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1717 Massachusetts Avenue, N.W., Suite 302
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**Women and the Risk of AIDS:
A Study of Sexual and Reproductive
Knowledge and Behavior
in Papua New Guinea**

by

Carol Jenkins

and

The National Sex and Reproduction Research Team

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From a 27-year-old woman on the North Coast

"I think also that the program you are now running is good because it is good to go out and get stories, ideas from people, then go back, look at them and then try to find ways to solve their problems and worries. I would like to ask, if you have something to help us or to let us know more, can you please come again. Thank you very much and as I have mentioned, if you can try to help, see you again."

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Executive Summary

Background

Several reviews of available statistics and special study reports have demonstrated the poor state of women's health in Papua New Guinea. As most of the factors contributing to the differences in men's and women's health are related to women's reproductive functions, sexual and reproductive health issues loom large as public health problems for the nation. The acquired immunodeficiency syndrome (AIDS) pandemic has reached Papua New Guinea at a time when numerous factors conspire to threaten the sexual and reproductive health of its people. High rates of sexually transmitted diseases (STDs) in both men and women contribute to increasing infertility in the presence of moderately high national fertility levels. Rural health services have been declining over the last few years, at the same time as economic growth due to mining, logging and other mainly male occupations drive social changes affecting communities across the nation. The likelihood of a severe AIDS epidemic over the next few decades seems very high, although the number of reported confirmed cases of individuals infected with the human immunodeficiency virus (HIV) remains relatively low.

Project Aims and Objectives

In order to understand better the social and behavioral factors contributing to the poor state of reproductive health in the nation as well as the social and behavioral risk factors for AIDS, particularly among women, a national study of sexual and reproductive knowledge and behavior was launched in 1991. Its overall objective was to develop a body of accurate, up-to-date information with which interventions could be designed. The study's specific aims were to uncover the major variations among men and women and between culture areas in beliefs and behaviors related to sexuality, pregnancy, childbirth, STDs, and HIV/AIDS.

Methods

Previous experience in Papua New Guinea and elsewhere have demonstrated the inadequacy of standard questionnaire surveys for intimate subject matter. The primary difficulties in a questionnaire approach are a) typically, the respondent and the interviewer have no prior rapport, minimizing the value of an honest interaction; b) responses are classed into preformed categories for ease of analysis, thus reducing the possible variability in responses; and c) the contextual meaning of any one response is unknown. An anonymous questionnaire survey, often used in literate societies for sex research, was attempted in Papua New Guinea, but failed. Therefore, for this study, an ethnographic method was devised utilizing local interviewers who were trained to conduct focus group discussions and collect sexual life histories from individuals in their own language, tape record these and translate them into English. The nation was divided into 15 culture areas. Two female and one male interviewer were recruited from 14 of these culture areas, with the exception of Bougainville. Suitable female interviewers were not found for the Torricelli Range. After nine days of intensive training, interviewers returned to their villages to gather the data. Sampling on the community level was stratified by degree of distance from an urban center. On the individual level, variation was sought by age group, education, marital status and years spent in town. Ten individual sexual life histories and two focus group discussions, one on childbirth and the other on sexual issues in the community, were required from each interviewer. Probe lists or guides were provided to maintain standard topic coverage per interview. Men worked with men and women with women and all individual interviews were strictly anonymous and private. Of the 53 persons trained as interviewers, 42 produced usable results, covering 40 different language groups and producing a total of 263 female and 160 male sexual life histories as well as 61 focus group discussions. The life history texts were computerized, coded and frequencies counted of various responses. Analysis in this manner created 5635 records. Focus group discussions

were analyzed as simple tabulations of issues raised, ranking them as to their importance across the nation and by gender.

Findings

Reproductive Health Issues

Findings revealed that very little accurate and detailed information on sex or reproduction is presented by adults to young people, even at the time of adolescent sexual maturation. Over a third of the women reported not having been told of menstruation prior to their own experience of menarche. The main source of information for girls was their mothers, who mostly attempted to keep them from experimenting with sex by emphasizing the risks of a shameful premarital pregnancy and the pain of childbirth. Boys mostly learned about sex from other older boys and secondarily from their fathers or uncles. Young men were admonished to leave married women alone, implying that single women only were to be considered as available sex partners. First sexual experiences began on average at age 17 for both sexes, with a range from eight to 30 years. As no contraceptive knowledge was passed on at this time, premarital pregnancies were frequent and most young men renounced responsibility on various grounds, including the belief that a woman cannot become pregnant unless sexual intercourse is frequent.

Male initiation rituals and, to a lesser extent, menarcheal seclusion rituals for girls were retained by a significant portion of the nation's cultures. An opportunity for learning during these ceremonial functions exists but has not been utilized by the nation's parents. Levels of reproductive knowledge among adults were also very low. The menstrual cycle, ovulation and conception were not well understood. It was widely believed that pregnancy only results from repeated bouts of intercourse and that switching partners or having sex infrequently with one partner prevents pregnancy. Teenage pregnancies were problematic, socially and biologically and appear to result in very poor outcomes for the infant. Men

were generally admonished to avoid close contact, especially sexual contact, with their wives during pregnancy. Abstinence was widely practiced during the second half of pregnancy and the first year of lactation, motivating some men to have extramarital sexual affairs.

While the ideal family size was moderate, low levels of acceptance of effective, modern family planning prevailed. Fears and lack of knowledge as well as the desire to control family size by traditional means accounted for numerous unplanned pregnancies. A significant proportion of women who responded to interviewers' questions on abortion, both married and single, reported attempted or completed induced abortion. In addition, a few men reported infanticide.

Risk of AIDS

A serious potential risk of HIV transmission exists in most male initiation rituals where, it was reported, numerous boys are cut with a single blade. As some of these boys are already sexually active and, in several areas, fully adult men are recruited into these rituals, the potential for HIV transmission is real. Tattooing, common among teenagers, also poses some level of risk when needles are shared.

Sexual activities throughout the nation showed little major variation, despite common regional stereotypes. Anal and oral sex were regular alternatives to vaginal intercourse in most areas and at levels of frequency within the ranges found elsewhere. Same-sex activities, in both men and women, were practiced, commonly beginning during puberty. Bisexuality was the most common presentation of same-sex preferences, thereby diminishing stigma.

Of the respondents who discussed sex outside of marriage, the majority of women and almost all the men said they had numerous sexual partners prior to marriage. In both sexes the number of partners declined after marriage but a small proportion continued to have a high number of partners for many years. More married than single men paid for sex with cash. The majority of men have had extra-marital sexual affairs after marriage; a smaller proportion of married

women have done the same.

A high risk practice, perhaps more common in Papua New Guinea than elsewhere, was the phenomenon of group sex, i.e. several men with one women. As an expression of male bonding in tribal societies which have placed high value on male solidarity for purposes of fighting, this sexual practice appeared to be widespread and ancient. The events described ranged from those of a highly coercive and punitive nature to those having no apparent coercion of the woman. Women did not report willingness to engage in this type of sex (although it undoubtedly existed). The risk to men of acquiring HIV infection through this type of sexual practice is very high due to their multiple exposure to other men's sexual fluids. The women involved are also likely to have increased risk due to the high frequency of bleeding as well as the increased number of partners. Campaigns to discourage the sharing of one's sexual experiences with '*wantoks*' (persons of one's own village or language group) should be mounted.

The growing commercialization of sex has reached into many villages. Of the respondents interviewed about commercial sex, nearly half of the women of all ages and marital statuses reported receiving money, gifts or both in exchange for sex. The increasing availability of cash, high mobility among both men and women as well as a rising level of media-influenced eroticism were perceived by the participants in the focus group discussions as the major factors contributing to higher levels of sexual experimentation and frequent partner change than is claimed to have occurred in the past. STDs were reported by about one in four male and female respondents who often experienced inadequate treatment and long-term sequelae. A statistically significant association was found between women who reported having had an STD and exchanging sex for cash, as might be expected.

A high proportion of rural people, especially men, have heard of the disease AIDS, but detailed and accurate understanding was low. AIDS and other STDs were commonly confused. Health workers who attempted to educate people about this disease sometimes gave false information, as indicated by informants.

Written materials were not well understood. Radio was an important mode of acquiring simple information, but the level of understanding of prevention and transmission remains too low to have any major effect on the epidemic.

Condom use was known and appreciated by a small proportion of rural men and resistance to increased usage was not great. Over half of the men and slightly less than half of the women stated they would use condoms, either for disease or pregnancy prevention. Availability, however, remains very low, especially in rural areas. Women were less familiar with condoms and were confused about their various roles as a contraceptive and disease prophylactic. Among those who had never tried condoms, fears and doubts were more common than among those who had used them.

Conclusions and Recommendations

These findings suggest several possible directions for interventions, all of which will require considerable support of local institutions and persons by national government and its associated agencies. Ultimately, sexual and reproductive education of young people is best accomplished by parents who care more than any other sector of society about the lives and happiness. But Papua New Guinean parents are handicapped by a lack of information appropriate to the changing times. It should be the role of NGOs, including churches, with support and materials developed by government as well as others, to build the capacity of the parental generation in the nation to take control once again of the moral, social and biological information about sex and reproduction passed on to their children. This must be reinforced with sex education programs in schools, through churches, health service educators, and any suitable local organizations. The health system must be strengthened to cope with the increasing need for improved diagnosis and treatment of reproductive tract infections in both men and women. STD clinics are insufficient as they convey moral stigma and discourage attendance, especially by women. Disposable needles and syringes must also be

available in all health facilities.

The prevention of the spread of the fatal disease AIDS will require a large commitment of resources and coordination of strategies. Many branches of society must participate in order for the necessary social changes, including the diminution of gender bias, to take place. Condoms, the single technical device known greatly to decrease the risk of HIV infection, should be made widely and cheaply available through every means possible. National government should endorse condom use while encouraging the reduction of sexual partners and faithful relations among married couples. Commercial sexual activity in rural areas will require targeted interventions. Economic alternatives, particularly for women must be considered. Peer educators among women who exchange sex for cash as well as among men who enjoy buying sex may be the best approach.

Because all men who reported having sex with men also reported having sex with women, bisexuality appears to be more common than strict homosexuality. On the other hand, men with strict same-sex preferences are more likely to be found in urban areas which were not sampled in this study. While stigmatization of gay identity is not strong in Papua New Guinea, this is largely because few men have adopted what is an imported social construct.

As elsewhere in the world, the AIDS epidemic is a challenge and an opportunity. If resources are properly mobilized to bring about attitudinal change in the public at large, a considerable amount of prevention is possible, if not for this generation, then by the time the next generation becomes fully sexually active. The nature of the HIV virus coupled with the information in this report strongly suggests that the government should consider that there is a national emergency and mobilize quickly to avert a disastrous scenario. Sexual networking and urban-rural movement is sufficient to guarantee the spread of HIV even into remote rural areas. The basic facts on HIV transmission and prevention must reach all the people as soon as possible in a communication style which is sensitive to the terminology and meanings used by ordinary people.

1. Background

Culture and Geography

Papua New Guinea is a nation of exaggerated variation in people and place. Although a nation only about the size of Thailand, Papua New Guinea contains about one-sixth of the world's total languages. Cultural differences are extremely important to the people who hold to them for they function as deeds to land and resources, the markers of distinctive social groups occupying specific territories. Improved communications, greater internal and foreign travel, and the influences of church, state and the cash economy have all contributed to increasing homogenization. Despite modernization, cultural differences and local allegiances are still great. Overall the rate of social change has been very rapid, though not equal in all domains. These factors play an important role in the current study, the first to attempt to assess beliefs and behaviors related to sex and reproduction across the range of cultural areas in Papua New Guinea.

Sexual and Reproductive Health

Reproductive health in Papua New Guinea has received increasing attention over the past decade. An important report on the state of women's health published in 1990 (Gillett 1990) summarized the best available information on indicators such as maternal mortality, sexually transmitted diseases (STDs) and proportions of supervised births. Considering rural and urban areas together, a woman has a lifetime chance of a pregnancy-related death of 1:26 (Gillett 1990). Most rural women are not delivering their babies under supervision, resulting in high rates of both mortality and subsequent morbidity.

The spread of STDs has contributed to high levels of infertility in some parts of Papua New Guinea (Jenkins 1993). At Madang Hospital the proportion of gynecological admissions due to pelvic inflammatory disease has increased from

2.6 percent to 24 percent between 1976 and 1984, with no evidence of other contributing service-related factors. Fewer women than men attend STD clinics with 64 percent males to 36 percent females (STD/AIDS Unit 1992a) and reproductive tract infections are not routinely diagnosed in the antenatal or family planning clinics. Evidence from a perinatal sepsis study in Goroka shows that there is a high prevalence of newborn infections due to STDs, particularly chlamydia (D. Lehmann, personal communication). Between 15 and 24 percent of symptomatic women attending STD clinics were recently shown to be positive for chlamydia (Hudson et al. 1993). In addition, Papua New Guinea has one of the world's highest prevalence rates of the genital ulcer known as donovanosis. Considering these factors alone, without any prior information on the sociocultural aspects of sexual behavior, the risk of a serious acquired immunodeficiency syndrome (AIDS) epidemic in Papua New Guinea appears to be quite high.

Although infertility is rising, the current net reproduction rate is estimated to be about 2.3 percent, suggesting that the population will double in less than 35 years. While many women recognize that their own and their children's health are jeopardized by short birth intervals, the National Health Plan of 1986-1990 estimated that only seven percent of women were family planning acceptors. Urban and periurban family planning acceptor rates are reportedly higher (Jenkins and Pataki-Schweizer 1992) but there is little information on utilization patterns. Several studies have shown inadequate promotion and supply of contraception, especially in the rural areas. Other factors related to a woman's control of her sexuality and her ability to negotiate this in marriage play a role in the under-utilization of modern contraception, but these issues remain to be examined.

The first case of AIDS in Papua New Guinea was reported in 1987. Since then the number of confirmed diagnoses of persons infected with the human immunodeficiency virus (HIV) has been relatively low, totaling 161 as of December 1993. The sex distribution of reported cases is 50 percent males and

49 percent females (one percent unknown). The age distribution of cases with known ages indicates higher prevalence among those between 13 and 28 years old, but 31 percent of cases have no recorded age (STD/AIDS Unit, 1993).

Numerous problems with testing and reporting strongly suggest that this figure is very inaccurate. STD officers in several provinces report that HIV infections tested locally and clinically diagnosed cases of AIDS fail to reach national statistics for lack of funds to send blood samples to the National Laboratories for confirmation. In general, reporting of all notifiable diseases, from leprosy and TB to AIDS, is poor. At best it can be said that, despite a currently low incidence rate of AIDS, STD levels in the nation as a whole are such as to predict a serious AIDS epidemic, but when it will accelerate and its ultimate effects on people and health services cannot be known. Wisdom dictates the implementation of strong preventive measures immediately. Information pertaining to the behavioral aspects of sex and reproduction in Papua New Guinea is scant. Ethnographic accounts of ideology related to sex and customs associated with pregnancy and birth are scattered throughout a vast literature on the cultures of Papua New Guinea. Many of these are seriously outdated; others are specific to small communities and may not be generalizable. In contrast, the reproductive health problems of Papua New Guinea, especially those of women, are better documented, clearly widespread and possess many similarities throughout all cultural areas. Hence, a national study of knowledge, beliefs and behaviors related to sex and reproduction has considerable importance.

Study Objectives

The specific concerns of the agencies funding this study coincided well with the priorities of the 1990-1995 National Health Plan. The Child Survival Project was particularly interested in acquiring information on both men's and women's sources and levels of knowledge of pregnancy and childbirth, their customary beliefs and practices related to reproduction, including all forms of fertility

control, and their actual experiences of and attitudes toward childbirth. The Women and AIDS Research Program was more directly concerned with identifying the factors that place women at risk of acquiring HIV infection and opportunities for program intervention. While the emphases desired by the two agencies differed, the overlap in terms of data gathering was considerable and it was decided to approach these issues in the context of the sexual and reproductive life history of the individual, supplemented by focus group discussions.

The composite study therefore had as its specific objectives: 1) to examine the range of variation among men and women and between culture areas throughout Papua New Guinea in beliefs and behaviors related to: a) sexuality, b) pregnancy, c) childbirth, d) STDs, e) HIV/AIDS; 2) to ascertain whether cultural variation in attitudes and practices is great enough to require different approaches to education and interventions aimed at reducing maternal mortality and preventing STD and HIV infections. In this report for the Women and AIDS Research Program, certain aspects of pregnancy and all childbirth-related findings have been omitted.¹ It is important to note that the epidemiology of behavioral risk factors for the acquisition of HIV infection was not an objective of this study. The overriding importance of obtaining frank and honest responses from men and women on intimate issues required a personal approach to interviewing which would not simultaneously allow truly representative sampling of the nation's population. Nor can the absence in our findings of a practice or attitude be construed to mean it does not exist. It seems fairly certain, however, that the findings describe behaviors and beliefs which do exist, some at fairly common levels, and therefore warrant attention.

¹ A complete version of this report has been published as a monograph by the Papua New Guinea Institute of Medical Research, P.O. Box 60, Goroka, PNG, and is available upon request.

2. Methodology

Research Design

Recruitment of local ethnographers

The sensitivity of the issues to be investigated demanded an ethnographic approach in Papua New Guinea. Survey research, such as the standard knowledge-attitude-practice (KAP) study, was considered an inappropriate method as previous experience in Papua New Guinea and elsewhere has demonstrated clearly their inadequacy for the study of intimate or sensitive subject matter (Conrath et al. 1983; Bleek 1987; Pickering 1988; Jenkins and Pataki-Schweizer 1992; Jenkins and Howard 1992). The present study utilized an ethnographic approach, dependent upon established rapport, the use of the same language in a relaxed and familiar setting. For these reasons, local persons were selected to conduct the interviews and were trained as investigators. These persons were selected according to several criteria: 1) aged 18 to 40; 2) from but not at present living in selected rural or periurban areas; 3) literate in English and capable of interviewing in their own vernacular language. In addition, these persons had to be in touch with their home villages, with the last visit not greater than five years ago.

Funding permitted the recruitment of three investigators per culture area, two females and one male. Because the issues focused on women's reproductive health, women were oversampled. For each culture area, efforts were made to recruit persons from periurban and both near and distant rural areas. Educational level among investigators varied from grade eight to postgraduate level. Some were unemployed, while others were health workers, school teachers, actors and actresses, medical students, laboratory technicians, women's group activists, and ex-soldiers. Those with more education were slightly more successful, but overall personality, particularly an accepting and nonjudgmental nature, was a better predictor of success in fieldwork-based interviewing than any

other factor.

Life histories and focus group discussions

The study gathered data in two forms: personal sexual life histories and focus group discussions. Each interviewer was instructed to collect ten life histories and conduct two focus group discussions with persons of the same sex. The sexual life histories began at puberty and covered the person's complete sexual and reproductive life up to the time of interview. The topics covered in the two focus group discussions centered on sexual mores of the community and childbirth. Data gathered were totally qualitative, originally recorded on tape recorders in the local language and translated later to written English by the interviewers. Guides or probe lists were used to standardize the topics to be covered. Guides were also provided for the focus group discussions.

Protection of privacy

Anonymity was strictly observed and no names were ever written or preserved. All interviews were conducted in private. Tape recorders were equipped with earphones to help maintain privacy during translation. All tapes and translations were later stored in the archives of the Papua New Guinea Institute of Medical Research (PNGIMR).

Sampling frame: the culture area approach

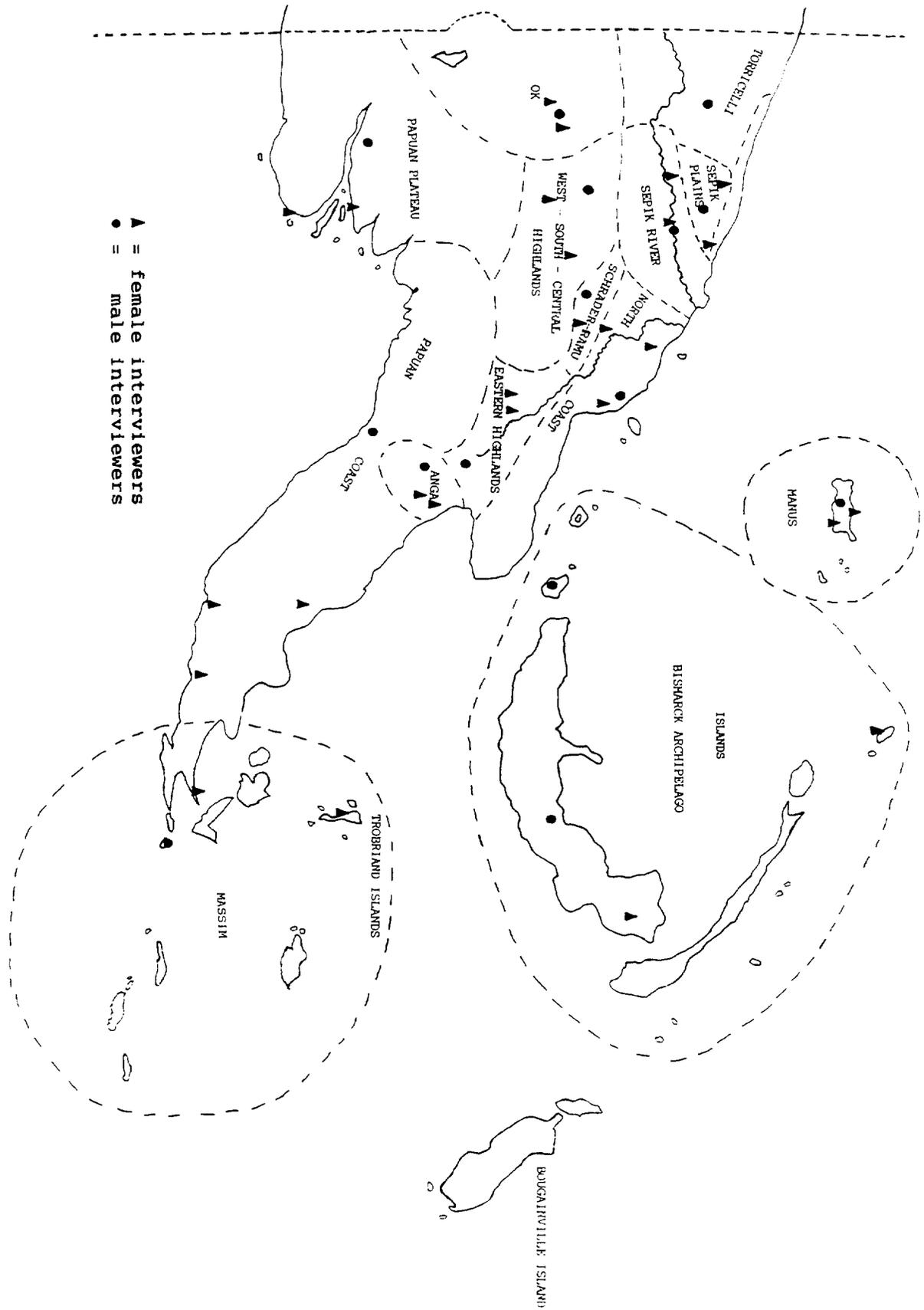
Because sampling the enormous cultural and ecological variability in Papua New Guinea is very difficult and expensive, few national surveys have ever been carried out. It has been apparent, however, that a framework by which the main cultural patterns could be sampled would be quite useful, as in surveys on nutrition, health-related practices, family planning, agricultural practices, etc. This would be useful, even if we still do not know how to define these patterns, where their cores, margins and peripheries might be. While such an approach may have little utility for the study of cultural processes (but, see Terrell 1993), for health

workers in Papua New Guinea attempting to create materials for nutrition or health education, a rough division of the nation into a small number of pertinent culture areas can determine, for example, how many types of food posters need to be created or the number of different presentations needed for discussing birthing practices. While the questionable nature of such an endeavor ethnographically is well appreciated, the urgency of acquiring information with which AIDS prevention education could begin, as well as work on other reproductive health problems, called for a bold approach. One attempt at creating such a framework derived from the sampling scheme of the 1983 National Nutrition Survey. This sampling frame was based on key features of environment and not on administrative boundaries or cultural characteristics. The environmental features were altitude, rainfall and landform. It was drawn up by the former Division of Land Use Research of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Land Use Section of the Papua New Guinea Department of Agriculture and Livestock (formerly DPI, Department of Primary Industry). The original purpose was to assess the national resource potential for food crop production. This mode of describing the nation also worked well for nutrition investigations. For the purpose of achieving statistical representativeness, the nutrition survey then moved to random cluster sampling across the entire population, in proportion to the 1980 census figures. When analyzed by the original environmental features, this study produced statistically sound results by environmental zone, although not by district. Food patterns, based on the results of a 24-hour recall which included cooking methods, were also discernible from this survey. Reasoning that these food patterns are, at least in part, an expression of culture and, combining the patterns found with standard linguistic divisions (in the main, drawn from Wurm 1975), linked by computer with each village sampled in the National Nutrition Survey, 15 areas were created. With these, an analysis was made of the influence of various economic endeavors on nutritional status of children (Jenkins and Zemel 1990) by these constructed food culture areas.

Ideally, a similar mode of dividing the nation into a sampling frame for sexual culture areas should have been used. However, no similar level of previously randomized data for factors having any known relationship to sexuality was available. A full ethnographic sampling would be prohibitively expensive. A compromise was reached based on a small number of sampling units and best guesses as to their representativeness of the major differences in sexual ideology across the various cultures of Papua New Guinea, leaving out urban areas because of their multi-ethnic composition.

An examination of the food culture areas used for the previous nutrition analysis revealed that they might be useful for the present study, with a few adjustments based on ethnographic information. The areas sampled were: the Ok area, the Angan peoples, the Schrader-Ramu region, Manus, the Bismarck Archipelago, Bougainville, the Massim, the Torricelli Range, the Sepik Plains (including the coastal zone), the Sepik River, the North Coast (including the Huon Peninsula and Oro Province Coast), the Eastern Highlands (including the Markham Valley), the Western-Central-Southern Highlands (including Simbu), the Papuan Coast (from Abau to Kikori), and the Papuan Plateau (including coastal and inland areas with similar cultures in a zone stretching from Kikori to the Irian Jaya border and inland to Bosavi). These culture areas are shown in Figure 1. There are small societies which fall in the interstices between these regions or on outlying islands which have distinctive cultures, e.g. the Sepik Hills or Nissan Island. These, however, represent less than three percent of the nation's population and, for practical purposes, were omitted from the sampling frame. Bougainville was not included due to political disturbances. Major urban centers were also omitted because they would require a different sampling strategy. Thus, the study sampled 14 different culture areas, including rural and periurban communities as well as rural government stations which have urban qualities. The areas sampled represent about 82 percent of the nation's population.

Fig. 1 Culture Areas of Papua New Guinea



In the ensuing analysis, no statistical comparisons are carried out between culture areas because the sampling method cannot support such an analysis. For the purpose of correcting regional stereotypes of sexual behavior commonly heard in Papua New Guinea, when a particular practice is found in all areas, this is noted. The lack of information in a particular area about a certain practice does not mean it is absent there. On the other hand, when many persons discuss a particular behavior, it is clearly present.

It is important to recognize the advantages and disadvantages of the resulting research design. First, it by no means represents all known variability in sexual cultures within Papua New Guinea. Many known differences documented in small village studies had to be subsumed under a given areal designation. Also, as only three persons were able to work in three selected sites within each area, only a small portion of the variation is likely to have been sampled. We tried to find investigators who could work in villages both near and far from major urban centers, in order to increase the variability sampled with reference to urban influences. But as only one male interviewer could be hired for each area, such variation in male informants was lost. This was partially made up by variability of length of time spent in towns, a datum on each informant which was gathered and coded into the identification information.

Second, deeper aspects of sexuality could not be examined in this study. While the same practices may be found in numerous culture areas, they may have different meanings to the people in each area. Cultural themes in sexuality, or sexual ideologies, fall in the realm of public discourse and while these are very important to understand they are not likely to reflect actual sexual behaviors. The material from the focus group discussions better represents current understandings of sexual ideologies.

The principle aim of this study was to learn what ordinary people were doing sexually that might place them at increased risk of acquiring HIV infection. Therefore, considerable emphasis was placed on detailed, almost mechanistic

descriptions of sexual acts. Meanings, either on a personal level or in terms of cultural notions of sexuality, were not systematically explored, with a few exceptions. The exceptions were mainly on topics related to pregnancy, female pollution and love magic. Much further research will be needed to clarify the emotional, ideological and social factors associated with various sexual activities in different areas of Papua New Guinea. This study should be considered simply as a first attempt at outlining some of the issues and obtaining a sense of the commonness of particular beliefs, situations and practices. It is left to future research projects to investigate the true prevalence of such behaviors (if that is really important), what they represent to the people involved, and what local people think they can do to improve the sexual and reproductive health of their communities.

Training

The selected interviewers underwent intensive training for nine days in Goroka at the National Sports Institute, under the direction of the principal investigator (PI) and a team of trainers. The training period was divided into several components, beginning with what has been called sexual attitude restructuring, or desensitization toward sex-related speech and attitudes. The second component consisted of learning about sex, reproduction, childbirth, STDs and AIDS. The third and longest component was spent in teaching the participants good interview techniques, selection of informants and other specifics regarding the interview process. The last component centered on the focus group work.

Selection of informants

Selection of informants aimed at encompassing a wide range of variation in the issues of interest. It was assumed that, in addition to age and marital status, formal education and urbanity, measured by years of urban residence, were important variables determining sexual and reproductive behavior. The range of

variation in urban residence and education differed considerably by community, with some areas having almost no women who had ever gone beyond grade six or ever resided in an urban area. Interviewers were instructed how to adjust the selection of informants accordingly. The criteria for selecting ten persons to interview were flexibly set, within fixed parameters. These were 1) three unmarried persons with varying amounts of schooling, from none to high school or beyond, and with varying amounts of urban residential experience; preferably to include one who was just becoming sexually active. Although in most cases, unmarried persons would be young, i.e. less than 20 to 25 years, some could be older; 2) four persons between the ages of 20 and 35, at varying levels of reproductive experience, from no pregnancies to many; those suspected of infertility as well as widow(er)s could be interviewed; educational and urban experience had to vary; 3) three persons over 35 years old, preferably a few over 45 or 50 years, in order to obtain contrasting attitudes and establish the older generation's level of experience. It was stressed during training that the most important aspect of selecting informants was that they provide contrasts on at least one or more of the main sociodemographic factors. The resultant spread of variation in informants is presented in Chapter Three. Further, investigators were instructed to choose persons who were relatively well known, who trusted him (her) and who were willing to participate.

Data Gathering

Field supervision and translation

Following training, the investigators were sent to their respective communities for a period of up to six weeks, after which time their work was to be handed in. Field supervision was not always possible, or even desirable, given the sensitivity of the issues and the probable destruction of trust which an unknown outsider could cause. Instead, telephone contact with the PI was made possible at all times for the fieldworkers and a visit by the PI or an assistant to a nearby area,

but not to the actual village, was a requestable option.

Most investigators returned to town in order to translate and write up their taped materials. In all cases, materials were reviewed, tapes checked, and translations questioned before acceptance. In two cases, efforts at translation into English were found to be too difficult and the investigators were allowed to translate into Melanesian Pidgin. These materials were then retranslated into English by the PI. Each investigator was also interviewed by the PI as to the conditions of work, rapport, and the amount of fabrication or avoidance on the part of each respondent, and in order to fill in information gaps.

Data quality

The resulting materials were reviewed and ranked for quality. In all, 53 persons were trained, including 11 or 21 percent who failed completely and 16 or 30 percent who turned in excellent work. Counting those whose work ranked as good, very good or excellent, 43 percent performed well. In the data analysis, the work of those judged as failed or poor were discarded. In total, usable material was obtained from 27 female investigators who produced 263 interviews and 35 focus group discussions and 15 male investigators who produced 160 interviews and 26 focus group discussions. All culture areas were represented by both men and women except the Torricelli Range, from which an appropriate female interviewer could not be found. The resulting sample totaled to 423 interviews and 61 focus group discussions, representing 40 language groups from various parts of the nation. Table 1 lists the investigators whose work was retained for the analysis. For each, the culture area, geographical region, village name, province and language name are also listed.

The rate of refusal is difficult to calculate because interviewees who failed to acquire cooperation were replaced. If we assume that the inability to acquire a full ten interviews indicated refusal and we count the known refusals, the rate of refusal was about ten percent. More importantly, investigators had difficulty broaching particular sensitive subjects, e.g. group sex among women informants,

and the number of responses on these probes were significantly decreased. Focus group discussions were more difficult to organize than private interviews for many investigators.

Table 1. National sex and reproduction study research team

CULTURE AREA	NAME	PLACE	AREA	PROVINCE	LANGUAGE
Manus	Mary Paren	Derimbat	N. Coast	Manus	Kunuti
Manus	Grace Kichau	M'bunai	S. Coast	Manus	Titan
Manus	Jack Puayil	Buyang	Inland	Manus	Ere-lele
Islands	Benedine Eremas	Takekel	Tolai	E.N.Br	Kuanua
Islands	Jennifer Litau	Tasitel	Mussau	N.Irel	Erimai
Islands	Kelly Namu	Mutu-malau	Siassi	Morobe	Siassi
Islands	Ben Haili	Karapi	Hoskins	W.N.Br	W. Nakanai
North Coast	Beata Yamega	Mikarew	Bogia	Madang	Aruamu
North Coast	Iol Tomidel	Waguk	Amele	Madang	Amele
North Coast	John Doa	Riwo	Madang	Madang	Gedaged
Papuan Coast	Wala Possiri	Big Hula	Hula	Central	Hula
Papuan Coast	Karuvita Vauia	Tubesaria	Pom	Central	Motu
Papuan Coast	Tau Togove	Malalawa	Kerema	Gulf	Kaipi
Papuan Coast	Florence Bundu	Hururu	Popondetta	Oro	Notu
Papuan Plateau	Ume Wainetti	Mabadawan	Daru	Western	Kiwai
Papuan Plateau	Freda Daniel	Sepe	Kiwai	Western	E.Kiwai
Papuan Plateau	Tony Lupiwa	Balimo	Fly River	Western	Gogodala
Sepik Plains	Jimmy Kambo	Bana	Maprik	E.Sepik	Wom
Sepik Plains	Nancy Warakai	Saure	Wewak	E.Sepik	Coastal Boiken
Sepik Plains	Veronica Kinim	Bima	Sepik Hwy	E.Sepik	Plains Boiken
Sepik River	Dominica Wai'in*	Avatip	Ambunti	E.Sepik	Manambu
Sepik River	Theresia Yos	Kilimbit	Chambri	E.Sepik	Chambri
Sepik River	Cherubim Yos	Kilimbit	Chambri	E.Sepik	Chambri
Schrader-Ramu	Veronica Bumgai	Nodabu	Mid Ramu	Madang	Rao

Schrader-Ramu	Nancy Goar	Simbai	Simbai	Madang	Kalam
Schrader-Ramu	Blake Kumbuk	Ainonk	Kobon	Madang	Kobon
Ok	Nancy Tandamat	Tekin	Oksapmin	W.Sepik	Oksapmin
Ok	Betty Tonda	Terapdavip	Telefomin	W.Sepik	Telefol
Ok	Colin Tandamat	Tekin	Oksapmin	W.Sepik	Oksapmin
Anga	Angupi Haki	Hanjuwa	Menyamy	Ehp	Menya
Anga	Margaret Manase	Hakwangi	Menyamy	Ehp	Kokai
Anga	Krumain Kolain	Wiabo	Marawaka	Ehp	Baruya
W-C-S HGLS	Francesca Mulungu	Tari	Tari	Shp	Huli
W-C-S HGLS	Magdelene Kaupa	Siurinigl	Mingende	Simbu	Kuman
W-C-S HGLS	Jack Kitembi	Kandep	Kandep	Enga	Mai Enga
Eastern HGLS	Nimi Suto	Unggai/kama	Goroka	Ehp	Unggai/Pisin
Eastern HGLS	Gideon Naru	Asempa	Kainantu	Ehp	Auyana
Eastern HGLS	Agnes Javati	Kama	Goroka	Ehp	Guhuku
Massim	Kila Kalo	Rabe	Alotau	Milne BP	Suau
Massim	Dorothy George	Awakuta	Trobriands	Milne BP	Kilavila
Massim	Thomas Lisenia	Logea Isl	Engineers	Milne BP	Suau
Torricelli Range	Tony Wonembi	Saindei	Lumi	W.Sepik	Olo

Abbreviations are listed at the end of this chapter

*With assistance in translation from Peter Wai'in

Data Analysis

The textual material was gathered under headings called probes, e.g. MENARK for stories from women about their menarche. This was entered into the computer as separate paragraphs with one line headers coded for the identification information associated with each interview. Headers included information on culture area, interviewer number, informant number, date of interview, sex of informant, marital status, age, number of years of formal education, number of living children, number of dead children, number of years living in an urban area and the urbanity of the community in which the individual lived, ranked from one to four, based on distance/travel time from the nearest urban center.

In order to count the frequency of certain responses, a codebook was created and each response was coded numerically. For ease of coding, all paragraphs with specific probe names were gathered in a single computer file and printed, using a program called Text Collector. After coding, the numerical data were then entered into a database file (using FoxPro2). A total of 5635 records (3332 female, 2303 male) were coded and analyzed for this report. All the male interviews were coded by a single male coder and checked by a second male coder as well as the PI. The female interviews were coded by two female coders, working on different probes and their associated variables. All codes were checked once by the PI and, in cases of discrepancies, done again. All coding and recoding were accomplished under supervision of the PI and entailed considerable discussion in order to resolve the subjective nature of coding such data. A basic rule was established and used throughout, i.e. unless the informant stated clearly that he or she did or thought something specific, the variable in question was not coded. Consequently, the number of responses vary considerably across variables. Despite having a probe list with which the interview was to be standardized, not all interviewers managed to cover each topic with every informant.

Because of unknown biases in sampling, results cannot be considered as

statistically representative. Internal consistency, however, is high on specific sensitive topics, e.g. the frequency of heterosexual anal sex as reported by males and females. External validation data are, for the most part, unavailable, but where these exist, e.g. the proportion of men reporting extramarital sexual partners, they exhibit consistency. Unless problems with the data (e.g. exaggeration, under-reporting, or contradictory statements) were noted by the investigator and handled in the field, we accepted the information as it was reported. In a few instances, where the interviewer knew the informant well and disclaimed a feature of his or her report, adjustments were made in the coding.

Focus group discussions were handled in a similar fashion. They were entered as textual paragraphs under specific probe names. They were not, however, coded as numeric variables. Instead, the topics raised and opinions discussed were tabulated and counted. These were then ranked quantitatively. A single female assistant tabulated all focus group discussions.

Report structure

For the purposes of this report the material collected on childbirth and selected material concerning pregnancy are excluded. Frequencies of different responses are presented along with a summary interpretation of the meanings and implications of the findings concerning each topic.

Note on abbreviations

Some culture areas are abbreviated in tables. These are: Western-Central-Southern Highlands (W-C-S Hgls); Eastern Highlands (Eastern Hgls). Provinces are abbreviated as: East New Britain Province (E.N.BR), New Ireland Province (N.IREL), West New Britain Province (W.N.BR), East Sepik Province (E.SEPIK), West Sepik Province (W.SEPIK), Eastern Highlands Province (EHP), Southern Highlands Province (SHP), Milne Bay Province (MILNE BP).

3. The Study Sample

Measures of Urban Influence

The structure of the study sample was influenced to some extent by differences in availability of male and female investigators. In the more distant rural areas, fewer women than men were educated well enough to be suitable for recruitment. Hence, while 23 percent of the male sample of 160 were interviewed in more remote rural areas, having no airstrips or vehicular roads, only 11 percent of the female sample of 263 were seen in such villages. This phenomenon may have biased the female sample toward slightly more urbanized, better educated women. Table 2 presents the structure of the sample by sex and distance from an urban center, ranked in three categories: 1) no road or airstrip; 2) greater than one hour by road or boat; 3) less than or equal to one hour by road or boat; and 4) periurban.

Table 2. Distance from Urban Centers by Sex

	MALES		FEMALES		TOTAL	
	N	%	N	%	N	%
No road/air	36	22.5	30	11.4	66	15.6
> 1 hour	106	66.3	169	64.3	275	65.0
≤ 1 hour	18	11.3	54	20.5	72	17.0
periurban	-	-	10	3.8	10	2.4
TOTAL	160		263		423	100%

The distribution of the second measure of urban influence, the number of

years spent in a town, appears to compensate to some degree for the residential sex bias above. Table 3 presents the urban experience of persons interviewed by sex. Although about the same proportion of men and women have lived for long periods of time in town, i.e. five years or more, a larger proportion of men have spent between one and four years residing in town. In addition, 11.5 percent of women and 6.3 percent of men claimed that they go regularly to town but do not remain there. The larger number of women in this category reflects their marketing of vegetables on a daily basis at town markets.

Table 3. Years Spent in Town by Sex

	MALES		FEMALES		TOTAL YEARS	
	N	%	N	%	N	%
Day visits	10	6.3	30	11.5	40	9.5
0	51	32.0	99	38.1	150	35.6
1-4	54	34.0	61	23.5	115	27.4
5-9	15	9.4	33	12.7	48	11.5
10-14	11	6.9	12	4.6	23	5.5
>=15	18	11.3	25	9.6	43	10.3
TOTAL	159		260		419*	100%

* no information on town residence available for four persons

Age and Sex Distribution

This study deliberately oversampled females for reasons discussed above. Because the female investigators found the task of discussing sex with other women more difficult than did men and more often were unable to obtain 10 full personal interviews, the deliberate oversampling was fortuitous. On the other hand, some of the investigators tried to compensate for difficulties with focus groups by obtaining more individual interviews. The resultant age and sex distribution of informants is presented in Table 4. The ages ranged from 14 to 82 years for women and from 15 to 85 for men. Among those under 20 years, the average woman's age was 17 and the average man's age was 18. Most ages were estimated by the investigator or by the PI, based on events and dates in the life histories.

Table 4. Age and Sex Distribution of Study Sample

AGE GROUP	MALES		FEMALES		TOTAL	
	N	%	N	%	N	%
<20	26	16.3	47	17.9	73	17.3
20-24	30	18.7	42	16.0	72	17.0
25-29	25	15.6	46	17.5	71	16.8
30-34	22	13.6	28	10.6	50	11.8
35-39	16	10.0	39	14.8	55	13.0
40-44	14	8.8	15	5.7	29	6.9
45-49	12	7.5	12	4.5	24	5.7
50-54	5	3.1	11	4.2	16	3.8
55-59	4	2.5	6	2.3	10	2.4
60-64	3	1.9	10	3.8	13	3.1
≥65	3	1.9	7	2.7	10	2.4
TOTAL	160		263		423	100%

Education

The educational level of the sample is shown in Table 5. In this sample, perhaps because of the relative under-representation of women in more remote areas, educational level was more alike for each sex than found in other studies. As expected more females than males never attended any school, but closely similar proportions completed primary school and secondary school. The number of persons with a tertiary education of any kind was low in village communities, partly because most of these people would be found working in urban centers.

Table 5. Years of Formal Education

YEARS OF EDUCATION	MALES		FEMALES*		TOTAL	
	N	%	N	%	N	%
0	46	28.8	85	34.0	131	32.0
1-5	23	14.4	55	22.0	78	19.0
6	46	28.8	63	25.2	109	26.6
7-9	20	12.5	22	8.8	42	10.2
10	14	8.8	17	6.8	31	7.6
1-13	8	5.0	6	2.4	14	3.4
≥14	3	1.9	2	0.8	5	1.2
TOTAL	160		250		410	100%

* No educational information available for 13 women.

Marital Status

The various possible marital statuses were assigned by the investigator and based on the life histories. Polygynous marriages (men married to more than one woman) represented only 4.7 percent of the sample and 7.7 percent of all

currently married men and women (N=261). Some women were married polygynously the first time and then monogamously the second time, or vice versa. The changes in men's marital status were more complex, in that a polygynous man may have been a widower vis-a-vis one wife, but married yet to another. While he may have still considered himself a man with multiple wives, we considered only the demographic realities of marriage structures. The proportions of persons within each of the categories described are presented in Table 6.

Table 6. Marital Status by Sex

MARITAL STATUS	MALES		FEMALES		TOTAL	
	N	%	N	%	N	%
Never married	51	31.9	69	26.2	120	28.4
First marriage (mono)	89	55.6	123	46.8	212	50.1
Second or later	4	2.5	20	7.6	24	5.7
Divorced	4	2.5	18	6.8	22	5.2
Widow(er)	2	1.3	18	6.8	20	4.7
Polygynous, only	9	5.6	7	2.7	16	3.8
Monogamous, then poly	0	0	4	1.5	4	0.9
Polygynous, then mono	1	0.6	4	1.5	5	1.2
TOTAL	160		263		423	100%

Fertility and Child Mortality

The fertility of married versus single persons is seldom examined in Papua New Guinea. Our sample showed, for example, that 17 percent of the single, i.e. never married, women had delivered at least one child, yet only eight percent of

single men stated they had fathered a child. This discrepancy may be partly explained by the fact that numerous married men stated they had fathered children with single women, outside of their own marriages. It is also true that single men may never know of their offspring from casual sexual affairs.

Among ever-married men, eight percent stated they have never fathered a child, and 16 percent ever-married women stated the same. While a few of these may have been newly married, similarly high levels of primary infertility have been documented previously in specific regional studies (for review, see Jenkins 1993). Fertility increased, as expected, with age in both sexes. Tables 7 and 8 present the reported fertility and child mortality experience of each age cohort in our sample. Those who have never had children are not included. In men, fertility among those 55-64 years old appeared to drop, but this was more likely to be explained by small sample sizes and inaccurate reporting. It would also appear that mortality data were under-reported.

Table 7. Fertility and Child Mortality Experience Among Ever-married Fertile Males

AGE GROUP	N	NO. LIVE BIRTHS	MEAN LIVE BIRTHS	NO. DEAD CHILDREN	% DEAD CHILDREN
15-19	0	0	0	0	0
20-24	15	15	1.0	1	6.7
25-29	19	33	1.7	2	6.1
30-34	17	40	2.4	4	10.0
35-39	11	33	3.0	2	6.1
40-44	12	66	5.5	4	6.1
45-49	12	65	5.4	5	7.7
50-54	5	38	7.6	4	10.5
55-59	4	22	5.5	1	4.5
60-64	3	17	5.7	2	11.8
≥65	3	28	9.3	2	7.1

Table 8. Fertility and Child Mortality Experience Among Ever-married Fertile Females

AGE GROUP	N	NO. LIVE BIRTHS	MEAN LIVE BIRTHS	NO. DEAD CHILDREN	% DEAD CHILDREN
15-19	10	9	0.9	4	44.0
20-24	21	26	1.2	4	15.4
25-29	40	103	2.6	8	7.8
30-34	28	88	3.1	6	6.8
35-39	34	143	4.2	20	13.9
40-44	15	66	4.4	6	9.1
45-49	12	65	5.4	11	16.9
50-54	11	63	5.7	7	11.1
55-59	6	43	7.2	11	25.6
60-64	9	65	7.2	4	6.2
≥65	7	24	3.4	7	29.2

Among ever-married fertile women, fertility and child mortality data appeared more accurate. While average fertility increased with age, as expected, the proportion of dead children tended to increase, but with considerable irregularities in rates through the age cohorts. Most striking was the very high child, presumably infant, mortality in those under 20 years old, an age group in whom we might expect fairly accurate reporting. Although the quality of these data as demographic statistics is questionable, this finding is suggestive of the real biosocial disadvantages associated with teenage pregnancies and underlines the importance of both research and prevention strategies relating to this issue.

4. Knowledge and Events Before Marriage

"When I was busy making my bilum one morning, I felt that my panty was wet and knew that I was having my period. I was told by other girls about menstruation. I quickly went to the river because my house is up on the mountain. I washed myself thoroughly, making sure that no blood stains were on me. After my bath I ran back to my house and told my mother that I had my menstruation. I was then told by my mother to sleep in the yabmangka, the small house. I used rags as pads and coconut husk to absorb blood. I used the coconut husk to rub myself. I stayed in the house eating only food cooked on the fire, taro, sweet potato and banana. One morning my mother's sister-in-law came to visit me. She told me that I have to look after myself now and not to go close to boys because I am already a woman and they might make me pregnant. I stayed in the house for two weeks because my uncle was still in the bush looking for pigs. My uncle came back with lots of meat, pig, flying fox, tree kangaroo and six cuscus to celebrate my first menstruation.

One bright morning my big sister came and told me that my uncle is here and the celebration will begin late in the afternoon. My uncle hit the yabmangka with a big stick so that I may know that he is already here to take me out from the house. I was taken to the river to wash myself and get ready for the celebration. I didn't know that there were girls or women waiting for me in the bush. They came out from their hiding place and started to hit me with sticks and a special grass broom called ningi. Then they took me to my mother and her sister-in-law to be painted with black ash from nangu (sago) leaves. My aunty dressed me up in my traditional clothes, but my body was full of pain and black with the ash of sago leaves they had rubbed on me. I was given a special necklace to wear around my neck. It is called hembinimbi and made from flying fox teeth. Then I was taken to my parent's house to celebrate with the women who beat me. I was told to stand on the stairs of my parent's house and my mother and her brother showed me the things inside our house so that I may know how to look after my own house when I am married. I was told not to hold knives during my menstruation because I might not get fat and fit to give birth. My mother told me to put my hand at the fireplace where they usually kept meat. Then she hit my hand with a stick called hembirak so that I may not steal meat and eat it when I had my own house.

The celebration was very nice. There were pigs served with sago

because sago is our staple food. I really like the celebration because of my traditional song called the kanang. I was not allowed to dress in ordinary clothes until two to three days after the celebration. After three days my mother said I could wear my ordinary clothes. I was happy to be free at last and not having this blood." (Sepik Plains, age 38)

Community Knowledge of Sex and Reproduction

The study demonstrates that little is actually learned about sex during puberty. In most societies, sex and reproduction as a topic ranks lower than, for example, subsistence, among those aspects of life parents consider important to teach their children. In village life, the opportunities for learning about sexual reproduction from observation of both humans and animals are multiple. However, modern scientific knowledge of the facts about human reproduction are not accessible to simple observation. While it appears that nearly all human societies recognize that the act of sexual intercourse must take place before a pregnancy ensues, understanding of the actual process of fertilization, its timing constraints, the process of gestation and childbirth, as well as the various disease states associated with sexual activities, is clearly beyond the capacity of non-specialists.

Early Learning

It should not be surprising how little accurate information the average person is told about sex and reproduction by his or her elders. In Papua New Guinea, as elsewhere, subterfuges concerned with how children are born are common during the pre-puberty period. Children were told that babies came from stones, were brought by birds, and, nowadays, were picked up at the hospital. Many youngsters came to their own conclusions about the manner of delivery, believing that a mother bears the baby through her navel. Not until adolescence did parents consider it appropriate to discuss some of the realities of sexual reproduction.

In this study the sources of information and the settings in which various types of information were learned differed between men and women. Women most frequently stated that their mothers were the main source of information, followed by other older women, schoolteachers, aunts and girlfriends. What they were taught, however, was generally very little. Over a third of the women reported no prior knowledge of menstruation at the time of menarche. About one-fifth of the women said they were taught nothing at all about sex or pregnancy and childbirth before their own experiences. Among the others, the most common message was that contact with boys could lead to pregnancy. Often what that contact entailed was left to the imagination. Most often adult women told the girl about the pains of childbirth and the social shame of becoming pregnant before marriage. The most commonly mentioned fears among adolescent women were fears of childbirth, sexual intercourse and becoming pregnant. Parents' own levels of accurate information were low and derived primarily from traditional beliefs. For example, with regard to menstruation, girls in many societies were given numerous restrictions on behavior and taught that, should they break these rules, their fathers, brothers, even the whole household could become weakened and sick or pigs might destroy the gardens. In the East Sepik, for example, the young women lived in cultures in which strong, secret male fertility cults prevail. Similarly, young men too were chastened to obey numerous food taboos and were made to bear pain while learning the rules regulating adult sexuality and the preservation of clansmen's strength. Taboos surrounding menstrual blood may have once had a pragmatic basis or may be simply symbolic, but the nature of physical pollution associated with menstrual blood loses much of its importance with the advent of tampons and sanitary pads, if properly disposed. Not all Papua New Guinean women reported using these or had clean, safe modes of menstrual blood disposal. In many villages, menstruation still had a very unclean connotation. Despite strong taboos against sex during menstruation, about half of all respondents of both sexes stated they have had sexual intercourse during menstruation. Information on sex and reproduction for boys most often came from older boys,

followed by fathers or uncles, and from viewing live sex in the village. Picture books, schoolteachers, and listening at the local village court, where sexual offenses are frequently aired, were also mentioned as sources of information. Boys learned about female menstruation most often from their older male relatives and secondarily from other boys. Boys also learned from their female relatives. Some men stated they had never been informed about female menstruation by anyone.

In Papua New Guinea there is a great lack of printed materials available on the topics of sex and reproduction. If a book on sex can be found in the village setting, it is likely to be pornographic. Because pornography is at least explicit, these books are valued and passed from one person to the next. Where an individual school teacher is interested and competent in teaching the youth, formal learning in school is highly valued as well. However, very few respondents in our study had an opportunity for learning about sex in school. Considering that approximately a third of the rural population has never attended the formal school system (Jenkins and Howard 1992), and that an additional large proportion does not reach the higher grades in which these lessons are scheduled, the lack of impact of the formal education system on knowledge of sex and reproduction is not surprising.

Initiations and Menarche Rituals

Parents are responsible for controlling the emerging sexuality of their children. Therefore, very strong constraints were traditionally placed on what a child may be told in the belief that information would pique curiosity and lead to earlier or greater experimentation with sex. While there is little evidence that this is true, there are certainly many other influences, including the strong hormonal surges during adolescence as well as pressures from peers, which affect the timing and manner of early sexual behavior.

As elsewhere, much of what young people learned about sex was learned from

their peers or from those only slightly older. Peer pressure to participate in sex is likely to be a far stronger determinant of actual behavior than levels of information. However, the negative consequences of sexual experimentation among adolescents, e.g. unwanted pregnancies, poor pregnancy outcomes, social stigma, or STDs and HIV infection, are definitely influenced by the amount and accuracy of information available. Therefore, sources of information, levels of appropriateness and accuracy, the timing of the educative process and the social setting in which it occurs are crucial to understand and to control.

This social need has been addressed in most of Papua New Guinea's cultures by the development and maintenance of rituals which both mark the emergence of adult sexuality and attempt to channel it by controlling, at least for a while, the flow of information to young people. These rituals, initiation schools and ceremonies, for both men and women, have been extremely important cultural institutions where they occur. In the present sample, menarcheal seclusion and the imposition of menstrual taboos on women were found in the communities sampled among 11 of the 13 culture areas represented by women. Male initiation ceremonies were found to be active in the societies sampled within six of the 14 culture areas (Schrader-Ramu, Eastern Highlands, Sepik Plains, Sepik River, Angan and North Coast), almost totally abandoned or markedly altered in another six (Ok, Islands, Papuan Plateau, Torricelli Range, Manus, Western-Central-Southern Highlands), and reported as not traditional in the Massim or the Papuan Coast. It is possible that unsampled societies in these areas do in fact have such ceremonies, for either males or females, or both.

"I went to initiation when I was about 13 years old and in the house a chosen man has to come with a spear and make a hole in my nose by using one spear for a number of boys. The method of cutting of foreskin is not used in our area. When I want to dance I have to sleep in the bush, where woman can not see me. During that time I have to collect fig leaves from the bush and get one, put it in the sun so that it can dry. When it is dried, push the foreskin of my penis up, rub it up and down until the blood runs. The blood is not useful so clean it

away and take the leaves with blood and keep it for two or three weeks and I throw it away. Sometimes I rub the blood on the skin of younger boys' legs because it is a custom belief that boys will grow faster. It is done only by boys." (Schrader-Ramu, 30 year old)

About half of the men interviewed had been initiated and a few others planned to be. Among women, about half had undergone some form of menarcheal seclusion, usually accompanied by a ceremony. It would, therefore, appear that such institutions are not yet abandoned everywhere. Nevertheless, the forces of the church, the formal education system and, in some cases, the state, have severely undermined these institutions, attacking them, in part, because the physical aspects of these rituals are repulsive to western culture. While there was no evidence that participation in these rituals actually contributed to fewer social or biological problems associated with sex and reproduction, in the focus group discussions many elders expressed their opinions that they did do so in the past. It is clear that these institutions provided a venue for adult control of information flow and a social setting in which ethical and moral rules could be reinforced. With the loss of these rituals, and the reluctance of either church or state to take on the responsibility for sex education, very few modes of communication by adults to youth are currently available.

Penile and other types of skin cutting were relatively common in male initiations. Nearly a third of those initiated had been cut and in nearly all cases the cutting implement was shared among several to many young men. In addition, the recent spread of non-traditional circumcision in several areas (Sepik Plains, Eastern Highlands, Islands, Torricelli Range), purportedly as prevention for STDs and AIDS, represents a serious threat of HIV transmission due to the sharing of cutting implements and also a threat of other infection. In a few very traditional areas, only young boys are initiated, but increasingly young men and even older men, who have been away at school or work, are returning to their villages to be initiated. The risk of HIV transmission under these circumstances is likely to be increased. Tattooing among both males and females was also widely practiced, as

were other forms of bloodletting for medicinal purposes. In approximately half of all reported events, cutting implements were shared. These behaviors have the potential to facilitate transmission of HIV. It is important to target these practices for prevention activities.

First Sexual Experiences

The first sexual experiences of young men and women occurred in all types of settings. One nearly universal factor was that hardly anyone was prepared for the event. There may have existed the possibility for control and preparation when the first sex took place in arranged marriages, as was described by older women from the Schrader Range. Their parents 'made a bed' for the young couple, i.e., sat with them on their wedding bed and explained certain aspects of sex to them just before their first official intercourse. Few such marriages take place today. If sex education is to have an impact on sexual health, the timing of learning is a significant factor. Among the men who reported an exact (not necessarily accurate) age at first intercourse (N=58), the mean age was 17.0 (± 4.4). For an additional 84 men, the age could be estimated based on school grades and calculated to a mean of 17.4 (± 4.0). The age at first intercourse ranged from eight to 30 and was greater (mean=21.2) among those over 40 years old (N=13) than among those who were less than 20 years old (mean=15.1, N=17). Slightly over half of the men said their first partner was a woman younger than themselves whom they did not marry. These men thought that about one-third of their first sexual partners were previously sexually experienced. An additional 16 percent had first intercourse with their current wives. About ten percent of the men questioned (N=94) stated they had bled during the first event, as did over a quarter of their female partners.

Women, for both biological and cultural reasons, generally had a more problematic first sexual experience than did men. In particular, women have the greater risk of an unwanted pregnancy and the accompanying serious physical and

social consequences. Women reported the first experience of intercourse with far less detail and enthusiasm than did men. Among the women who reported exact age at first sexual intercourse (N=49), the mean was 17 (± 3.4). Ages ranged between 11 and 29. A few women in different areas (Papuan Coast, Anga, North Coast) had intercourse before menarche. Fears that the first menstruation would be construed as proof that they had already experienced sexual intercourse were expressed repeatedly by young women in the Massim area. Bleeding was reported by about two-thirds of the women, most of whom described the event as painful. About a third of those who discussed their first sexual intercourse in detail (N=42) described a pleasurable and good experience, but the rest were frightened of becoming pregnant, of the pain, or were coerced into sex without their full agreement.

"Before I was married, my boyfriend taught me about sex. He was from an island province but lived at the station with his working parents. It was not a verbal lesson but we had actual sexual intercourse in 1981. I was 14 years old. This was my first sexual encounter. I was not aware that men ejaculate semen and was totally ignorant about sex. During intercourse, I was surprised when I felt that I was wet but did not realize it was semen. I was in grade six at that time. Much later, at high school I learnt about the presence and the ejaculation of semen during sex. I was fearful of sex but he forced me into it. I was scared because I had no previous sexual encounter and also that I might be pregnant as a result. In fact, I was terribly scared of both things. My first sexual encounter with my boyfriend was vaginal intercourse when we laid in the regular position, him on top of me. I do not know his precise age, he might have been in his mid-teens. After this sexual encounter, I felt wetness in my vagina from semen (as I now know) with my fingers and also saw blood on them. It was painful during intercourse, maybe because he had torn my hymen. When I got home, after I had showered, I applied spirit on my vagina using a piece of cotton wool. It was still very painful but the pain did finally cease." (Islands, age 25)

Premarital Sex

After becoming sexually active, most young people had several sexual partners before marriage. The modal number of total premarital partners among male

respondents was four. A small proportion of both women and men (12 percent and 17 percent respectively) reported more than five sexual partners per year before marriage. Men more readily discussed premarital sex, suggesting the continued strength of social rules prohibiting an active sex life for unmarried women. Nearly three-quarters of the female respondents, however, did engage in sex before marriage. In this sample 11 percent of ever-married women were pregnant when they became married. Among the single women, 16 percent had delivered a baby. Nearly one-third of the ever-married women in the sample reported sexual intercourse with one partner before marriage; the rest had more than one partner. Among currently single women, the proportions having had one or more sexual partners were quite similar to those of ever-married women.

"After my menstruation I stayed with my parents for a little longer and made friends with a man. I never had a chance of having sex with him because my parents warned me of becoming pregnant. I gave him up and stayed for about a month and made friends with another man. This time the man was married and my parents rejected me so I gave up from him also. With the same man about a month passed and I had sexual intercourse with him two times again. This man was already married to a woman. Both sexual events took place during night time inside the house and outside the house so I did not have a chance to see sores or pus on the man's penis. For myself, pus only was seen in my vagina. It was last month I had sexual intercourse with him again and the wife found out and brought it up to the court where we both were stopped from making friends again. After some months passed, I made friends with another man. This time I did not let my parents know because I am really in love with him. In addition the man is young and we both are really in love and have promised to get married. At the moment I am with my parents waiting for any man to marry me." (Anga, age 17)

Men have more to gain and less to lose by disclosing the number of women they slept with before marriage. While it is possible that some men exaggerated the numbers for the sake of impressing the male interviewers, the modal number of four reported per year agreed with the number of annual premarital sexual partners reported by the women. Men reported having sex with girls and women ranging in age between eight and 39. Approximately one-third of the men had sex

with married women while they were single. About 17 percent of men had six or more different sex partners per year.

"After that first sex experience at home I had about 13 girlfriends whom I had sexual intercourse with. Among the 13 sexual partners there were some whom I had sex with more than once. For example, there is one girl whom I had sex with more than 20 times. I must say here that all these 13 partners were single girls. Some were younger than me, less than 16, while others were about 17, 18, 19 and 20 but not older. I did not have sexual intercourse with any married women at home until I went to the city." (Papuan Plateau, age 40)

Approximately one-third of single men claimed they had at one time used a condom, but only eight percent reported consistent use. When asked what they would do if they were named as the father of a woman's child, about one-third of men said they would deny responsibility and/or run away. Most of the rest had ambivalent responses such as "I would wait to see what the baby looks like," "Maybe I would marry her, if I want her as my wife," or simply "I don't know." It is clear that the burden of premarital pregnancies falls primarily on women alone.

Sexual Mores and Behavioral Change

Many young people showed considerable ambivalence about their own premarital sexual activities. The sources of this ambivalence and confusion may derive from contradictory social rules. Many contradictions exist between older rules and those emergent within this current generation. In contemporary Papua New Guinea, as elsewhere, there is a double standard regarding sex, i.e. men are allowed to have numerous sexual partners before marriage, but are supposed to settle down after marriage and take care of their families. Women, on the other hand, are expected not to have a sexual affair, but may be excused if it leads to marriage. Yet, single men are regularly admonished not to sleep with married women, leaving only single women for them to turn to. The cognitive dissonance

created by these and other contradictions could be partially resolved by paying for sex, which some men did report doing. Single men, however, had less money with which to pay for sex and did so far less often than did married men.

Sexual activity among single women can only be publicly justified if it leads to marriage. Young women are thereby placed under pressure to convince themselves (and others) that each partner is a potential spouse. Getting pregnant (and conversely, getting a woman pregnant) could force the issue and, therefore, not using any type of contraceptive helps resolve the conflict. The advent of alcohol and marijuana into Papua New Guinean societies and the chemical euphoria they produce have offered yet another way to help resolve these conflicts, at least temporarily, in that many people believe that, under the influence of drugs, one is somehow less responsible for one's actions. Most importantly, many of the conflicts surrounding one's sex life in the village can be resolved by going to town. There anonymity is increased and urban sexual norms are not constrained by the principles of traditional social structure. Western norms, as presented by media and expatriate example, are viewed as justification for more liberalized attitudes. Many elders simply summed up the current attitudes with the statement that people feel free today to do what they please with regards to sex.

"The kinds of changes that have been taking place in the village about sexual behavior is that they get ideas from reading bad books, watching sexy films like blue movies, or even watching videos about sex life. Some of our people staying in towns see sexy movies, read bad books and they come to the village and teach our youngsters in the village many different kinds of styles of doing sex." (Schrader-Ramu woman, age 31)

"Again all these changes are the result of the education system we have today. If a man does not want his children changed, then he should not send his children to school. Better to keep everyone at home. Cash income in the village is also far greater than used to be 20 to 30 years ago. Today everyone can have lots of money and play around with it. Young men and women today can travel to and from towns and cities more than once because they have the money. Transport is

more accessible to them now than used to be in the old days. They have more materials and wealth for themselves than we could expect. Parents have more difficulties talking to their children today which could easily be done before. For some, maybe it is possible to talk to their children but not everyone." (Islands man, age 39)

In the focus group discussions numerous social problems caused by changing sexual mores were raised by villagers. Men and women raised different issues, many of which referred to changing premarital as well as marital sexual norms. With reference to premarital sex, both men and women agreed independently on several points. One was the increasingly younger age at which sexual intercourse begins. The school system was frequently blamed for this phenomenon, in that children were removed from parental authority during their years of sexual maturation. Only a few persons in the village seemed to recognize another contributing factor, the biological phenomenon that sexual maturation is taking place at younger ages in many areas due to improved nutrition and health care over the past 20 years (cf. Zemel and Jenkins 1989).

A second point on which most people agreed concerned the breakdown of rules against single men sleeping with married women and vice versa, single women sleeping with married men. Most elders cited the lack of resort to traditional sanctions against this behavior, e.g. murder or sorcery. The legitimate power to use these sanctions was removed by the missions and the government, but no effective substitute has emerged.

A third and very clear issue focused on a perceived rising eroticism in daily life. It was expressed as the introduction of alternative sexual acts, e.g. oral or anal sex. While both oral and anal sexual intercourse were known in various Papua New Guinean societies, they were seen as non-reproductive and therefore were often reserved for special situations, e.g. when a woman was pregnant, as part of male initiations, or as play, i.e. not serious sex. Pointing to non-vaginal alternative sexual practices as a problem may be a way of expressing that more sex is taking place for reasons of personal erotic pleasure, unrelated to a desire

for children and marital bonding and therefore with less social approval.

The fourth issue which was raised in a number of different ways was the changing expectations of women in sexual relations with men, including the increasing commercialization of female sexuality. These issues underscore the difficulties in developing public health initiatives for the promotion of sexual and reproductive health. Making contraceptives more widely available and encouraging single people to use them could help reduce the risks of unwanted pregnancy as well as STDs and HIV infection. But traditional social mores and the hierarchy of authority they serve would have to undergo considerable change in order for there to be widespread acceptance of these options. Community-level discussions involving elders and youth on issues related to sexual behavior and reproductive health could be a serious first step in the right direction.

5. Pregnancy

Understanding the Basics

The processes of conception and gestation were understood in traditional Papua New Guinean villages in broad terms. This study did not attempt to record the folk systems of knowledge on these topics, except about how often and at which times sexual intercourse should take place in order for a pregnancy to result. Understanding of the pertinent anatomy and physiology varied considerably by ethnic group. All languages at least labeled the uterus, and some differentiated between the placenta and the uterus, while others did not. Most village women, when queried, admitted knowing little of what actually happened when they conceived and proceeded through a pregnancy. They were generally more concerned with knowing what they should do, first to become pregnant, and then to progress through the pregnancy in good health while assuring the safety of the fetus. These issues were covered in the common lore of their cultures and passed down from generation to generation of mothers. Men generally knew little and did not think it was an area of concern for them. Some men stated that the fluids of men and women mix and, in time, form into a baby. Their roles during their wives' pregnancies were defined in traditional culture to include a small range of usual subsistence activities and a considerable amount of physical avoidance of the pregnant woman. Most women feared childbirth a great deal more than the pregnancy itself. About two thirds of the women were scared of childbirth, but 15 percent said they were scared only during the first pregnancy. Some 82 percent of women received some information on pregnancy, mostly from mothers, older, experienced women and health workers, but not until they were pregnant; the rest were given no information.

Marriage

In our sample 109 men and 194 women had ever been married. The men married at an average age of 22 (± 4.2), with no significant differences detectable amongst culture areas, and women married first at about age 19.9 (± 4.9). Among those in polygynous unions, the number of co-wives ranged from one to 14. Half of the women in polygynous unions had had more than one marriage; half of these left a polygynous union for a monogamous one and the other half moved in the opposite direction. Slightly over half of the ever-married women had themselves chosen their first husbands. An additional 11 percent had been pressured into marriage due to pregnancy. Marriage arrangements for the rest had been made by parents or brothers; about half of these were unacceptable to the woman but she was coerced either verbally or physically into the arrangement. About 70 percent of women considered their marriages as good, although only 30 percent stated explicitly that they were happy with their husbands. Women gave various reasons for being unhappy, the most common reason women gave was that they were beaten by their husbands. The most common reason for being beaten was their own refusal to have sex with their husbands. About six percent of women stated that their unhappiness stemmed from their husbands giving them STDs. In our sample 21 percent of ever-married women had dissolved at least one union (other than through the death of the spouse). The most common reasons for the dissolution of the first union were: wife beating, abandonment, infidelity, infertility and non-payment of brideprice, in that order. About half of the men chose their own first wives while the other half accepted marriages arranged by parents; about five percent were coerced into marrying women they did not want to marry but who were already pregnant. About three-quarters of the men described their first marriages as happy; 20 percent said they were unhappy and fought often with their wives; the rest were unhappy, but fighting was not emphasized.

Conception

The most widely held belief concerning pregnancy throughout all culture areas was that conception required many repeated bouts of sexual intercourse. Very few men and women believed it was possible to become pregnant with only one event of sexual intercourse. Formal education or age had no effect on this belief. Most women believed that frequent sexual intercourse was necessary, one reporting as often as 10 times a night. The majority of men also believed that frequent sex was necessary, ranging from three to 10 times altogether to several times per night for a month or two. The most frequent response was that a woman could not get pregnant if a man slept with her less than six times.

"I had sex with my husband about four times per night, vaginal intercourse, no other styles of sex. When I had sex with my husband for about two weeks, I stopped having sex. Then I missed my first menstruation and knew that I was pregnant. So I went and told my husband's mother and that woman said I was pregnant. I was very happy that I was pregnant. When I told my husband, he was very happy to hear that his wife was pregnant. When I got pregnant, I went for antenatal clinic to find out whether I am pregnant or not. And the sisters in the hospital said I was pregnant. After the second pregnancy, the miscarriage, I waited one month only and started intercourse again. After sex for one month, I was pregnant again. After getting pregnant, no sex, big taboo. Husbands will not come and ask for sex when they know their wives are pregnant. I think that the man's penis can kill the baby at that time. After the third pregnancy, I was having sexual intercourse again with my husband. I had sex with my husband for one week and I got pregnant. It is not allowed to have sex when I am pregnant. After the fourth pregnancy, I got pregnant again. At six months, the baby died inside of me. When I went to antenatal clinic, the doctor said the child was dead inside me. So I was in the hospital and they pull it out from my vagina. When I pushed, the baby came out good. With the doctor's help, it was a good livebirth male but it moved once, lived for one minute and then died. So now I am not having sex with my husband anymore."

(West-Central-Southern Highlands, 34 year old)

Several women stated they were unaware that semen was necessary for pregnancy to ensue; one stated that she figured out that she hadn't become

pregnant because they had been having anal intercourse. A few seemed quite confused about semen and called it 'pus'. Both men and women thought that women could get pregnant by several men simultaneously. This belief appeared to be widespread and some women specifically asked the interviewers for advice on this topic. One young woman from the Anga culture area was divorced from her first husband on grounds of infertility, despite the fact that she was so young that she had not yet reached menarche. She later remarried and had several children. There is a great deal of misinformation regarding the nature of conception among both men and women. The number of years of formal education appeared to have little effect on level of knowledge. The belief that one must engage in multiple bouts of sexual intercourse for pregnancy to ensue has been a useful one for those engaging in premarital or extramarital sex. Many men said they could not be responsible for getting their premarital or extramarital sexual partners pregnant because they had slept with them only once or twice, or left long time periods in between. Several women reported being quite shocked at becoming pregnant after only one or a few bouts of intercourse. It is interesting to note that many men reported the exact number of times they had intercourse with a particular woman, as if that were a more salient feature of their sex lives than the number of different women they had slept with. At court cases for adultery, it is common to hear the number of times the couple has had intercourse entered as an important piece of evidence. It is not possible to assess, with the data from this study, to what degree this belief encourages frequent sexual partner change, but it may be a hidden factor in this aspect of sexual behavior, contributing to increased risks for acquiring HIV infection.

Sex During Pregnancy

The most important and widespread pregnancy-related taboo prohibited sexual intercourse during pregnancy. Although adherence to this rule may be on the wane, 40 percent of women stated they ceased having sex as soon as they

recognized they were pregnant; 16 percent said they never avoided sex during pregnancy. The rest began avoidance during the second or third trimester. Slightly over two-thirds of the women felt it was a risky thing to do and could harm the baby, even among those who continued to have sex. Some believed that it would harm the husband. Some women stated that they simply adjusted positions for vaginal intercourse during pregnancy, while others utilized other forms of sex, e.g. manual, oral.

"With a young woman, it may take four or five months of hard work to get her pregnant. We don't know timing. We just go until we see the woman is pregnant, then we continue until her belly is big. When she says she is pregnant, we can do it orally. It would cause a big fight if I went to steal another man's woman, so we can use oral sex to satisfy ourselves when our wives are pregnant. When the fetus is little, we do sex gently, not to harm the baby. And when the baby is big, we respect mama and leave her vagina alone. That is when we switch to oral sex. I myself avoid fights that way." (Angan, 38 year old)

"I intended to get my wife pregnant, that is I had sexual intercourse with her every night, several times per night. My parents taught me that when my wife is pregnant I have to play my role in my family, that means I have to help her in some ways, e.g., carrying water, collecting firewood or gathering garden food. I have to go hunting to get good meat for her while she is still pregnant. When my wife is pregnant, I have to stop from having sexual intercourse with her because it is our custom. If I go on having sex with her when she is pregnant the baby inside the mother's womb might die and this could cause big problem to my wife also. When my wife is still pregnant, I cannot go around and look for other women because if I do that then the same thing would happen, the baby inside the mother's womb would die or the mother herself could face hardship during labor. If my wife found out that I had sex with another woman, then my wife could get cross with me and the lady that I had sex with. So I have to follow our customs and the rules and if I happen to break one that means that everything within my family life would go wrong. If my wife faces some sort of danger during pregnancy then I have to seek the advice from village elders or any health workers to help her. I have to seek advice from village elders first and if they ask me to get the witch doctor to find out her danger and if the witch doctor cannot do anything good to her health, then I have to help her to seek a medical person." (Torricelli Range, age 24)

A little over half of the men reported that they stopped having sexual intercourse with their wives at the time the pregnancy was announced. In the Simbu-Western Highlands area, it was traditionally permissible to have sexual intercourse until about the beginning of the second trimester, a custom known as 'giving the fetus sugar and water.' Coastal men predominated among those who had no inhibitions about sexual intercourse throughout the entire pregnancy; however, some younger highlands men stated that they did not cease having intercourse due to pregnancy. Oral sex was a traditional option among the Anga and the ingestion of semen was once thought to contribute to breastmilk production. Masturbation appeared to be a traditionally acceptable option for men in Enga and the Western Highlands, as it might be elsewhere though little discussed. Many men stated that they continued to have vaginal intercourse but adjusted the positions. Yet, 13 percent of men said they sought other partners when their wives were pregnant or breastfeeding. This was corroborated by women, 15 percent of whom made the same statement.

"I am 25 years old an married and have a child. I finished school in grade six. I go to and from the towns. I am married, when we got married our intention was to have children. There was no problem getting my wife pregnant, therefore we just have normal sex and we became pregnant. We have been married for three years now and have a child. When my wife was pregnant, we had sex all the way up to the last month. We had normal front position, she laid down and I was on top with great care. During pregnancy, I helped her to go to clinic and also with domestic work like chopping firewood, fetching water. We always work together. I would not let her do all the work like cooking and washing utensils and doing laundry. My wife did not have bleeding or any other problem or signs of danger during her pregnancy. Our first child was delivered at home in our own house. She was helped and assisted by older experienced women. Only women assist in the village delivery, not men. When the labor started, it was long before the baby came. She did not have a problem at all. I do know what happens during labor and have not actually seen a childbirth.

We do talk about sex in the house. We are free to talk about sex. Normally we would talk about sexual intercourse, the different styles and about how to space the children and when to avoid sex to avoid unwanted pregnancies or when she is on monthly period.

Yes, when my wife was pregnant, I did have sex with four different women. They were in my age group and my wife did not know of them. That is my secret, she shouldn't know. There were no payments or gifts for sex. It was for pleasure only. If any one of the four women from my home village got pregnant, I wouldn't worry about them because we had sex for pleasure only so I wouldn't care. My wife will be very cross if she finds it out." (Sepik River, age 25)

Improving Knowledge and Care for Pregnant Women

The narratives created a clear picture of a considerable lack of accurate information on pregnancy and reproduction among both men and women. Women were taught very little about pregnancy until they were already pregnant and men were taught only their social roles. The elders did not have access to accurate information with which to inform their youngsters and this task has been left to the formal health and education sectors. Although the majority of women have some contact with maternal and child health (MCH) sisters, little information is passed to the women during their visits. Men are generally not reached by the health sector on issues relating to reproduction. As with sex education in general, the formal school system could provide a great deal more instruction, but for those who are older or out-of-school, a comprehensive village-based reproductive health education campaign is required to deal with this problem. During the course of this research, it was quite apparent that the desire for information was truly very great. It should be possible to develop a reproductive health education program, building on what people already know with a small number of critically important new facts without interfering with cherished values. Providing for that felt need should be a high priority in the effort to reduce pregnancy and birth-related morbidity and mortality.

6. Fertility Control

The Value of Children

In order to understand the attitudes and experiences with various modes of fertility control, it is useful to review what is known about the value of children in Papua New Guinean societies. A series of ethnographic studies conducted by McDowell (1981) and colleagues about a decade ago collected a large body of information composed of case studies and a comprehensive literature review which demonstrated the range of diversity of cultural attitudes on this issue.

In sum, the production of children essentially validated a marriage and the full adult status of a man and woman. Children were valued, both for the moderate but constant amounts of labor they provided and for their role as supporters of aging parents. Where large clans were often in competition for land, male children were highly valued as active defenders of clan property. Large families, i.e. five to nine children, were more often desired in island and lowland groups than in highland societies. Emphasis was traditionally placed on wide spacing of children in many highland and some lowland societies. Very large numbers of children usually were desired only by 'big men' or chiefs, i.e. men rich in resources and political power.

The desired number of children

There is an opportunity to compare results from this ethnographic study with a more quantitative survey conducted in urban, periurban and rural areas found within 10 km of three major towns in 1991 (Jenkins and Pataki-Schweizer 1992). For example, in the present study, the modal number of children desired by men was four and the mean was 5.3, with a range between two and 25 (the latter from one elder man with 38 children and seven wives). In the 1991 survey, rural residents wanted an average of 3.8 children (mode=4) and men and women agreed closely on this number. About 69 percent of rural respondents wanted no

more children. In the present study about 40 percent of the men said they wanted no more. Essentially, a moderate number of children is highly valued and this fact has been validated repeatedly.

Some women find it difficult to discuss family planning with their husbands. In the current sample 13 percent said they never spoke on this topic with their men, and six percent said they tried but their husbands were not supportive. About 44 percent of women discussed both the desired number of children and what methods they might use with their husbands; 18 percent only managed to talk about a target family size. Others did not discuss the matter with husbands until they had reached the number of children they wanted and a small proportion of women waited until they had more than they wanted.

About three-quarters of the men stated they discussed family planning with their wives, but very few also consulted health workers. Most men who decided to stop having children did so only after the number of children they had appeared to be a burden or their wives had become weakened or ill.

Birth Spacing

The value of well-spaced children was appreciated by most men and women, despite their frequent lack of ability to accomplish this. In our sample two-thirds of the women claimed they regretted having spaced their children poorly. Most women made an effort at some time in their lives to avoid unwanted pregnancies. In this sample, one-third of the women reported they did not ever try to avoid pregnancy but the remainder had at some time in their lives attempted to avoid getting pregnant. Among their reasons, they most often cited it was important in order to limit family size, while a smaller number stressed spacing, and avoiding pregnancy when unmarried. The rest included those who wished to avoid but did not know much about it and those women who wanted to use family planning better but their husbands refused.

Traditional Fertility Control

"As I said earlier, I went to one of the elder woman to give me coconut water to drink because I didn't want to get pregnant quickly. Yes, we fought many times for that because I didn't ask him, I just went privately to her and she stopped me from getting pregnant quickly. We used to fight over sexual intercourse when I did not feel like having it when he felt like it, without having beer or so." (North Coast, 19 year old)

Traditionally, nearly all Papua New Guinea societies had some means of controlling overall family size. These included herbals, spells, abstinence, mechanical modes of abortion and infanticide. Because most of the herbals also required a spell invoking spirits, these methods were considered non-christian by most missionaries and were condemned. Some societies stopped using them and ceased teaching them to the next generation. In some societies, the traditional modes of fertility control were not singled out for attack. In these areas, as well as others, the traditional practices are still very much alive. In several culture areas, e.g. Sepik River, North Coast, and perhaps others, traditional spells and herbals are available for men as well as women. This is a topic about which little is known and may warrant further research.

Abstinence may have been one of the most effective methods practiced traditionally. After marriage, periodic abstinence was required under a wide variety of circumstances. It was believed that the 'smell' of sexual fluids on a man would attract bad spirits. Therefore, men could not have sex when making canoes, hour-glass drums, signal drums, sorcery, special yam or taro gardens, war, when standing guard, conducting rituals, or seriously hunting and fishing, as for a feast. Any competitive activity, e.g. canoe races or even, today, soccer games, are times when men are supposed to avoid sex. When a member of the family died, during the pregnancies of their wives and during most of the first year of the baby's life (in some cases, longer), a man was supposed to avoid sex.

These taboos were buttressed with separate housing arrangements, in

particular, men's houses which were convivial places for sociality and information exchange. Contrary to outsiders' understanding, men's houses did not always exclude women, but in many areas had a women's section which served the same social functions for the clan's women. Residential separation of men and women was condemned by missionaries and, in some cases, government agents. While couples could have met in secret at other times for sex, the residential separation helped maintain social norms of sexual abstinence. This conviction was stated repeatedly in all culture areas in the focus group discussions.

Reasons for the maintenance of traditional practices included the lack of knowledge and accessibility of modern methods of birth control, the fear of side-effects as well as both the real and imagined side-effects of modern contraceptives. There may also be a felt need to maintain power over family size control by the couple as opposed to outside, modern influences. Resistance to modern methods may, in some cases, stem from the basic need to maintain ethnic distinctiveness as expressed in the power and knowledge of the ancestors. Traditional methods were the only family planning methods available for many women. These methods fell into two groups, those which were reversible and those which were not. The effectiveness of these herbal medicines is scientifically unknown. Some are likely to be fairly toxic in large doses, especially those which double as abortifacients. Many women made little distinction between prevention before intercourse and 'prevention' after intercourse, the so-called 'morning after' approach. Where fertilization is not comprehended, it is understandable that little distinction can be made between preventing conception and destroying the conceptus. Therefore, some women reported taking a particular tree bark every time their menstrual periods seemed to be late. Similarly, others reported a behavioral method, such as jumping over a stream several times.

Men and women frequently referred to the danger of the traditional herbals in the focus group discussions. They gave examples of women becoming sick, vomiting, bleeding and of alleged permanent sterility after their use. Many of the methods discussed, however, appeared to be fairly harmless and their chemical

effectiveness highly doubtful. About 10 percent of all the women stated they used reversible traditional methods at some time (excluding abstinence and alternative sexual acts). These were reversible in the sense that they were taken when one wanted to avoid pregnancy and then taken again, sometimes with symbolic manipulation such as passing the leaf behind the back instead of the front, when one wanted to become pregnant again. Another 10 percent of the women stated they used a traditional method to prevent pregnancies permanently. This often entailed a symbolic action such as burying the placenta a certain way or throwing it into a major river.

The most common traditional method of fertility control still in use was the simple avoidance of sex, but the timing of avoidance was the critical issue. While abstinence was widely required during lactation, about half of the women reported resumption of sexual activities after one year, when nearly all were likely to have resumed ovulation. Others resumed sexual intercourse before the end of the first year postpartum.

The Rhythm Method

"She advised me to only consent to have sexual intercourse with a guy during my safe time to avoid possible pregnancy. She said, safe time is three days or so after menstruation when I can safely have sex without any worry of pregnancy resulting. She said to watch out about having sex during unsafe time of the cycle, which is during actual menstruation. When I am not menstruating it is safe to have sex but not the reverse. I am scared of getting pregnant. I do not want to get pregnant from having sex with a guy. I was fearful of pregnancy during the intercourse and repeatedly told him not to ejaculate but withdraw or else I would become pregnant. He said, we love each other so if pregnancy results from this sex affair I will have no choice but to marry you. I said this was my unsafe time as I was into my third day of menstruation when we had sex. He obeyed my pleas and withdrew before ejaculation inside the vagina and in turn ejaculated outside. I was relieved of fears of pregnancy after he withdrew knowing that I would not be pregnant. One thing that caused me fear about pregnancy was if I got pregnant, my family and relatives would be very angry with this man and cause him trouble." (Islands, age 18)

About nine percent of women tried to use the rhythm method, in combination with periods of abstinence and alternative sex acts. But one-third of these women stated plainly that they did not know about safe and unsafe periods within their cycle, even though a small proportion of these women had been taught about it by someone. Another third thought they understood the rhythm method, but their explanations showed they did not. The concept of dry and wet days, which was apparently widespread, was quite confusing and may bear little relationship to the actual state of a woman's vaginal mucosa. In our sample only 11 percent seemed to have a clear understanding of the menstrual cycle and another 22 percent said they did but never defined what they meant.

Non-penetrative sex was mentioned as an acceptable alternative throughout all areas and, interestingly, by several quite elderly men and women with the implication that this was practiced before marriage by their generation in order to avoid pregnancies.

Knowledge and Use of Modern Methods of Family Planning

Modern contraceptives, like modern medicines in general, have gained some converts, although most people had little understanding of how they work or the proper modes of use. About one-quarter of the ever-married women stated that they had tried a modern method at some time in their lives; another third had never used any method and the rest used traditional methods of various sorts, including abstinence and alternative sexual acts, such as withdrawal or anal sex. Of those who had never used anything, nearly half stated they feared unwanted pregnancies but did nothing about it. The rest of this group presumably wished to be pregnant or ceased reproducing for reasons they did not always understand. Some women because of their age were clearly post-menopausal, but said they did not understand why they were not getting pregnant anymore and even asked our investigators if they could fix their problem.

Of those currently married, 18 percent were currently using modern

contraceptive methods; half of these were tubal ligations, and the rest used pills, condoms and depo-provera, in decreasing rank order. Of the never married women (with an average age of 21 years), 18 percent admitted to using some form of modern contraceptive, usually condoms, at some time. Divorced and separated women were reticent to speak of their sex lives and 42 percent gave no clear reply when queried on their current use of fertility control methods. An additional 38 percent of these divorced/separated women used nothing and the rest used various traditional methods. One-quarter of all the users of modern contraceptives were single, never married women, including one who had had a tubal ligation and three-quarters of the condom users. It is apparent that, despite a moralistic discourse among health workers and others about single women having access to contraceptives, a significant proportion have nonetheless managed to obtain contraceptives, even in the rural areas.

Men's knowledge and attitudes towards family planning did not differ greatly from women's. Among the men, 38 percent preferred modern methods, 26 percent expressed distrust of modern methods, while 19 percent seemed to be equally willing to trust both modern and traditional methods. The rest knew little about either traditional or modern, although a slightly higher proportion knew something about traditional methods. Single, never married men (average age of 22 years) spoke little about contraception. Of those who did (N=12), four used condoms at some time, approximately the same proportion reporting condom use later in the interview process. The ever-married men reported that 26 percent of their wives were using modern contraceptives and/or they were using condoms; 39 percent were using nothing and the rest were using traditional methods. The majority (70 percent) of all men said they paid no attention to contraception with women other than their wives and over half of these men claimed they would not take responsibility for any child resulting from casual sexual affairs. Several older men made the point that younger men tricked girls into having sex but ran away when they became pregnant; however, few of the married men who had extramarital sexual partners paid any attention to contraception either. One elder

married man told how he made several married women pregnant and then advised them to have frequent sexual intercourse with their husbands so the husbands would consider the babies their own.

"Worry about getting them pregnant? For a woman who wants to have sex with me, I just take her, so long as I satisfy my sexual desires, that's it. (So if she gets pregnant, it's her worries?) No, of course not, I'll worry about it. But I am always careful to find out before sex if it is safe for the lady. I also make sure that I keep the dates that I had sex with a certain woman. Yes, I keep written records. I take notes in my diary, but I don't keep that any more since I got married. For me, I don't like my wife to use those modern family planning methods, things like condoms and loops. I don't like them. We do discuss family planning, but we never once went to discuss it with any health worker or family planning worker. The discussions are just between my wife and me. We just discuss the rhythm method, that's all. We have discussed family size already but we haven't come to any agreement on how many children we really want to have. We have never discussed modern contraceptives. I wanted to use traditional methods at one stage, but didn't have the time to look for the mixtures to make the potion. We just use the rhythm method." (Massim, 32 year old)

The proportions of women and men who reported using modern methods of family planning can be misleading as they do not reflect the level of effectiveness among these couples. Several women described using pills and still becoming pregnant. Others described failures for traditional methods. In the Sepik River area, numerous women discussed the dangers of traditional methods which they believed could leave a woman sterile. Others feared that some of the modern methods could do the same. Traditional methods were therefore not without perceived side-effects and were also costly for most people. In most areas traditional methods were held as secret knowledge by a few persons, men as well as women. These persons were paid to administer the treatment and paid again to remove it, if it had been a reversible type.

Despite the sizable proportion of women who stated they were currently using or have used modern contraceptives in the past, there was much confusion about

the nature of these methods. It seemed many times in our narratives that women were given tablets such as chloroquine and thought they were being given contraceptive pills. The stories demonstrated a very poor understanding of whatever it was the clinic sisters told the women, although there was no indication that the sisters in fact gave correct information.

Miscarriage, Induced Abortion and Infanticide

Repeated, closely spaced pregnancies, or a very large number of offspring were often perceived as a burden, depending upon the parents' assessment of their strength and resources. Consequently, careless attitudes and behavior, even destructive behavior, occurred during pregnancy when the child was not really desired. The most common factor associated with attempted abortion, by any method, was an unhappy, unstable relationship between the mother and father. This was true of premarital pregnancies as well as pregnancies within marriage. Premarital pregnancies had the additional problem of social stigma, but the possibility of positive support by the woman's parents. Upon occasion, the single father's parents stepped in to take care of the child.

In many societies, especially those in the lowlands, adoption of a sister's child is a common and non-problematic way to solve the problem. Adoption is also used to even out sex ratios within married families and, occasionally, to relieve a married sibling of the added burden of a high birth order infant. In marriage, other factors operated to set emotions against an unborn fetus. Infidelity, or the suspicion thereof, frequently was the reason for beatings from the husband. Women tried self-starvation, self-poisoning, avoidance of antenatal care and made direct attempts at induced abortion through natural chemicals or by mechanical means. Sometimes men requested their girlfriends or wives to abort a fetus. Another very hazy area in this domain of behavior was the use of traditional contraceptives which were believed to work after a woman either missed a

menstrual period or had sexual intercourse and simply feared conception had taken place. Numerous examples of this form of traditional 'morning-after pill' have come to light in this study.

One hundred women discussed miscarriages and induced abortions with our interviewers. Twelve described having miscarriages, seven of whom sought medical care, often after the bleeding had continued for some time. Explanations for these miscarriages were, in order of their frequency: working too hard, husband beat her, malaria, gonorrhoea, other infections, playing basketball, spell cast by brother and don't know. The number who admitted to having attempted an abortion was 10; our interviewers themselves stated that there was good evidence that an additional three also had an abortion. The number who specifically stated they never had attempted an abortion was 39. Therefore, the estimated number of women attempting abortion in the sample was between 20 percent and 25 percent. This amounted to about 23 percent of the pregnancies of these women. The issue is a sensitive one and was likely to be underreported. Some induced abortions may have been reported as natural miscarriages. Several additional women seemed to hedge their statements, saying, for example, "Since I have been married I have not attempted an abortion." The issue is further clouded by the fact that some traditional contraceptive methods were also used as abortifacients and that some women claimed they could use high doses of birth control pills for abortion, after they have missed a period. Several women stated they always attempted to dislodge any conceptus when a period was late by jumping over ditches or streams. There was no way to know from our data if these women had actually been pregnant or not. Half the women who admitted to an abortion attempt were single and half were married, in contradiction to public opinion, as expressed in the focus groups, that mostly single women attempted abortion. If we count those attempts our interviewers claim were hidden, then about one-third were unsuccessful; one additional woman did not succeed in aborting, but her baby was born with damaged skin and died within a few hours. Another had seen a private doctor but never completed the required

number of injections. The married women gave various motives for inducing an abortion, including having seven to nine prior children, having one that could not yet walk, having an inattentive husband and having too many children who have died.

The methods used to induce abortion included visiting private doctors, taking pills and herbals, and mechanical means, e.g. putting hot mumu stones on the belly, banging against a tree, jumping out of a tree, jumping over streams, and pouring hot water on the belly. Each type had both successes and failures, except the pills, which worked in both reported cases. It was not explicitly stated that these were birth control pills, but the context and manner of speech implied they were. Among the ten who discussed their abortions, three had heavy bleeding and ended up in the hospital, including the two who took pills. A fourth bled for three months, but did not apparently seek health care. The investigators themselves reported on additional methods, such as the so-called Thai method, a type of vigorous massage done with the feet, or the name of a particular doctor in one city to which women refer each other.

Among those who stated they never tried abortion, reasons given were: too scared, afraid of the law, God would judge them, didn't know how to, and wanted children. Several narratives related that either husbands or boyfriends wanted their women to abort, but publicly, as in focus group discussions, men tended to abhor the idea of abortion. Regarding abortion and infanticide, about six percent of the men in our sample referred to either event, including those in the focus groups. Focus group discussions more often mentioned infanticide than did personal interviews, although the phenomenon did appear. Men spoke of infanticide and the situations which prompted it.

The right to obtain a legal abortion does not exist in Papua New Guinea, unless several doctors agree that the woman's life is seriously threatened by the pregnancy and/or the birth. Few women who desire to abort an unwanted fetus are actually physically in danger. Although our study did not specifically document these, there are likely to be serious medical, psychological and social

consequences associated with induced abortion in PNG, as there are elsewhere in the world. Prevention cannot simply consist of tightening the laws against abortion, as has been suggested. Many of these abortion attempts could be prevented with better access to and understanding of contraception. A large proportion of women who attempt abortion are without meaningful personal support systems, abandoned by husbands and boyfriends and too ashamed to reach out for help. Private counseling networks, which include young single women as well as older married ones, could be an important source of psychological, as well as social, support for these women in trouble.

Infertility

"I was on family planning pills after my second child. I could not have any more children, so I don't know why I stopped. Maybe because of the pills, I haven't had any village medicine. I have only one husband, no boyfriends, but I know my husband has girlfriends. In the first few months after I had the first child, my husband had been out with other women so when he realized that he had hot painful urine with pus, he told me about it. I was angry but we had to go to the hospital to get treatment and I had two injections in each buttock. I wasn't sick like him but I had the injections. These women who go from men to men, they can't stop it because that's how they make their living, like money, food, clothes. While pregnant with my second child, I went to my village. But I realized that my husband was going out with other women so I came back home." (Eastern Highlands, age 32)

There is a major conundrum surrounding infertility and contraception, inasmuch as few women understand the linkage between infection and infertility. It appeared that many women were infertile without having had any noticeable symptoms of infection. This is a serious issue for the future of contraception in PNG. Numerous women suspected their infertility was a result of taking birth control pills.

Demographic data were available from 107 ever-married men and 49 single men. Of those who were or had been married, eight percent had never fathered a

child. Nearly half of these men did not know why their marriage was infertile; the rest attributed their infertility to the wife's sickness, taking of traditional contraceptives, a prior husband having buried his wife's last baby's placenta, and to a 'dry woman,' from whom her husband claimed the sperm fell out after intercourse when she stood up. Three of these men never sought any type of treatment, two planned to find a traditional cure, one had tried traditional treatment, another had gone to see a doctor and two tried both traditional and modern medicine. Infertility in the marriage had driven several men to seek a fertile woman, others reported that they fought with their wives, some said it had caused no problems, another man said there were no problems but he had made another woman pregnant, and one had beaten his wife until he drove her away.

Our study sample consisted of 193 ever-married women with complete demographic data, including eight percent with primary infertility, i.e. no pregnancies despite having been married for over five years, and six percent with secondary infertility, i.e. they have had at least one child but subsequently did not get pregnant despite trying. Of those discussing their infertility further, the largest proportion could find no cause, while others attributed it to prior STDs. A few said they were sick or their mothers had given them traditional contraceptives, or sorcery was to blame. Other causes reported were the use of modern contraceptives, husbands having given them a traditional contraceptive and inheritance, i.e. a genetic tendency in the family. Half of these women had never tried to treat their infertility, several had gone to doctors, while others planned to go or wanted to go but their husbands blocked them. Traditional medicine had been tried by a few. About half of the women claimed that infertility had not led to problems in their marriages, but a few said they were seeking a new partner, that their husband was seeking a new partner or their husband had taken a second wife.

Infertility is a common problem in PNG. The proportion, about 14 percent, found in this study is not unlike that found in several other demographic studies conducted by the PNGIMR (Jenkins 1993). About one-quarter of these women

recognized the connection with STDs, but few men did. Men generally did not consider that they themselves might be the infertile one in a couple. A higher proportion of women than men said it led to no problems in the marriage, yet infertility clearly led to problems in many marriages, driving both men and women to seek additional sex partners. Improved detection and treatment of reproductive tract infections, most of which are probably STDs, deserves much higher priority in the health services. Given that nearly all of these diseases facilitate the acquisition of HIV infection, especially in women, detecting and treating patent and asymptomatic reproductive tract infections is one of the most effective AIDS preventive measures that could be accomplished and would further support family planning efforts.

In summary, fertility control is widely desired and practiced in one way or another by the majority of Papua New Guineans. By contrast, family planning, with its emphasis on the use of modern contraceptives and surgical procedures, has a very low profile in the lives of most families. Inasmuch as family planning as programmed in PNG omits the unmarried and only barely reaches men, it has little impact on the frequency of unwanted pregnancies. Integrating sex education for all, disease prevention, and an understanding and sensitivity to human sexuality among family planning workers is fundamental to any future success of family planning efforts as well as to any future improvement of the population's health.

7. Sexual Behavior

Same-Sex Activities

"For me personally when I was I was a child I did practice it with young boys. The sex practice occurred when we were playing. An older boy told us to do it with him. That's including myself and other boys we were playing with." (Islands, age 42)

Out of 160 interviews, 89 men responded to questions regarding sexual activities with other men. Of these, 88 percent denied any sexual intercourse with other men and 12 percent reported having had some same-sex experiences. The average age at which these experiences first occurred was 16. The most common type of intercourse reported was anal and many of these events took place in group situations. Exactly one-half of those reporting were highlanders and one-half lowlanders and most culture areas were represented. Not infrequently expatriate men were also mentioned. A further eight percent reported eye-witnessing sexual acts between persons of the same sex, half of which were between males and half between females. As same-sex activities among women represent minor risks for HIV transmission, our study did not probe deeply into this aspect of human sexuality. Several cases were reported, however, including a stable relationship treated as a standard marriage by local villagers on the Papuan Coast.

Traditionally, a number of Papua New Guinean cultures incorporated same-sex activities into their religions and rituals of initiation. What are now viewed as homosexual acts were often non-erotic symbolic expressions of various aspects of life-force (Knauff 1993). A few cultures seem to have promoted homosexuality by tabooing male-female sex for most of the year or for significant portions of a young man's life (Williams 1936; van Baal 1966). Rather than placing the highest value on the reproduction of humans, these societies placed high value on the reproduction of society itself through secret all-male rituals. Where low levels of

reproduction were the result, headhunting and the capture of children from other tribes may have helped to maintain population levels. In most cases, however, ritual homosexuality was either complemented by ritual heterosexuality or simply allowed to coexist, either ritually or casually, with standard heterosexual relations (Herdt 1984). Although most ritual homosexuality has been lost in Papua New Guinea, some remains in remote areas and old men remember when it was an acceptable but secret part of male life.

It must be recognized that homosexuality among men is a difficult issue to investigate where social norms scorn the fact that a man may enjoy sex with a man as much or more than sex with a woman, and similarly among women. 'Coming out,' in the western sense, i.e. publicly professing to same-sex preferences, is not yet acceptable in PNG and is not likely to become so unless something functionally equivalent to the subculture of gay identity evolves further. Consequently, one of the few ways men can cautiously reveal these preferences is to hide them under a presentation of bisexuality, i.e. having sexual relations at times with women and at times with men. It is likely that the majority of men in PNG who prefer having sex with men are driven to adopt this pose and to marry and have children in order to maintain public respectability. In addition to the minority who would prefer male partners nearly all the time, there is a larger number of men who have sex with both men and women more or less regularly throughout their lives. Even beyond this, there is a wider level at which male bonding leads to sexual expressions of homoeroticism, e.g. group sex or gang rape, a phenomenon which has been demonstrated in other societies as well (Sanday 1990). There is no way to decipher the underlying psychosexual dynamics of any of these variations in masculinity from our data. We simply did not probe deeply enough. It is clear, however, that many men found it difficult to discuss this aspect of their sex lives with our interviewers.

The urban scene was not sampled in this survey and would certainly present different patterns, including male prostitution. It would not be surprising that men who prefer men as sexual partners would migrate into urban areas and avoid

village life, especially when, as young men, they notice the differences in their own sexual orientations and those of the majority of fellows around them. Sampling urban areas in order to understand better the contemporary expressions of homosexuality as well as understanding the risk factors for HIV infection among men who have sex with men is a high research priority for the future. It is extremely important that tolerance for homosexuality is encouraged in Papua New Guinea in order to diminish marginalization and make it possible to reach out to these men and help them learn to protect themselves from AIDS.

Group and Forced Sex

The male point of view

In several culture areas (Sepik River, Sepik Plains, Papuan Plateau, North Coast, Eastern Highlands, parts of Western-Central-Southern Highlands, and Ok) a woman could be punished traditionally by gang rape for a variety of reasons related to sex and marriage. The punishment was decided upon and approved by clan elders. In some areas, it was punishment for being in the male-dominated initiation house or sacred bush areas; in others it was punishment for adultery or refusal to marry. In a few of these culture areas, these were socially acceptable practices until relatively recently, i.e. men in their 20s and 30s witnessed or participated in them. The underlying psychosocial dynamic for socially acceptable gang rape derives from a strong emphasis on male bonding coupled with ideologies of female pollution and danger. Its function, in addition to further cementing the men's bonds, is to demonstrate domination and control of female sexuality. Although the full social acceptability of this type of punitive sex has waned, the practice continues to be widespread in modern guises. Some events were conceptualized as punitive by men and others were not. Clearly, threats and physical force were frequently involved, but not likely all the time. In an attempt to minimize interpretive problems, the assessment of force in these narratives was based only on the translation made by the interviewer, i.e. if whatever terms were

used in the vernacular were translated as 'force' in any tense in English, then the commentary was analyzed as a statement on forced sex. Men and women reported these events very differently. Out of 70 interviews in which the subject was raised with men, 26 men stated they had never been involved in any group sex, whether forced on the woman or not. The remaining 44 men recounted 74 events as their own experiences and four as eye-witnesses. These figures suggest that approximately 60 percent of the men who discussed this topic in our study sample have participated in this type of sexual event. Inasmuch as 90 other men were not probed about this subject, possibly because the interviewer felt it was too sensitive to raise, it is difficult to state whether the practice is overreported or underreported. That the practice is common is widely acknowledged among men, and to a lesser extent among women, in PNG. Of the 128 women who were questioned on forced sex, only three reported gang rape, although 55 percent stated they have been forced into sex against their will. No woman in this study clearly described willingly having sex with several men simultaneously.

The large discrepancy between men's and women's reports probably relates to two factors. The first is the distinction between group sex (multiple men to one or two women) which is forced and that which takes place with consent. Force has many dimensions and ranges from threats with guns, knives and being bound with rope to verbal pressure. Verbal threats included threats that she will be killed, thrown out into the night, exposed to the village and her parents, forced into sex with additional men, or others. Other forms of force included forced alcohol consumption, as when men stated that they deliberately forced her to drink until she didn't know what was happening to her. Force also included trickery, as in the common situation of a woman expecting to have sex with one man who has in fact arranged for many of his friends to join them. Consent is more difficult to define partly because, in many cases, it is likely to be a rationalization by men (cf. Sanday 1990). No women in our sample admitted to consenting to this form of sex. It is not correct, however, to assume all the events reported really took place without consent, although defining consent is highly

problematic. Women who are available for group sex are known by men in many communities. In one unpublished anonymous survey conducted by the author on the North Coast, several women admitted to the practice with a certain pride. In the Papuan Plateau, a focus group participant related an older custom in which a special woman was chosen to enter the men's house and have intercourse with all the men of the village. For this she was honored.

Similar events of group-level sexual intercourse have been documented in the context of traditional religious practices in several areas of the Papuan Coast, Papuan Plateau and, with wider variations, elsewhere (Davenport 1976; van Baal 1966; Knauff 1993). Often these events were staged as part of fertility and renewal rites and sought the recovery for use in ritual of mixed sexual fluids from men and women of the whole community. These rituals have been vehemently attacked by the churches and, in some cases, government and health authorities.

This raises the second factor in accounting for the discrepancy between men's and women's reports. While some men admitted to these events with apparent shame and some disgust, most stated their involvement with a flat matter-of-factness. In our data, only a very few described these events with some excitement. Women hardly alluded to such events at all, suggesting that a great deal of shame was associated with them.

Some of the men's stories related large drunken parties with a single woman they judged as *longlong* or crazy; others stated they took place with paid prostitutes; still others claim they took place with *pamuks*, i.e. loose women. Even accepting all the men's explanations, over half of the events described were clearly of the forced variety. Forced group sex has been maintained, without formal approval, and extended into the modern era as the punishment of a woman for being rude and rejecting men, for rejecting her boyfriend, for refusing to marry someone or for showing dissatisfaction with her husband. The most common reason given by men for punitive sex in this study was to teach the woman not to be sexually arousing.

"Took part in one occasion where my friend and I forced the 11 year old school girl to have sex with us. She sexually aroused me and there were two of us and we forced her to have sex and told her to take it easy. The girl did bleed. The hymen was broken and I did experience a minor pain on my penis but had no bleeding." (Sepik Plains, 18 year old).

Not all motivations reported were punitive. At least as many men stated the event was engineered in order to share a sexual partner with their *wantoks* (persons of the same language group or home village). In several cases, young virgin males were initiated into their first sexual intercourse during these events. Watching group sex is a traditional sex education component of some Sepik River initiations. In some areas the sharing was coercive, i.e. although the man thought only he was going to have sex with his partner, he and she were followed by a group of men or boys and he was forced by threats to let them all have a turn.

These events took place in both urban and rural settings, with the majority of those described in the village, frequently in the context of a 'six-to-six,' or social dance. Alcohol figured prominently in most, but not all, occasions. All culture areas were represented with three exceptions, the Schrader Range, the Angan area and the Papuan Coast. However, in these areas a few personal interviews as well as the focus group discussions made it clear that the men knew this practice took place, although they claimed it did not occur in their communities.

There are numerous ways to force someone into sexual relations, some of which occur in both the Angan and Schrader areas, as well as elsewhere. The serious problem of 'losing face' in the context of sexual rejection was repeatedly described, illustrating the psychosocial crises of masculinity many men experience. These events often led to extreme violence. None of the men reported having ever been taken to court for any of the violent events described, even those in which women were physically restrained and threatened and/or ended up in the hospital for stitches. One factor contributing to this lack of reporting may be the difficulty of establishing whether consent was given or not. Our interviewers did not uncover any rapes of men or boys, but they certainly occur.

While the variation in these practices bears significance for the legal definition of rape, with reference to the spread of STDs and HIV/AIDS, they must all be considered high-risk behaviors. In the 44 few-women-to-many-men events recounted here in which numbers of participants were clearly given, there were 52 women and 445 men, i.e. there were 497 persons involved in 44 events, making over ten times as great a risk of exposure for each man at each event as would have occurred had there been simple one-to-one sexual intercourse. If HIV were transmitted in such an event, a man would be more likely to contract it from the semen of another man than from the woman, which presents an interesting conundrum for epidemiological categories such as homosexual or heterosexual transmission.

In addition, in about one-third of group events, whether coercive or not, bleeding was reported. The sharing of one's sexual experiences with *wantoks*, while tacitly accepted male behavior in traditional PNG and commonly referred to as *singel fail* in contemporary Pidgin, should be addressed directly as dangerously high-risk behavior in future STD/AIDS education efforts.

The female point of view

A majority (55 percent) of the women queried on the matter (N=130) stated they had been forced into sex against their will; another 33 percent said they had never been forced into sex and the rest were unclear. Among the women who claimed they were forced, 31 percent said it had occurred once, three percent twice, 61 percent said more than twice, and the rest did not specify.

The reported events of forced sex included both marital and non-marital sex. Among those who reported forced sex outside of marriage, most were forced by acquaintances and boyfriends, and only a small proportion (eight percent) reported being raped by strangers or unknown gangs. Nearly 30 percent of these women said they had bled as a result of these events. More women mentioned being threatened with knives than did the men in their accounts of forced sex.

"When my boyfriends ask me to have sex, I put my mind on it (together with each of them) and go ahead. If I refuse, they used to threaten me with knives. I have been frightened for my life, so I just give in to each of them. Sometimes these boyfriends get drunk and come and force me to have vaginal intercourse. I fear my body getting spoiled from rough sex. This takes place at social parties. Rough, forced sex makes me feel bad." (Schrader-Ramu, 16 year old).

Forced sex within marriage is more complex. Among 95 ever-married women who spoke on this topic, about half said they were forced into sex by their husbands, a third by beating, another 20 percent by being harangued by a drunken husband, 15 percent by verbal threats, 12 percent by strong insistence and the rest unspecified. Others referred to being forced to have sex by their husbands far more often than they wished.

"There is an incident where some men from outside my area tried to rape me. This was when I was walking back to my house one time and these men were drunk and they stopped me, but I said, 'Man! I'm not a single lady. I'm a married lady', so they left me and I went home. But when my husband is drunk I don't like having sex with him but he used to force me to have sex with him. My husband is a great drunkard and whenever he is drunk, I used to say no to him when he asked me for sex but he used to beat me up and forced me to have sex with him. Whether I like it or not, I have to bow down to him and have sex." (Ok, age 34)

Sexual Harassment within the Family

Sexual harassment within the family was specifically discussed by a subsample of female informants (N=42) and 15 percent of them claimed they had been sexually harassed by a male member of the family. Approximately half had succumbed and the other half had successfully resisted. Most of the harassment revealed in this study was perpetrated by cousins, uncles and stepfathers. There were no admissions of incest with a father or sibling, but it can be certain that such occurs. One particularly urban variety of sexual harassment within the family was described in which a young woman, often a niece or cousin, is brought to

town to work as a babysitter and forced into sex with the man of the house. A fairly common way to explain why sexual relations may occur among close family members was the use, deliberate or accidental, of love magic. Resorting to an explanation based on love magic diminishes culpability.

Extramarital Sex

Most men have had extramarital sexual partners (71 percent) at some time during their married years. In PNG the widespread belief that sexual intercourse is dangerous during pregnancy, causing harm both to mother and baby, led most men into thinking they should stop having sex with their wives during pregnancy and 84 percent did; 55 percent of the men said they stop as soon as the pregnancy is recognized. In some areas there were also strong beliefs that sex outside of marriage while a woman is pregnant will place the woman at risk during birth. Therefore, whenever trouble did arise in childbirth, women commonly accused their husbands of infidelity. Where these two beliefs were combined and held strongly, there were options. Men may have been taught it was permissible to masturbate at this time or that oral sex with one's wife was harmless. In other areas, such as one part of the Sepik River, a substitute wife could be selected by the man's own wife. Polygynists simply turned to their other wives. But 13 percent of men in our study stated they expressly sought other women when their wives were pregnant or breastfeeding an infant, while another 45 percent had extramarital affairs when their wives were pregnant as well as at other times. A further 13 percent stated they had sex with other women but never when their wives were pregnant. The rest said they never had outside women.

"When my wife told me that she was pregnant, I told her that I was not allowed to have sexual intercourse with her and that she was to let me have my sexual pleasures with other women. During my wife's pregnancy I went to have sex with Bamu women, most of them were middle age and older woman. I had to pay them K1 or K2 to have sex with them.

Yes, I sometimes think that my wife has been seeing another man. Sometimes she came home very late from the bush or from her fishing trip or she was in another part of the village where she never goes to. Sometimes she just wanders off to another part of the village without letting me know.

I have been having casual sex with Bamu women in the last five years. There have been many, I can't recall the exact number. The ages were middle age to old women. Most of these women were married and were being accompanied by their husbands to make quick cash for the family. There were also widows who were brought by their brothers. The money I paid depended on how much I had in my pocket. If I had K5 I get a young woman charging that amount. The sex activities took place in the tall grass. I did not see any blood during or after sex." (Papuan Plateau, 42 years old)

The numbers of reported extramarital partners were distributed as follows: one partner, 22 percent; two to five partners, 59 percent; six to ten partners, 13 percent; 11 to 20, three percent and greater than 20 partners, three percent. About half of the men stated they paid these women with cash, and most of these paid partners were commercial sex workers.

It seems that a wife's pregnancy drives men to seek sex with women who may be at high risk for STDs and HIV infection from having multiple partners. Transmission of HIV to a pregnant woman may result in vertical transmission as well and significantly increase the number of infants born with HIV infection. Further, HIV infection acquired while breastfeeding greatly increases the risk of transmission to the baby through breastmilk. While a wife's pregnancy (or lactation) is not the only reason men sought sex outside of marriage, it may be one which would be amenable to alteration through education, particularly in light of the risk of AIDS.

The manner in which men discussed their extramarital affairs revealed a variety of attitudes. Some men clearly felt some guilt and hoped that their wives did not find out. Others were secretive but readily admitted and apologized when questioned by their wives. Some men felt justified on the grounds that their wives were infertile, or that the women they slept with were aware they were married men. A few stated they had a real deep love for the additional woman. The two

most common, and closely related, attitudes were 1) that it was alright when sex with his wife was inappropriate (during pregnancy or early lactation) and 2) that he must not have sex with his wife at such times or he would kill the baby, cause trouble in childbirth or his newborn would become malnourished. In other words, there is good evidence from these data that some significant proportion of extramarital sexual activities among men is either driven by or justified with customary beliefs about the dangers of sex and semen to pregnant and lactating mothers.

Where traditional values remained intact, men feared the consequences of extramarital sex and made other adjustments. In the modern era, the consequences of extramarital sex may be different from those of the past.

"The law was that when my wife was pregnant I couldn't have another woman. I was already married. The law of before was that if I was married and went around with another married women or a single woman, the men of the village would get together and kill me. I never saw them do it, but heard about it. Women were very important then, when we were young." (North Coast, 62 years old)

Regarding their wives having extramarital affairs, 19 percent of men stated that they knew or worried that their wives were unfaithful. The rest did not, and therefore the most common statement was that they trusted their wives. The second most common attitude was essentially "I don't know and I don't want to know." These self-reports by men in our sample contrasted greatly with the repeated statements by women on men's jealousy.

"With my first husband I used to have sex with other men besides him, but with this second husband, I never did this. This is because my second husband is a very bad man and a rich one too. He has many wives, many children, and many pigs, too. He tells all his wives to stay in the village and we were not allowed to go to the market and the town too. If I had food in my garden that I wanted to sell at the market, I must get permission from my husband first. If, however, I go to the market without my husband's knowledge, he would tie both my legs and hands and hit me very badly until I was nearly dead. Because of that I never

have sex with other men." (Western-Central-Southern Highlands, age 35)

Out of 126 women who spoke about extramarital sexual relations, 21 percent stated that they had sex with men other than their husbands at some time during their marriage. Among those who gave motives, the most common was that she felt justified because her husband slept with other women. A few women expressed attitudes indicating that they would like to have boyfriends but feared being beaten by their husbands, the social consequences and diseases.

More women in our study sample spoke willingly about their own extramarital sex lives than about those of their husbands (126 vs. 88). Only 23 percent of the 88 who spoke of their husbands' extramarital sex lives stated with certainty that their husbands had no other women while married to them; another 15 percent suspected but were not sure. A total of 63 percent said they definitely knew their husbands had sex with other women; of these 24 percent stated that these affairs went on while they themselves were pregnant or breastfeeding an infant. Another 13 percent said their men were looking for fertile women as they considered themselves to be infertile. Infertility was a major factor contributing to marital discord in both the men's and women's reports.

In statements revealing attitudes towards their husbands, in contrast to statements about his known or suspected extramarital sexual behavior, equal proportions of women (18 percent) thought that their husbands were faithful and trustworthy as thought the opposite, i.e. that they were unfaithful, which sometimes angered the wives. Other attitudes expressed by women varied; in descending order of frequency they were: "I can have other partners since he does it;" "I will (or did) beat up that other woman" and "It's O.K., he needs it and, besides, I'm the main one." A further small proportion each said that they feared their husbands would give them STDs or AIDS, and that the man's unfaithfulness was the cause of their sickness and/or troubles in childbirth. A wide variety of attitudes toward extramarital sex was reported, including women who loved their men and considered them trustworthy, despite being told by the men themselves

that they have slept with other women. Others simply accepted the fact that their men had other partners and did the same.

In all, 77 percent of the women who discussed their husbands' sexual affairs (N=88) stated that they knew or suspected their husbands had sex with other women during their marriage, a figure that agreed quite well with that given by the men in this sample (71 percent) as well as that recorded from women (73 percent) in an earlier structured interview survey conducted in 1991. Only 13 percent of men had admitted to extramarital sex in that survey, a clear indication of how inadequate random sample questionnaire surveys are for the elicitation of sensitive material (Jenkins and Pataki-Schweizer 1992).

Gaining information on extramarital sex among women was more problematic and was never even attempted in the earlier questionnaire survey, whereas, in this sample, 21 percent of 126 women admitted to having extramarital sexual partners. Women were far more reluctant than men to admit to sexual affairs outside of marriage or even before marriage. Although many women in this study discussed the topic, it is likely that some women refused to reveal the truth. In view of the physical threat that many women face for adultery, the proportion of women who regularly or repeatedly take on extramarital affairs is undoubtedly much lower than among men, but the enormous reported difference between men and women in this study is suspect.

"When my husband goes out for work at night, I usually go out with my boyfriend from America, he is a foreigner. He took me to the hotel, we booked a room and stayed there the whole night. At night we enjoyed having sex. He first went up on my body and was licking my skin and after all we both were naked, happy having sex. It was vaginal intercourse. I go around with him for some time and left him because I was scared of my husband, he might find out and belt me up. I was scared to become pregnant from him but I wasn't pregnant at all. He sometimes give me anything when I request or buys me presents and other things when asked. I have experienced sex outside marriage, it's the same as inside marriage. This happened in Madang, it wasn't work of love magic. The American guy was a bit older than me or my husband. I don't believe in love magic. My husband does go out in the night and have sexual intercourse with some women. He made a woman

pregnant when he was having sex outside marriage. She was pregnant and I found it out and I belted that lady up and she was scared and ran away. I heard from my friends that she had an abortion. She went to a doctor and the doctor took out the baby." (Sepik Plains, 30 year old)

Commercialization of Sex

Prostitution, as reported in this study, no matter what the other motives, was clearly a commercial activity. Young sex workers may find men in villages, rural stations or towns, but rarely have a brothel, a pimp or their own room in which to work. They were found by men at discos, parties, dances, clubs, bingo games, video shows or simply on the street or at the market. Sex took place almost anywhere and was often outdoors, behind a building or in a high clump of grasses. In some instances, men lined up and each took his turn with the woman, sometimes paying her and sometimes tricking her. Among the women who told about their commercial sexual activities, a significant proportion presented a very passive picture of themselves, demonstrating little ability to control the nature of their sex lives, as evidenced by their inability to secure payment from some men, or to seek treatment for STDs.

The level of prostitution has grown in Papua New Guinea as involvement with the cash economy has grown (Hart 1974; Sterly 1973). As soon as the roads were built and men drove cars along them, there were reports of young women waiting along the roadside, ready to take a ride and sell sex to the truck drivers.

There are many other situations in which women received cash and gifts for sex. It is difficult to classify them all. In some areas, loaning one's wife to an exchange partner, usually with her consent, was one type of traditional exchange. In former times as well as recently, payments were expected by women in exchange for casual sex. At Balimo in the Papuan Plateau area, men told of the traditional *gumlae*, a payment in food, such as a bunch of bananas or taro. In the Menyamya section of the Anga area, women described a usual payment in meat or vegetables and in the Massim area, in fish or vegetables. In most areas, some

payment was required to keep the event a secret, convince the woman to give herself on this occasion and ease the way for the next occasion. Some groups of men are well-known for selling their wives and sisters for various commodities and have been doing this probably for centuries. In a few areas, everyone claimed sex had never been paid for traditionally. In all areas, sex as an exchange commodity was known and understood. Even where people in the focus groups claimed it did not happen, a version of the same phenomenon occurred as when an unattached woman, for example, a widow, slept with men of the village who, in turn, kept her supplied with food. Men of the Ok area claimed that women would knife them or send them to jail if they were not paid for sex.

Among male respondents, 36 percent had at some time paid in cash for sex; a larger proportion of these were married men than single. An additional one-third said they usually paid in gifts; the remaining men claimed not to have paid anything, although this should be taken with caution. Studies of commercial sex workers and their customers have shown that men often underreport their payments compared to what the sex workers themselves report (Pickering et al. 1992).

"No, I don't pay them. When I was working, women come to my work place to be entertained, where I buy beer and from there I have sex with one of them. Sometimes I give them gifts like t-shirts or a necklace just to show my appreciation. Yes, I give money. Because I work I give them money for their taxi fares to send them home. But I haven't paid them money for having sex with them." (Massim, age 35)

The prices reported by both men and women ranged from 20t to K80. As their reasons for paying for sex, men gave the following: to make her happy, to convince her after she has refused, because he feels sorry for using her, because she may report him, or simply because she asked for it. In the focus group discussions, men were asked why women want to be paid for sex and the most common answer was to buy food or clothes. Several men mentioned the lack of

garden space for women in town, how much their husbands spend on alcohol and that many of these women are requested to do sex for money by their fathers, brothers and husbands. In almost all cases, men stated that the reason for women wanting to be paid for sex was quite simply as a way to make a living. No man stated that these women had a greater desire for sex than others or similar explanations.

"I think the only reason why women want to be paid for sex is that they want to earn their living." (Eastern Highlands man, age 39)

Among the women of our sample responding to queries regarding payment (N=180), 22 percent received cash in exchange for sex; another 27 percent received both cash and non-cash gifts and seven percent received non-cash gifts only, leaving 45 percent who said they never received payment. Their attitudes towards sex for cash were mostly negative, when explicitly stated, citing the dangers of STDs. There were exceptions who thought getting paid was very nice. Others acted a bit insulted when they weren't compensated and others stated, rather matter-of-factly, that they were paid for their vaginas. A very few women said they depended upon exchanging sex for cash as an income. Many had been given some cash and/or gifts, but did not consider themselves commercial sex workers. A number of young women stated they had sex with their friends in exchange for beer, betel nuts and food. And a few specifically said they gave something to the men, even if they also accepted something in return, just to show their autonomy.

It is not easy to define commercial sex work in the current economic context. Some girls admitted having sex with a man for 20t, a betel nut or cigarette. There were examples of women paying for garden vegetables with sex and receiving taro instead of cash so that they could bring it to the house without suspicion. Men reported traditional payments for casual sex, such as game meat, fish or necklaces and bracelets. Women of all ages reported a wide variety of payments and

situations in which cash played a major part in their motivations for sex. While other economic options, such as growing market vegetables or selling betel nuts, are generally available to most rural women, sex for cash, gifts or both has far greater attraction for some women as a source of glamour, social status, and enhancement of self-esteem as well as a means of acquiring small amounts of cash and thus some independence.

"I earned my living with those men I had sexual intercourse with. They gave me money and other things in return for sex. I also have a garden to sell vegetables. Some men I went around with were coastal men who were public servants like carpenters, teachers." (Ok, age 45)

"When I went to dance places, the sex partner paid my gate fees and gave me money. When I was by myself, the second sexual partner would come with gifts of food and money and make me agree to have sexual intercourse with him. The food he brought was cooked and eaten with my girlfriends after he had gone away to his house. Mostly he brought me gifts and we had sexual intercourse. I earn my income from this man and my own parents." (Ok, age 19)

Many women who experienced material gain in exchange for casual sex were at greater risk of STDs and AIDS than others, not simply because they had more partners than others, but also because they were not in a strong position to control the nature of the sex act. It may not be easy to target these women in either the town or village setting for education in these matters, unless their educators are peers. Moralistic prescriptions aimed at bringing commercial sex to a halt are likely to surface, as are counterclaims that it should be legalized. In either case, the real economic and status needs of women which underlie the move toward a greater commercialization of sex must be addressed in the society at large.

"The man always gave me food and money in exchange for all those sexual acts. He was about 45 years old. I like him because he offered me things where other men didn't. I now earn my living by growing kaukau for sale and also my relatives give me money. I am often very poor. My last sexual partner never gives me things. I am very poor and my relatives don't build my house, help me with food and clothes or money and no one makes the fence for my gardens. So I am a very lonely poor woman." (Ok, age 38)

8. Sexually Transmitted Diseases, HIV/AIDS and Condoms

Sexually Transmitted Diseases

"This STD is not new to me. I've got it four times and seen it. It is a very serious sick and can also cure very quickly when treated. Other STD diseases like big sores on penis is very, very serious and I am frightened of it. Some of my friends in Moresby do get them and I saw them but not me. Some having swollen testicles and some had swollen penis. I haven't seen anybody having the signs of STDs on their mouths or around anus. There is no traditional cures of STDs because this STD was not existing in old times. I got it four times but they were not from the five steady girlfriends. I got them from other four ladies who I had only once each. They were all about 20 years old. All of these diseases I got from casual sex partners were not different types. They were all same type of disease like feeling very painful when urinating and pus coming out from my penis. When treating me for the fourth disease, the doctors told me to use condoms for every sexual intercourse. I paid K5 each to those four ladies when I got disease from them. That was after sex. Other signs of disease like sores, swollen penis and testicles, I did not get it. But I saw three of my friends got it. One get swollen penis and was treated and the other two boys got small sores on their glans of the penis and were also treated. That is all I knew about the disease." (Eastern Highlands, 32 years old)

Of 102 men asked about STDs, 89 percent had heard about them. About half of those who had heard of them could only describe symptoms, while the other half mentioned names as well. In this sample 22 percent of men said they had themselves experienced an STD, eight percent more than once. Despite smelly discharges and pain, about three-quarters of these men described continuing to have sex. The majority (87 percent) were treated at a clinic and apparently cured; another seven percent were treated for some bouts but not others. The most common ways to avoid STDs mentioned was using condoms and examining the woman, followed by choosing only good women and not doing anything. Other ways were avoiding prostitutes, performing urethral purging or penile bloodletting,

withdrawing the penis quickly, avoiding alternate positions during intercourse, avoiding manual foreplay, avoiding oral sex, washing afterwards and avoiding town women. While three-quarters of the men believed these infections were transmitted by diseased women, the rest said it was due to intercourse during menstruation, sorcery, not washing after sex, and not changing clothes. STDs are widespread in Papua New Guinea and appear to be at high levels in some rural areas as well as urban. In the narratives of men, it was revealed that some young males acquired these infections, usually gonorrhea, from very young girls. Since most premarital sex partners for young boys were even younger than themselves, it appears that these infections have been spreading among children in some communities. Preventive education must begin much earlier than it does currently and condoms must be made more readily available to those at risk, of all appropriate ages. What is the appropriate age? From a medical point of view, it would be any age at which a person is engaging in sexual intercourse, but, naturally, the social, economic and moral aspects of this issue require local cultural input. In Menyamya, many girls are formally married by age 13. In other areas, that is unheard of. In parts of the Massim, marriages forced by pregnancy occurred by age 15 for boys, as was revealed by the men in focus group discussions.

Among the women in our sample, 18 percent said they knew nothing about STDs and another 26 percent appeared to have very vague ideas about these diseases; 30 percent knew names and 25 percent could describe symptoms correctly. They were definitely more familiar with the symptoms of gonorrhea than any other infection. The most common source of information was from their own experience (30 percent), followed by health workers other than the aid post orderly (APO), the APO, school teachers, own husbands, and, at low frequencies, their parents, the radio, books and missionaries.

The largest proportion of women, about one-third, knew that prevention involves not having many sexual partners as well as having a spouse or boyfriend who does the same. The next most common comment regarding prevention was

"I don't know" (23 percent), followed by not sleeping with many partners (22 percent), not sleeping with sick people (13 percent), not having a promiscuous partner (6 percent), and using only the so-called 'missionary position' for sexual intercourse (6 percent).

Self-reports of STDs among women were more difficult to interpret from our data than they were from men, reflecting the diversity of clinical presentations among diseases and between the sexes. About 69 percent of women claimed never to have had an STD and another seven percent had vaguely defined symptoms, some of which could have been STDs. Among the rest, 24 percent knew they had had an STD, including five percent who claimed to have acquired it from their spouses. Of 47 women who discussed signs of STDs on sexual partners, 17 percent stated they had seen them and six percent said they continued to have sex with the men anyway; 83 percent had not ever noticed any such signs. Of those who stated with some certainty that they had experienced an STD and who gave information on what they did about it (N=20), nine had sought treatment and been cured, six had never sought treatment and another four had begun but never completed treatment. Among those who never sought treatment, three said they were too embarrassed to go, and one each said their husband forbade them to go, they were treated in an insulting way by the health workers and therefore would not go, and that it really wasn't too painful and they would wait.

The gynecological issues involved in the treatment and detection of STDs in rural PNG are complex and at present are not addressed adequately. Population-based screening for epidemiological purposes, in order to estimate the proportion of women infected and with which pathogens, is imperative. But even more important is a strong program of education for these women in addition to the improved provision of health services (Hughes 1991). Infertility, one of the major sequelae of STDs, haunts many families and creates a negative feedback loop, i.e. because she or he cannot have children, the partner seeks another spouse, increasing extramarital sexual activity. Fighting and other negative effects lead to

considerable marital discord for many families.

"After I had my first baby I went home to my parents home from hospital. About a month later went back to my husband's village and the first night we had sex, my husband said he was passing painful urine and pus, he blamed me for sleeping with another man. He must have been the one who did it so we end up in the hospital and get injection from the VD clinic. Up to now I have not had any problem or any boyfriend." (Eastern Highlands, 30 years old)

Miscarriage, ectopic pregnancy, stillbirth and other forms of pregnancy wastage are expensive for the health care system and frequently dangerous to the women themselves. Infants in Papua New Guinea are seriously affected via birth-related transmission of STDs (D. Lehmann, personal communication) and the entire profile bodes ill for the spread and ultimate impact of AIDS on Papua New Guinean society.

Most rural women knew little or nothing about condoms and they were never mentioned directly as a mode of STD prevention by women, in contrast to the fact they were the most common mode of prevention mentioned by men.

Knowledge of AIDS

*"If this sickness affects me, the only way I'll be cured is at the health center. I think in a traditional way I'll be cured by eating the skin of a tree or water from magic people. And how it is caused or spread is not known so you can't tell and the same thing with sick AIDS."
(Schrader-Ramu, age 18)*

"I have heard of this new disease called AIDS and it is spread through sexual intercourse. I can get AIDS if I do not stick to one sexual partner. I do like the condom. It can help to protect me from getting this disease." (Torricelli Range, age 35)

Of the 110 men discussing this topic, nearly all had heard of the disease named 'AIDS,' but 20 percent knew no more than the name; 45 percent knew it

was fatal, but 51 percent did not. Regarding transmission, slightly over half knew only that it was sexually transmitted, and only a few knew about both sexual and blood-borne transmission. A very few knew it was sexually transmitted, fatal, and could be vertically transmitted. Few knew it was caused by a virus, that it involved the immune system, or that there was a long latency period. The rest, 36 percent, knew nothing about transmission. Most men associated it with having many sexual partners and 17 percent designated commercial sex workers as the main carriers. A small proportion thought it was mainly caught by those who practiced alternative sex acts, e.g. oral or anal sex. Specifically, ways one can get AIDS were mentioned in the following order of frequency: sexual contact with a person with AIDS, having many sexual partners, blood contact with a person with AIDS, contact with objects, e.g. pencils, belonging to a person with AIDS, sharing food, betel nuts, water with a person who has AIDS, sitting where they have sat, through sneezes and coughs, needles, clothes, oral and anal sex.

The most frequent sources of information on AIDS were, in descending order: health workers, friends, radio, newspapers, printed materials, spouse, schools, TV and posters. It is noteworthy that several men stated completely incorrect information with certainty, saying they had been told this by health workers or had read it in a book.

Did men express fear of AIDS? On this topic the unprompted responses were as follows: 29 percent had no expression of fear, 23 percent expressed fear but did not mention behavioral change, 21 percent expressed fear with the wish to change behavior, 20 percent did not think they need be concerned as they did not consider themselves at risk, and the rest simply denied the facts, e.g. "I know there is a cure." How did men think it can be prevented? The responses were: having only one sexual partner (22 percent), using condoms all the time (17 percent), both of the above (17 percent), staying away from people with AIDS (10 percent), keeping foreigners out of the country (10 percent), sex with wife only (10 percent) and, at very low frequencies, more education, stop all sex, and the combination of more education and use of condoms. In addition, seven percent of the men

thought prevention was not possible.

Although a high proportion of rural men knew the name of the disease AIDS, for the most part, they knew only a little more than the name. It was fearful to many and known to be fatal. The majority of men knew it is sexually transmitted. The specific facts about transmission and prevention were unclear to most men. A minority knew that condoms prevent HIV infection. Hardly any man mentioned perinatal transmission. The men clearly indicated that they would be receptive to both better information and the increased availability of condoms. It is imperative that these needs are met by a sustainable national safer sex education and condom distribution program.

Women's knowledge of AIDS was queried prior to their hearing small educational talks given by the investigators during the course of our study. Among women, 36 percent knew it was sexually transmitted, 22 percent seemed quite confused between AIDS and other STDs; 17 percent had only heard the name of the disease, 16 percent knew it was fatal, five percent knew it could also be spread through blood contact and four percent mentioned mothers can pass it on to their babies. Most women (53 percent) thought it was a disease of commercial sex workers and an additional 40 percent said it was a disease of people with many sexual partners.

Regarding transmission, the most frequently mentioned modes were: sex with a person who has AIDS (33 percent), having many sexual partners (23 percent), sharing food, betel or drinks (five percent), blood contact with a person who has AIDS (four percent). All the other modes mentioned by men were similarly mentioned by women, at low frequencies, e.g. sharing clothes, sitting where others have sat, etc. The women also mentioned mosquitoes and the concept *blut no gut* or bad blood.

Their sources of information on AIDS were the same and in the same order of descending frequency as that of the men. A much higher proportion of women expressed no fear of the disease than did men (67 percent vs 29 percent), but 13 percent stated they feared their husbands would pass it to them; five percent

expressed some fear and thought they should alter their behavior and another nine percent expressed fear with no mention of behavioral change. The rest did not think it concerned them.

"I have heard and read about the AIDS disease. In fact, I have an AIDS brochure at home. I do not know its cause. Yes, I know a basic way whereby HIV can be contracted, I should not have a casual sexual affair with any men who have lived in town and returned to the village but, stick with my own husband. The brochure I am talking about also reads that HIV can be contracted through women by way of touching fluids from their body through plates they use and clothes worn. When I have been infected, if I get pregnant again the fetus will also be infected. AIDS can be spread through ways that I have stated. I do not know how AIDS can be prevented." (Islands, 25 years old)

The women thought prevention involved having one faithful partner (22 percent), sleeping with only one man (14 percent), avoiding people with STDs, staying clean, and abstaining from sex. Only three percent mentioned using condoms all the time. More than half the women had no idea how it could be prevented. As expected, levels of knowledge about AIDS among women were lower than among men in the rural areas. Women were more often concerned with acquiring the infection from their spouses and with transmission to their children. Many did not think it was a topic which should concern them. The frequent denial of sexual activity among women, both premaritally and extramaritally, is a dangerous situation. For example, not one woman even mentioned the need to warn daughters, whereas men, even those who did not believe themselves to be at risk, frequently stated that it poses a threat to the younger generation of men and women and that education is very important.

Knowledge and Use of Condoms

"Condom is a plastic put on the penis before sex to stop a person from getting STDs. I never use one but would like to use one since I am sexually active, would use with my wife and carry to a party to use with any female I have sex with. I don't use a condom during sex since I don't have access to them." (Sepik Plains, age 25)

Interviewers were instructed in condom use and promotion during training. They were instructed to demonstrate how condoms are used after first questioning men about their knowledge of condoms. Of the 113 men questioned about condoms, 80 percent had heard of them but 43 percent had never seen one before the study. Of the men who had heard of condoms, more than a third reported having used one at least once; eight percent reported use most of the time. Of users, 85 percent used them with women other than their wives; of these men, slightly more than half were married. Of the users, about half reported satisfaction with condoms while the other half were not pleased. Of those not pleased, 70 percent were willing to use them anyway for their own protection.

Among all men, after explanations, 56 percent said they would be willing to use them; of these, 52 percent for disease prevention, 13 percent for family planning, and another 18 percent for both purposes. It is interesting that one of the Schrader men pointed out that the use of condoms while his wife was pregnant or lactating would allow them to have sex without his semen damaging the baby. Men's major concerns were that condoms were inaccessible (47 percent), might increase promiscuity (24 percent), break (6 percent), or fall off inside the woman (5 percent).

In general, rural men's responses were not negative and indicated that improved accessibility accompanied by moderate amounts of promotion would greatly increase condom usage.

"I don't use a condom but am willing to use one due to high risk of STDs."

Condom is a plastic thing put around the penis before sex. I'd like to use it if I am properly taught how to use it and if I have some available." (Sepik Plains, age 19)

These findings corroborated those of an earlier urban/periurban survey (Jenkins and Pataki-Schweizer 1992). Several rural men specifically mentioned that they needed education on condom usage. Where education and promotion accompany village-based condom distribution, evidence is accumulating that condoms are acceptable and utilized by rural men.

Female interviewers were also equipped with condoms, a phallic dummy and instructed to open a package and clearly explain about condoms to the rural women. This education was to take place after the women responded about their basic knowledge and prior usage of condoms. Of the 119 women responding, 60 percent had heard of condoms. Although three-quarters had never seen a condom before this study, 12 percent report having used a condom at least once, half of these with their husbands, while the rest were single women. Of the users, almost all were pleased with the experience.

"My husband and I are used to condoms. We do use them when having sex. My husband bought some from the store and brought them home and we used them. We love using condoms. The main idea behind that is to get rid of the sperm but again it also stops any from getting into my body. I think it is a good idea to use condoms because at times my husband might not be faithful to me and because he is working in town, any time he can have sex with any woman while I'm in the village, so I prefer him to use condoms whenever he is with me so that it will help to stop me from getting such diseases as STDs." (Ok, age 22)

After having been educated about condoms, 40 percent of all the women expressed willingness to use condoms, mostly for disease prevention. Their major concern was possible breakage (73 percent). It is interesting that no woman in these private interviews spontaneously mentioned the fear of increased promiscuity, a fear not infrequently heard in public discussions. In general, women appeared to consider the condom a useful object, but many expressed

doubts that they were personally in need of such protection. Promotion and education about condoms, including the risks of acquiring STDs and AIDS, may require greater efforts among women than among men in rural Papua New Guinea. As discussions about condoms nearly always elicited many questions about contraception from women, it is important that information on both family planning and disease prevention be combined at every opportunity. Now and for several years to come, most village women will probably think that their own risks of acquiring HIV infection are very low as they are not likely to see many fellow villagers die of AIDS. They do, however, know infertile women in every village and the protection of one's fertility is likely to be highly valued and viewed as a morally justifiable reason for the use of condoms. The difficult position of women who are trying to become pregnant must be addressed by careful counseling of married couples and the availability of voluntary HIV testing. Health workers and others who may promote condom usage will need training to handle these issues surrounding the condom in both marital and non-marital sex.

9. Conclusions and Recommendations

Risk Factors in Sexual and Reproductive Health

Because this has been a qualitative study with unknown biases in sampling, it is not possible to discuss risk factors for HIV/AIDS in proper epidemiological terms. Nonetheless, it is possible to point out the common responses from men and women throughout the nation which may be considered risky practices. Attitudes or beliefs, by themselves, have little impact on health unless they drive behavior. For example, while the belief that sexual intercourse harms a growing fetus may indirectly drive some men to other women while their wives are pregnant, most of these men also had extramarital affairs at other times. Some men said they like to use condoms but unless these are available, there is little chance they will do so. Therefore, while this study revealed many beliefs and attitudes concerning sex and reproduction, understanding the social, situational and structural determinants of behaviors which constitute a risk for acquiring HIV infection in Papua New Guinea requires a broader overview.

Some of the risk factors revealed in this study do not rest with the people themselves, but with the health care services available to them. An inadequately funded, inadequately staffed and inadequately trained health service exacerbates numerous risk factors for the population at large. These issues cannot generally be addressed at the community level, but must be taken up by the authorities vested with responsibility for these functions. Reducing maternal mortality rates or preventing an AIDS epidemic will not be accomplished by village people alone, no matter how well informed or motivated. Further, without the provision of basic health services, warnings about a new, still not widespread and distantly fatal disease are likely to have little salience. Understandably, most women would rank the threat of AIDS to themselves far below that of malaria and pneumonia to their children when their health posts are unstaffed or without medicine.

The negative side

Lack of accurate information on sex and reproduction looms large as a risk factor in Papua New Guinea, affecting all aspects of reproductive and sexual health. As the reported mean age at first sexual intercourse was 17, many people began their sex lives much earlier and with little knowledge of the risks involved. Where traditional rituals of initiation and menarcheal seclusion still continued, a venue was available for teaching the young. However little useful information for disease or pregnancy prevention is passed on at these times and, in many cases, the rituals themselves placed the participants at greater risk of infection and the transmission of HIV. Poor understanding of conception may influence frequent sexual partner change because a significant proportion of men appear to believe they can only make a woman pregnant if they have sex with her frequently. It is considered safer to switch partners often than to stick to one. A significant proportion of both men and women appear to have high numbers of sexual partners. Young people are constrained by sexual mores set by elders which do not allow for frank discussions, availability of contraceptives or protection against STDs. Alcohol, marijuana and a perceived rising level of public eroticism may be contributing to peer-pressured sexual activities, many of a high-risk variety. Some elder men and women were participating as well in a new sense of sexual experimentation and freedom, justified with reference to imported, modern values, including that of sex for cash. These activities were more easily carried out without social conflict during frequent visits to town. STDs are highly prevalent in urban and rural areas and infertility is moderately high throughout the nation (Lombange 1984; Jenkins 1993).

The generally low levels of status and education among young women placed them at risk of sexual coercion from men, with little recourse to adult interference. Rape was tacitly accepted in many communities, despite general disapproval of such behavior in principle. Group sex appeared to be a widespread, customary practice. Anal sex among young men was also not infrequent especially during puberty, and generally overlooked by adults. Among

adult men, occasional same-sex activities also did not appear to be rare. Gay identity, to the extent that it existed, or a strict same-sex preference, were not easily exposed, particularly in the village setting.

Unwanted pregnancies often led to a variety of destructive behaviors, including suicide, induced abortion, forced marriage, even infanticide. Social stigma and embarrassment, which bore on the woman more than the man, created barriers against better utilization of antenatal and delivery services. The poor outcomes of teenage pregnancies were the result.

Strong beliefs regarding the necessity to avoid sex during pregnancy resulted in long periods of abstinence. Others factors which may lead to high rates of extramarital sex among men, in addition to idiosyncratic levels of sexual drive, included infertility, rising demands of women for sexual satisfaction, rising levels of public eroticism and the increasing availability of sexual partners, motivated by the desire for cash and a little adventure.

Information on modern contraception has been poorly disseminated and a large number of rural families continued to depend on abstinence and traditional herbal and symbolic methods. Thus, poor contracepting was at the root of a number of marital and sexual problems. Women refused sex to their husbands, partially in an effort not to become pregnant, and were often beaten as a result.

In terms of risks for AIDS, the majority of people understood only that it is associated with frequent partner change. Few persons had a clear understanding of what this disease means to their communities or their own personal lives. Many people, particularly men, did comprehend the value of condoms and were willing to use them, although availability remains low in rural areas.

Although only in a few focus groups was the issue of caring for an AIDS patient raised, the little information collected shows that much work will have to be done to educate village families about AIDS patient care. Coping with AIDS in the community is a large social service issue barely considered as yet in Papua New Guinea.

The positive side

While this reiteration of negative factors contributing to the risk of AIDS and maternal mortality may be extensive, there were numerous strong positive factors as well. First and foremost, the strongest positive factor is that the epidemic has not yet spread widely and time remains during which educational and behavioral change support programs can be placed into action. With each passing month, however, this advantage diminishes. Levels of awareness, even in most rural areas, are fairly high, despite poor understanding in detail. Village communality is still strong enough in most areas to support family-level care of AIDS patients, protection and psychological support of HIV-infected persons. The potential acceptability of the condom for disease prevention also appeared high. Despite a generally low traditional position for women, many women today are willing to speak up for their own protection and, already, women's groups are taking up the task of improving AIDS awareness. Values such as the protection of fertility, the lives of unborn babies and the stability of marriage and family are easily supported by even the most conservative groups. These are strong traditional values around which women can create positions advocating AIDS prevention which will be acceptable to men.

For their part, men in general appear to accept that condoms are needed and that reduction of numbers of partners is important. Helping men meet these goals may involve serious community-wide education regarding sex in pregnancy and lactation, the true nature and risks of different, alternative sex acts and devising other less risky and more positive ways in which male bonding can be expressed.

Another quite positive finding is the very one which made the study successful, that is that Papua New Guineans are generally quite capable of discussing sexual matters when the issues are important, when their privacy is protected and when they trust the interviewer.

The Role of Education

The level of understanding of sex and reproduction among village people is low. A serious effort on the part of numerous community-level agencies will be required to reach those in need of improved information. The formal educational system is an excellent venue by which detailed and accurate information may be passed on to the next generation, providing the information is offered early enough, with enough clarity and frankness. Teachers must be trained in better communication skills to discuss sex and reproduction both in and out of the classroom. Appropriately written materials should be developed at various reading levels and made widely available.

Informal education of teenagers may be accomplished in the context of puberty rituals where these exist. The formal educational sector is probably less well placed to devise such a plan of action than are local community-based organizations. Ultimately, the teaching of the 'facts of life' to young people is best done by their parents, as the elders then have the option to transfer their values regarding the morality and ethics of different types of sexual behavior to their children. A national AIDS education program should not interfere with that duty and privilege of parents. However, efforts must be made to upgrade the information available to the parental generation, preparing them for the task of explaining the real risks and options regarding sex in the era of AIDS. Teaching adults, many of whom are functionally illiterate, cannot depend on the written word and is best accomplished in a face-to-face manner. Visual materials, if carefully developed and tested, could be of considerable value. However, the materials presented in lecture sessions with posters and flip-charts are frequently misunderstood; questions and answer sessions are a necessity. A strong commitment to training persons available at the community level and within local and national NGOs may serve as the means by which serious misunderstandings can be averted and safer sexual behaviors achieved.

Behavioral modification programs for specific target groups must be

understood to differ from simple education. At present, it is not apparent that most agencies working to improve levels of awareness and knowledge recognize the different strategies and resources needed actually to modify behavior.

The Role of Health Services

In general the health services have proven to be a poor vehicle for health education. Nonetheless, rural people continue to look toward their health personnel for information. Few health workers make an effort to explain the nature of disease or treatment to their patients. Others know too little or are too uncertain of what they know to attempt health education. Some health personnel make an effort to educate villagers but either give false information, information biased by their own religious or other opinions, or communicate poorly with condescending attitudes. Improving the capacity for sexual health education within the health services should be a high priority, requiring new positions and specialized training.

AIDS prevention in general cannot ignore the importance of clean needles and syringes. A functioning rural health service, equipped with disposable syringes that are not ever re-used, or the proper sterilization techniques for reusable glass syringes and metal needles, could visibly demonstrate a serious intention to minimize transmission of HIV through needles. Government policy must assure the continued availability of disposable needles and syringes.

The diagnosis and treatment of STDs is one of the most important means by which the AIDS epidemic can be diminished. Improving the entire service for reproductive tract infections should be one of the highest priorities over the next few years for the health department. STD clinics should be changed and renamed in most locales to a less stigmatized term. Women should be more carefully screened for infection at the first antenatal visit. Better information in the community could make a very great difference in utilization and compliance.

AIDS prevention activities also require a capacity to accommodate voluntary

testing with counseling. Testing and counseling centers should be available in every major town.

In sum, without the better provision of basic health services, warning messages about an as yet uncommon, remotely fatal disease are likely to fall on deaf ears. Unfortunately, all indications point to a diminished national health budget in the immediate future and a growing disparity between urban and rural health services.

The Role of Non-Government Organizations

Although few government services, usually health, education and agriculture, have reached directly into the villages, their presence and effectiveness have been eroded by budgetary cuts and other factors over recent years. Health services have been severely affected. Non-government organizations (NGOs), such as volunteers from abroad, local business groups, churches and their development arms, and special projects of United Nations agencies, have also played their part. With the exception of churches, their impact has been very localized. Over the last few years an increasing number of NGOs have entered Papua New Guinea and others have developed locally. These are increasingly seen as the vehicle for social change, local economic development, conservation work and even the delivery of auxiliary services, e.g. health education. The effectiveness of various NGOs has never been evaluated, but because they have the ability to place people in or near villages, the received wisdom is that they can be more effective than government has been. Consequently, increasing amounts of funds are reaching these NGOs and some are greatly overcommitted, threatening their performance. In order for local NGOs to help in an effort to contain the AIDS epidemic and improve sexual and reproductive health, most will have to be strengthened in a variety of ways. Given that funding and appropriate advisory capacity were available with which this could be accomplished, NGOs will have a critical role to play in the future. With reference to AIDS awareness campaigns, several churches, their youth groups, local women's groups and a few others have already

begun to bring information to the villages. Few have attempted to facilitate behavior change by, for example, setting up condom distribution networks. Few have developed programs for villagers on sexual and reproductive health, but the recognition of the necessity to do so is growing despite official disapproval from the minister of health. The NGOs with the greatest resources in terms of money and personnel are the churches, some of which have philosophical difficulties with condom and contraceptive distribution.

In order to bring about improved sexual and reproductive health and prevent and manage both STDs and AIDS, the coordination, provision of technical advice and strengthening of different agencies, each able to perform a defined portion of the work, will be required. At present, no single agency, within or outside of government, has conceptualized this function. In addition, where local NGOs do not exist or operate, new ones may have to be developed and individuals who can crystallize such organizations around themselves may be required to accomplish this task.

The Role of Government

National and local governments have a large role to play in improving the reproductive health of Papua New Guineans and preventing the spread of AIDS. Without recognition of the severe consequences to economic development and political and social stability which the AIDS epidemic in Papua New Guinea is likely to have, government will not be able to respond in an effective way. A national coordinating body should be established in order to accomplish the many tasks of providing technical advice and strengthening and coordinating AIDS-related activities at all levels, including the encouragement of private-sector programs within places of business. Local government can also be strengthened to carry out specific tasks, particularly if aided by national funds and advisors. The recent development of a Village Services division, within the Department of Provincial Affairs, aimed at strengthening local leadership, may have a role in this

process. The distribution of funds through local wards could also go to local AIDS educators. These could be grade eight to ten leavers, unemployed young men and women who could be trained to take on the task of improving awareness, leading the village people into the realization that, as a community, they will have to develop the internal social supports to bring about change in sexual behavior. In this study, the elder men and women demonstrated considerable astuteness in social analysis and historical perspective. There appears to be a considerable potential for change, supported by the elders, providing their current sense of helplessness is defeated. Older patterns of punitive measures to control sexual behavior are not likely to be appropriate in most instances, but where they are, e.g. in the case of rape, child sexual abuse, etc., local magistrates and councillors may play a large role in bringing about control.

Gender issues loomed large in the results of this study. The rights of women to redress for rape, in and out of marriage, to better, more specialized health services, to income-generating options, and to greater access to information and the means by which to avoid unwanted pregnancies and STDs, including HIV infection, cannot be ignored much longer in Papua New Guinea. Men who come to understand the serious threats to women of HIV infection as well as other diseases related to their reproductive function, who care about their wives and daughters, are an important resource through which the attitudes of other men could be modified. The future stability of family life in Papua New Guinea is at stake and without significant changes in the sexual/reproductive rights of women, their health status and, indirectly, that of their children, cannot be improved. The risk of acquiring AIDS among women in Papua New Guinea is greatly magnified by the social conditions of their lives. While women's groups can raise awareness and place pressure on political bodies, village life is not likely to change unless men are actively involved. This is an issue which must be addressed on all levels by the male-dominated power structure within Papua New Guinea. Educational, economic and political opportunities will have to be shared more evenly if

women's reproductive health is to improve.

The Role of Research

The present study takes a large first step toward filling gaps in informational needs. Several areas remain very poorly documented. The data gathered in this study suggest that the pregnancy outcomes of young women under 20 are quite poor. Their health, nutritional status and social situation needs a thorough investigation.

Urban areas were not sampled and the whole issue of changing sexual mores as people move from rural to urban lifestyles and then back again, needs further investigation, particularly with reference to young people. Gay identity and other manifestations of homosexuality are also areas requiring serious research efforts. A fuller understanding of the dynamics and processes of commercial sex is essential. Reaching out with preventive programs to sex workers where they are not immediately recognizable will be very difficult. Peer education and interventions may offer the best chance in this arena. STDs must be controlled and a coordinated effort for operational research with the health services is called for in order to accomplish this.

Operational research, in the sense of monitoring and evaluating future programs aimed at diminishing the spread of AIDS, e.g. community-based condom distribution, should be done in at least a simple fashion, in order to avoid enormous wastage of time and funds in repeated mistakes. Learning from the mistakes and successes in other countries could help Papua New Guinea avoid wasting scarce resources. More persons with interest and enthusiasm for AIDS work need to be given the opportunity to learn about what has been taking place elsewhere. Developing some mode of monitoring the success of local efforts is a must.

As agencies hoping to affect change enter Papua New Guinea's communities and as community members themselves begin to take on the responsibility to

bring about change and develop prevention activities, new informational needs will arise. Currently, the capacity to carry out research on sex-related topics is very limited. Funds will be needed for training more Papua New Guineans with social science backgrounds and interests to accomplish future research tasks.

The recommendations outlined above are costly, not only in terms of finances, but also, and more importantly, in terms of the emotional and intellectual work that must be done to accomplish social change in the realm of sexual mores. Nonetheless, there can be little doubt that investing in AIDS prevention at the early stages of the epidemic is far more cost-effective than waiting for a full-blown disaster to develop. Time is running out.

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ABOUT THE WOMEN AND AIDS RESEARCH PROGRAM

The Women and AIDS Research Program was initiated in August 1990 with support from the Offices of Health and Women in Development of the U.S. Agency for International Development. The objective of the program was to support research in developing countries to identify the behavioral, sociocultural, and economic factors that influence women's vulnerability to HIV infection. The program also sought to identify opportunities for intervention to reduce women's risk of HIV infection.

The first phase of the program supported 17 research projects worldwide: seven in Africa, five in Asia, and five in Latin America and the Caribbean. The studies focused on women and men in rural and urban communities, school-based and nonschool-based adolescents, and traditional women's associations. The focus of the second phase of the program, which began in August of 1993, is to support eight of the original seventeen projects in the design, implementation, and evaluation of interventions developed from the research findings of the first phase of the program. The second phase of the program is expected to be completed by February of 1996.

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For more information, contact:

ICRW
Publications Department
1717 Massachusetts Avenue, N.W.
Suite 302, Washington, D.C. 20036

Phone: (202) 797-0007
Fax: (202) 797-0020
E-mail: icrw@igc.apc.org

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