perspectives* March/April 1992, 24:75-84.

Cates and Stone review the literature on the effectiveness of contraceptives to prevent unplanned pregnancy and sexually transmitted diseases. The history of the modalities is reviewed: In developing contraceptive technology, policy emphasis and service delivery have been directed toward the prevention of pregnancy rather than STDs. This focus is undergoing change. STDs are more easily transmitted to women and yet more difficult to diagnose in women. On the other hand, STDs may be asymptomatic in women or have more subtle clinical symptoms and at the same time lead to worse, long term complications. Thus there are differences. Among health care providers, the population at greatest risk for STDs is considerably smaller than fertile individuals. The risk of transmitting bacterial lower genital tract infection, for instance gonorrhea, is present at least 2/3 of the time while an infected female transmits the organism to an uninfected male only 1/3 of the time. The risks are slightly lower for other bacterial organisms. The risk of pregnancy per intercourse ranges from 0-20%, depending on the timing of intercourse. It is highest if intercourse occurs the day prior to ovulation, but even then is only 25% of the risk of acquiring gonorrhea. Researchers in STD prevention tend to focus on microbiology, while family planning experts focus on physiology. Thus, STD preventors look for new diagnostic techniques and new anti- microbial treatments and vaccines, while family planning advances have been largely in the endocrine system synthetic hormones, or hormone blockers. Obviously, treatment is required for STDs, while unplanned pregnancy (according to the authors) may require hormonal or surgical abortion. Early prenatal care is recommended for women "choosing to continue unplanned pregnancies."

Family planning providers generally deal with healthy people, while public health officials obviously deal with sick patients. Family planning demands preventive care, planning and staffing patterns in clinics, while STD care is relatively crisis oriented. Finally the authors opine that pregnancy and infection occur through slightly different biological mechanisms. "For pregnancy to occur, semen with active spermatozoa must be deposited in the vagina, usually through intercourse. By contrast, and depending on the particular organism, STDs can be transmitted by genital contact alone, for instance, through genital ulcers or by genital discharge devoid of any semen or sperm, as is the case for gonorrhea, chlamydia, or trichomonas."

In 1990, current literature review on condoms reported that if properly used, condoms protect the wearer against infection. The review distinguished between latex condoms, whose pores are small enough to prevent transmission of viruses and natural membrane condoms which appear to be less effective. This presumes correct use and no defects. In human studies, condoms significantly reduced the risk of infection of gonorrhea and ureaplasma in an Irish cross sectional study, as well as in England, Australian soldiers returning from Vietnam and the Philippines. In Sacramento, men who attended an STD clinic and were given free condoms were "less likely" to have gonorrhea than men who had never used them, although the difference was not statistically significant. Based on the risk reduction reported above, the authors conclude that condoms are protective against STDs. *[Clearly one needs to define the word "protective." Ed.]*

Condoms may also protect women to some extent, reducing the incidence of herpes simplex, type 2, while an Alabama STD Clinic showed lower incidence of female gonorrhea when the men had used condoms, although the difference was not statistically significant. Additionally, a Finnish study found condoms had no protective effect against the cervical human papiloma infection. The article goes on to discuss usual reasons for condom failure and also mentions vaginal pouches, also called "female condoms." These are polyurethane or latex liners for the vagina. Another barrier is a latex panty with a built-in pouch. Because of cost and lower acceptability to users, they do not envision wide use especially in developing countries. The spermicide nonoxyinol-9 has shown laboratory effectiveness against the organisms which cause gonorrhea, trichomonas, herpes simplex virus, human immuno deficiency virus, and treponema pallidum (the cause of syphillis), also ureaplasma urealyticum. However, studies in the actual situation have given mixed results. The use of combined barriers is more difficult to evaluate, especially with HIV. Although laboratory studies suggest that condoms are impervious to HIV and that spermicides are toxic to the virus, human studies have found adverse outcomes. Prostitutes in Nairobi who used contraceptive sponges permeated with nonoxyinol-9 (probably the Today Sponge) were more likely to have genital ulcers and had a higher rate of sero conversion, even though the increase was not statistically significant. In Vancouver, Canada a small sample of "commercial sex

workers" (in Nairobi these are called prostitutes) used condoms lubricated with nonoxyinol-9 and experienced vaginal irritation. There are many methodological problems with the studies; however, the bottom line is that the effective combination methods on STD transmission remains unknown.

What Condoms Can't Do. C.M. Roland, *Washington Post*, Letters to the Editor, July 3, 1992.

Roland, Editor of Rubber Chemistry and Technology for the Naval Research Laboratory, writes to suggest that rubber contraceptives are inherently unable to make sex safe. While the water leakage test for condom patency, which has been accepted as the standard by the Food and Drug Administration, may be an adequate guide to judge that sperm will not leak through. Roland points out that the standard is inadequate to insure that the small holes in the rubber will be able to prevent passage of the AIDS virus. The AIDS virus measures 0.1 micron in diameter. Voids in condom rubber measure 5 microns in diameter when viewed with an electron microscope, while fracture mechanics analyses, which are sensitive to the largest flaws present, suggest inherent flaws as large as 500 microns. Roland suggests that when condoms are used to prevent HIV infection, "at least two should be worn."

The New AIDS Case Definition. *Journal of the American Medical Association* Feb. 19, 1992, 267:973-975.

The Centers for Disease Control (CDC) proposed a new AIDS definition effective April 1, 1992. The new definition will include those who already meet the previous definition but will add adults and adolescents infected with human immunodeficiency virus whose CD-4 lymphocyte counts are less than 200 per ml. The prior definition included positive blood tests and certain indicator diseases. By broadening the definition to include a drop in CD-4 lymphocytes, a number of people will be counted before the onset of clinical symptoms. The CD-4 count is subject to limitations. During the day it varies from 35-75% of the daily average and is affected by acute illness as well as variation between laboratories. The CDC definition relies on the lowest accurate CD-4 count, leaving the definition of accuracy to the clinician.

There are many social implications to broadening the definition. On the one hand, more persons become eligible for services through the Social Security Administration and State agencies, but the level of services have not been expanded, leaving providers in the unhappy position of deciding who is to receive care. Although the original purpose of the CDC AIDS case definition was to monitor the epidemic, the changes have taken on far broader social and ecomomic significance for provision of services and for health planning. *[Individual implications are not explored in this article, but can well be imagined. Ed.]*

Questions? *Do you need further information regarding research reported in this Supplement? Have you a specific question which you'd like to ask the Editor? Please direct your letter to the Editor,* ***Current Medical Research,*** *DDP/NFP, 3211 Fourth St., N.E., Washington, D.C. 20017. We look forward to hearing from you.*

Current Medical Research, a supplement of the **NFP Diocesan Activity Report**, is published quarterly. Hanna Klaus, M.D. is the editor. The purpose of the supplement is to serve the Roman Catholic diocesan NFP programs of the United States through providing them with up-to-date information on research within the field of fertility, family planning, and related issues. The Diocesan NFP teacher should be equipped to understand the various methods of contraception and be able to explain their incompatibility with the practice of the natural methods of family planning.