Women's Ability to Identify and Address Reproductive Tract Infections:
A case study in urban Pakistan

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This thesis is my original work whilst a research scholar in the Demography Program, Research School of Social Sciences, The Australian National University

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For my parents

Dearest Ammi and Abbu
You are the wind beneath my wings

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Abstract

Among women in Pakistan, complaints of symptoms associated with reproductive tract infections (RTIs) are common. Most of the existing evidence is primarily based on women's self-reports, lacking medical verification to support it. In cases where medical diagnosis is carried out, women's subjective evaluation of disease condition is missing, making the relation between the two difficult to estimate. This study investigates the presence of RTIs and its related symptoms from all dimensions, personal, clinical and aetiological. It also looks into the health-seeking behaviour of women reporting symptoms.

Self-reported health condition indicates a heavy disease presence, which is not substantiated by medical diagnoses, especially laboratory testing. Clinical examination, using WHO's Syndromic Approach to manage RTIs, also shows only moderate concordance with laboratory diagnosis, and misses co-infections and asymptomatic infections, making aetiological diagnosis imperative for an accurate estimation of disease prevalence. More than disease conditions, women's self-reports often represent socio-psychologically shaped expression of distress, having cultural and personal meanings that can not be understood in a solely biomedical context.

Women lacked knowledge about the causes and consequences of the symptoms they report, nor did they know much about how they could protect themselves from having them. Their perceptions about the symptoms affect their health-seeking behaviour, with women often ignoring symptoms they think to be a normal part of womanhood. Duration, severity, associated level of worry and communication with spouses about symptoms were factors that motivated women to seek help, with mainly allopathic doctors being their first choice of health providers.

There is a need for imparting information about reproductive health issues to women. This should be unambiguous and directed to minimise high-risk behaviours. Improvements are needed in Pakistan's health delivery system so it can address the needs of women with reproductive illnesses. A more sensitive approach by health care providers would greatly assist women presenting such problems.

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CHAPTER ONE

Introduction

1.1 Introduction

Reproductive tract infections (RTIs) have important repercussions not only for the reproductive health of women but also for the children born to them. They have an impact that is not confined to the reproductive tract but extends to women's basic sexual and reproductive health, including their acceptability of family planning practices. The World Health Organisation estimates an annual global burden of over 333 million new cases of curable RTIs (WHO 1997). The main RTIs being trichomoniasis, chlamydia, gonorrhoea and syphilis, having 170 million, 89 million, 62 million and 12 million cases world-wide, respectively. Women in developing countries become all the more vulnerable due to lack of resources and limited access to diagnosis and treatment of such infections. A 1993 World Bank report shows that a substantial proportion of disease burden in urban areas of developing countries is because of sexually transmitted infections (STIs). This however does not mean that incidence of RTIs is a developing country phenomenon. RTIs are common in developed countries as well, and rates of some of the infections, like syphilis and chancroid, are actually increasing (Aral and Holmes 1990). The important difference is that in rich countries RTIs are frequently diagnosed and treated at an initial stage, thus in most cases preventing any serious complications to develop (Althaus 1991).

The term RTIs refers to a variety of infections affecting the lower and upper reproductive tract of men and women. However, RTIs show, what Dixon-Mueller and Wasserheit (1991) call "gender asymmetry" and Hatcher et al. (1989) refer to as "biological sexism". Uninfected women are more susceptible to acquire an infection from infected male partner than

an uninfected male from an infected woman, and women are likely to suffer more serious and long-term consequences, like, pelvic inflammatory disease (PID), ectopic pregnancy, cervical cancer and infertility. These consequences could be particularly confounding in most developing countries where woman's status in the society, and even within the family, is usually dependent on her fertility. To make things worse, RTIs in many cases are asymptomatic among women, making their detection and diagnosis difficult. Despite such grave consequences, policy makers and health planners in developing countries have not given much attention to these infections. In part, it is due to the misconceptions that RTIs are not fatal, are expensive to treat, and that they affect only a particular segment of population, such as commercial sex workers. The risk for women getting RTIs is further exacerbated in the developing countries because of the existing socio-economic and cultural environment. These include financial constraints, gender roles in decision-making, constraints on mobility, health-seeking behaviour during illnesses, and norms related to menstruation, pregnancy and childbirth.

RTIs refer to three different types of infections that affect the reproductive tract (Population Council 2001; Germain et al. 1992). These are:

- **Endogenous infections**: these are the most common RTIs, resulting from an overgrowth of organisms normally present in the vagina. These include bacterial vaginosis and candidiasis.
- **Iatrogenic infections**: they occur when the cause of infection is introduced into the reproductive tract through a medical procedure, such as insertion of IUD, during delivery or abortion, and menstrual regulation. Unsterilised and unhygienic medical instruments and conditions can infect women, and if the infection is already there in the lower reproductive tract (i.e., vagina, vulva and cervix) it can be

pushed through the cervix to the upper reproductive tract (i.e., uterus, fallopian tube and ovaries) during a medical procedure.

- **Sexually transmitted infections (STIs)**: these are transmitted through sexual activity with an infected partner. These include infections like, syphilis, herpes, human papillomavirus, gonorrhoea, trichomoniasis, chancroid and chlamydia.

RTIs are intertwined with safe motherhood, family planning and child survival. These consequences range from less serious to fatal outcomes for the materno-foetal health, such as, premature delivery, low birth weight, still births, congenital syphilis, neo-natal conjunctivitis, neurological and cardiovascular diseases, PID, infertility, and ano-genital cancers, specifically cervical cancer (AVSC 2000; Reproductive Health Outlook 2001).

The relation between RTIs and contraceptive technologies is also of great implications. It is a two-way relation as the symptoms of infection may be attributed to the contraceptive method, affecting its usage, and the whole attitude towards contraception. Secondly, certain contraceptive methods may increase the risk for infection or aggravate the infection already present. Table 1.1 shows the relation between different contraceptive methods and RTIs.

Dealing with RTIs becomes all the more important because of their relation with HIV infection. Men and women with some RTIs are at a greater risk of acquiring and transmitting HIV infection. RTIs that cause genital ulceration, such as chancroid, syphilis and herpes, can increase the risk of getting HIV infection by 3-9 times, while the inflammation causing RTIs, like gonorrhoea, chlamydia and trichomoniasis, increase it by 3-5 times. Ulcerative RTIs have a higher probability of transmission because

of the direct contact of bodily fluids through the open ulcers that allow for a greater contact and access to the virus (Reproductive Health Outlook 2001). This is also a two-way relation as the presence of HIV makes the person more susceptible to RTIs and the infections are more difficult to cure (Population Council 2001). Presence of HIV makes even the not so dangerous candida infection hard to treat.

Table 1.1: Relation between contraceptive methods and RTIs

Method	Relation to RTIs
1. Oral contraceptives	Do not protect from STIs. Can disrupt the balance of the vaginal environment, causing endogenous infections.
2. Hormonal implants	Do not protect from STIs. Can disrupt the balance of the vaginal environment, causing endogenous infections.
3. Injectables	Do not protect from STIs. May decrease risk of PID. Can disrupt the balance of the vaginal environment, causing endogenous infections.
4. Diaphragm/spermicides	Partial protection against cervical infection with bacterial STIs.
5. Condom, both male and female	Effective protection against STIs when used correctly and consistently.
6. IUD	No protection from STIs. Insertion with improperly sterilised medical implements or in a women with an untreated RTI can introduce bacteria into the uterus causing iatrogenic infections.
7. Female and male sterilisation	Risk of iatrogenic infection. Does not protect against STIs.

Source: Population Council 2001; Cates and Stone 1992.

1.2 An Overview of RTIs among Women

RTIs vary in the source of infection, mode of transmission, symptoms and impact on maternal and child health. Different RTIs are caused by specific viruses, bacteria and protozoan organisms. The sources of all these infections are shown in Table 1.2, along with the mode of transmission and possible consequences (a detailed version attached as Annex 1). The Table also shows that most RTIs could remain asymptomatic among women, making their identification by women themselves, and diagnosis through a simple clinical examination rather difficult and inaccurate. AIDS and Hepatitis B and C are also among those infections that can be

sexually transmitted. This study, however, deals only with the infections that are related to the reproductive tract, unlike AIDS or hepatitis B/C that take a general disease form[1].

Given timely and proper treatment most RTIs are curable (as can be seen from Annex 1), but if left untreated they can lead to serious consequences. With so many RTIs being asymptomatic, diagnosis and treatment can be difficult, especially in the absence of accurate laboratory testing. In an effort to counter the problem in resource poor situations, WHO designed the "Syndromic Approach" to diagnose RTIs based on symptoms reported by the patient and signs observed by the clinician, referred to as the "syndromes" (WHO 2001). The recommended treatment takes into account all possible diseases that could cause the specific syndrome. Treatment related recommendations, including health education, partner referral and dosage of medicine, follow the algorithms developed by the WHO for each syndrome. These algorithms deal with the syndromes of genital ulcers in men and women, urethral discharge among men, and vaginal discharge and lower abdominal pain among women (WHO 2001). Though treatment can be started immediately and the diagnosis is inexpensive, without needing any sophisticated equipment, Syndromic Approach depends on the judgement of the clinician. It is unstandardised and thus often unreliable. It can also result in over-diagnosis and over-use of medicines, building up drug resistance in the patient (Hawkes, et. al. 1999; Passey, et. al. 1998; Pettifor, et. al. 2000). The biggest disadvantage however is that it is totally ineffective in patients who have asymptomatic infections. Therefore, laboratory testing, despite all its costs and time-consuming procedures, remains the most efficient way of diagnosing most RTIs.

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[1] Other factors in consideration for not including HIV and hepatitis in the present study are: 1. Ethical consideration: Providing treatment to women testing positive for HIV/hepatitis would have been beyond the scope and resources of this study. 2. These two infections/diseases are already in attention of researchers and planners, so the present study wanted to focus on a rather ignored but important area of women's health.

Table 1.2: Reproductive tract infections: Agent of infection, mode of transmission, symptoms and possible impact on general and materno-foetal health

Infection	Agent	Mode of transmission	Symptoms	Possible health problems	Impact on materno-foetal health
Chlamydia	Chlamydia trachomatis bacterium	Sexual contact, mainly anal/vaginal	75% asymp. Unusual VD, bleeding after sex and between menstruation, pelvic pain	Can lead to PID, with the possibility of infertility, chronic pelvic pain and ectopic pregnancy.	Premature delivery. Neonatal conjunctivitis and pneumonia.
Gonorrhoea	Neisseria gonorrhoea bacterium	Sexual contact, mainly oral/ anal/vaginal	50% asymp. Burning/increas ed urination, unusual VD, bleeding after sex and between menstruation, pelvic pain	As above, plus infection of throat following oral sex with infected partner.	Trans-placental infection damaging child's eyes seriously or permanently.
Herpes	Herpes simples virus HSV-1, HSV-2	Skin contact through lesions/shedding. Any sexual contact	Fever, fatigue, swollen glands/lymph nodes, ulcers around genitals, thighs, lips, mouth, throat, tongue. Painful/burning urination	Painful recurrent genital ulcers, increased risk of HIV	Increased risk of miscarriage, pre-term labour, transmission to baby in utero or during passage through infected canal
Genital warts	70 types of human papillomavirus	Direct sexual contact with warts.	Warts, small or large, flat or raised, single of multiple or none at all, in and around genitals.	Genital and anal cancer, especially cervical cancer	Warts may grow large enough to block the birth canal. Warts in new-born's throat
Syphilis (primary, secondary and latent)	Treponema pallidium bacterium	Sexual contact of any kind with syphilis sores	Small painless sores in the area of sexual contact. Rash all over body, swollen lymph nodes, fever and fatigue.	Spread to whole body. Heart diseases, dementia, blindness, paralysis, even death.	Congenital syphilis, leading to blindness, severe organ damage and death
Chancroid	Haemophilus ducreyi bacterium	Sexually transmitted through sores/fluids	Genital ulcers, painful and tender when touched. Glands in infected areas swollen	Partial loss of tissue in infected area. No systematic infection	Scarring, fibrosis formation of the fistula
Trichomoni asis	Trichomonas vaginalis protozoan	Vaginal sex with infected person	Up to 50% asymp. Unusual VD with bad odour. Itching, burning and redness of vulva/vagina	Increase risk of HIV infection.	Pre-mature delivery

Continued:

Continued from Table 1.2:

Infection	Agent	Mode of transmission	Symptoms	Possible health problems	Impact on materno-foetal health
Bacterial vaginosis	Gardnerella vaginalis bacterium	Over growth of bacteria. Can be because of douching, over use of antibiotics, vaginal sprays, bubble baths, pregnancy, frequent exposure to semen over a short time	Unusual VD with a bad fishy odour, vaginal itching or irritation	Increased risk of PID if present with chlamydia or gonorrhoea	Early labour and delivery, low birth weight babies
Candidiasis	Candida albicans fungi		Unusual VD, thick and white, with irritation, itching or burning	No complications. If infection severe can cause discomfort	Role unclear so far

Source: Reproductive Health Outlook 2001; National guideline for the management of reproductive tract infections, 1999, *Sexually Transmitted Infections* (75).
Note: VD: vaginal discharge. Asymp: asymptomatic.

1.3 RTIs among Women in Pakistan

1.3.1 Incidence of RTIs

Epidemiological data about incidence or prevalence of RTIs in Pakistan are relatively limited when compared to other countries of the region, like India and Bangladesh. Whatever information is available in Pakistan on the subject is through certain small clinical based studies or some inferences that can be drawn from studies mainly focussed on family planning behaviour, through verbal inquiries. Such studies are generally limited to a particular segment of population, like women in antenatal care centres or those attending gynaecology departments of tertiary care hospitals, and are not representative of the general population in any way.

Table 1.3 provides the summary of the studies available in Pakistan on incidence of RTIs. It is evident that the studies are either solely based on self-reported symptoms by women or if medical diagnosis is involved, they are based on presentations to clinics or hospital wards. There are also differences in objectives, as most of the laboratory based studies focus only on one type of infection, making comparison between these studies problematic. These studies however show that surveys based on self-

reported symptoms of RTIs generally give a high prevalence rate of infections among women in the country, going up to as high as 78%. Similarly, studies using the syndromic approach present high incidence rates, with the exception of the PAVNA study (2001). Laboratory based studies, with their different objectives notwithstanding, generally give rates lower than the studies based on self-reports and syndromic approach. Substantial variability in results from different studies, even when using similar methodology, makes it difficult to give a fair estimate about the prevalence of RTIs/STIs among the general population of women in Pakistan.

Table 1.3: Incidence of RTIs in Pakistan

Survey/Study	Sample	Method	Incidence
National AIDS Control Programme (NACP), 2002, on prevalence of RTIs/STIs. (preliminary results)	2400 women attending antenatal clinics and gynaecological departments of tertiary care hospitals in Islamabad, Karachi, Lahore and Peshawar	Clinical and Laboratory diagnosis	***Clinical*** Pathological discharge78% Pelvic tenderness 29% Cervical ulcers 17% Vesicles on genitals 3% ***Laboratory*** Chlamydia 7.8% Trichomoniasis 0.3% Candidiasis 4%
PAVNA, 2000, survey conducted for measuring the incidence of STIs/RTIs	7640 women attending two family planning centres	Syndromic Approach	***Any RTI*** 13% of which Trichomoniasis 49% Candidiasis 23% Gonorrhoea 7%
Reproductive Health Project, 2000, funded by the *Asian Development Bank*	214 currently married women of reproductive age in 12 districts	Self-reported symptoms	74%
Khalid, R., 1999, funded by Behbud Association of Pakistan	461 currently married women of reproductive age in Rawalpindi	Self-reported symptoms	46%

Continued:

Continued from Table 1.3:

Survey/Study	Sample	Method	Incidence
Quick Count Survey, 1999, "Monitoring and evaluating systems for measuring the progress of reproductive health and family planning programmes in Pakistan" conducted by *National Institute of Population Studies, Islamabad*	633 currently married women of reproductive age in two villages and a city in Punjab province	Self-reported symptoms	Urban 57.0% Rural 50.4%
Reproductive Health Client Card Survey, 1998-99, a survey on family planning and use of antenatal care centres by the *National Institute of Population Studies, Islamabad*	3059 currently married women of reproductive age in Jhelum district	Self-reported symptoms	Urban 17.4% Rural 16.1%
Ghauri, K. and S. A. Shah, 1997, on patterns of STD syndromes	2013 females attending Teaching and District Headquarters Hospitals in Sindh province	Syndromic Approach	Candidiasis/Bacterial Vaginosis 47.5% PID 37.8% Genital ulcers 2.7%
Wasti, S., et al, 1997, for chlamydial infection	200 women attending two family planning clinics in Karachi	Laboratory diagnosis	12%
Karachi Reproductive Health Project, 1997, for measuring the prevalence of sexually transmitted diseases	600 low income currently married women aged 14-49 in Karachi	Laboratory diagnosis	Trichomonas 4.3% Syphilis 0.2% Gonorrhoea 0.2% Chlamydia 0.2%
Mohammad, R., et al., 1997, on nature of prevailing STDs	220 cases of STDs, males and females both, referred to tertiary care facility in Karachi	Laboratory diagnosis	Syphilis 44% HBc 23% HbsAG 10% HIV 0.4%
Bhatti, N. R., et al., 1995, on prevalence of vaginal discharge	115 women with vaginal discharge complaint attending hospitals in Rawalpindi and Islamabad	Syndromic Approach	Candidiasis 48% Bacterial Vaginosis 9% Trichomoniasis 3%

Continued:

Continued from Table 1.3:

Survey/Study	Sample	Method	Incidence
Kirmani, N., et al, 1994, for chlamydial infection	82 pregnant women attending the gynaecology department of a hospital in Karachi	Laboratory diagnosis	16.5%
Khanani, R., et al, 1994, for gonorrhoea strains	255 women attending a skin and social hygiene centre of a hospital in Karachi	Laboratory diagnosis	52.5%
Reproductive Morbidity in an Urban Community of Lahore Survey, 1992-93, conducted by the *Maternity and Child Welfare Association of Pakistan*	629 women of reproductive age registered with a MCH centre in Lahore	Self-reported symptoms	78%
Somji, S., et al, 1991, on prevalence of chlamydia trachomatis	126 women attending gynaecology department of a hospital in Karachi	Laboratory diagnosis	Pregnant 11.8% Non pregnant 14.7%

Sources: In References by the name in italics.

1.3.2 RTIs and Contraception

Modern method contraception prevalence rate in Pakistan remains a low 20%[2] (PRHFPS 2000-01). Fear of having side effects is a major hurdle to the use of modern contraceptives in Pakistan. Many women discontinue their use after having suffered an infection or hearing about a friend or relative with an infection. The PFFPS 1996-97[3], found that 5.5% of the urban women had never used contraceptives because of fear of symptoms associated with such infections. Another study done in two villages of Punjab found that for 41.7% of past users the reason for discontinuation was getting infections, while 12.8% who never used it had similar fears (Nayab 1998).

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[2] Total contraceptive prevalence rate was found to be 28% (PRHFPS 2000-01).
[3] PRHFPS 2000-01 report does not give reasons for non-use of contraceptives, making the PFFPS 1996-97 figures the most recent available ones.

Since there is no study available to look into the relation between RTIs and methods of contraception exclusively, it is mainly from the fertility and contraceptive surveys that we infer their association. Evidence from these surveys show that complaints about side effects/problems from modern contraception among women in Pakistan are common among those using IUDs and women who have been sterilised (Nayab 1998). These infections might be iatrogenic in nature, reflecting poor hygienic practices during these medical procedures. Association of IUDs with RTIs has been identified by many studies, including those done by Guerreiro, et al (1998) and Wasserheit, et al (1989).

1.3.3 RTIs and Infertility

There are no data relating RTIs with infertility (not even loosely) in Pakistan, however, certain studies do provide a rough estimate of infertility in the country. According to the Reproductive Health Client Card survey 1998-99 (NIPS 2000), conducted in family planning and gynaecology clinics, in the Punjab province, the infertility rate was 14.6% among urban women and 10.1% for the rural women. Another study in Pakistan (Fikree 2000) found primary infertility[4] rate to be 4% and a secondary infertility[5] of 18% among women accessing a gynaecology department of a hospital. The latest figure is that provided by the Pakistan Reproductive Health and Family Planning Survey 2000-2001, and it puts primary infertility at 5 per cent.

1.3.4 RTIs and Obstetric Experience

According to Wasserheit (1989) 72 per cent of the reproductive tract infections incidents in Pakistan are due to unsafe childbirth conditions.

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[4] Couples are considered having primary infertility if they have never been able to conceive a pregnancy, after a period of two years of unprotected and adequately timed intercourse (WHO 1991).
[5] Secondary infertility is the term used to describe couples who have previously been pregnant at least once, but have not been able to achieve another pregnancy despite having unprotected and adequately times intercourse for a period of two years (WHO 1991).

With 77 % of births still taking place at home, with *dais* (traditional birth attendants) delivering 48 % of the babies[6] (Pakistan Reproductive Health and Family Planning Survey 2000-01), this high figure is not improbable. Various studies in countries in the South Asian region, having conditions similar to Pakistan in many ways, have shown that the odds of having a RTI increase with the duration of marriage and number of pregnancies (including studies by Brabin, et al. 1998; Bhatia and Cleland 1995). These infections are mainly attributed to iatrogenic factors linked to pregnancy and abortion experiences. Pelvic inflammatory disease (PID) is the most common post-abortion complication, and Wasserheit (1989) estimated that 23 per cent of pelvic infections in Pakistan are among women who have gone through an induced abortion.

1.3.5 RTIs and Health-seeking

There is little information available about whether women seek treatment for RTIs in Pakistan, and if they do, what kind and in what progression, and what are the barriers for seeking such treatment, both actual and perceived. There is only one study available, by Bhatti and Fikree (2002) that deals with the health seeking behaviour of women with RTIs in Karachi. Exploring the contextual factors affecting the health seeking behaviour, of 18 women with RTI symptoms, they found that women sought help from a variety of healthcare providers, mainly allopathic doctors and *hakims* (traditional healers).

1.3.6 RTIs and the Health Policy

With the exception of Sub-Saharan Africa, interest in RTIs in developing countries has developed only in the last few years and efforts are now being made to establish programmes to deal with RTIs, including sexually

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[6] The remaining 29% births at home are supervised by female relatives, lady health visitors, nurses and at times by doctors.

transmitted infections. Reproductive health as such and women's reproductive health in particular has been elevated in the agenda of governments throughout the world partly through the International Conference on Population and Development (ICPD) in Cairo, 1994, while association of RTIs with HIV/AIDS has given a further impetus to such attempts. The key components of reproductive health, as envisaged by the ICPD 1994 and then later by the Fourth World Conference on Women in Beijing (1995), and the +5 conferences held in 1999 and 2000, include maternal mortality and morbidity, perinatal mortality and morbidity, abortion and post-abortion care, family planning, reproductive tract infections including HIV/AIDS, infertility, adolescent reproductive health, female genital mutilation and gender-based violence. If we look at the information available on all these facets of reproductive health of Pakistani men and women it does not portray a satisfactory picture. The population growth rate still remains over 2.4%, the maternal mortality ratio is officially stated to be 340 per 100,000 live births and unofficially thought to be much higher (GOP 2000), the infant mortality rate still hovers around 85 per 1000 live births, attendance for antenatal care is 51% and the unmet contraceptive need of 33% (Pakistan Reproductive Health and Family Planning Survey 2000-01) are just a few glimpses of this picture. There are certain topics for which no national level surveys have ever been conducted, including incidence and prevalence of RTIs[7]. However, information that is available shows that incidence of such infections among women is high.

[7] UK Department for International Development (DFID) has funded a study, "National Study of Reproductive Tract Infections and Sexually Transmitted Infections in Pakistan", carried out by the London School of Hygiene and Tropical Diseases, the Population Council Pakistan, and the Aga Khan University. The study looks into the prevalence and determinants of RTIs, including STIs, in three groups, in three separate studies, which are, vulnerable or high risk group, the bridging population, and the general population. It looks into different sets of infections for the three groups. For general population it takes into account only four infections, namely, chlamydia, syphilis, bacterial vaginosis and candidiasis (DFID 2002). The study findings were not available by the completion of this study.

The country's reproductive health policy emphasises the shift in focus after the ICPD from fertility control towards a more comprehensive approach integrating reproductive health integrating with family planning and addressing a wider range of concerns especially economic status, education and gender equality and equity (GOP 2000). It also recognises the need to place human beings, rather than human numbers, at the centre of all population policies and activities. A very ambitious Reproductive Health Services Package was designed in 2000, entailing the following measures:

- Comprehensive family planning services for females and males
- Maternal health care including safe motherhood, and pre and post abortion care for complications
- Infant Health Care
- Management of reproductive health related problems in adolescents
- Prevention and management of RTIs/STDs and HIV/AIDS
- Management of infertility
- Detection of breast and cervical cancer
- Management of reproductive health issues of men

(GOP 2000)

This Package however, though approved, remains to be implemented in practice. The Government admits its lack of knowledge regarding the magnitude of RTI prevalence, and the problems related to them (GOP 2000), but the practical focus still remains on family planning. This is evident from the main objectives of the National Health Policy 2001. It states, "The current Population Welfare Programme aims at reducing growth rate from 2.4% to 1.9%, TFR from 5.2 to 4.2, and to increase CPR from 24.4% to 40.3%" (GOP 2001). With such a formulation it is quite improbable that RTIs will get much attention at the governmental level.

Interestingly, the country has a separate AIDS policy, and a specialised unit in the Ministry of Health, called the National AIDS Control Programme (NACP, formerly called the National AIDS Programme, NAP), since early 1990s, despite the fact that AIDS is not really an issue in the country, with only 187 reported cases in a population of 140 million plus (NACP 2000)[8]. NACP has outlets countrywide, giving information and treatment regarding the disease, and also gathering data regarding HIV/AIDS prevalence. On the other hand, despite accepting RTIs as a problem with grave consequences, most government hospitals do not have the provision to even screen the patients and diagnose the infections. The only plausible explanation for this unbalanced priority at the governmental level is the international focus on HIV and availability of funds for HIV/AIDS that are not available for dealing with the more numerous cases of RTIs.

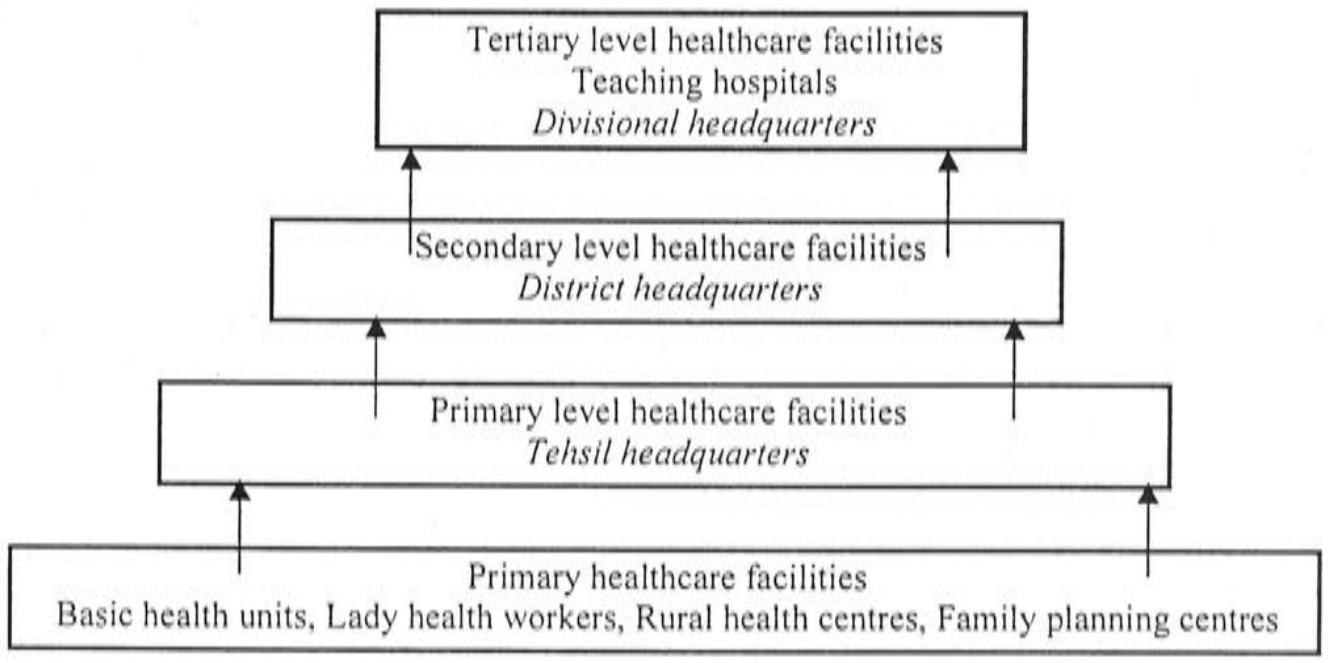
1.3.7 RTIs and Health Delivery System

Pakistan's public expenditure on health (as % of GDP) is a mere 0.9% (UNDP 2003), and the stated objective of the latest National Health Policy of "Health for All" seems like a distant possibility (GOP 2001). The policy accords priority to the primary and secondary tiers of the health sector to take the pressure off the already stressed tertiary level. Pakistan has four provinces that are divided into administrative divisions, which are further divided into districts, which comprise of even smaller units called *tehsil*. The primary and secondary tiers of healthcare delivery are present at the *tehsil* and District headquarters, respectively, while the tertiary hospitals are located at the Divisional headquarters. The Primary Health Care Centres come under the district administration while the Basic Health Units/Rural Health Care comes under the *tehsil's* domain. Family

[8] UNAIDS (2002) puts the reported figure of AIDS cases in the country at 210 (by November 6, 2001), with an estimated HIV cases of 78,000, that is less that 0.1 per cent of the population, including, 16,000 women and 2,200 children.

planning centres are a part of healthcare system at every level. At the district and *tehsil* level hospitals, there are shortcomings in emergency care, surgical services, laboratory facilities and at times even qualified practitioners as absenteeism is common due to a general lack of monitoring and accountability. Women with RTIs can go to hospitals at any of these levels but it is usually at the tertiary level they can get any proper treatment. There is a sense of dissatisfaction with the quality of service provided at the primary and even secondary level of healthcare delivery system, increasing pressure on the tertiary facilities. This lack of proper functioning of the referral system results in doctors at the tertiary hospitals so overworked that they cannot give sufficient attention to each patient. Figure 1 provides the public healthcare delivery structure in Pakistan. As we go up the tiers in the delivery structure the size and nature of available facilities increase.

Figure 1: Organisational structure of public health service



Note: Arrowheads show the direction of the referral system.

Beside the public sector, there are also private clinics and hospitals, especially in cities, but they are usually more expensive than the ones run by state. The quality of services provided at private clinics/hospitals could range from very good to very poor and improper. The use of private health

facilities are not restricted to only the affluent because there is a general belief among people that private doctors are better than public ones so at times they prefer going to them. Another reason for this preference could be the distance aspect as there is usually a clinic present in every locality in cities making it more accessible. At times, people running these clinics are not even qualified doctors and might just have some experience working at pharmacies or as helpers of government doctors. At the same time, it is not unusual either to find doctors employed at government hospitals running their private clinics or employed part-time at privately owned hospitals, where they are paid much more than their fulltime job with the government. This trend, at times, contributes to their absence from the government hospitals, whose lower fee structure is more affordable for people.

Along with these sources of allopathic treatment, traditional methods of medicine are also widely used (Bhatti and Fikree 2002). This includes seeking treatment from *hakims* and spiritual healers. *Hakims* are healers who emphasise the importance of temperament of food eaten and body fluids, and usually derive their medicines from herbs. Spiritual healers on the other hand, including *baba*, *peer* and *maulvi*, base their treatment on religious verses and calling of spirits. *Dais* or traditional birth attendants are also a common source of seeking help among women, along with reliance on some self-administered home remedies.

Given this scenario of healthcare delivery in the country, problems faced by women are not only caused by their lack of knowledge and awareness regarding the infections but also inaccessibility, and in instances, unavailability, of quality care. What compounds the problem further is the cost of quality care that could not be afforded by most women, and presence of quacks in the health delivery system.

1.4 Present Study

The preceding review of studies on RTIs in Pakistan raises several questions. These include:

i. What are the prevalence rates for RTIs among the general population, not just a particular segment, and how do they vary among women belonging to different socio-economic and demographic backgrounds?

ii. How aware are women about RTIs and their symptoms, and what consequences do they associate with the infections?

iii. What are the behavioural and other risk factors associated with RTIs?

iv. How do women act if they think they have an RTI?

v. How accurate are their own diagnoses compared with those done by clinical examination and laboratory tests?

With these questions in mind, the present study took a comprehensive approach to the problem. Instead of basing it in a place like family planning clinic, maternal care centre or gynaecology department of a hospital, the present study sought a community-based perspective, taking into account not just the medical but also the cultural and psychosocial aspects associated with the problem. Instead of relying only on self-reported symptoms or clinical or laboratory diagnosis, it includes all three methods in the study. While laboratory diagnoses are expensive, recent studies have shown that they are unavoidable if accurate estimation of RTI is sought. These studies include those done by Sloan, et al (2000), Klitsch (2000), Bhatia and Cleland (2000, 1995), Hawkes, et al (1999), Teles, et al (1997), and Zurayk, et al (1995). They conclude that the risk factors, algorithms, and risk scoring for syndromic management lacks both specificity and sensitivity, and are poor indicators to identify various infections and consequently are not effective in managing these conditions.

As Murray and Chen (1992) also point out, self-reporting of morbidity is a complex issue because it is a comparative idea. Each individual can have a different idea of being healthy, making an objective morbidity estimate difficult. The same is true for the "syndromes" used for identifying RTIs among women. What is abnormal to one woman might be normal to another. Also, with many RTIs being asymptomatic there are no symptoms to interpret at the first place. Thus, a comprehensive study must include identification at all three levels, individual, clinical and laboratory.

The present study, referred to as the Rawalpindi Reproductive Tract Infection Study 2001-2002. (RRTIS 2001-2002), thus, had the following objectives:

1. To record the awareness level and health beliefs of women regarding RTIs.
2. To determine the prevalence of RTIs in the study population, and its differentials according to socio-economic and demographic characteristics, and factors associated with it.
3. To assess the consistency of self-reported symptoms with clinical and laboratory diagnosis.
4. To probe women's perceptions about the causes and consequences of their experiences with RTI related symptoms, and the ways they think they could protect themselves against them.
5. To determine whether women respond to these symptoms, and the factors affecting their treatment seeking behaviour.

And the hypotheses for RRTIS 2001-2002 were:

1. RTIs are common among urban Pakistani women.
2. Knowledge about RTIs and their symptoms is low among women.

3. With so many RTIs being asymptomatic, infected women are often unaware of being infected.
4. Iatrogenic infections are a major source of RTIs in urban Pakistan.
5. Self-reported symptoms are not always consistent with medical examination.
6. Even when women identify having a problem they do not necessarily seek treatment.
7. Women usually prefer the traditional methods of treatment.

1.4.1 Shortcomings of the study

The major shortcoming of study is that it did not include men in the research design. In Pakistan, research on male reproductive health is even more limited than that on female reproductive health. Along with providing a much needed insight into the reproductive health status of men as such, since sexual interaction is one of the major sources of transmission of RTIs, it would have been of interest to see the health status of husbands of the women included in the present study. It was mainly because of the time and budgetary constraints that this could not be done. However, though not an equivalent, women were asked about the health status of their husbands to have some idea about the latter's health.

1.4.2 Organisation of the Study

The study is presented in nine chapters, and a brief outline of each is as follows:

- Chapter one has provided an introduction to the study topic in general and with reference to Pakistan in particular, including a review of existing studies on the subject in the country. The objectives and hypothesis of the study are also stated in this chapter.

- Chapter two describes the field methods employed, the concepts used and the measurement framework built for the study.
- Chapter three gives the demographic and socio-economic background of women in the study, including factors that could affect their reproductive health and their ability to seek treatment in case of illness.
- Chapter four looks into the level and nature of knowledge women had regarding RTIs including the associated symptoms, means to protect against them, and ways to deal with them in case of getting infected.
- Chapter five presents the self-perceived disease burden regarding RTIs, looking into the nature and number of symptoms reported by women, and differentials in reporting by differences in their socio-economic and demographic characteristics. The chapter also talks about perceptions of women regarding the symptoms they reported experiencing.
- Chapter six presents findings of the medical diagnoses for RTIs, clinical and laboratory, and examines the determinants of and differentials in having the infections.
- Chapter seven measures the consistency of self-reports with medical diagnoses and explores the meaning of inconsistent self-reports.
- Chapter eight examines the health-seeking behaviour of women who report experiencing any RTI related symptom, and analyses the determinants of and differentials in this behaviour.
- Chapter nine summarises the findings of the study, and draws out conclusions and policy issues arising from the findings.

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CHAPTER TWO

Field Methods and Measurement Framework

Considering the rather complex and socially sensitive nature of the study, it was a challenge to formulate a workable and acceptable research design, for everyone involved, without compromising on the objectives set forth for the study. Combining the socio-cultural and behavioural aspects of the subject under study with the medical one posed a major task, and the issues involved were not only methodological, definitional, monetary or logistical in nature but also had ethical connotations to it.

2.1 Field methods

2.1.1 Locale of the study

The study was conducted in the major urban area of Rawalpindi, a twin city ten kilometres west of Islamabad, the capital of Pakistan. Rawalpindi ranks better than most cities in the country for all social and demographic indicators. The city has an estimated population of 1.4 million, with six tertiary level hospitals and around 70 other public administered basic health facilities (Federal Bureau of Statistics 2002). Labour employed in the agriculture sector is among the lowest in the country (8.4 per cent), not just the province (NIPS 2002). City level information is not available but Rawalpindi district's total fertility rate of 4.0 and the contraceptive prevalence rate of 41.6 per cent is better than all other districts of the Punjab province, except for Lahore district that has a CPR of 53 per cent (NIPS 2002).

An urban area was selected for the study due to two reasons:

1. Prevalence of RTIs is believed to be relatively higher in urban areas, as Table 1.3 indicates.

2. Investigating the behavioural factors affecting women's health seeking process was one of the objectives of the study. These factors could be better understood at a locale where absence or inaccessibility of health services, as in most rural areas of Pakistan, is not the main factor affecting the decision to seek treatment. Thus, conducting the study in a major urban area with sufficient medical facilities takes this reason out for not seeking help in case of illness.

The present study, as stated earlier, was a community-based one, instead of conducting it in places like family planning clinics, maternal care centres, or gynaecology departments of hospitals. The reasons for this were threefold:

1. A selection bias creeps in the sample as women attending hospitals and clinics do not reflect the general population. In Pakistan, women's attendance at antenatal and post-natal care is not universal, so a sample in any such clinic would hardly represent the population.
2. Women attending antenatal clinics being pregnant might be avoiding sexual interaction, which is a means of transmitting these infections, affecting the current incidence rate. The Quick Count Survey (NIPS 1999) and the study done by Somji, et al (1991) also show the currently pregnant women having a lower rate of RTI related symptoms.
3. Women in ante and post-natal care clinics/hospitals might not be using contraceptives, which again are associated with some of the infections, affecting the prevalence rate.

Rawalpindi was also considered a good site for the study because it offered the technical and organisational set-up needed to fulfil the study

requirements, and assured the quality of the medical procedures that were part of the research design. A very well qualified and enthusiastic group of doctors working at the Holy Family Hospital, which is attached to the Rawalpindi Medical College, helped to carry out the medical part of this study.

2.1.2 Respondents

The study sample comprised of currently married women aged 15-49 years, having their husbands living with them. The median age of marriage in urban areas of Pakistan is still 19 years (PFFPS 1998), so inclusion of young females aged 15-19 years was a logical choice. Being currently married was of importance because if women were not in a current union they were unlikely to be sexually active or using contraceptives, which were factors of interest to this study. Similar reasons led to the decision to include only those women whose husbands were living with them.

2.1.3 Sample selection

The acceptable size of the sample for a survey to estimate the prevalence of any disease/infection depends upon: the expected prevalence of the disease in the population from the available evidence; the degree of precision wanted in the estimate; and whether a time trend is to be monitored or not (WHO 2000; de Vaus 1995). A large sample size is needed if: higher precision is required; there is an intention to study the trend over time; and if the expected prevalence is low. For an acceptable sample size for the present study, calculations were based on the existing evidence of RTI prevalence rates as found by laboratory diagnosis. As Table 1.3 shows, RTI prevalence rates, for the laboratory based studies, range from ±5% to ± 10%. Following the WHO guidelines, a sample size of 385 is acceptable for a similar prevalence rate, with 95% degree of

confidence and a precision of ±3%. Using this as the base, a sample of 500 households was selected for the study, keeping in mind the probable refusal rate for the medical part of the study and the budgetary constraints.

Using Federal Bureau of Statistics' primary sampling units (PSUs) of Rawalpindi, a representative sample of 500 households was drawn based on the economic status of the households. It was assumed that differences in economic background will bring with them differentials in factors like education level, health seeking behaviour, health perceptions, etc. Twenty-five PSUs were randomly selected, covering the economic composition of the city. (A detailed list of the PSUs included in the study is attached as Annex 2). From these sampling units, 20 households each were selected randomly to give a sample total of 500 households. A worker of the Federal Bureau of Statistics was appointed to demarcate the exact boundaries of the PSUs and mark the selected households. In case of absence from the house or refusal to give interview it was decided to include the house towards the left side of the originally selected house, facing the street, keeping the number of households in the sample close to the desired one. Table 2.1 gives the basic facts about the sample used in the study.

Table 2.1: Basic Facts about the Sample

Number of Primary Sampling Units	25
Upper income	4 (16%)
Middle income	15 (60%)
Lower income	6 (24%)
Number of households selected	500 (100%)
Number of households interviewed	490 (98%)
Number of women interviewed (in full)	508 (100%)
Number of women taking medical examination	311 (62%)

Source: Rawalpindi Reproductive Tract Infections Survey (RRTIS) 2001-02.

2.1.4 Tools for data collection

For a holistic approach to the problem under study three basic tools were used for the collection of data. These were: conducting a questionnaire; having a clinical exam which was based on the Syndromic Approach; and finally to have a laboratory diagnosis to ascertain the presence or otherwise of any infection.

2.1.4.1 The Questionnaire

Drawing on the relevant literature, including questionnaires for demographic and health surveys, a mainly open-ended questionnaire was developed before going to the field. An open-ended approach was preferred because a lot of information can be left unrecorded or concealed if the responses are given in the confines of narrow options provided as answers, as in a standardised structured questionnaire. However, pre-coded questions were asked in instances where the responses could not in any case be other than the options given. On reaching the field and doing a pilot study some problems were found with the questionnaire, and then some further changes were suggested by the doctors who were consulted in Rawalpindi. The questionnaire was amended keeping these suggestions in consideration. Since doctors deal with patients on everyday basis, their help was also taken to translate the questionnaire in the Urdu language, using terms that were easy to understand for the respondents and carried the meaning that they were supposed to convey. Like, lower abdominal pain was originally translated as "*neechlay pait ka dard*", which was a verbal translation of the term, but it was suggested that "*neechlay pairhoo ka dard*" should be used instead as this is the term commonly used by women. Likewise, for "sexual intercourse" instead of using "*jinsi amal*" (sexual act), it was suggested to use "*shohar say miltay waqt*" (while

'meeting' husband), a term that implied the meaning and was less intimidating for women[9].

The final version of the questionnaire inquired about:

a. Social and economic characteristics: including age, sex, marital status, education, occupation, type of family, possession of various household amenities, age at marriage, and water and sanitation facilities at house.
b. Obstetric and gynaecological history: number of pregnancies and their outcome, any complications faced during pregnancy or delivery, person attending the delivery and any health problem with the newborn. Women were also asked about any operation they have had on their reproductive organs, and any complications that might have followed it. Questions regarding infertility were also part of the questionnaire.
c. Contraceptive history: including whether or not any method was ever or currently being used, and any problems experienced while using it.
d. Hygiene practices: general state of hygiene, like number of baths taken per week, but specifically the menstrual hygiene of women.
e. Health status: any health problem being faced by women and whether they were seeking help for it and from whom.
f. Knowledge regarding RTIs: including their perceptions of the causes, consequences and ways of treating the infections.
g. Experience of RTI symptoms: their personal experiences regarding RTIs at the time of the survey in particular, and over their lifetime in general. To give women a time reference to report for their current experiences a period of one week preceding the survey was given. However, for two symptoms, those of menstrual irregularity

[9] Further examples are given in Chapter Four, while discussing women's knowledge regarding RTIs.

and pain during menstruation, a period of three months preceding the survey was given to women for reporting their current experiences. This decision was taken due to the cyclic nature of the process and because a period of three months is taken to medically define a menstrual problem as a disease. Along with reporting their experiences, women were asked about the severity of these symptoms and the way these symptoms affected their daily routine. Women were also asked about the uninterrupted duration they had experienced the symptom.

h. Health seeking behaviour: if women were experiencing any RTI related symptom were they seeking help, if yes, what type of treatment and from whom, and their impressions about the treatment provided to them. If they do not seek help what are the actual or perceived barriers to it.

i. Inter-spousal communication: whether women discussed about their RTI related experiences with their husbands.

j. Autonomy: including her say in decision-making regarding different matters of the household, control over household income and independence to leave the four walls of her house without seeking permission. Questions were also asked about any abuse the women were a target of.

k. Husband's health status: husbands could not be interviewed directly so respondents were asked about any health problems their husbands were having, specifically any reproductive health problem.

The complete questionnaire is attached as Annex-3. Along with noting down the answers to the questions being asked, any relevant statement made by the respondents were also noted down on the questionnaire.

2.1.4.2 Clinical Examination

The WHO recommended Syndromic Approach was in the medical investigation of RTIs as step one. As stated earlier, this approach is based on identification of syndromes, which are a combination of symptoms, reported by the client, and signs, observed during clinical diagnosis, following the algorithms given by the WHO. These algorithms are attached as Annex-4.

With so many RTIs being asymptomatic, all women who agreed to the medical part of the study were examined irrespective of whether they reported any symptoms or not. Two female doctors were employed to carry out this part of the research. They first interviewed the respondents regarding the presence or otherwise of the symptoms, and other related questions, and then administered the clinical examination. Respondents were examined in a private space, where the bed was further shielded by a curtain. Except for the doctor, and the nurse helping her, no one else had access to that part of room while the examinations were carried out. The examination included:

- Inspection of the genitals
- Abdominal and bimanual exam
- Pelvic exam
- Collection of samples for laboratory diagnosis

Respondents who agreed to the medical part of the study were asked to avoid sexual intercourse the night before the examination, which could otherwise spoil the vaginal samples taken for the laboratory diagnosis. In addition to this, women were asked to have an empty bladder at the time of pelvic examination. During the course of examination some of the women, especially the younger ones, were somewhat hesitant at the use of speculum but the doctors were experienced enough to ward off their fears.

2.1.4.3 Laboratory diagnosis

Samples for laboratory diagnosis, taken from the respondents during the clinical examination, were clearly marked by the respondent's code number, her age, and the date the sample was taken. Her name was not written on the sample containers. Samples were transported immediately to the laboratory as the clinical examinations were taken in the same premises. It reduced the time and expenditure involved to transport the samples in a bio-safe manner and an appropriate environment.

Effort was made to use the method with better sensitivity and specificity for diagnosing each infection in the laboratory, while respecting the constraints of time and budget available for the study. The selected laboratory/hospital had sufficient equipment and trained pathologists to guarantee quality results. Table 2.2 gives a brief account of the laboratory methods used for screening each infection, and the type of sample taken for it (for details see Annex V).

Table 2.2: Laboratory assays used to detect RTIs

Infection	Detection Assay	Nature of Sample
Candidiasis	Culture- Gram Stain	Vaginal smear
Bacterial Vaginosis	Culture- Gram Stain	Vaginal smear
Trichomoniasis	Culture	Posterior vaginal smear
Chlamydia	Direct Fluorescent Antibody (DFA)	Endo-cervical vaginal smear
Gonorrhoea	Culture	Endo-cervical vaginal smear
Syphilis	Rapid Plasma Reagin (RPR)	Serum
Genital Herpes	Culture	Cells from lesions
Chancroid	Culture	Smear from the base of the ulcer, pus removed
HPV	Cellular morphology	Endo/ecto-cervix cells
Other[1]	Culture	Vaginal/cervical smear

Note: 1: The other category includes infections like E-coli, staphlococus aureaus, etc.,

To remove any chance of bias due to the duration between the interview and the medical part of the study, both things were conducted within a space of a day. Women who expressed their willingness for a medical exam were taken to the hospital the next day, making the comparison between the self-reported symptoms and medical diagnosis more meaningful.

2.1.5 Field operations

The study was conducted from the first week of December 2001 to the end of April, 2002. Two research assistants, both females, were employed to help conduct the interviews. Both of them had substantial experience of conducting interviews in demographic surveys, and had good inter-personal skills that were so necessary for a survey like the present one. To familiarise them with the questionnaire and the objectives of the study, they were given an intensive training of one week before entering the field. Interviews were conducted at the homes of the respondents, usually between nine in the morning to six in the evening. This was the time when the husbands were away at work and the children out for school or play, and women could talk, while doing their household chores. On average an interview took two to three hours, depending on the responsiveness of the respondent, and the frequency of interruptions that took place during the course of the interview. Mother-in-laws and women from the neighbourhood, especially those who had already given an interview and now considered themselves to be informed about the interview questions, were the main source of interference. Every effort was made to interview women in private so that their responses were not affected by the views of those around them. For this consent was usually taken from the mother-in-law so as not to antagonise her.

Women who gave their consent for the medical examination were taken to the hospital the day after the interview, to give minimum lapse of time

between their self-reported condition and medical diagnosis, making the comparison for accuracy between the two more meaningful. The initial plan was to conduct the physical examination and collect the samples at respondents' homes but after a few trials during the pilot study it was not found to be a practical method, for a number of reasons. Many houses had just one room so there was not enough privacy to conduct the examination. Keeping the speculums sterilised at the field was the next problem, as it was not convenient to operate the autoclave at the respondents' houses. There was also a problem of proper lighting on the bed while examination. However, these problems did not prove to be a hurdle, as women who agreed for the medical examination usually had no objection going to the hospital for it. In fact, some even preferred going there, as they were somewhat curious about the place, and it also gave them a much needed break from their daily house routine. The maximum number of women who could be taken to the hospital at one time was ten[10] but a bigger vehicle was hired because most women were accompanied by their young children and in some cases also their mother-in-laws. The distance to be travelled varied according to the location of the PSU vis-à-vis the hospital where the examinations were conducted, with the maximum distance being around 12 kilometres. At the end of each interviewing day, a list of addresses of women consenting for the medical examination was made and the following day they were picked up from their doorsteps between 9-9.30 am, and dropped back at their homes after the completion of the examination of all the women in their batch. Allowing for constraints of travel time, the routine was kept flexible enough to drop back home any woman who had an urgency to go early, after having her clinical examination and sample collection done, instead of waiting for all women in her group to be examined.

[10] The clinic could handle more than ten women in one session but ten was the maximum number of interviews that were conducted on any day, so even if all the interviewed women agreed for the medical examination the number could not have been more than ten.

2.1.6 Potential bias

Selectivity of women who were willing to undergo the medical exam was a potential source of bias in the study. Studies have demonstrated that symptomatic women are more likely to give their consent compared to those who are not experiencing any symptom (Koenig, et al., 1998). Economic status of respondents was another source of bias as women with fewer resources were more probable to go for a free medical examination than those who could afford it by themselves. Another methodological issue in this regard was that before starting the questionnaire respondents were briefed about the medical exam, along with giving other information about their rights during the course of interview, and it was feared that it might affect their responses. In this regard, effort was made not to state anything that could lead them to a particular answer. Not much could be done to avoid the earlier stated bias, that is, potential of over-representation of poorer and/or symptomatic women in the medical sample, as no woman, richer/asymptomatic in this case, was forced to be a part of this study at any stage. However, as Table 6.1 later shows, there was not much difference in the background characteristics of women in the total sample and the medical sub-sample, removing any major representation problems that might have arisen otherwise.

2.1.7 Ethical considerations

Ethical considerations are inseparable from a successful completion of a research process. Cassell and Jacobs (1987) define research ethics as, "A code is concerned with aspirations as well as avoidances, it represents our desire and attempt to respect the rights of others, fulfil obligations, avoid harm and augment benefits to those we interact with" (quoted in Glense and Peshkin, 1993 p: 110). If a researcher oversteps these codes it is ultimately he himself who suffers because this way he alienates his respondents. Considering the nature of problem under study a special

effort was made to avoid any such situation. As a start, clearance was taken from the Ethics Committee at the Australian National University (ANU) before leaving for the fieldwork, and then again from the Holy Family hospital before the actual work began.

The ethical issues in this study vis-à-vis the respondents were mainly of three kinds:

i. Informed consent
ii. Confidentiality
ii. Result notification, and partner notification in case of a positive result
iii. Provision of treatment if tested positive for an infection

Before conducting the interview women were explained the nature and purpose of the study, the approximate length of the interview, the issues to be covered in it and her right to leave the interview at any stage she felt like. Interview was only conducted if she gave her consent knowing all these things. Likewise, respondents' consent was sought for the medical part of the study after explaining to them the procedures involved in it and the available opportunity of having free of cost treatment in case they tested positive for any infection. It was made clear that no remuneration in cash or kind would be given for their participation in the interview, other than free transport (for the initial examination) and treatment (till the infection is cured). Women also had the flexibility to change their mind and not go for the medical examination, after giving consent for it the previous day at the end of the interview. On a few occasions, consultation with their husbands and family members made them change their mind.
The issue of confidentiality was taken care of by giving an identification code number to each respondent. In hospital records as well, they were identified by their code numbers. In case a respondent tested positive for

any infection, the doctors informed me, that is, the principal investigator, and I went back to that respondent asking her to come along with me to the hospital, along with her husband if the recommended treatment required him to take medicines too. The last ethical issue, that is, provision of treatment, was also dealt without much problem as before starting the survey the hospital management very graciously agreed to provide free treatment to women who test positive for any of the infections under study. Holy Family being a government-funded hospital already provides subsidised treatment to patients, but made it free as a special favour to this study. Special cards were issued to these women so that they could come for the follow up visits without making any payment.

2.1.8 Technical processes used for data entry and analysis

Questionnaires were edited the day the interview took place, and codes were assigned to the answers to the open-ended questions. The interviewers were told to write the response in verbatim and appropriate codes were given to these responses later according to a coding scheme. Original details were retained in the coding procedure, with the provision to change the breadth of categories in accordance to the analytical requirements. The software, Statistical Package for Social Sciences (SPSS), version 10, later upgraded to version 11, was used to enter data. To check the accuracy of entered data for out of range or inconsistent responses, frequency distributions and cross tabulations were carried out. Once the entry was complete, SPSS was used to analyse the data using different analytical methods.

2.2 Measurement framework

The present study looks into RTIs at personal and medical levels. Both perspectives have their own advantages and shortcomings. Medical

examination has its own scientific protocols and procedures, especially the laboratory testing, so measures of occurrence given by it do not have any ambiguity. However, there are certain aspects of the problem under study that can only be measured through the questionnaire, like the behavioural factors associated with the problem. Otherwise too, measuring perceived illness gives us an insight into the cultural and psychosocial context of the problem, and helps differentiate between pathogenic and possible psychogenic illnesses. Medical examination gives account of the pathogenic existence of illness, while its comparison with self-reports throw light on the possible presence of health problems that could be psychogenic in nature.

2.2.1 Measurement of self-reports

To measure the self-reported prevalence of RTIs, women were asked questions based on the symptoms associated with different infections. These symptoms were:

1. *Abnormal vaginal discharge*: discharge that was not usual to the woman in colour, texture, odour or consistency, and if it caused an itch in the genitals.
2. *Lower abdominal pain*: nature, duration and severity of pain in the lower abdomen.
3. *Menstrual irregularity*: changes in duration, quantity, cyclicality or consistency of blood during menstruation.
4. *Dysmenorrhoea*: pain during menstruation.
5. *Sores and ulcers on the genitals*
6. *Dysuria*: painful urination or burning sensation during urination.
7. *Dyspareunia*: painful intercourse, bleeding or bad odour after intercourse.

8. *Lower backache*: only if it was reported accompanying any of the above symptoms.

Women were asked if they were experiencing these symptoms at the time of the interview, or in the last three months regarding the two menstruations related symptoms. This constituted the measure of self-reported prevalence of RTI related symptoms. Some of these symptoms could be present due to factors other than RTIs but since they are associated with one or more RTIs they were included in the questionnaire. The reported symptoms were classified according to the infection they are associated with, as shown in Table 2.3, to estimate the prevalence of a specific infection.

Table 2.3: Symptoms and possible links to RTIs

Symptom	Possible link to RTIs
Abnormal vaginal discharge	Bacterial vaginosis, candidiasis, trichomoniasis, chlamydia, gonorrhoea
Lower abdominal pain	Chlamydia, gonorrhoea
Menstrual irregularity	Chlamydia, gonorrhoea
Dysmenorrhoea	Chlamydia, gonorrhoea
Sores, warts, ulcers on genitals	Genital herpes, chancroid, syphilis (primary), HPV
Dyspareunia	Chlamydia, gonorrhoea
Dysuria	Chlamydia, gonorrhoea, trichomoniasis
Lower back ache	Bacterial vaginosis, candidiasis, trichomoniasis

With so many symptoms having more than one infection as the probable cause it was not possible to categorise each symptom for a single infection. For analytical purposes, the reported symptoms were classified in two useful categories of endogenous and exogenous infections, including sexually transmitted infections. The criteria used for these categories are:

1. *Endogenous infections*: If a woman complained of having abnormal vaginal discharge, with or without lower backache.
2. *Exogenous infections*: If a woman complained of experiencing one or more of the symptoms not included in category one, and also when one or more of these symptoms were reported accompanying those mentioned in category one.

These categories also coincide with the potential sites of RTIs among women. With the exception of trichomoniasis, which is a sexually transmitted/exogenous infection, vulvo-vaginal infections, or simply vaginitis, are generally endogenous in nature, while the more serious infections of the cervix are usually caused by the sexually transmitted infections. Category one and two could therefore also be referred to as vulvo-vaginal and cervical infections, respectively.

2.2.2 Measurement of consistency of self-reports with medical diagnosis

It was one of the objectives of the study to investigate consistency of women's self-reports with the clinical and laboratory diagnoses. With the data available, accuracy of clinical diagnoses could also be measured, comparing them with the laboratory results. These measures would be calculated following the procedure given in Box 1.

The measures given in Box 1 will tell us the rate of women responses for :

- *True positives*: women reporting symptom(s) and having an infection.
- *True negatives*: women not reporting symptom(s) and not having an infection.
- *False positives*: women reporting symptom(s) but not having an infection.

- *False negative*: women not reporting symptom(s) but having an infection.

Box 1: Comparison of women's report of symptoms with medical diagnosis of presence of disease

Women's report of symptoms	Medical diagnosis of presence of infection		
	Yes	No	Total
Yes	A	B	A+B
No	C	D	C+D
Total	A+C	B+D	N

Sensitivity: Ability of a symptom to lead to detection of a disease if present = $\frac{A}{A+C}$

Specificity: Ability of a symptom to cause the ruling out of a disease if not present = $\frac{D}{B+D}$

Positive predictive value: Percent of those who report a symptom and for whom the disease is present = $\frac{A}{A+B}$

Negative predictive value: Percent of those who did not report a symptom and for whom the disease is not present = $\frac{D}{C+D}$

Percentage of agreement: Percent of those whose reporting of a symptom is consistent with the presence of disease = $\frac{A+D}{N}$

Kappa statistics: comparing agreement against that which might be expected by chance = $\frac{(P_o - P_e)}{(1 - P_e)}$, where P_o = observed agreement and P_e = expected agreement

Sources: Detmer and Nicoll 1994; Bhatia and Cleland 2000; Zurayk, et al. 1995; WHO 2000.

The scale used to judge the strength of agreement, represented by the aforementioned indicators of specificity, sensitivity, positive and negative predictive values, percentage of agreement and Kappa value, is as follows.

- Zero per cent – No agreement
- 10-20 per cent – Poor agreement
- 21-40 per cent – Fair agreement
- 41-60 per cent – Moderate agreement
- 61-80 per cent – Substantial agreement
- 81-100 per cent – Strong agreement

2.2.3 Measurement of the social context

Jejeebhoy and Koenig (2002) believe that in recent times studies have mainly focused on the prevalence of reproductive tract infections without investigating "the roles of potentially key determinants, ranging from sexual behaviour and practice, to behavioural norms for women and men, to misperceptions regarding healthy practices, to constraints on women's access to information and services and the role of male partners," (2002, p: 53). The present study looks into these socio-cultural issues to provide a firm foundation to bridge the gap between medical findings and policy initiatives. Various indicators are used in surveys to represent these factors but their measurement remains a controversial issue in social research. The present study included indicators believed to influence the health of the women in either a direct or an indirect manner. Most of these variables were straightforward but some did pose problems in measurement, which are discussed now:

2.2.3.1 Economic status

Measuring economic status of respondents posed a problem for the study. With very few women working for cash in the sample, it was mainly the earnings of the husbands that determined the economic status of the households, and thus by default also of women. It was decided to use the

average monthly income of the household, nature of house she lived in and the possession of various household items that socially contributed to her status as indicators of woman's economic status. Women were categorised into three groups, that is, upper, middle and lower income group.

2.2.3.2 Personal hygiene behaviour

Numbers of baths taken by a woman in a week and protection during menstruation were used as indicators of personal hygiene behaviour in the study. Women who were using old cloth/rags as protection were also asked about their method of washing and drying the material. A woman was considered to have better hygiene if she boiled the cloth before re-using, and dried it in sun compared to the one who just washed it in water, or even soap and water, and dried it in a hidden/shady place.

2.2.3.3 Autonomy

Measuring autonomy is among the more complex issues in social research. Literature suggests several indicators of female autonomy, including the extent to which women have a say in family decisions and decisions about her own life; her ability for physical mobility without constraints; the extent to which women are free from the threat of physical and emotional abuse; and the level of control she has on her own and household's economic resources (Mason 1993, 1997; Caldwell, et al. 1982; Sathar, Callum and Jeejebhoy 2001; Kazi and Sathar 1993). The present survey included many questions regarding autonomy of women in their households (See section VII of the questionnaire in appendix). Adapting the indexes formulated by Sathar, Callum and Jeejebhoy (2001), questions asked in the present study were used to form four dimensions of autonomy:

i. *Decision making authority*: Seven questions were used to measure the extent of authority women had over the decision making process in the house. Women were asked if the had a say in decisions regarding: what to cook; children's education; children's health; supporting her own parents; supporting her husband's parents; buying and selling of household items; and buying of gifts. An index, with a range 0-7, was developed from the responses to these questions. A value of 1 was assigned if the woman stated to have a major share in the decision making process, 0.5 if she had a minor share and a value of 0 if she had no say at all.

ii. *Freedom from threat*: This measure took into account both aspects of threat, physical and psychological. Questions asked in this regard were if the woman was beaten by her husband (usually or occasionally), and whether she was afraid to disagree with him. An index of 1-4 was created for it: 1 if they were afraid of their husbands and beaten; 2 if they were afraid but not beaten; 3 if they were not afraid but were beaten; and 4 when they were neither afraid not beaten. For the sake of convenience, they would also be referred to as battered (afraid and beaten), anxious (not beaten but afraid), defiant (beaten but not afraid) and contented (neither afraid nor beaten) women in this study.

iii. *Freedom of mobility*: This measured the ability of women to go outside their houses without taking permission from their husbands or any other person considered to be having this authority in the household, like their in-laws. An index of 1-3 was created to measure the mobility status of women. A value of 1 was assigned if a woman had to always ask for permission; 2 if she never had to ask permission; and 3 if it depended on where she was going. Questions

were asked from women about their freedom of mobility regarding going to different places, like market, hospital/clinic, relative's house and nearby shrine.

iv. Control over household income: This measured the role of woman in managing the household income, including her own if she was working for cash. The measure included woman's having cash on her, and her ability to take independent decisions regarding how money is spent in the household. In most households, money was being managed by a combination of people so the index developed for this measure had only two values. It was 1 if she had some control over household income (total or partial) and 2 if she had no control over it at all.

2.3.4 Data definitions

Majority of the concepts used in this study are employed in their conventional meaning, however, some terms have somewhat peculiar meanings. These include:

i. Education: Different surveys in Pakistan use different definitions of literacy. In some surveys literacy rate of the population is calculated by considering all those persons literate who were above ten years of age and could read and write a simple letter, and read a newspaper in any language, while others also include those who could only read the Holy Quran. Some surveys consider only those persons literate who have gone to formal education schools. The present study instead of going into defining "literacy" and "illiteracy" questioned only the years of formal schooling attended by a person. It was assumed that it is not just what is taught in

schools that bring changes in people's thoughts and behaviour but is a general influence of the whole schooling experience.

ii. *Background area*: The present study was urban-based but to gauge the influence of urban and rural life on the behaviour of women, a question was asked on the place where respondents spent the first twelve years of their lives. The initial twelve years are considered to be the psychologically formative years in a person's life that are bound to affect his/her later behaviour. To explore this influence, the study uses the terms "rural background" and "urban background" for women who have spent the first twelve years of their lives in rural and urban settings, respectively.

iii. *Work status*: To avoid any confusion, women were considered to be "working" only if they were being remunerated for the work done. Being an urban study the remuneration was usually in cash form so a woman was considered working "if she worked for cash".

Other terminology and concepts used in this study are employed in their usual meanings.

This sets the scene for achieving the objectives set forth for the present study, named as, Rawalpindi Reproductive Tract Infections Study 2001-2002 (RRTIS 2001-2002).

§§§§§§§§§§§§§§

CHAPTER THREE

Socio-Economic and Demographic Profile of the Respondents

Health, and more so reproductive health, is an outcome of interaction between the social, economic, cultural and demographic characteristics of the population, this being even truer for societies like that of Pakistan. Without understanding these factors, an explanation of the problem under study is not possible. A profile of the demographic and socio-economic characteristics of the respondents, and their husbands, is given in this chapter, to provide background information regarding factors that could affect women's reproductive health and their ability to seek health in case of illness. Wherever possible these characteristics would be compared with those reported in earlier surveys to examine the trends and differentials.

3.1 Age distribution

The age distribution of the currently married women of reproductive ages in the sample is comparable to that of recent surveys, like the Pakistan Fertility and Family Planning Survey- 1996-97 (PFFPS), and the Pakistan Integrated Household Survey- 2001-2002 (PIHS). The current sample is slightly older than these two national surveys with the mean age of 32 years, compared to 31 years in the PFFPS and 29 years in PIHS. As can be seen from Table 3.1, half the women in the sample were under 31 years of age and the most populous age group is the 25-29 year age group with the numbers gradually decreasing in the older ages. On the contrary, husband's age distribution reaches its peak in the 30-34 year category, and has a median age of 37 years.

Table 3.1: Age distribution: Respondents and their Husbands

Age groups (years)	Respondents		Husbands	
	Per cent	Number	Per cent	Number
15-19	2.4	12	0.2	1
20-24	16.5	84	3.9	20
25-29	22.2	113	15.2	77
30-34	19.9	101	20.3	103
35-39	17.3	88	17.9	91
40-44	13.4	68	17.9	90
45-49	8.3	42	12.0	61
50-54	-	-	8.5	43
55 & over	-	-	4.3	22
Total	100.0	508	100.0	508
Mean	32.1 years		38.0 years	
Median	31.0 years		37.0 years	

Source: RRTIS 2001-02.

Age difference between spouses can be a major source of determining the status of a woman in a household, especially in her ability to communicate with her husband (Mahmood and Khan 1985; Cain 1993; Dyson and Moore 1983). Only 6 per cent of the respondents were of the same age their husbands, while a small 3 per cent were older than their spouses, as can be seen form Table 3.2. Husbands being older than their wives is a norm in Pakistan and it was the same in the present study. The average age difference between spouses in the study sample was six years, with a median difference of five years. The maximum difference between the spouses in the sample was the husband being thirty-four years senior to his wife. The most any respondent was older than her husband was four years.

Table 3.2: Age difference between respondents and their current husbands

Age difference	Per cent	Number
Wife older 1-5 years	3.0	15
Both same age	5.9	30
Husband older 1-5 years	47.6	242
Husband older 6-10 years	31.3	159
	7.9	40
Husband older 11-15 years	4.3	22
Husband older 16 or more years	100.0	508
Total		
Mean	5.9 years	
Median	5.0 years	

Source: RRTIS 2001-02.

3.2 Age at marriage

Early marriages are still a norm in Pakistan. According to the PFFPS 1996-97, the median age of marriage for females in Pakistan is 18.3 years, with the major urban areas (including the research site, Rawalpindi) having a median age at marriage of 18.9 years. Coale (1991) argued that culture and tradition determine the age at marriage, and the present study shows that the tradition of early marriage is still strong in the country. Early age at marriage, along with exposing women to early child bearing, undermines their position within the family in more than one way. Women who marry early are often married to men who are considerably older than themselves. This puts them in a disadvantageous position, especially in the extended family households that exist in Pakistan where she is more susceptible to come under the subordination of her husband and his family.

Table 3.3 shows that the median age at marriage in the study sample was 19 years, which is similar to the one found by the PFFPS 1996-97 for the major urban areas of Pakistan. Some studies have shown a gradual increase in the age at first marriage among the Pakistani women (including, Alam and Karim 1986; FBS 1995) but the present study, like the one by Yusuf (1988) and the PFFPS 1996-97, does not corroborate this

finding as the age at first marriage for successively older birth cohorts does not show any declining pattern (Table 3.3). Early marriages still appear to be the norm, and as Table 3.3 shows, 25 per cent of the women in the study sample had got married by 17 years of age. By 22 years of age 75 per cent of women were already married.

Table 3.3: Age at first marriage

Current age (years)	Mean	Median	Number
< 24	18.6	19.0	96
25-29	20.2	20.0	113
30-34	20.2	20.0	101
35-39	19.2	18.0	88
40-44	20.2	20.0	68
45-49	19.7	19.0	42
Total	19.7	19.0	508
Quartiles of age at first marriage (in years)			
First	**Second**		**Third**
17.0	19.0		22.0

Source: RRTIS 2001-02.

As noted by Alam and Karim (1986), in Pakistan a very high proportion of first marriages remain intact and the number of people who remarry is quite low. In the study sample, 1.4 per cent of women had married previously, while 6.3 per cent of the respondents were not the first wives of their husbands. Re-marriage by widows is allowed, rather highly prescribed, in Islam but there is a social stigma attached to a divorced or widowed woman remarrying (Shah 1986; Naqvi 1986). Even if she remarries it is with a man much older than her, as one of the respondents, who had remarried, had a husband 22 years older than her. On the other hand, polygamy, though not common, exists in the society. In the sample, 2.4 per cent of the respondents were not the only wives of their husbands at the time of the survey.

Another measure that could be of interest to the present study is the duration of marriage, as that mainly defines the period a woman had been sexually active. Table 3.4 shows duration of current marriage of women in the present study. With only 1.4 per cent been married previously, the duration of current union adequately represents their lifetime sexually active period. The mean duration of marriage for women in the sample was 12.3 years, with 35.2 per cent being in the union for 16 years or more (Table 3.4).

Table 3.4: Duration of current marriage

Duration of marriage	Per cent	Number
One year or less	5.7	29
2-5 years	20.7	105
6-15 years	38.4	195
16 years or more	35.2	179
Mean	12.3	
Median	12.0	

Source: RRTIS 2001-02.

3.3 Education

Education is considered to be the most important indicator of social development, and most literature shows a significant association between educational level of women and their attitudes and behaviour related to health and health seeking behaviour (Bhatia and Cleland 1995; Kavita 2002; Sathar 1984; Caldwell, et al. 1982; WHO 1996;). The literacy levels, especially of females, remain low in Pakistan, and according to the latest estimates, the literacy rate of the country is 45 per cent for the population 10 years and over, with that of males being 58 per cent, and of females 32 per cent (FBS 2002). The figures for the Punjab province are marginally better with the overall literacy rate of 47 per cent and a female literacy rate of 36 per cent.

As discussed in section 2.3.4, instead of getting into the problem of defining "literacy" the present study takes "years of schooling" as the indicator for education. In the study sample, 34 per cent of the respondents had never been to school while around a quarter had attended a formal educational institution for more than 10 years (Table 3.5). The figures correspond with the findings of the PFFPS 1996-97, where 62 per cent women in major urban areas had been to school. Continuation of schooling after marriage is a rarity in Pakistan and early marriage generally means culmination of schooling. In the study sample as well, no woman was going to school, including the youngest ones, and their reported years of schooling present their highest level of education attained. Although the data do not show any clear trend in education, a slight improvement in educational level among the younger women is discernible with comparatively lower figures for the proportions that have never being to school, and also the higher median value for the years of schooling attended (Table 3.5).

Table 3.5: Educational level by age of respondents

Age groups	Years of schooling[1] (%)					Mean years	Median years
	None	Up to 5	Up to 10	11 & over	Total		
15-24	31.3	12.5	37.5	18.8	100.0	6.4	8.0
25-29	28.3	7.1	25.7	39.0	100.0	7.8	10.0
30-34	31.7	14.9	28.7	24.7	100.0	6.7	8.0
35-39	38.6	12.5	35.2	13.7	100.0	5.6	5.0
40-44	42.6	8.8	20.6	27.9	100.0	6.2	5.0
45-49	42.9	11.9	33.3	11.9	100.0	5.3	5.0
Total	34.4	11.2	30.1	24.2	**100.0**	6.5	8.0

Source: RRTIS 2001-02. Note: 1. No woman was currently going to school, so there were no problems of censoring in reporting years of schooling.

Husband's education is also considered an important factor affecting the behaviour of the wife and the decisions she takes. As Table 3.6 shows, husbands are better educated than their wives. There is a difference not only in the proportion attending school but also the level to which they attend it. Husbands have an advantage of over 10 percentage points over

their wives in ever being to school and also in attending up to 10 years of schooling.

Table 3.6: Distribution of husbands and respondents by schooling years

Years in school	Husbands (%)	Respondents (%)
None	19.1	34.4
Up to 5	10.8	11.2
Up to 10	40.2	30.1
11 & over	29.9	24.2
Total	100.0	100.0
Mean	8.2	6.5
Median	10.0	8.0

Source: RRTIS 2001-02.

3.4 Employment

For countries like Pakistan, it has always been difficult to define female participation in the labour force. There is no consensus on the proportion of women who are in the labour force as different sources render widely different estimates. This is because of varying degrees of under-reporting, exclusion of unpaid family workers in some surveys, and certain definitional differences between data sources. In the present study the respondents were asked about their involvement in any income generating activity, which defined their role in the labour market. As Table 3.7 shows, 93.5 per cent of the respondents did not report any work done directly for income. The participation rate of 6.5 per cent is lower than the estimate (12.9 per cent) produced by the PFFPS 1996-97 for females in the major urban areas of Pakistan. One reason for this difference could be that the PFFPS figure is for the ever-married women, while the figure from this study is for the currently married women, who could have lower participation rates. Although some of the working women in the sample were employed as teachers (0.8 per cent) and doctors (1.0 per cent, both included as professionals/salaried workers in Table 3.7), but majority were employed in low status work, like serving as domestic servants (2.8 per

cent, included in the unskilled/casual labour in Table 3.7) or on per piece payment of knitting and embroidery items (0.4 per cent, comprising skilled labour in Table 3.7). Interestingly, despite such a low participation rate there was no one reporting to be "unemployed".

Table 3.7: Occupational status of respondents and their husbands (%)

Occupation	Respondents	Husbands
No work	93.5	-
Professionals/salaried	2.6	34.3
Self employed/business	0.2	28.3
Skilled labour	0.4	17.1
Unskilled/casual labour	3.3	11.2
Land income	-	0.8
Unemployed	-	5.9
Other	-	2.4
Total	100.0	100.0

Source: RRTIS 2001-02.

As Table 3.7 shows, majority of the husbands were employed in salaried jobs (34.3 per cent), or were self-employed (28.3 per cent). Both these categories, however, are not internally homogenous and comprise a wide range of income levels.

Males are traditionally considered the breadwinners, so it is against the cultural norms for women to work for money. Males would not allow it. Mandelbaum (1988) gives a good anthropological insight into this issue in his book "Women's Seclusion and Men's Honor: Sex Roles in North India, Bangladesh and Pakistan". Even to date the conditions in the country are similar to what Mandelbaum implies when he says, "male honor commands homage" (1988 p: 133). It was considered to be an affront to the male honour if females of the household worked outside the home.

3.5 Type of family and average household size

The type of family structure has important consequences for the status and behaviour of a woman. Her position vis-à-vis other members of the household determine the extent to which she has the freedom to carry out her decisions. In the study sample, as Table 3.8 shows, 71.5 per cent of the women were living in nuclear households, while 28.5 per cent were a part of an extended or joint household. Extended households refer to a living arrangement where two or more nuclear families are tied together by bonds of descent, and usually comprise living relatives from three or more generations. The joint families on the other hand comprise of two or more relatives of the same generation living together with their respective spouses and children, and it usually consists of one to two generations. In the present study, for analytical purposes, we will group these two together, representing a household structure where a respondent had at least one more adult who could influence her decision and behaviour, other than her husband.

Table 3.8: Type of Family and Average Household Size

Type of family	% of HHs	Mean size	*Median size*	Number
Nuclear	71.5	5.5	5.0	363
Extended/Joint	28.5	8.2	8.0	145
Total	100.0	6.3	6.0	508

Source: RRTIS 2001-02.

The average household size naturally is bigger for the extended/joint families (8.2) as compared to the nuclear households (5.5). The median household size also shows a difference of three persons between the nuclear and joint/extended household size.

3.6 Background area

As stated earlier, in section 2.3.4, any difference between urban and rural areas for the issues under study would be studied using the area of residence of women in the first 12 years of her life as a proxy. In the sample, more than three quarters of the respondents had spent their early lives in cities, as can be seen from Table 3.9. In most cases women having urban background had lived all their lives in urban areas.

Table 3.9: Area of residence of respondents in their first 12 years

Area	*Per cent*	Number
Urban	76.8	390
Rural	23.2	118
Total	100.0	508

Source: RRTIS 2001-02.

3.7 Economic status

Economic status of a respondent was basically the economic status of her household. As discussed in section 2.2.3 economic status of each respondent was measured by the average monthly income to which the household she belonged to had access to, the nature of house she lived in and the possession of various household items. All these factors indicated her economic standing but it was mainly her husband's income that determined her economic status.

Ownership of house is considered the most valued possession, and the size and structure of the house is reflective of the socio-economic standing of the household. In the study sample 89 per cent of the respondents were living in houses constructed fully of commercial material (i.e., bricks, cement, iron, etc.,) while the remaining 11 per cent were living in *kutcha*/semi-*Kutcha houses*, i.e., made solely or in a combination of iron sheets, wood, mud and/or thatch. The figures correspond to the ones found in the PFFPS 1996-97 for the major urban areas of Pakistan, and the 1998

census of the Rawalpindi district. With not so wide differences in the nature of house construction, it was mainly the difference in the number of rooms in the house used for sleeping that differentiated the economic status of the household. As Table 3.10 shows almost three quarters of the respondents were living in houses having two or fewer rooms used for sleeping. The average number of persons living in the house increase with the increase in the number of rooms but it is not a corresponding increase. The houses with fewer rooms have a much higher density than the ones with more rooms, reflecting the underlying economic factors.

Table 3.10: Number of rooms used for sleeping and mean number of persons

Number of rooms	% of households	Mean number of persons/household	Number
One	26.6	4.6	135
Two	44.3	6.3	225
3-4	25.4	7.0	129
5 or more	3.7	11.7	19
Total	100.0	6.3	508

Source: RRTIS 2001-02.

After having a house, the next important thing is to equip it with every possible and affordable amenity. Table 3.11 shows the possession of selected consumer durables and amenities by the households. Of particular interest in the context of health is having easy access to clean water, and to a toilet facility, along with the possession of means of transport, and also electricity, radio and television as these three provide the exposure to modern media that can bring information in this regard.

Table 3.11: Proportion of respondents having selected consumer durables, and amenities in their households

Amenities/durables	% of respondents
Toilet facility	98.2
Water piped to the house	74.2
Electricity	100.0
Radio	67.9
Television	85.0
Means of transport[1]:	48.4
Car	21.5
Motorcycle	11.0
Bicycle	15.9

Source: RRTIS 2001-02. Note: 1. A household could own more than one means of transport, but the reported figures here relate to the higher level of transport they had, e.g., if a household had a car and a bicycle, it is included in having a car here.

Table 3.11 shows, availability of electricity was universal in the sample, as was toilet facility. This included mainly houses having toilets with a flush system but there was a small proportion of houses using bucket for draining purposes. PFFPS 1996-97 gives an estimate of 93.7 per cent for the houses having toilet facility in major urban areas of Pakistan, indicating a slightly better situation in the study area. The ownership of radio, TV, and car is also better in the study sample, when compared to the PFFPS 1996-97.

As stated earlier, very few respondents were working for cash, and it was mainly husbands' wages that contributed to the households' monthly incomes. Further analysis showed that it was primarily this wage that defined the whole economic status of the household. The households with more income had bigger houses with better facilities, with fewer people sharing these facilities. Table 3.12 shows that half the respondents had a monthly average household income of Rs. 5000 or less (equivalent to US$ 82), with over a quarter households having an income of less than Rs. 3000.

Table 3.12: Income level of respondents' households

Income level (Rupees)*	% of respondents	Number
≤ 1500	2.6	13
1501-3000	23.8	121
3001-5000	29.1	148
5001-10000	21.7	110
10001-15000	6.5	33
> 15001	16.3	83
Total	100.0	508
Mean	9367.5	
Median	5000.0	

Source: RRTIS 2001-02. Note: * 1 Rupee= US$ 0.02.

Based on the information presented in this section, respondents were categorised into three economic groups for analytical purposes, which is the high, middle and low economic groups. Table 3.13 gives the breakdown of respondents in these categories.

Table 3.13: Economic groups of the respondents

Economic group	% of respondents	Number
Upper	22.8	116
Middle	46.3	235
Lower	30.9	157
Total	100.0	508

Source: RRTIS 2001-02.

3.8 Maternal health and fertility

The cultural, social and economic environment influences the reproductive health of women and consequently the health of their children. That is why maternal and child health is taken as an indicator of social development. In Pakistan, pregnant and lactating women are considered to belong to a vulnerable group in terms of health. In 1994, 24.6 per cent of the women in reproductive ages in the Punjab were found to be anaemic, accompanied by a high prevalence of gynaecological morbidity (WHO 1996). Other studies, as were presented in Table 1.3, also show that such problems are common among women in the country.

3.8.1 Number of pregnancies

As Table 3.14 shows, the mean number of pregnancies per women was 3.99, with 16 per cent having been pregnant seven or more times. The Table also shows the percentage distribution and mean number of living children these women had. It shows a difference of almost one child lost per woman. At the time of the survey 48 women were pregnant, out of whom 10 were first time pregnant, so that partially accounts for difference in zero parity, but the overall figures show a high incidence of foetal or child loss. The number of pregnancies and the number of surviving children women had, as expected, increase with increasing age, as can be seen from Table 3.14.

Table 3.14: Number of pregnancies and number of living children

Number of pregnancies and living children				
Number	*Pregnancy distribution*		Distribution of living children	
	Per cent	Number	Per cent	Number
None	4.5	23	8.1	41
1-2	28.7	146	36.4	185
3-4	29.1	148	32.3	164
5-6	21.7	110	17.1	87
7 or more	15.9	81	6.1	31
Total	100.0	508	100.0	508

Mean number of pregnancies and living children by age groups		
Age groups (years)	Mean number of pregnancies	Mean number of living children
15-19	0.92	0.42
20-24	1.88	1.42
25-29	3.02	2.24
30-34	4.30	3.28
35-39	5.33	4.27
40-44	5.28	4.15
45-49	6.02	4.90
Total	3.99	3.09

Source: RRTIS 2001-02.

3.8.2 Foetal loss

Reproductive tract infections have important repercussions on the health and survival of the foetus. Foetal mortality is common among women who

are malnourished and anaemic. In Pakistan, the condition of women is worsened further by frequent pregnancies. In the study sample, 37.6 per cent of the respondents, i.e., 191 women, had ever experienced one or more foetal loss. Out of the total foetal loss, 67.3 per cent were spontaneous abortions, 16.8 per cent were induced abortions and 15.9 per cent were stillbirths. Table 3.15 shows the distribution of foetal loss in the study sample, and we can see that 6.8 per cent of women had opted for an induced abortion at some time in their lives, 28.7 per cent experienced a spontaneous abortion and 8.5 per cent had experienced a stillbirth. Though the number of respondents having stillbirth is higher than those having an induced abortion but the number of induced abortions slightly exceed the stillbirths. Per woman induced abortions are higher than per woman stillbirths.

Table 3.15: Distribution of foetal loss

	Induced abortion		Spontaneous abortion		Stillbirths	
	Per cent	Number	Per cent	Number	Per cent	Number
None	93.2	452	71.3	346	91.5	444
1	4.1	20	18.6	90	7.2	35
2	1.9	9	7.2	35	1.1	5
3	0.4	2	2.7	11	-	-
4	0.4	2	-	-	0.2	1
5 or more	-	-	0.6	3	-	-
Total*	100.0	485	100.0	485	100.0	485
Mean	0.11		0.42		0.10	

Source: RRTIS 2001-02. Note: * Excluding those women who have never been pregnant.

Induced abortion is illegal in Pakistan, except in situations where mother's life is at risk. The evidence available from various micro-surveys shows that the Induced Abortion Rate (IAR) is quite high in the country. One survey indicates it to be 25.5 induced abortions ever per 1,000 women aged 15-49 years. Of these, an alarming 69 percent had post-abortion complications, and of all the maternal mortality and morbidity reported by hospitals in a survey, 2 to 12 percent instances were contributed by

induced abortions (Fikree, 2000). The Pakistan Reproductive Health and Family Planning Survey 2000-2001 (PRHFPS 2000-2001) gives an estimate of 2.2 percent women ever having an induced abortion. The proportion of women having induced abortion in the study sample is higher than these estimates, with 6.8 per cent women having experienced at least one induced abortion. There is every probability of under-reporting induced abortions in surveys for reasons of disapproval by law, religion and cultural norms. It is not uncommon to report an induced abortion as a spontaneous abortion. With better inter-personal communication and interviewing skills used in the present study, the comparatively higher estimate could thus be more reflective of the reality, with women being more open and honest about their reproductive experiences.

3.8.3 Place of delivery and person attending

For the health of the mother and the child, safe and hygienic conditions at the time of delivery are imperative, along with the presence of a qualified person who could manage any emergency if/when it arises. In the study sample, as Table 3.16 shows, 45.6 per cent of women had their last delivery at home, followed by those having it at a government hospital (30.6 per cent) and private clinics (15.7 per cent). The proportion of last delivery taking place at home in the present study is comparatively higher than the ones found by the PRHFPS 2000-2001 (39 per cent) for the major urban areas, but corresponds with the one estimated by the PFFPS 1996-97 (45.1 percent) for the major urban areas of Pakistan[11]. Despite this high proportion of deliveries taking place at home majority of them were attended by doctors (58.2 per cent), this proportion was however lower than the ones found by the PRHFPS 2000-2001 for the major urban areas

[11] All figures relate to the place of delivery and person attending the last birth a woman had in major urban area of Pakistan.

of Pakistan, which was 65 per cent. One third of the deliveries were conducted by traditional birth attendants, locally called *dai*, which is very near to the PRHFPS estimate of 34.1 per cent.

Table 3.16: Place of delivery and person assisting the last birth

Place of delivery			Person assisting at delivery		
Place	**%**	**No.**	**Assistant**	**%**	**No.**
Home	45.6	208	Doctor	58.2	266
Government hospitals	30.6	140	*Dai*[1]	33.7	154
Private hospitals	15.7	72	Nurse/LHV[2]	2.8	13
MCH centre	8.1	37	Relative	5.3	24
Total*	100.0	457	Total	100.0	457

Source: RRTIS 2001-02. Note: * Excludes the 41 women who have never had a live birth, and 10 who were pregnant for the first time. 1. Dai: Traditional birth attendant. 2. LHV: Lady health visitor.

3.8.4 Person attending/carrying out abortion

Abortion, spontaneous or induced, has important repercussions for women with respect to reproductive tract infections. Usually it is induced abortion that is discussed in this context, but spontaneous abortions can be an equally significant issue for RTIs. Table 3.17 shows that almost half the women whose last pregnancy ended in a spontaneous abortion were not attended by anyone. When asked why they did not see anyone in this regard, they said that after the bleeding they knew the pregnancy was over and there was no need to seek any medical attention. Such instances can result in incomplete abortions, which can be a source of infections. Part of the conceptus/foetus is expelled but certain tissues, usually placental, could be retained by the body that remain unrecognised by women. There are also chances of missed abortions, where pregnancy ceases to develop but conceptus is not expelled, and instead of bleeding there is excessive vaginal discharge, usually brownish in colour (Grudzinska 1999; Mackay and Evans 1994). In the study sample, majority of the spontaneous abortions taking place at home (63.4 per cent) were unattended (48.7 per cent), with no dilation and curettage procedure taking place to clean the uterus. Even if advice was sought from any

health provider, it was only after the problem had aggravated, a time when the main damage had already been done.

As stated earlier, induced abortion is illegal in Pakistan, except for in specific conditions. Table 3.17 shows that most induced abortions were conducted by doctors (42.3 per cent), but not those in government hospitals (3.8 per cent). Most of the induced abortions were taking place at private hospitals/clinics (53.8 per cent), followed by those at home (38.5 per cent). Most of the abortions conducted at home were carried out by the traditional birth attendants or *dais* (34.9 per cent). Some of the private clinics where these abortions take place are unequipped to handle any kind of emergency and usually maintain low standards of hygiene, and can therefore be a source of post-abortion problems.

Table 3.17: Place and person attending abortions

Spontaneous Abortion

Venue			Person assisting		
	%	No.		%	No.
Home	63.4	26	Doctor	39.1	16
Government hospitals	29.3	12	*Dai*[1]	7.2	-
Private hospitals	4.9	2	Nurse/LHV[2]	-	3
MCH centre	2.4	1	Relative	4.9	2
			No one	48.7	20
Total*	100.0	41	Total	100.0	41

Induced Abortion

Venue			Person assisting		
	%	No.		%	No.
Home	38.5	10	Doctor	42.3	11
Government hospitals	3.8	1	*Dai*[1]	34.6	9
Private hospitals	53.8	14	Nurse/LHV[2]	23.1	6
MCH centre	3.8	1	Relative	-	
Total*	100.0	26	Total	100.0	26

Source: RRTIS 2001-02. Note: * Includes women whose last pregnancy ended in an abortion, spontaneous or induced. 1. Dai: Traditional birth attendant. 2. LHV: Lady health visitor.

3.8.5 Ante-natal and post-natal care

Monitoring the progress of pregnancy and recognising any probable complications are important for the health of the mother to be and the

new-born. In the present study women were asked if they consulted anybody for at least three times, or more, during their last pregnancy, and 68 per cent gave the answer in affirmative, as shown in Table 3.18. This figure is quite similar to the 63 per cent found by the latest Pakistan Integrated and Household survey 2001-2002 for the last pregnancy in urban areas of Pakistan (FBS 2002). Post-natal consultation rate in the present study was lower than the antenatal care, with 39.3 per cent women receiving care within six weeks of delivering their last child. This figure is much higher than the one estimated in the PIHS 2001-2002 (17 per cent) for the last delivery for women in urban Pakistan, but is quite similar to the one given by the PFFPS 1996-97 (35.5 per cent) for the last delivery for woman in major urban areas of Pakistan.

Table 3.18: Women receiving antenatal and postnatal care

Proportion consulting for:					
Ante-natal care			**Post-natal care**		
	%	**No.**		%	**No.**
Consulted	68.0	330	Consulted	39.3	143
Did not consult	32.0	155	Did not consult	60.7	221
Total[1]	100.0	485	Total[2]	100.0	364
Place of consultation for:					
Ante-natal care			**Post-natal care**		
	%	**No.**		%	**No.**
Home	3.9	13	Home	3.5	5
Government hospitals	57.3	189	Government hospitals	65.0	93
Private hospitals	22.4	74	Private hospitals	17.5	25
MCH centre	16.4	54	MCH centre	13.9	20
Total[3]	100.0	330	Total[4]	100.0	143

Source: RRTIS 2001-02. Note: 1. Excluding 23 women who have never been pregnant. 2. Excludes 144 women whose last pregnancy did not end in a live birth, those who are currently pregnant and those who have never been pregnant. 3. Those who received antenatal care. 4. Those who received postnatal care.

Table 3.18 also shows the place from where these women sought care during pre and post-natal period. The pattern remains almost the same, with majority of the women consulting doctors at government hospitals, followed by the ones going to private clinics and maternal and child care health centres. A small proportion sought pre and post-natal care from

traditional birth attendants at home, but as Table 3.18 shows, it was mainly medical professionals from whom help was sought. The credibility of these doctors is another issue but on the part of women majority decided to see a professional. Not surprisingly, it were mainly the women delivering at home who were not getting any antenatal and/or postnatal care.

3.9 Infertility

Women were asked a question, "Was there ever a time when you wanted to become pregnant but could not?" to gauge the level of infertility in the study sample. Women were considered to have primary infertility if they have never been able to conceive a pregnancy, after a minimum of 1 year of attempting to do so through unprotected intercourse, and secondary infertility if they have previously been pregnant at least once, but have not been able to achieve another pregnancy. In the study sample the proportion of women reporting infertility was 11.4 per cent, with a primary infertility rate of 3.5 per cent, and a secondary infertility rate of 7.9 per cent. These rates are lower than the ones quoted from existing studies in section 1.3.3 (that is a total infertility rate of 14.6 per cent, and 22 per cent) but those were hospital/clinic based studies and could thus have higher estimates, as women present there are the ones with an already perceived problem. Irrespective of the comparison, an infertility rate of 11.4 per cent, especially with a major share of secondary infertility, presents a major issue for consideration.

Of the women who complained of infertility, 75.8 per cent had sought help for the problem. It was mainly allopathic doctors (75 per cent of those seeking help) who were consulted, with a few women going to traditional doctors (2.2 per cent) and spiritual healers (13.6 per cent). Asked about the cuase they thought for their problem, 30 per cent said they don't know,

while 15.8 per cent and 14 per cent thought it was due to problems with their uterus, and God's will, respectively.

3.10 Contraception

The contraceptive prevalence rate (CPR) in the study sample was 48.8 per cent (Table 3.19). This rate is slightly higher than the 41.6 per cent estimated for the Rawalpindi district (NIPS 2002), but the district contains some rural and semi-urban areas too which can result in a comparatively lower CPR. Major urban areas in Pakistan generally have higher CPRs than other urban and rural areas, for example a CPR of 51.6 per cent for the all urban Karachi South district, that covers part of Karachi, the biggest city of Pakistan (NIPS 2002).

Table 3.19: Contraceptive use by currently married women (%)

	Present study	PFFPS-1996-97[1]
Ever users	61.1 (310)	
Current users	48.8 (248)	39.9
Current method used		
Pills	4.1	0.5
IUD	7.5	4.7
Injections	3.0	0.3
Condom	14.4	10.9
Vaginal methods	0.0	0.1
Tubal ligation	9.8	13.4
Vasectomy	0.0	0.1
Rhythm	2.2	1.9
Withdrawal	7.9	7.2
Total	48.8	39.9

Source: RRTIS 2001-02. Note: Number of women ever and currently using contraceptives in parenthesis.

1. PFFPS 1996-97 figures are used for comparison because CPR for currently married women in major urban areas of Pakistan were not available for the more recent PRHFPS 2000-01 and PIHS 2001-02. However, in the recent two surveys also, overall figures for contraceptive use in urban areas of the country show a similar trend, with tubal ligation being the most used method followed by condom, withdrawal and IUD.

In most surveys, like the PFFPS 1996-97 and PIHS 2001-2002, tubal ligation is the most commonly used method, followed by condom use, withdrawal, and intra-uterine device. However, as Table 3.19 shows,

condom was the most commonly used method among women in the sample (14.4 per cent), followed by tubal ligation (9.8 per cent), withdrawal (7.9 per cent) and IUD (7.5 per cent). The proportion of women getting tubal ligation is higher in rural areas of Pakistan than the urban areas (PIHS 2001-2002), so it would not be wrong to infer that it could be even lower in major urban areas, with women opting for less permanent methods.

3.11 Health problems

Before getting to the questions related to their experiences related to RTIs, women were asked a general question about whether they had any health problem, and if yes, did they seek help for it. More than half the respondents (52.2 per cent) reported one or more health problem at the time of the survey. Table 3.20 presents the major problems reported by respondents. Chronic aches (of body, back, and/or head) and a feeling of permanent fatigue were among the most common problems reported by respondents. Leucorrhoea and menstrual problem were also among the major sources of worry for many women.

Table 3.20: Health problems reported by respondents

Problems[1]	Per cent[2]	Number[2]
Any problem	52.2	265
Chronic body ache	17.5	89
Chronic back ache	16.7	85
Vaginal discharge/leucorrhoea	10.1	51
Blood pressure- high or low	6.5	33
Abdominal pain	5.1	26
Menstrual problem	4.5	23
Chronic fatigue/weakness	3.9	20
Chronic headache	3.4	17
Heart problem	3.2	16
Kidney pain	3.2	16
Asthma	3.0	15
Diabetes	2.2	11

Source: RRTIS 2001-02. Note: 1. Includes only those problems that were reported by more than 10 women. 2. Includes multi-responses.

A vast majority of women (81.1 per cent) had sought help for their reported problem(s), with a majority of these consulting medical professionals (87.9 per cent), followed by those consulting traditional healers (7.4 per cent).

3.12 Exposure to mass media

In societies where there are restrictions on female mobility, the already important role of mass media becomes all the more significant as females could be reached within the confines of their homes. In the study sample, as Table 3.21 shows, half the respondents were reading any newspaper or magazine. Of these 14.7 per cent were reading them daily and 35.8 per cent read them occasionally. Exposure to television was the highest with 81.7 per cent women watching it daily (65.9 per cent) or occasionally (15.8 per cent). Table 3.11 showed that 15 per cent of the respondents did not own a television set, meaning 1.2 per cent watching television despite not having it. On the other hand, radio was not a popular medium among women, with 24.4 per cent not listening to it despite owning one. Considering the interest women took in the programmes shown on television, it could be very easily used as the main medium of getting across information regarding any issue, as radio appears to be displaced as the main form of communication.

Table 3.21: Exposure to mass media

Medium[1]	Yes		*No*		Not applicable[2]		Total	
	%	No.	%	No.	%	No.	%	No.
Read newspapers/magazine	50.5	251	16.1	82	34.4	175	100.0	508
Watch television	81.7	415	4.5	23	13.8	70	100.0	508
Listen to radio	43.5	221	24.4	124	32.1	163	100.0	508

Source: RRTIS 2001-02. Note: 1. Exposure to the medium irrespective of frequency. 2. Have never been to school or do not own a television or radio.

3.13 Autonomy

Section 2.2.3.3 gave the details of the indicators used in this study to measure the level of autonomy the respondents in the sample had, summarised in four indices.

3.13.1 Decision-making authority

Women's decision-making authority is measured by whether she had a say in decisions regarding: buying of food; children's education; children's health; supporting her own parents; supporting her husband's parents; buying and selling of household items; and buying of gifts, with an index of a range 0-7 to categorise the responses (see section 2.2.3.3). Table 3.22 shows that most women had a major say in buying of food (70.9 per cent), followed by decision related to the education (45.1 per cent) and health (36.2 per cent) of their children. The remaining four indicators show a similar trend, with less than one-third women having a major say in making those decisions in their households. The lower half of Table 3.22 shows that almost half the respondents had a substantial influence in these household decisions, with a little over a quarter having a major say in the decision-making processes. The median value of 4 also shows that approximately half the respondents had substantial to major say in these selected decisions in the household.

Table 3.22: Decision making authority

Extent of say in decision-making (%)				
	Major	**Minor**	**No say**	**Total**
Buying food	70.9	16.5	12.6	100.0
Children education	45.1	38.2	16.7	100.0
Children health	36.2	39.4	24.4	100.0
Supporting husband's parents	27.8	55.3	16.9	100.0
Supporting own parents	26.4	58.1	15.6	100.0
Selling house item	26.2	57.7	16.1	100.0
Buying gifts (specially for marriage)	26.6	58.1	15.4	100.0
Index[1]				
	Per cent		**Number**	
No say at all (0)	7.1		36	
Moderate say (0.5 to 3.0)	18.5		185	
Substantial say (3.5 to 5.0)	47.6		242	
Major say (5.5 to 7)	26.8		136	
Total	100.0		508	
Median	4.0			

Source: RRTIS 2001-02. Note: 1. Value of index in parenthesis.

3.13.2 *Freedom from threat*

Section 2.2.3.3 detailed the index used for this measure, using both psychological and physical aspects of threat. Table 3.23 shows that women were more afraid of their husbands (46.7 per cent) than being actually beaten by them (28.3 per cent). This is also reflective in the index, with 29.5 per cent women being afraid though not beaten. A substantial proportion of women (42 per cent) however were neither afraid of nor were beaten by their husband (Table 3.23).

Table 3.23: Physical or psychological threat

Proportion physically abused and afraid by/of their husbands (%)			
	Yes	No	Total
Beaten by husband[1]	28.3	71.7	100.0
Afraid of husband	46.7	53.3	100.0
Index[2]			
	Per cent		**Number**
Afraid and beaten (1)	17.1		87
Afraid but not beaten (2)	29.5		150
Not afraid but beaten (3)	11.2		57
Neither afraid nor beaten (4)	42.1		214
Total	100.0		508

Source: RRTIS 2001-02. Note: 1. Includes occasional or frequent beating. 2.Value of index in parenthesis.

3.13.3 *Freedom of mobility*

An index ranged 1 to 3 measured women's ability to move around freely (as discussed in section 2.2.3.3). Table 3.24 shows that majority of women (61.8 per cent) needed permission to go out of their houses. This permission was generally needed from the husband but could also be from the in-laws (usually the mother-in-law) in case of a joint/extended family structure. Only around a quarter (27.6 per cent) could go out without asking anybody, irrespective of where they were going.

Table 3.24: Ability to go out of house without permission

	Per cent	Number
Permission always needed (1)	61.8	314
Permission never needed (2)	27.6	140
Depends on where going (3)	10.6	54
Total	100.0	508

Source: RRTIS 2001-02. Note: Value of index in parenthesis.

3.13.4 Control over household income

This measure has only two values, as discussed earlier in 2.2.3.3, that is 1 if she had control over household income (total or partial) and 2 if she had no role in controlling money. Table 3.25 shows, majority of women (71.7 per cent) were controlling household income, in totality or partially. Having control over household income gives women more chance of taking an independent decision to spend money to seek medical care in case she needs it.

Table 3.25: Control over household income

	Per cent	Number
Has control over household income (1)	71.7	364
Does not have control over household income (2)	28.3	144
Total	100.0	508

Source: RRTIS 2001-02. Note: Value of index in parenthesis.

§§§§§§§§§§§§§

CHAPTER FOUR

Knowledge about Reproductive Tract Infections

For making an appropriate and effective decision, having relevant knowledge is a pre-requisite. Knowledge that is unambiguous and does not get distorted in interpretations. This is even more pertinent in case of health issues where having appropriate knowledge becomes all the more important to take the right and timely decision. In the present study, women's knowledge about reproductive tract infections was gauged through questions, without any prompts. Vernacular terminology for RTIs was used to phrase these questions but no names or symptoms were included in the question. Questions were also asked about the perceived causes and ways of dealing with such infections.

4.1 Level of knowledge about RTIs

Women were asked if they knew about *jinsi amraaz*, which is a locally used term for diseases related to the reproductive organs and processes. As can be seen from Table 4.1, less than a quarter of respondents (21.5 per cent) reported knowing about reproductive tract infections, including sexually transmitted infections. Not many studies have been conducted to estimate the awareness level of general population in Pakistan regarding RTIs, and even the studies that are available primarily focus on AIDS awareness and that too mainly among men (Shaikh and Assad 2001; Aahung 1999; Ali 1999; Raza, et al., 1998). However, information that is available regarding awareness of RTIs, among women in the country, gives very divergent figures. According to the Quick Count Survey (NIPS 1999), 86.4 per cent and 54.5 per cent of women knew about RTIs and STIs, respectively, in the Jhelum district of the Punjab province. Another study conducted at a hospital in Islamabad found the awareness level to be 77.8 per cent (Mazhar, et al., 2001). The present study's rather low

knowledge level corresponds to the 22.7 per cent awareness level found by a study in the Sindh province (Afsar, et al., 2002). A possible reason for this disparity could be the difference in the questions asked for the purpose. The Quick Count Survey, for which the questionnaire is available, asks the question giving vernacular terms used for various infections. The probability of a positive response in such questions is definitely higher than the unprompted ones. Women might know of a disease/infection but not relate it to the reproductive organs/processes, leading to a lower estimate. That was exactly the motive behind asking the questions the way they were asked in the present study. An affirmative answer thus meant that women related these problems to the reproductive system, and were not just acknowledging knowing/hearing the name of the RTI/STI she was asked for in the question. The knowledge that she had could be medically wrong but it at least acknowledged presence of a problem

There is no linear relationship between age and knowledge regarding RTIs among the respondents. As Table 4.1 shows, fewer younger (<25 years) and older (34< years) women reported knowing about RTIs as compared to the middle age category of 25-34 year olds. Education, as expected, has a highly significant impact on the reported level of knowledge about RTIs. Thirty per cent of the women who have been to school reported knowing about these infections, while for those who had never been to school the proportion was a small 4.7 per cent (Table 4.1). The rural-urban impact could also be inferred from Table 4.1, with the reported knowledge about RTIs among women having a rural background being half to those who having an urban background.

Table 4.1: Proportion of women reporting to be knowing about RTIs, by selected indicators

Selected Characteristics		% Knowing	Number[1]
Total		21.5	109
Age of woman			
	<25	17.7	17
	25-34	25.8	55
	34<	18.7	37
Ever been to school[***]			
	Yes	30.0	101
	No	4.7	8
Family type[**]			
	Nuclear	18.2	66
	Joint/extended	29.7	43
Economic group[***]			
	Upper	44.8	52
	Middle	16.6	39
	Lower	11.5	18
Background area[**]			
	Urban	24.1	94
	Rural	12.7	15
Reads newspaper/magazines[2***]			
	Yes	27.9	93
	No	9.4	8
Watches TV[***]			
	Yes	24.1	100
	No	9.7	9
Listens to radio			
	Yes	24.4	54
	No	19.2	55
Does she report experiencing any symptom			
	Yes	19.5	70
	No	26.2	39
Freedom of mobility[*]			
	Always need permission	19.1	60
	Depends where going	16.7	40
	Never need permission	28.6	9

Source: Field data.
Note: 1. Of the total 508 women, unless otherwise specified.
2. From among those who have been to school, i.e., 336 women .
Chi-square/Fischer's Exact test significance levels: *** $p<0.001$; **$p<0.01$; and *$p<0.05$[12].

[12] In the present study calculating P values (that focus on the presence or absence of an effect) were favoured over the recently preferred confidence intervals (CIs) because in the given scenario the magnitude of an effect is not as important as whether or not an effect is present. As useful as confidence intervals are, they are not a cure-all. They offer estimates of the effects they measure, but only in the context in which the data were collected. It is thus common to see (CIs) vary between studies much more than any one interval would suggest. This is one of the things that plagues meta-analysis, even in medicine where the outcomes are supposedly well-defined. Along with this, p-values provide a useful summary of the data. This is yet another reason why significance tests were preferred in the present study, as would be seen on the following chapters.

The type of family unit a woman lives in could also affect her knowledge about things, RTIs in this case. As Table 4.1 shows, women living in joint/extended family households reported knowing about RTIs more (29.7 per cent) than those living in nuclear households (18.2 per cent). The possible explanation for this difference could be the exchange of such knowledge among women within the household. This could be especially true for the households where two or more sister-in-laws, in reproductive ages, are living together and sharing their experiences and knowledge regarding the issue.

The economic background of women had a highly significant association with their reported status of knowledge. As can be seen from Table 4.1, 44.8 per cent of the women in the upper economic group reported knowing about RTIs as compared to just 11.5 per cent in the lower economic group. With economic differences come differences in other factors, including education, exposure to mass media and access to better health care, which could affect the awareness level of women.

Exposure to mass media had a positive effect on women's reported awareness. As can be seen from Table 4.1, women who read newspapers/magazines, watched television, or listened to radio were more likely to report knowing about RTIs than their counterparts. However, the impact of radio seems to be the least, as there is a difference of just 5 percentage points in the awareness level among those who did and did not listen to it. On the contrary, there was a wider difference between those watching television, and reading newspapers/magazines compared to those who were not. This association was also confirmed by the Fischer's Exact test, which was highly significant for watching television and reading newspapers/magazines, but insignificant for listening to radio

(Table 4.1). A recent trend in the country has been to listen to FM radio stations, if listening to radio at all, which are mainly music stations. Otherwise too, in the absence of basic knowledge regarding RTIs, it would be rather difficult for women to absorb any information given on a non-visual medium, where attention is difficult to focus, especially if they are listening while doing household chores.

Women's personal experience regarding RTIs could have a possible effect on her knowledge regarding such infections. Table 4.1 however shows the contrary and the association was not found to be significant. Those who reported experiencing symptoms at the time of the survey were less aware (19.5 per cent) than those who did not (26.2 per cent). As the later chapters would show, women often did not associate their symptoms with reproductive/sexual causes so it is not surprising that despite reporting a symptom they were not aware of RTIs, including STIs.

Knowledge is linked to exposure, which could be improved by having freedom in mobility. Level of freedom which women had regarding their mobility had a significant association with their awareness regarding RTIs in the study sample (Table 4.1). Women who did not need permission to go out of their homes, irrespective of where they were going, reported knowing about RTIs the most (28.6 per cent).

4.2 Naming RTIs

Women who reported knowing about RTIs were then asked to name the infections they knew about. AIDS was the most reported infection, with 95.4 per cent women naming it, from among those who said they knew about RTIs (Table 4.2). Hepatitis followed AIDS, with 18.4 per cent reporting knowing about it. Other infections reported by women include, leucorrhoea (6.4 per cent), infertility (3.7 per cent), menstrual problem (4.6 per cent) and infection in uterus (7.3 per cent), along with a few reporting

syphilis, gonorrhoea, and herpes. One woman even reported leprosy as a RTI/STI. Various studies in India, along with some in Pakistan, have also found AIDS to the most reported RTI (including those done by Afsar, et al. 2002; Frontiers in Reproductive Health 2002). Afsar, et al (2002) found the same trend of AIDS followed by hepatitis as the most reported infections. Likewise, in a study in Delhi, India, 29.8 per cent women, attending an antenatal clinic, reported knowing about STIs but the proportion rose to 48.5 when asked if they had heard about AIDS (Frontiers in Reproductive Health 2002).

Table 4.2: Naming specific RTI

Infection	*Terms used by women*	Per cent*[1]	Number*[1]
Leucorrhoea	*Paani parhna/ganda paani*/leucorrhoea	6.4	7
AIDS	AIDS	95.4	104
Hepatitis	Hepatitis	18.4	20
Infertility	Bhaanjpan/bachay na hona	3.7	4
Menstrual problems	*Mahwari mein masla/mahwari mein takleef*	4.6	5
Gonorrhoea	Gonorrhooea	1.0	1
Herpes	Herpes	1.8	2
Infection/tumour in uterus	Ander rasoli/ander zakhm hona	7.3	8
Syphilis	Syphilis	1.0	1
Leprosy	*korh*	1.0	1
Total		100.0	109

Source: Field data. Note: * Includes multiple responses. 1. Including only the 109 women who reported knowing about RTIs.

Women while referring to uterus usually used the term "*ander*", that literally means "inside", or less commonly "*bachaydani*", meaning the "place that holds the baby". "*Ander zakhm hona*" (wound in uterus) or "*ander rasoli hona*" (tumour/growth in uterus) were the problems reported by women while naming RTIs. The use of the word "inside" for uterus is

meaningful. It refers to the value assigned to uterus and the function it performs in the life of these women. All other body parts are referred to by their names, including those that are also inside, like the stomach, lungs and kidney, but it is the uterus that embodies the notion of "inside".

The comparatively common awareness about AIDS and Hepatitis could be attributed to the recent public health campaigns for both the diseases in print and electronic media. However, at the same time it indicates some shortcoming in the way the message is being delivered in these campaigns because despite being the most reported infection, by those who said they knew about RTIs, it was still only known to 20.5 per cent of the total sample. Because of cultural constraints in Pakistan, nothing with sexual connotations can be talked about explicitly and the same is true for these AIDS advertisements. Women, despite seeing/reading these advertisements might not be always relating it to sexual reasons. The result would have been very different if women were directly asked if they had heard about AIDS. In that instance, the answer would have been in affirmative in most cases, and not just 20.5 per cent of the total sample[13]. That is why names were not given while asking the question in this study, to see what infections women associate with RTIs/STIs.

4.3 Knowledge of symptoms associated with RTIs

Women who reported knowing about RTIs were asked about the symptoms they thought were associated with RTIs. As can be seen from Table 4.3, a big proportion (44 per cent) did not know of any symptom associated with RTIs, closely followed by those who reported extreme weakness resulting in death (43.1 per cent) as a symptom of RTIs/STIs. Vaginal discharge (5.5 per cent), pain in uterus (5.5 per cent), yellow eyes and body (6.4 per cent)

[13] AIDS was the most named infection by women who reported knowing about RTIs, that is 95.4 per cent (Table 4.2), but in the context of the whole sample, the proportion naming AIDS is only 20.5 %.

and infertility (2.8 per cent) were among the other symptoms reported by the respondents. As we know, RTIs can be asymptomatic, and a small 2.8 per cent of those reporting knowing about RTIs believed so too.

The big proportion reporting extreme weakness leading to gradual death is again due to the public health campaigns for AIDS awareness. "*AIDS maut hai*" ("AIDS is death") is the slogan, and a gradual, painful death is the message in all the AIDS related advertisements, which is reflecting in these responses by the respondents. Similarly, the yellowing of eyes, in specific, and body, in general, are the symptoms given in the public health campaigns for hepatitis. None of the symptoms reported by women is unrelated to RTIs but the worrying aspect is the big "do not know" response. Despite saying that they knew about RTIs they could not give any associated symptom, showing that the concept is little understood.

Table 4.3: Symptoms associated with RTIs

Symptom	Per cent*1	Number*1
Extreme weakness/gradual death	43.1	47
Infertility	2.8	3
Vaginal discharge	5.5	6
Yellow eyes/body and weakness	6.4	7
Pain in uterus	5.5	6
No symptoms	2.8	3
Do not know	44.0	48

Source: Field data. Note: * Includes multiple responses. 1. Including only the 109 women who reported knowing about RTIs.

4.4 Causes of RTIs

Women reporting knowing about RTIs were asked to give the reason they thought caused these infections. Awareness about aetiology and risk factors relating to RTIs were generally limited to AIDS and hepatitis,

courtesy the public health campaigns again. Sexual promiscuity, or to be more precise extra-marital relations, was reported to be the reason by most women (89.9 per cent). Infection through blood transfusion (66.1 per cent) and sharing used syringes (49.5 per cent) were the other main causes of getting these infections, with weakness (4.6 per cent) and less spacing between births (3.7 per cent) being the other reasons.

Table 4.4: Causes of infections

Cause	Per cent*1	Number*1
Weakness	4.6	5
Sexual promiscuity	89.9	98
Sharing/using old syringe	49.5	54
Blood transfusion	66.1	72
Less spacing between births	3.7	4
No reason/just happens	1.8	2
Don't know	5.5	6

Source: Field data. Note: * Includes multiple responses. 1. Including only the 109 women who reported knowing about RTIs.

"Weakness", or as locally referred to as "*kamzori*", is also given as a cause of getting RTIs, and as we saw in section 4.3, it was also reported as a symptom of RTIs, making it a cause and a consequence at the same time. This circular relationship has been reported in literature on health, specifically sexual health, in South Asia[14]. This includes studies by Bhatti and Fikree (2002), Ramasubban et al. (2001), Mazhar (2001), Singh et al., (2001), that show weakness as an illness in itself along with being the cause and consequence of other problems, especially the ones sexual in nature.

[14] This notion of "weakness" would be discussed in detail in Chapter Five, while dealing with women's self-reported symptoms and the causes they attributed to them.

4.5 Best way to deal with RTI symptoms

The AIDS campaign slogan, "*Ehteeat hee ilaaj hai*", meaning "precaution is the only treatment", seems to have formed the majority response (73.4 per cent) given by the respondents when they were asked as to what is the best way to deal with the symptom they have reported to be associated with RTIs (Table 4.5). Seeing a doctor was considered the best way by 7.3 per cent women, while an equal number did not know of any way to deal with the symptoms. A reasonable proportion (15.6 per cent) thought that once you have such a problem there is nothing you can do to deal with it.

Table 4.5: Way to deal with RTI related symptoms

	Per cent*1	Number*1
See a doctor	7.3	8
Take precautions	73.4	80
Nothing could be done	15.6	17
Do not know	7.3	8

Source: Field data. Note: * Includes multiple responses. 1. Including only the 109 women who reported knowing about RTIs.

The reported "take precautions" response in a way overlaps the "nothing could be done" reply. Taking precautions could save one from having an infection, and it is not a way to deal with the infection once it is there. Precautions here refer to having sexual relations with just your spouse, being careful in blood transfusion and use of syringes. Likewise, doctor's role was considered crucial in dealing with RTIs but women, including those who considered seeing a doctor as the best way to deal with the symptoms, could not explain what doctors could actually do.

4.6 Conclusions

General awareness about RTIs is low among women. The factors having a positive effect on the reported awareness includes the joint/extended

family structure, having been to school, exposure to mass media and freedom of mobility. AIDS was the most reported infection followed by hepatitis, with very few women naming other infections. This response could be attributed to the public health campaigns initiated by the government of Pakistan for awareness regarding AIDS and hepatitis. This was also evident from the reported causes for such infections, and the ways women thought these infections could be dealt with. Sexual promiscuity, sharing used syringes and blood transfusions were reported to be the main sources of contracting RTIs/STIs, as is implied by the AIDS and hepatitis advertisements in media. Similarly, the best way to deal with the infections reported by them, that is "to take precautions", was also derived from the public health campaigns. These findings show that media could be an effective way of imparting knowledge to women. Given the cultural constraints, such messages cannot be delivered in an explicit way, but they should still be in a form that gets the right message through, to most women, in an unambiguous form. Given the low literacy levels and lack of interest in radio, television could be the best medium for this purpose.

§§§§§§§§§§§§§

CHAPTER FIVE

Self-Reported Symptoms of Reproductive Tract Infections: Prevalence And Perceptions

Self-perceived disease burden has important implications for the health status of a population and the utilisation of health delivery system, and the consequent satisfaction or dissatisfaction with it. Reporting of symptoms, related to reproductive tract infections, depends upon women's perceptions regarding the causes for the symptoms they are experiencing and the effect they think it can have on their lives in general and their bodies in particular. Perceptions about the possible causes and consequences of these symptoms also define the level of worry, if any, women have on experiencing any symptom. Linked to these perceptions are the different ways women think they could protect themselves from having these symptoms. All this put together helps us explain the health-seeking behaviour of women in this regard, and the ways they deal with the problem. Women were asked if they experienced any one or more of the eight RTI related symptoms, included in the study, at the time of the survey, except for the menstruation related symptoms for which a period of three months preceding the survey was taken as the cut off point. The included symptoms were: abnormal vaginal discharge, lower abdominal pain, menstrual irregularity, dysmenorrhoea, sores or ulcers on the genitals, dysuria, dyspareunia, and lower back ache. Women were also inquired about their experiences regarding these symptoms ever in their lives.

5.1 Prevalence of self-reported RTI symptoms

There are two aspects of self-reported prevalence of RTIs that are important to this study. One, the number of symptoms, and two, the nature of symptoms reported by women.

5.1.1 Number of symptoms reported by women

The self-reported symptoms of RTIs indicate presence of a heavy disease burden among the 508 women included in the present study. As Table 5.1 shows, only 29 per cent of women in the sample do not report any symptom at all, meaning more than two thirds of the respondents complain of experiencing one or more RTI related symptom at the time of the survey, with a substantial proportion (11 per cent) complaining of having as many as five or more symptoms. The mean number of symptoms reported by women in the sample is 1.9 (Table 5.1). However, the mean increases to 2.7 symptoms reported per women if we take into account only symptomatic women (not shown in the Table). This high rate of reporting symptoms is consistent with findings of some other studies in Pakistan, including those done by ADB (2000) and MCWAP (1993), where the rate of reporting was near eighty per cent (see Table 1.3).

Table 5.1 presents differentials in number of symptoms reported by women by factors that seemed most likely to affect such reporting. Women's age does not show a significant relationship with reporting of symptoms, though women in the 25-34 years age group on average report slightly more symptoms than the younger and older women. Education on the other hand has a highly significant association with whether a woman reports current symptoms or not, with women never being to school more likely to report symptoms than those who have been to school. The difference is not restricted to reporting or not reporting of any symptom but also to the number of symptoms reported. Proportion of women reporting five symptoms or more is much higher for women who have never been to school (21 per cent) than those who have been to school (7 per cent). Likewise, level of education also has a strong association on the reporting of symptoms. Proportion of women reporting symptoms decrease with increasing years of schooling, with the more educated ones, if

reporting symptoms, reporting fewer symptoms (Table 5.1). This is evident from the mean number of reported symptoms, which is 1.3 for women who have been to school for eleven years or more as compared to the 2.3 symptoms per woman who have never been to school.

Table 5.1: Number of RTI related symptoms reported by selected characteristics of women

Characteristics		Number of symptoms reported (%)[1]				Mean
		None	1-2	3-4	5 or more	
Total		29.3	38.8	20.5	11.4	1.9
Age of woman						
	<25	34.4	39.6	15.6	10.4	1.7
	25-34	27.1	39.3	22.4	11.2	2.0
	34<	29.3	37.9	20.7	12.1	1.9
Ever been to school***	Yes	30.9	42.6	19.9	6.8	1.7
	No	26.3	31.6	21.6	20.5	2.3
Level of education***						
	11 or more years	40.7	40.7	13.8	4.9	1.3
	1-10 years	25.2	43.5	23.4	7.9	1.9
	No education	26.3	31.6	21.6	20.5	2.3
Background area						
	Urban	30.3	39.2	19.5	11.0	1.8
	Rural	26.3	37.3	23.7	12.7	2.1
Family type						
	Nuclear	30.0	38.0	19.6	12.4	1.8
	Joint/extended	27.6	40.7	22.8	9.0	1.9
Economic group***						
	Upper	44.0	37.1	11.2	7.8	1.3
	Middle	26.8	40.4	23.8	8.9	1.9
	Lower	22.3	37.6	22.3	17.8	2.3
Duration of marriage						
	I year or less	20.7	58.6	6.9	13.8	1.1
	2-5 years	35.2	35.2	21.0	8.6	1.0
	6-15 years	28.2	39.5	21.5	10.8	1.2
	16 years or more	28.5	36.9	21.2	13.4	1.2
Inter-spousal age difference**	Wife older	26.7	53.3	13.3	6.7	1.8
	Same age	46.7	26.7	16.7	10.0	1.4
	Husband 1-10 yrs older	30.4	37.9	20.4	11.2	1.9
	Husband >10 yrs older	14.5	46.8	24.2	14.5	2.3
Number of pregnancies*	None	30.4	30.4	17.4	21.7	2.4
	1-2	38.4	37.7	16.4	7.5	1.5
	3-4	27.7	42.6	19.6	10.1	1.8
	5 or more	23.6	37.7	24.6	14.1	2.1
Number of children						
	None	29.3	39.0	17.1	14.6	2.1
	1-2	35.1	36.8	19.5	8.6	1.7
	3-4	25.6	40.9	20.7	12.8	1.9
	5 or more	25.4	39.0	22.9	12.7	2.0

Continued:

Continued from Table 5.1:

Characteristics		Number of symptoms reported (%)[1]				Mean
		None	1-2	3-4	5 or more	
Current contraceptive use	Not using	28.1	38.1	21.5	12.3	2.0
	Using	30.6	39.5	19.4	10.5	1.8
	Modern method	*29.4*	*39.6*	*20.3*	*10.7*	*1.8*
	Traditional method	*35.3*	*39.2*	*15.7*	*9.8*	*1.6*
Know about RTIs						
	Yes	35.8	33.9	22.9	7.3	1.7
	No	27.6	40.1	19.8	12.5	1.9
Decision-making authority ***	No say at all	5.6	38.9	44.4	11.1	2.6
	Moderate	24.5	39.4	17.0	19.1	2.2
	Substantial	35.1	35.5	18.2	11.2	1.7
	Major	28.7	44.1	20.6	6.6	1.6
Freedom from threat**	Afraid and beaten *(battered)*	12.6	40.2	28.7	18.4	2.6
	Afraid but not beaten *(anxious)*	23.3	43.3	24.0	9.3	2.0
	Not afraid but beaten *(defiant)*	33.3	31.6	17.5	17.5	2.1
	Neither afraid nor beaten *(contented)*	39.3	36.9	15.4	8.4	1.5
Freedom of mobility**	*Needs permission:*					
	Always	22.9	39.8	25.2	12.1	2.1
	Never	38.6	35.0	16.4	10.0	1.6
	Depends	42.6	42.6	3.7	11.1	1.3
Control over household income**	Has control	34.1	40.7	17.3	8.0	1.6
	Does not have control	17.4	34.0	28.5	20.1	2.6

Source: Rawalpindi Reproductive Tract Study (RRTIS) 2001-2002.
Note: 1. Of the total 508 women, i.e., 100%.
Chi-square/Fischer's Exact test significance levels: *** p<0.001; **p<0.01; and *p<0.05.

The rural-urban impact, which was gauged in this urban study by the area where the woman spent first 12 years of her life, shows that though fewer women with an urban background report symptoms than their rural counterparts but the relationship is not statistically significant (Table 5.1). Similarly, the type of family structure did not significantly affect the reporting or otherwise of symptoms. A relatively smaller proportion of women living in nuclear families report symptoms than those living in extended/joint families but the proportion reporting five symptoms or more is lower for the latter. On the contrary, a highly significant relationship exists between the economic status of the household the woman belongs to and her reporting of symptoms. The proportion of women reporting symptoms decrease with increasing economic status, as

can be seen from Table 5.1. The number of reported symptoms also decrease with improvement in economic status, for example, proportion of women reporting five symptoms or more is highest for those belonging to the lower economic group (18 per cent). The mean number of symptoms reported by the upper (1.3), middle (1.9) and lower (2.3) economic group summarises this trend (Table 5.1).

Duration of marriage appears to have no association with reporting of RTI related symptoms, however, an interesting, and significant, relation exists between inter-spousal age difference and reporting of symptoms. A smaller proportion of women report symptoms when they have husbands of the same age as them, with the proportion increasing with increasing age difference (Table 5.1). Whether the wife is older (which is in a few cases) or younger, the increase in difference had a positive effect on the proportion reporting symptoms. Women having husbands more than 10 years senior to them had the highest proportion reporting symptoms, along with reporting more number of symptoms (Table 5.1). The mean number of symptoms reported by each group, in the inter-spousal age difference variable, summarise the pattern of reporting, with women having same age spouses reporting 1.4 symptoms compared to 2.3 symptoms for those having husbands older by ten years or more.

Pregnancy, and consequent delivery and conditions prevalent at the time and place of delivery, can be a source of getting these infections so its relationship was also analysed for reporting of symptoms by women. It is found that number of pregnancies have a significant relationship, though at a low level, with reporting of symptoms. Women who have been pregnant for 1-2 times have the lowest proportion reporting symptoms, along with reporting fewer symptoms (Table 5.1). On the other hand, women who have been pregnant for five times or more had the highest

proportion reporting symptoms. However, women who have never been pregnant also had a high proportion reporting symptoms and had the highest proportion for those reporting five or more symptoms (22 per cent). These are also the women who report highest number of symptoms on average (that is 2.4 symptom per woman), followed by those who have been pregnant 5 times or more (2.1 symptoms), 3-4 times (1.8 symptoms) and 1-2 times (1.5 symptoms). Number of children a woman has does not have a significant relationship with her reporting of symptoms, however women with 1-2 children had the smallest proportion reporting symptoms, and they also report fewer number of symptoms, while both, proportion and number of reported symptoms, were higher for women who have never being pregnant or been pregnant for five times or more (Table 5.1).

Contraceptive use is another factor whose relation with RTIs is a source of frequent discussion in literature. However, based on self-reported symptoms of RTIs, no pattern of association was found between the two in this study. Women using contraceptives have relatively lower reporting rate, along with reporting fewer symptoms on average, but the difference is not much to assign any significance. Then there are differences within contraceptive users as well, with those using traditional contraceptive methods having lower reporting rate than modern contraceptive users.

All four indicators of women's autonomy used in this study, that is, having: freedom from threat; freedom of mobility; say in household decision-making; and control over household income, have a highly significant association with reporting of RTI related symptoms (Table 5.1). Women having no say in decision-making in their households report more symptoms on average (2.6 symptoms per woman) than those having a major say (1.6 symptoms per woman). A similar trend is found for women who have/do not have control over household income and who have/do not

have freedom of moving out of their houses without permission. Likewise, the rate of reporting symptoms and the average number of symptoms reported are much higher for battered women (who are afraid and beaten) than the contented ones (who are neither afraid nor beaten). Figures for the other two categories, that is defiant (afraid but not beaten) and anxious (not afraid but beaten), fall between the two polar categories. It is worth noting that the proportion of women reporting symptoms is higher for those who are afraid but not beaten as compared to those who are afraid though not beaten. It could be inferred that having a feeling of fear is more distressing for women than being actually beaten. The higher rate of reporting symptoms by anxious women could mean that mental abuse has a stronger negative influence on women than physical abuse.

5.1.2 Age effect on reporting of symptoms

Woman's age could affect other factors related to her life, including issues regarding marriage, education, family structure, childbirth, and her level of autonomy in the household. Table 5.1 showed the differentials in rates of reporting symptoms by women having different background characteristics, including those that could be affected by women's age. It would be worthwhile to see age differentials in reporting of current symptoms by women having different background characteristics, helping us ascertain if the age effect is confounding the trends shown in Table 5.1. As Table 5.2 shows, different background characteristics seem to have an independent relation with the reporting of symptoms, staying generally unaffected by women's age. If a characteristic is significant or in significant for one age group, it usually remains so for the remaining two age groups as well, showing that more than age effect, the characteristic itself determines the relation with the reporting of symptoms. Economic group, inter-spousal communication, freedom from threat, control over household income and decision-making authority are examples in this

regard, being significantly associated with all three age groups (Table 5.2). Likewise, factors like number of pregnancies, family type, level of education and number of children are insignificantly related with reporting of symptoms for all age groups. However, whether associated significantly or insignificantly, the pattern of reporting of symptoms across the age groups remains generally the same (Table 5.2). Differences could be found in the magnitude of the reporting rate but the trend of reporting remains the same for the three age groups, for background characteristics that otherwise have the potential to be affected by women's age.

Table 5.2: Proportion of women reporting symptoms having different background characteristics by age groups

(%)

Characteristics		Age groups (in years)		
		< 25	25-34	34<
Total		65.6	72.9	70.7
Level of education				
	11 years or more	50.0	65.2	52.8
	1-10 years	73.5	73.5	76.8
	No education	62.1	80.6	72.5
Background area				
	Urban	62.9	71.6	70.4
	Rural	70.6	78.9	71.7
Family type				
	Nuclear	61.4	70.9	71.4
	Joint/extended	69.2	77.8	66.7
Economic group				
	Upper	42.9	63.6	53.4
	Middle	67.6	70.5	78.5
	Lower	71.1	83.1	76.6
		(*)	(*)	(**)
Duration of marriage				
	1 year or less	76.0	100.0	-
	2-5 years	61.1	69.4	50.0
	6-15 years	64.7	73.2	69.4
	16 years or more	-	73.7	71.3
Inter-spousal age difference				
	Wife older	-	75.0	66.7
	Same age	40.0	66.7	50.0
	Husband 1-10 yrs older	62.0	72.1	70.2
	Husband >10 yrs older	85.0	85.7	85.7
		(**)	(*)	(**)
Number of pregnancies				
	None	55.6	77.8	80.0
	1-2	62.3	62.1	57.9
	3-4	81.3	75.9	62.2
	5 or more	100.0	78.3	75.2

Continued:

Continued from Table 5.2

Characteristics		Age groups (in years)		
		< 25	25-34	34<
Number of children				
	None	57.9	81.3	83.3
	1-2	65.7	64.7	63.6
	3-4	77.8	77.0	70.6
	5 or more	100.0	80.8	72.5
Current contraceptive use				
	Not using	65.7	76.9	69.9
	Using	65.4	68.0	71.2
	Modern method	65.0	68.4	73.3
	Traditional method	66.7	66.7	62.5
Decision-making authority				
	No say at all	88.2	100.0	100.0
	Moderate	66.7	77.4	85.7
	Substantial	60.0	65.0	66.7
	Major	50.0	76.6	71.4
		(*)	(*)	(**)
Freedom from threat				
	Afraid and beaten *(Battered)*	74.1	90.9	96.3
	Afraid but not beaten *(Anxious)*	71.0	75.8	80.7
	Not afraid but beaten *(Defiant)*	0.0	76.9	66.7
	Neither afraid nor beaten *(Contented)*	61.8	63.4	57.5
		(*)	(**)	(***)
Freedom of mobility				
	Needs permission:			
	Always	70.9	77.3	82.3
	Never	33.3	64.3	61.5
	Depends	0.0	69.2	54.2
		(**)		(**)
Control over household income				
	Has control	57.8	67.5	66.7
	Does not have control	72.5	86.7	90.9
		(*)	(**)	(**)

Source: Rawalpindi Reproductive Tract Study (RRTIS) 2001-2002.
Note: 1. Of the total 508 women, i.e., 100% of the sample.
Chi-square/Fischer's Exact test significance levels: *** p<0.001; **p<0.01; and *p<0.05.

5.1.3 Determinants of self-reported RTI burden: A multivariate analysis

The above discussion establishes prevalence of a heavy self-reported disease burden regarding RTIs, with women having different characteristics showing their own pattern of reporting, and at times having no pattern at all. In order to examine the factors most likely to determine the reporting of RTI related symptoms, we will analyse the data using a multivariate approach, namely logistic regression. Two models are created for this, taking reporting of at least one symptom as the dependent

variable. Model 1 includes all factors that were considered to have an effect on the reporting of symptoms, while Model 2 includes only those factors that come out to be significant after running stepwise forward conditional method and stepwise forward likelihood method of logistic regression on Model 1. These methods allow specifying how independent variables are entered into the analysis. The entry criterion set to include a variable in the model was .05 and the removal criterion was set at 0.1, with a maximum of 15 iterations. A variable's entry in such a model depends not only on how well it fits the entry criterion but it is also not entered if it would cause the tolerance of another variable already in the model to drop below the entry criterion. The final model generated by both stepwise procedures was identical, and is shown as Model 2 in Table 5.3. As can be seen from the Table, Model 2 is more robust, with many fewer variables that correctly predict 73 per cent of the variance in the reporting of symptoms, and having a better Hosmer and Lemeshow goodness of fit test statistics[15], compared to Model 1.

The results of the logistic regression analysis show a positive association between women's age categories and their reporting of at least one symptom, with the oldest age group three times more likely to report a symptom than the youngest age group. Categories of women's economic status are significantly associated with their reporting of any symptom. Women from the middle and lower economic groups are around two times more likely to report a symptom than those in the upper economic category. Although not a significant association, women married for a duration of one year or less were four times more likely to report a symptom than those in a union for sixteen years or more (Table 5.3).

[15] Hosmer-Lemeshow goodness of fit test tests the null hypothesis, and if the value of the test is equal to or less than .05 we reject the null hypothesis, that there is no difference between the observed and model-predictive values of the dependent. This means the model predicts values significantly different from what they ought to be, which is the observed values. If the test statistics is greater than .05 we fail to reject the null hypothesis, implying that the model's estimates fit the data at an acceptable level.

There is not much difference in the probability of reporting a symptom for the women married 2-5 years and 6-15 years from those who are married for over fifteen years, supporting the findings of the bivariate analysis. Level of education, family structure, background area and current contraceptive use do not show any significant association with reporting of at least one RTI related symptom.

Table 5.3: Determinants of reporting any RTI related symptom: A logistic regression analysis

Predictor Variable	Model 1		Model 2	
	Co-efficient	Odds ratio	Co-efficient	Odds ratio
Age of women				
>25[a]				
25-34	1.070*	2.92	-	-
34<	1.098*	3.00	-	-
Duration of Marriage				
16 years or more[a]				
1 year or less	1.399	4.05	-	-
2-5 years	.292	1.34	-	-
6-15 years	.181	1.20	-	-
Level of education				
11 or more years[a]				
1-10 years	.157	1.17	-	-
No education	-.270	0.76	-	-
Family Structure				
Nuclear[a]				
Joint/extended	-.135	0.87	-	-
Background area				
City[a]				
Village	-.118	0.69	-	-
Economic group				
Upper[a]				
Middle	.585*	1.79	-	-
Lower	.746*	2.11	-	-
Inter-spousal age difference				
Same age[a]	.742	2.10	1.218	3.38
Wife older	.770*	2.16	.757*	2.10
Husband 1-10 yrs older	2.011**	7.47	1.783***	5.95
Husband >10 yrs older				
Number of pregnancies				
1-2[a]				
None	.174	0.84	.176	1.19
3-4	.705*	2.02	.877**	2.40
5 or more	.971**	2.64	1.103***	3.01

Continued

Continued from Table 5.3:

Predictor Variable	Model 1		Model 2	
	Co-efficient	Odds ratio	Co-efficient	Odds ratio
Current contraceptive use				
Non-users[a]	.206	1.23	-	-
Modern method user	-.131	0.87	-	-
Traditional method user				
Decision-making authority				
Major say[a]				
No say at all	1.958**	7.09	1.863**	6.44
Moderate say	.132	1.14	.215	1.24
Substantial say	-.068	0.93	-.194	.82
Freedom from threat				Continued:
Neither afraid or beaten[a] *(Contented)*				
Afraid and beaten *(Battared)*	1.329***	3.78	1.338***	3.81
Afraid but not beaten (Anxious)	.406	1.50	.585*	1.79
Not afraid but beaten *(Defiant)*	.328	1.39	.303	1.35
Freedom of mobility				
Needs permission:				
Never[a]				
Always	.206	1.68	-	-
Depends	-.131	1.06	-	-
Control over household income				
Has control[a]				
Does not have control	.604*	1.83	.638**	1.89
Constant	-2.901**		-1.144**	
Model Chi square	92.182***		72.142***	
Degrees of freedom	28		13	
R-square	33.6%		28.9%	
Reporting predictive correctly	74.8%		73.2%	
Hosmer- Lemeshow goodness of fit test	.341		.886	
Number of cases	508		508	

Source: RRTIS 2001-2002.
Note: Significance levels: *** p<0.001; **p<0.01; and *p<0.05.
A dash (-) means variable not included in the regression analysis.

The likelihood of reporting a symptom is significantly associated with inter-spousal age-difference, with the probability increasing with increasing age difference (Table 5.3). The relationship is significant in both the models, with the women having husbands more than ten years older to them being six and seven times more likely to report a symptom, in Model 2 and 1 respectively, compared to those having a husband of same age as them. Likewise, women who were older than their husbands were three times more likely to report a symptom, in Model 2, compared to same age couples. Number of pregnancies is also significantly associated

with the reporting of any symptom in Model 1, and the relationship becomes even stronger in Model 2. Having 1-2 pregnancies as the reference category, we see in Model 2, the likelihood of reporting a symptom increasing slightly for those with no pregnancy, doubling for those having 3-4 pregnancies and increasing three folds for those being pregnant five time or more (Table 5.3).

The autonomy indicators, except for the mobility predictor, show a significant relationship with the reporting of any symptom, with freedom from threat having the strongest association. Having contented women as the reference category, we find the battered women four times more likely to report a symptom, while the anxious ones almost twice as likely to report a RTI related symptom. Similarly, women who have no say at all in household decision-making are almost seven times more likely to report a symptom compared to those who have a major say (Model 2). A similar significant association exists between women's control over household income and reporting a symptom, with women not having any control being twice as likely to report a symptom than those who are.

5.1.4 Nature of symptoms reported

Abnormal vaginal discharge is the most commonly reported symptom, being experienced by 40 per cent of the respondents, followed by lower backache (37 per cent), lower abdominal pain (26 per cent), dysuria (23 per cent), dyspareunia (22 per cent), menstrual irregularity (21 per cent) and dysmenorrhoea (18 per cent). Having sores and ulcers on genitals was not very common and was reported by fewer than 2 per cent women (Table 5.4).

Previous studies in Pakistan also show abnormal vaginal discharge as the most common symptom. These include the studies done by the National

AIDS Control Programme on the prevalence of RTIs/STDs (2002) and the Reproductive Health Client Card Survey (NIPS 1999) where abnormal vaginal discharge was the most common symptom, reported by 78 per cent and 41 per cent of women in the respective samples (see Table 1.3). Differences in the nature of sample and locale of study could lead to these differentials in the rate of reporting of having abnormal vaginal discharge but it remains the most reported symptom in most studies. This pattern is found in other countries of the South Asian region as well. Studies in India and Bangladesh also show vaginal discharge to be the most common complaint; as evidenced in Bhatia and Cleland (2000), Bogaert, et al., (1999), Hawkes, et al., (2002), Viswanath, et al., (2000), Das and Shah (2001), Mayank, et al., (2001), Maitra, et al (2001) and Mulgaonkar (1996). Since abnormal vaginal discharge is a symptom associated with majority of the RTIs, understanding its common reporting has important implications for alleviating the health, specifically reproductive health, of women in the region. This however does not mean that reporting of other symptoms should be ignored, as they could be associated with equally serious infections, if not more[16].

Reporting of a particular symptom is not uniform across women having different socio-economic and demographic characteristics. As can be seen from Table 5.4, different variables are associated differently with the reporting of various RTI related symptoms. We shall now see differentials in reporting of each symptom and explore its plausible explanations.

[16] See Table 2.3 for symptoms and the possible infections they could indicate.

Table 5.4: Nature of RTI related symptoms reported by women

Characteristics		Symptoms reported[1] (%)							
		Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Total		20.7	18.1	23.2	26.2	39.6	1.6	21.9	36.6
Age of woman									
(years)	<25	12.5	21.9	24.0	18.8	37.5	1.0	27.1	28.1
	25-34	20.1	16.4	21.0	27.1	44.4	0.9	26.2	41.1
	34<	25.3 (*)	18.2	25.3	28.8	35.4	2.5	14.1 (**)	35.9
Ever been to school									
	Yes	18.4	17.2	17.8	21.4	36.8	0.6	20.8	32.6
	No	25.1 (*)	19.9	33.9 (***)	35.7 (***)	45.0 (*)	3.5 (*)	23.4	44.4 (**)
Level of education									
	No education	25.1	19.9	33.9	35.7	45.0	3.5	23.4	44.4
	1-10	18.7	21.0	20.1	22.9	40.7	0.5	22.4	38.8
	11 or more	17.9	10.6 (*)	13.8 (***)	18.7 (***)	30.1 (*)	0.8 (*)	17.9	22.0 (***)
Background area									
	Urban	20.5	17.4	20.8	26.2	38.5	1.8	21.5	34.1
	Rural	21.2	20.3	31.4 (**)	26.3	43.2	0.8	22.0	44.9 (*)
Family type									
	Nuclear	22.3	19.6	23.1	29.5	39.4	1.7	18.2	35.5
	Joint/extended	16.6	14.5	23.4	17.9 (**)	40.0	1.4	30.3 (**)	39.3
Economic group									
	Upper	21.6	15.5	12.1	19.0	25.9	0.0	13.8	19.8
	Middle	17.9	17.0	20.9	27.7	44.3	0.9	23.8	37.4
	Lower	24.2	21.7 (**)	35.0 (***)	29.3 (*)	42.7 (**)	3.8 (*)	24.2 (*)	47.8 (***)
Inter-spousal age difference									
	Wife older	6.7	13.3	13.3	26.7	46.7	0.0	26.7	46.7
	Same age	10.0	13.3	23.3	20.0	30.0	0.0	20.0	26.7
	Husband 1-10 yrs older	20.0	18.2	21.4	26.4	38.0	2.0	22.2	36.7
	Husband >10 yrs older	33.9 (**)	21.0	37.1 (*)	27.4	50.0 (*)	0.0	17.7 (***)	38.7
Number of pregnancies									
	None	47.8	43.5	26.1	21.7	30.4	0.0	43.5	30.4
	1-2	15.1	15.8	17.8	21.2	31.5	1.4	22.6	28.1
	3-4	16.2	15.5	19.6	24.3	44.6	2.0	19.6	41.9
	5 or more	25.1 (***)	18.8 (**)	29.8 (*)	31.9	42.9	1.6	19.9 (*)	39.8

Continued:

Continued from 5.4:

Characteristics		Symptoms							
		Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Number of children	None	36.6	29.3	24.4	26.8	24.4	0.0	39.0	31.7
	1-2	13.5	14.1	18.4	23.8	38.4	1.6	21.6	34.6
	3-4	24.4	20.1	20.7	25.6	45.7	1.2	19.5	39.6
	5 or more	21.2 (**)	17.8 (**)	33.9 (**)	30.5	38.1	2.5	18.6 (*)	37.3
Current contraceptive use	Not using	20.0	17.3	23.8	25.0	38.5	1.9	27.7	41.2
	Using	21.4	19.0	22.6	27.4	40.7	1.2	15.3 (***)	31.9 (*)
	Modern method	*22.8*	*19.3*	*22.8*	*27.9*	*42.1*	*0.5*	*15.2*	*33.0*
	Traditional method	*15.7*	*17.6*	*21.6*	*25.5*	*35.3*	*3.9*	*15.7*	*27.5*
Know about RTIs	Yes	21.1	12.8	21.1	24.8	32.1	1.8	21.8	34.9
	No	21.6	19.5	23.8	26.6	41.6 (*)	1.5	21.1	37.1
Decision-making authority	No say at all	33.3	33.3	38.9	27.8	41.7	5.6	36.1	44.4
	Moderate	23.4	22.3	29.8	36.2	38.3	0.0	29.8	44.7
	Substantial	15.3	16.5	21.2	26.4	36.8	2.1	22.7	33.1
	Major	25.0 (*)	14.0 (**)	18.4 (*)	18.4 (*)	44.9	0.7	10.3 (***)	35.3
Freedom from threat[2]	Battered	29.9	16.1	36.8	33.3	52.9	3.4	28.7	54.0
	Anxious	17.3	20.0	25.3	28.0	42.7	1.3	22.7	42.0
	Defiant	33.3	21.1	22.8	26.3	40.4	1.8	19.3	38.6
	Contented	15.9 (**)	16.8	16.4 (**)	22.0	31.8 (***)	0.9	18.7 (*)	25.2 (***)
Freedom of mobility	*Needs permission:*								
	Always	21.3	21.3	26.4	29.0	43.0	1.3	23.9	44.6
	Never	21.4	14.3	19.3	18.6	35.0	2.9	19.3	26.4
	Depends	14.8	9.3 (**)	14.8 (*)	29.6	31.5	0.0	14.8	16.7 (***)
Control over household income	Has control	17.9	12.9	19.5	21.7	37.1	1.4	18.1	31.9
	Does not have control	27.8 (**)	31.3 (***)	32.5 (***)	37.5 (***)	45.8 (*)	2.1	30.6 (**)	48.6 (***)

Source: RRTIS 2001-2002.

Note: 1. Of the total 508 women, i.e., 100%.

2. The used terms refer to: Battered- afraid and beaten; anxious- afraid but not beaten; defiant- not afraid but beaten; and contented- neither afraid nor beaten.

3. Chi-square/Fischer's Exact test significance levels: *** $p<0.001$; **$p<0.01$; and *$p<0.05$.

5.1.4.1 *Menstrual irregularity*

Number of pregnancies a woman has had shows the most significant association with the reporting of menstrual irregularity. Women with no pregnancies have the highest rate of reporting the symptom followed by those being pregnant five times or more. Number of living children a woman has is also significantly associated with her reporting of this symptom, though the pattern is not similar to the one for the number of pregnancies where reporting increased at the two polar categories. The high reportage of menstrual irregularity by women who have never been pregnant could be explained by the existing belief that strongly associates menstruation with fertility: Women who have never been pregnant were more likely to complain of the symptom even if it was not the cause of their not bearing children, as the later medical examination showed. This relation can also be inferred from the fact that the rate of reporting goes down for women who do not have any child compared to those who have never been pregnant. It takes out majority of the women who are first time pregnant at the time of the study, and are thus not suspicious of any irregularities in menstruation. Older women (35 years and above) reported the symptom more than their younger counterparts. The increasing trend of reporting of this symptom with increasing age (Table 5.4) could be linked to the transition to the menopause phase of their lives or the concern about it.

The inter-spousal age difference is also significantly associated with the woman's reporting of menstrual irregularity, with the rate being highest for women having husbands 10 years or more older to them. Likewise, the autonomy indicators, except for the freedom of mobility indicator, show a significant relationship with reporting of the symptom, with women having less autonomy being more likely to report the symptom.

5.1.4.2 Dysmenorrhoea

Number of pregnancies and living children are again significantly associated with reporting of dysmenorrhoea (Table 5.4). The reasons for this could be the same as those mentioned for menstrual irregularity. The link between menstruation and childbearing is too strong for women not to relate a problem with one with a problem with the other. The economic status of woman, her level of education and her indicators for autonomy are also significantly associated with reporting of this symptom, with women belonging to lower economic group, having been to school for fewer years and having less autonomy having a statistically significant high reporting rate. Differentials in reporting of dysmenorrhoea for factors like age of woman, background area, inter-spousal age difference, current contraceptive use and knowledge about RTIs do not show any statistically significant association.

5.1.4.3 Dysuria

The autonomy indicators show a statistically significant association with the reporting of this symptom as well. Women who have no say in household decision-making, are afraid and beaten by their husbands, always need permission to leave house and have no control over household income report symptoms more than their counterparts (Table 5.4). The 'freedom from threat' indicator again shows that women who are afraid of their husbands but not beaten by them to have a slightly higher rate of reporting than women who are actually beaten but are not afraid. Number of pregnancies and number of living children show the same trend of women having none or five or more pregnancies/children reporting experiencing dysuria more than those having 1-2 or 3-4 pregnancies/children. The rate is significantly higher (34 per cent) for women having five or more children compared to those having 1-2

children. Medical literature shows that dysuria could be associated with age (Eckert, et al., 1998; Swithinbank et al., 1999) but as Table 5.2 shows age factor does not show any trend with reporting of this symptom in this study. Thus, number of pregnancies/children could be believed to have an association independent of the age effect. Current pregnancy can also have an effect on the reporting of dysuria. In the present study, women who were pregnant at the time of the survey had a higher rate of reporting for the symptom (31 per cent) compared to those who were not (22 per cent). During pregnancy, certain irregularities and abnormalities can take place in urination (Wijma, et al., 2001) leading to a higher reporting rate. Along with these factors, woman's educational level, background area, economic status and inter-spousal age difference are significantly associated with reporting of experiencing dysuria, with women who have been to school for fewer years, have rural backgrounds, have husbands 10 or more years senior to them, and those belonging to lower economic group being more likely to report the symptom than their counterparts.

5.1.4.4 Lower abdominal pain

Reporting of lower abdominal pain, which could be a symptom for chlamydia and gonorrhoea, show a pattern somewhat different from the symptoms already discussed. Differentials in reporting the symptom are not statistically significant for the number of pregnancies and number of children a woman had, though women having five or more pregnancies/children again have the highest rate of reporting for lower abdominal pain (Table 5.4). The autonomy indicators, except for control over household income, are not as significant for reporting of lower abdominal pain as they were for reporting of the aforementioned symptoms. Likewise, the inter-spousal age difference does not show any pattern of reporting for the symptom, as it did for other symptoms, while family type, that did not show any significant association with other

symptoms is significantly associated with reporting of lower abdominal pain. Current contraceptive use and knowledge of RTIs continue to show no significant association with reporting of lower abdominal pain, as for the symptoms already discussed. The economic status of woman and her level of education were factors having significant association with reporting of lower abdominal pain, with women living in nuclear households and having no education more likely to report the symptom.

5.1.4.5 Abnormal vaginal discharge

The symptom linked to most RTIs, whether endogenous or sexually transmitted, and having the highest reporting rate in this study, does not show any pattern of reporting for most of the factors taken into consideration here. There is no statistically significant association or trend in reporting of this symptom with the age of woman, her background area, family type, number of pregnancies, number of children, current contraceptive use, decision-making authority and freedom of mobility. Educational and economic status of a woman and her age-difference with her husband show some degree of significant association with reporting of abnormal vaginal discharge. More educated women are less likely to report experiencing the symptom, as are women belonging to upper economic group and those who are of the same age as their husbands (Table 5.4). The rate of reporting is again high for women having spouses older to them by 10 years or more (50 per cent), followed by women who were older to their husbands (47 per cent). Of the autonomy indicators, women having control over household income are significantly less likely to report experiencing abnormal vaginal discharge. The most significant autonomy indicator however is the 'freedom from threat' variable, where battered women have the highest rate of reporting the symptom (53 per cent) compared to any other category for any given factor (Table 5.4). In a trend similar to other symptoms, anxious women had a slightly higher

rate of reporting experiencing abnormal vaginal discharge than the defiant ones.

5.1.4.6 Sores and ulcers on genitals

Given the very low rate of reporting of this symptom (1.6 per cent) it is difficult to expect any significant differentials in its reporting by the factors under consideration, and that is what Table 5.4 shows. However, the reporting for this symptom does show a significant association with the educational and economic status of women. Women who have never been school (3.5 per cent) and those belonging to lower economic group (3.8 per cent) are more likely to report experiencing sores and ulcers on their genitals than their counterparts (Table 5.4). Though not statistically significant, indicators of autonomy do show women with lower status reporting the symptom more than those with comparatively more autonomy. For example, 5.6 per cent of the women with no say at all in household decision-making report experiencing sores/ulcers on genitals compared to 0.7 per cent having a major say in such matters. Likewise, women who are afraid and beaten by their husbands have a higher rate of reporting (3.4 per cent) than those who are neither afraid or beaten (0.9 per cent), and women having control over household income are less likely to report the symptom (1.4) compared to those who have no control (2.1 per cent). With the total reporting rate of 1.6 per cent, a difference of 0.7 per cent in the latter example can be considered a substantial difference.

5.1.4.7 Dyspareunia

The factors significant for reporting of dyspareunia suggest a very interesting analysis. Woman's age, which was generally not significant for other symptoms, is significantly associated with reporting of this symptom (Table 5.4). Women in the youngest age group, that is less than 25 years,

are more likely to report the symptom (27 per cent) than the ones in the oldest group of 35 years and above (14 per cent). In Pakistan, sexual relations, specifically for females, are usually initiated with marriage so one explanation for this result could be that women new to this physical experience are more likely to report this symptom. It would be worthwhile here to look into the association of duration of marriage with reporting of dyspareunia.

Table 5.5 shows a strong association between duration of marriage and reporting of current experience of dyspareunia. Women who have been married for a period of one year or less have the highest rate of reporting of dyspareunia (48 per cent), with the rate going down as the duration of marriage increases. Sex is not a topic that is discussed openly with girls before marriage in Pakistan and this whole experience usually comes as a shock to them. There is a general lack of sex information among females before marriage in the South Asian region and it is usually only after marriage, through experience, that she knows about these aspects of her body.

Table 5.5: Duration of marriage and experience reporting dyspareunia at the time of survey

Duration of marriage	% Reporting experiencing dyspareunia***			Number
	Yes	No	Not having sex	
1 year or less	48.3	48.3	3.4	29
2-5 years	26.7	68.6	4.8	105
6-15 years	21.0	75.9	3.1	195
16 years or more	15.6	77.7	12.0	179
All	21.9	73.4	4.7	508

Source: RRTIS 2001-2002.
Note: *** Chi-square test significance: $p<0.001$.

Table 5.5 shows another column of "not having sex", along with the "yes" and "no" responses. For younger women the reason is usually pregnancy while for the older women it is lack of interest in sex. As one 46 years old

woman in the sample, with 28 years of marriage, said, "*kiya acha lagta hai kay jawaan bachay ghar mein hoon aur hum yeh kaam kerein?*" (does it look good that there are adult children in the house and we do this thing?).

It is not only lack of sex education, but also the relative power position in her relationship with her husband that works against a newly wed woman. This is reflected in not only her higher reporting of experiencing dyspareunia but also to her response when she is asked the question, "Did you continue having sex with your husband after having this pain". As Table 5.6 shows, the rate for those continuing having sex by force, despite experiencing dyspareunia, is highest for women married one year or less (64 per cent). It decreases dramatically to a low 7 per cent for women married for 6 to 15 years, increasing again for women spending the longest duration in marital union (21 per cent), though nowhere as high as to the level of newly weds. The increase in forced sex for those married for the longest durations could again be for the reason that women with increasing age, having adult children, try to refrain from sex, and their low sex drive is not necessarily matched by their husbands, leading to forced sex. However, for the newly weds it is their weak power position in the new set-up, accompanied by the training of obedience given to them by culture that makes them give in to the demands of their husbands by will or by force.

Table 5.6: Duration of marriage and continuation of sexual intercourse while experiencing dyspareunia

Duration of marriage	% Continued having sexual intercourse:			Number
	Yes	No	Yes, by force	
1 year or less	35.7	0.0	64.3	14
2-5 years	50.0	7.1	42.9	28
6-15 years	85.4	7.3	7.3	41
16 years or more	75.0	3.6	21.4	28
All	67.6	5.4	27.0	111

Source: RRTIS 2001-2002.
Note: 1: Including the 111 women who complained of experiencing dyspareunia.

Coming back to the differentials in reporting of dyspareunia, by different socio-economic and demographic factors, we find very slight variation for different educational levels and background areas (Table 5.4). Although there is a significant relationship between woman's economic status and reporting of dyspareunia, with women from the upper economic group having the lowest reporting rate, the relationship is not as strong as for some other symptoms. On the contrary, family type, which was not significant for the reporting of most of the other symptoms, is strongly associated with reporting of dyspareunia. Women living in joint/extended households have a higher reporting rate (30 per cent) compared to those living in nuclear households (18 per cent). This could be associated with the lifecycle of women. Being a patriarchal society, a younger married woman is more likely to live in joint/extended households, with her in-laws, before having her separate household, and then later again being part of a joint/extended household, this time with her sons getting married and she being in the role of mother-in-law herself. In the present study, more than half (54 per cent) the women aged <25 years were living in joint/extended households, compared to a low 15 per cent of those aged 35 and above years. It is therefore primarily because of the comparative age structure of the joint/extended and nuclear households that lead to this trend in reporting of dyspareunia. The issue of privacy in joint/extended households could also have a psychologically inhibiting effect on women, making them uncomfortable about the sexual contact, manifesting in complaints such as dyspareunia, a complaint originating more from mind than body. Interestingly, there is no difference between the mean number of persons per room living in joint/extended and nuclear households (which is 3.3 persons/room), so presence of any inhibiting effect in the joint/extended households could not be because of lack of space per se but probably because of the lack of mental space.

Dyspareunia shows a reverse, and highly significant, association with inter-spousal age difference (Table 5.4). For other symptoms it was usually women having husbands 10 or more years older to them who had the highest rate of reporting for the symptom, however for dyspareunia their rate of reporting is the lowest (18 per cent), with women who are older than their husbands having the highest rates (27 per cent). Number of pregnancies and number of children a woman had also show a significant association with reporting of experiencing dyspareunia. Women who have never been pregnant and those with no children are more than twice likely to report the symptom than those with five or more pregnancies and children (Table 5.4). Apart from the pathological causes, feeling of such pain by women with no pregnancies and no children could be because of the psychological linking of the act with their repeated unsuccessful attempts to get pregnant and have children. In the present study, 71 per cent of the women who have never been pregnant were married for more than two years[17], which is culturally a long enough time to have a child after marriage, failure in which can lead women to worry and panic.

In Pakistan, motherhood is very important for a woman in gaining social status, within the society in general and her in-laws in particular, and after marriage, she is under pressure to produce an offspring soon (Mumtaz 1994). The importance given to motherhood in the society can work both ways, and figures showing reporting of dyspareunia by contraceptive use in Table 5.4 can be an example for it. Women not using contraceptives have a rate (28 per cent) almost double to those using it (15 per cent). It is not improbable that the high rate of reporting for dyspareunia for non-contracepting women is because they do not want more children, something that the sexual act might lead them to. Presence

[17] In the present study out of 508 women in the sample, 23 had never been pregnant. Of these 30 per cent had been married for one year or less, 35 per cent were married for 2-5 years, 26 per cent for 6-15 years and 9 per cent had been a marital union for over 15 years.

of a big unmet need for contraceptives in Pakistan, topping 35 per cent, has been established by most studies (Casterline, et al 2001; NIPS 2000; Mehmood 2001; Fikree 2000; PFFPS 1996-1997). It is thus a probability that the reported pain during intercourse is actually stemming from the fear of getting pregnant.

The autonomy indicators again show significant association with the reporting for dyspareunia (Table 5.4). Decision-making authority has the strongest association with the reporting of the symptom, as compared to other indicators. Women having no say in household decision-making were more than three times as likely to report the symptom (36 per cent) compared to those who had a major say in household affairs (10 per cent). Similarly, women having freedom from both mental and physical threat from their husbands had a lower rate of reporting (19 per cent) than those who were who were beaten and afraid of their husbands (29 per cent). Again, the anxious women had a higher rate of reporting (23 per cent) than the defiant ones (19 per cent). Control over household income also had a significant association with reporting of the symptom, with women not having any monetary control being more likely to report the symptom (31 per cent) compared to those who did have some control (18 per cent).

5.1.4.8 Lower backache

If the definition of lower backache as a symptom for RTI had not included co-presence of any of the other mentioned symptoms, the rate of reporting for it would have been over 60 per cent. This was an attempt to differentiate common backache from that associated with RTIs. Even after refining the definition of lower backache, it remains the second most reported symptom, experienced by 37 per cent women in the sample (Table 5.4). Women's age does not show any pattern of reporting the symptom while her educational and economic status are highly significant for

reporting of the symptom. Women who have never been to school (44 per cent), and also those going for fewer years (39 per cent) have a higher rate of reporting, compared to those who have been to school for 11 years or more (22 per cent). Likewise, women belonging to the lower economic group had a rate much higher (48 per cent) than those in the middle (37 per cent) and upper (20 per cent) economic group. Inter-spousal age difference does not show a regular pattern or a significant association with experiencing lower backache, however women who are older than their husbands have the highest (47 per cent) and those of the same age as their spouses have the lowest (27 per cent) rate of reporting for the symptom (Table 5.4). Number of pregnancies and number children women have do not show any significant association with reporting of lower backache, however the rate is highest for those having 3-4 pregnancies/children.

Three out of the four autonomy indicators again show a highly significant association with the reporting of experiencing lower backache, with the exception of "decision-making authority" (Table 5.4). Women who are afraid and beaten by the their husbands have a reporting rate more than double than of those who are neither beaten nor afraid (54 per cent compared to 25 per cent), and yet again those who are afraid but not beaten being more likely to report the symptom (42 per cent) compared to those who are beaten but not afraid (38 per cent). Likewise, women having no control over household income are much more likely to report the symptom (49 per cent) than those who did have some control (32 per cent).

5.1.5 Classification of self-reports

Table 5.7 shows classification of self-reported symptoms into probable nature of RTI they might indicate to be present. Applying the classifying criteria (stated in section 2.2.1) on the symptoms reported by women,

majority (63 per cent) appears to be having exogenous infections, including sexually transmitted infections. A small proportion is classified having endogenous infections (8 per cent), with around one third (29 per cent) reporting no symptom at all. This classification gives impression of wide spread exogenous infections, including STIs, among women in the study population.

Table 5.7: Classification of self-reports into nature of RTIs

Nature of infections	Per cent	Number
No symptom reported	29.3	149
Endogenous infections	7.9	40
Exogenous infections	62.8	319
Total	100.0	508

Source: RRTIS 2001-02.

5.1.6 Ever experience of RTI related symptoms

Women's ever-experience with RTI related symptoms is not just a function of incidence, but also the ability and incentive to seek a cure. To have an idea about women's experiences with RTI related symptoms in her lifetime, they were asked if they had any of these symptoms ever in their life, along with asking about their experience at the time of the survey. Because of recall problems, the two menstruations related symptoms, that is dysmenorrhoea and menstrual irregularity, were put together in the "ever experienced menstrual problem" question. Likewise, query about ever experiencing lower backache was dropped altogether because of definitional issues, which could have led to an over-reporting of the symptom. Table 5.8 presents women's self-reported ever-experience with RTI related symptoms. Logically, the rate of reporting for each symptom goes up compared to their current experiences with the respective symptom.

Table 5.8: Ever-experience of RTI related symptoms

Symptom	% Ever experiencing	Cases[1]
Menstrual problem (irregularity/dysmenorrhoea)	29.0	147
Dysuria	31.5	160
Lower abdominal pain	45.3	230
Abnormal vaginal discharge	69.5	353
Sores/ulcers on genitals	4.7	24
Dyspareunia	27.8	141

Source: RRTIS 2001-2002.
Note: 1: Out of the 508 women in the sample.

For lifetime experiences as well, abnormal vaginal discharge remains the most reported symptom, with over two thirds of women in the study sample (70 per cent) having experienced it at some stage of their lives. Lower abdominal pain is also a common complaint, reported by almost one half of the women in the sample (45 per cent). Rate of ever experiencing sores/ulcers on genitals though still a low 5 per cent, is more than double the rate reported for the current experience (Table 5.8). While the ever experience of abnormal vaginal discharge, lower abdominal pain and sores/ulcers on genitals show a noticeable increase from their reporting for current experiences, there is not a similar magnitude of increase for other symptoms, like dysuria, dyspareunia and menstrual problem. This could be because of the current/temporary nature of reasons responsible for their reporting. Pregnant women were found to be more likely to report experiencing dysuria, so the symptom is associated with a transient phase of life. Likewise, newly wed women had a higher rate of reporting for dyspareunia at the time of the survey, which again is a temporary phase in their lives. It is probable that once they are out of these phases they tend to trivialise the problems that seemed grave to them at the time they were experiencing it.

5.2 RTI related symptoms reported as a health problem

Are RTI related symptoms considered to be a "health" problem or just a "reproductive health" problem by women? Evidence in this study supports the latter. Before answering the RTI specific questions women talked about their general health problems (as discussed in section 3.11). Using the same definitions as the ones used to measure RTI prevalence through self-reports in response to symptom-specific questions (except for menstrual related symptoms where the two symptoms of menstrual irregularity and dysmenorrhoea are put together), the rates are found to be much lower for the reporting for RTI related symptoms in the general health problem query. Table 5.9 shows the comparison between the rates of reporting for each symptom in respective questions.

Table 5.9: Reporting RTI symptoms as a general health problem

Symptom	% Reporting as a general health problem	% Reporting in symptom specific query
Menstrual problem (irregularity/dysmenorrhoea)	4.5	20.7/18.1
Dysuria	1.2	23.2
Lower abdominal pain	5.1	26.2
Abnormal vaginal discharge	10.1	39.6
Sores/ulcers on genitals	0.0	1.6
Dyspareunia	0.0	21.7
Lower backache	5.1	36.6

Source: RRTIS 2001-2002.
Note: Responses given by the 508 women in the sample.

Abnormal vaginal discharge remains to be the most reported problem in the general health query but with a rate four times lower than when asked for it specifically. For other symptoms as well, the rate remains manifolds lower than the ones found by the respective symptom-specific question. It is worth noting that not even a single woman reports dyspareunia or sores/ulcers on genitals in the general health problem

query. It could be because the problems were not considered important enough, or because they were too ashamed to talk about it, considering the cultural constraints about talking such issues publicly. Once these questions were asked specifically, the topic was already there for them to talk about and they did not have to initiate it, something that would have inhibited them while talking about it in the open-ended general health problem question.

5.3 Women reporting about their husbands' RTI related problems

Women were not very well informed, or at least vocal, about any RTI related problems their husbands were having. Only a few report a problem that could be associated with the presence of any RTI in their husbands. To most women their husbands were well, while some said that they do not share such issues with them and see a doctor by themselves if they feel the need, making "he has no problem that I know of" a common reply to the query. In cases where women do report a problem, it is usually problems like diabetes, heart trouble, paralysis, haemorrhoid, asthma, etc. Among the problems that could be related to RTIs, difficulties in having and sustaining an erection and of low sperm count are the two most reported problems. Pre-mature ejaculation or no erection at all, expressed as "*taqat khatam ho jati hai*" (he loses strength), was reported by eight women (1.6 per cent) while twelve women (2.4 per cent) thought that their husbands have a low sperm count or are infertile. The latter reply comes exclusively from women who have never been pregnant or have failed to become pregnant when they wanted to. This idea stems from what their doctors tell them to be the reason behind their not getting pregnant. The burden of seeing a doctor in case of infertility, whether primary or secondary, is squarely on women, and according to one woman in such a situation, "*mard apni izzat kay khilaaf samajhta hai kay bacha na honay*

ki soorat mein woh doctor kay paas jaye" (man considers it below his respect to see a doctor in case of not having a child). It was an idea shared by most women in a similar situation. Women keep on going through from one test to another, and even in cases where all their personal reports are clear they cannot convince their husbands to see a doctor. The problem has to be with the wife as it is against the male pride to even think that he is the cause behind the problem.

Apart from these problems that could be associated with RTIs, there were two women (0.4 per cent) who said that their husbands had lower abdominal pain, and another two (0.4 per cent) complained that their husbands have a lot of *"garmi"* (heat) in their bodies and they might be infecting them. *"Garmi"* is a generic term used in Pakistan, and also in parts of India, which manifests itself mainly in the form of sores or boils on or around genitals (Joshi and Dhapola 1999, Verma at al., 2001). Other associated symptoms with *garmi* are itching around genital areas, burning urination, pus discharge, and swelling and pain in penis, with or without discharge. No matter what the complaint, there were certain things common among all the women, which were that their husbands avoid talking about such problems with them and refuse to see a doctor for it, or at least do not tell them that they have seen a doctor.

5.4 Perceptions regarding RTI related symptoms

As Fitzgerald (1990) says, "To every separate person a thing is what he thinks it is—in other words, not a thing, but a think", so we look into what women in the study perceived of the symptoms they report to be experiencing. What are the perceived causes for experiencing these symptoms? Do they perceive the symptom as a source of worry, and if yes, why? In addition, how do they think they can protect themselves against having these symptoms? How they perceive the symptoms becomes all the

more important with regard to any attempt they might make to change a risk behaviour that could lead them to having these symptoms, and could also affect their health seeking behaviour.

5.4.1 Identifying the cause of RTI related symptoms

Contraception, mainly tubectomy and IUD use, and pregnancy related reasons, be it lack of it or frequent, come out to be among the major reasons perceived by women causing the symptoms they are experiencing (Table 5.10). Growth in uterus, which women usually euphemised as "*ander koyi masla hai*" (there is some problem inside), was also a reason stated for most of the symptoms. A sizeable proportion perceived symptoms like dysmenorrhoea (25 per cent), abnormal vaginal discharge (12 per cent) and dyspareunia (16 per cent) to be something common and normal for womanhood, having no specific cause.

Women tend to link their symptoms with any physical procedures they have gone through, including contraceptive procedures, like tubectomy and IUD insertion, and induced abortions (which fall in the "Other" category in Table 5.10). One respondent explaining the cause for having vaginal discharge said, "It all started a year back after *main nay apni nallian band kerwa di* (I had my tubes tied). Initially I had a lot of pain but later it was accompanied by excessive foul smelling discharge". Similar responses were given by women who were using "*challa*" (IUD). Induced abortion is legally restrictive in Pakistan, however women with enough economic resources can get it done in the better-equipped private hospitals/clinics. It is mainly poor women who have to opt for unsafe, backyard abortions. One such woman, talking about her experience, said, "I already had five children and didn't want any more so went to a woman my neighbour told me about. She took me to a room and inserted something inside. I got rid of the child but bled so much, and since then I

have this discharge and extreme pain in lower abdomen, and also feel pain *jab apnay shohar say milti hoon* (when I 'meet' my husband). I should have carried on with the pregnancy".

There are certain causes given in response to a specific symptom, not common with other symptoms being experienced. Reasons like, the "heat/*garmi*" factor for abnormal vaginal discharge, menopause for menstruation related problems, and too much domestic work for lower abdominal pain and lower backache being examples in this instance (Table 5.8). The notion of "*garmi*" among females has the same idea behind it as the "*garmi*" among males. The foods that were considered to create "heat" in the body included meat, eggs, nuts, *ghee* (clarified butter), spices and allopathic medicines. The idea being that such foods cause "heat" in the body, which could lead to excessive discharge. Dietary modification, which in a way further deprives women of a nutritional diet, is considered the only remedy in this philosophy. This belief is not only prevalent in Pakistan, as also shown by Bhatti and Fikree (2002) and Mazhar, et al., (2001), but is widespread in the South Asian region. Various studies in India also found the taking of "hot" foods to be perceived as a cause for abnormal vaginal discharge (Trollope-Kumar 2001; Singh, et al., 2001).

Table 5.10: Perceived causes of experiencing RTI related symptoms

(Column %)

Reasons	Percentage of women giving the reason for the symptom:							
	Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Weakness	20.0	12.0	39.1	24.8	41.0	-	5.5	26.3
Contraception	22.9	15.2	13.5	12.0	3.0	12.5	20.0	4.3
Too many pregnancies/frequent child-bearing	6.7	-	-	6.0	-	-	9.1	11.8
Current pregnancy	-	-	10.2	5.3	3.0	-	5.5	8.1
Stopping chid-bearing too soon	-	4.3	-	-	-	-	-	-
Menstrual irregularity	-	6.5	-	3.8	-	-	-	-
Growth in uterus	6.7	14.1	6.8	4.5	3.5	-	12.7	-
Advancing age/menopause	12.4	-	5.1	-	-	-	-	-
Domestic tension	4.8	-	-	-	-	-	-	-
Vaginal discharge	-	-	5.1	-	-	-	-	8.1
Too much domestic work	-	-	-	13.5	-	-	-	16.7
Drinking/bathing in cold water	-	-	-	6.8	-	-	-	-
Eating "hot food/"*garmi*" inside	-	-	-	-	8.0	-	-	-
Common thing/no reason/is normal/natural	-	25.0	-	-	12.0	-	16.4	-
Dai applied something	-	-	-	-	-	12.5	-	-
Other	11.4	14.1	13.5	6.0	4.0	-	5.5	13.4
Do not know	41.0	22.8	17.8	27.8	36.3	75.0	36.4	20.4
Number of cases	***105***	***92***	***118***	***133***	***201***	***8***	***111***	***183***

Source: RRTIS 2001-2002.

Note: Includes multiple responses given by women.

The notion of "garam/hot" food could be explained in the context of *Hikmat or Unani* and *Ayurvedic* philosophy of traditional medicine in Pakistan and India, respectively, where foods and drinks are classified according to its hot and cold temperament, having a specific influence on body energies (Zikria 1967; Said 1969, 1983; Zysk 1991; Pool 1987). This is however not the only classification criterion used in these medicinal schools to define the impact of different foods and drinks[18].

It is worth noting the consistently high proportion of women perceiving 'weakness' as the cause of the symptoms, along with an even bigger proportion who 'do not know' why they are having these symptoms. The latter response shows not just a lack of knowledge, traditional and/or modern, women have about such issues but also lack of knowledge about their bodies and its working. The notion of "weakness" is an interesting concept held by women, as a perceived cause for experiencing these RTI related symptoms. When asked to explain what they meant by "weakness", women said that it could include a feeling of chronic fatigue, dizziness, lack of proper food and rest, numbness of limbs, palpitation, inability to carry out household chores, and blackness of eyes. Perceiving "weakness" as a cause can again be explained in the context of *Hikmat* medicine, where some kinds of secretions are associated with causing weakness.

Along with what is being said, what is not being said is equally significant in the reported causes for having these symptoms. A striking feature of this perceived list of causes is the absence of any reason linking the

[18] Hikmat defines body in terms of four humours or *akhlaat*: air, earth, fire and water that emanate from the liver forming a subtle network around the body. In healing, foods and drinks are also classified according to the four humours. The four humours correspond to four bodily fluids: blood, phlegm, black bile and yellow bile. A typical diagnosis of a patient would take the balance of these humours into consideration. For instance, over-stimulation of wet-hot elements effects nervous biochemical interactions within the body, with glandular ramifications within blood. A wet-cold over-stimulation also effects nervous biochemical interactions and has ramifications for the relation between muscular biochemical exchanges and the bloodstream as such. Excess black bile in the blood leads to heart palpitations and constipation whilst excess yellow bile leads to general weakness (Zikria 1967).

experiencing of these symptoms with the lack of hygiene, menstrual or general (that could be a probable cause of endogenous infections), or with sexual transmission of any nature.

5.4.2 *Identifying RTI related symptoms as a source of worry*

The question of whether a symptom was a source of worry, or not, was asked only to those women who reported experiencing a particular symptom, so it did not include any abstract thinking of imagining whether a symptom would worry or not worry them if they had it. From their personal experiences, as Table 5.11 shows, lower backache is the symptom that makes women most worried (45 per cent), and dyspareunia is most likely to leave them "not worried" about the symptom (57 per cent). Abnormal vaginal discharge is not considered worrisome by a big 40 per cent, with only 28 per cent considering it very worrying and 31 per cent perceiving it to cause some mild degree of worry, while dysuria is among the symptoms that cause serious concern among women. Even if we put the "very worried" and "somewhat worried" replies together, there still remains a sizeable proportion of women for each symptom that is "not worried" (Table 5.11). A portion of these "not worried" women is of those who consider having these symptoms as something normal, that comes with the role of being a woman, but it also includes those who underestimate the consequences of the symptoms they are having or simply do not know what these symptoms could mean.

Differences in the level of worry for different symptoms might be explained by the cause of worry stated by women on experiencing each symptom. Table 5.12 presents the reasons given by women for their worry on having each symptom. For most women the pain and discomfort caused by the symptom and not knowing the reason for having a symptom are the main sources of concern. The worry related to pain and discomfort is in isolation

from the consequences a symptom might lead to, and is a source of worry by itself. However, it is not the only pain that worries women. Associated pains, like the ones they report having in their legs and back while having the RTI related symptoms is also a source of worry for them, especially the backache associated with dysmenorrhoea (19 per cent) and abnormal vaginal discharge (18 per cent), as can be seen from Table 5.12. Related to pain is the worry of not being able to carry out household chores with ease. Difficulty in carrying out household chores is a source of worry for around 20 per cent or more of the women reporting lower abdominal pain, dysmenorrhoea and lower backache.

Table 5.11: Identifying the symptoms as source of worry

Symptoms	Are they worried (%)			Cases
	Very	Somewhat	Not	
Menstrual irregularity	37.1	32.4	30.5	105
Dysmenorrhoea	34.8	39.1	26.1	92
Dysuria	43.2	35.6	21.2	118
Lower abdominal pain	32.3	37.6	30.1	133
Abnormal vaginal discharge	28.4	31.3	40.3	201
Sores/ulcers on genitals	25.0	37.5	37.5	8
Dyspareunia	22.7	20.0	57.3	111
Lower backache	45.2	36.6	18.3	186

Source: RRTIS 2001-2002.

The most common worry among women related to majority of these symptoms is that they do not know why they are having them (Table 5.12). This lack of knowledge regarding the cause could be intrinsically linked to one of the other reasons given for worry, that is, the fear that it might lead to something more serious. Of these two responses, one stresses the cause while the other emphasises the consequence, and both cannot be detached from each other. Either way, the responses reflect a lack of knowledge on the part of women, and in a way a desire to know more. The lack of knowledge about their bodies, and of lack of control over it, is also reflected in the worry expressed by 8 per cent women experiencing menstrual

irregularity when they talk about not being sure if they were pregnant. Again, it is not just being unwantedly pregnant that is a source of worry, but also the concern of not getting pregnant when wanting to that worries women, as shown by the response given by a proportion of women having menstrual irregularity (19 per cent), dysmenorrhoea (4 per cent) and dyspareunia (6 per cent) in Table 5.12. The strong concern about the reproductive function is also reflected in the worry that these symptoms will lead to a growth or cyst in uterus.

Some of the stated worries are symptom specific, and not shared by other symptoms. Interference with social or religious activities is a source of worry for women experiencing dysuria and abnormal vaginal discharge. With discharge and urinary problems, women are not able to remain in the "*pak*" (pure) state to offer prayers regularly. In the case of vaginal discharge, the problem is aggravated by the itch that makes sitting in front of guests difficult (Table 5.12). Likewise, it is only for dyspareunia that the worry relates to the role of the husband. For one third of the women having the symptom, their husbands' lack of cooperation was the source of worry.

Table 5.12: Reasons for worry for each RTI related symptom

(Column %)

Reasons	Percentage of women giving the source of worry for the symptom:							
	Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Why there is this change/symptom?	27.4	-	53.7	19.4	-	60.0	31.9	-
Will cause weakness	26.0	10.3	8.6	-	44.2	-	-	12.5
Gives backache	9.6	19.1	9.7	-	17.5	-	-	-
Gives leg ache	8.2	8.8	-	9.7	-	-	-	-
Would not let me have children	19.2	4.4	-	-	-	-	6.4	-
Might be pregnant	8.2	-	-	-	-	-	-	-
Will affect health of my unborn baby	-	-	-	-	2.5	-	-	-
Too much blood loss	13.7	-	-	-	-	-	4.3	-
Too much pain/discomfort	-	39.7	-	47.3	-	40.0	27.2	65.1
Difficult to carry out household chores	-	23.5	-	19.4	-	-	-	29.6
Having growth/cyst in uterus	-	5.8	.5.4	-	3.3	60.0	6.4	-
Might lead to something serious/aggravate	-	-	22.6	9.7	9.2	-	-	-
Too much itch, so can't sit in front of others	-	-	-	-	5.8	-	-	-
Cannot offer prayers/clothes get dirty	-	-	6.5	-	13.3	-	-	-
Now have wounds because of the itch	-	-	-	-	8.3	-	-	-
Makes bones weak	-	-	-	-	4.1	-	-	-
Signs of getting leucorrhoea	-	-	-	-	-	-	-	10.5
Husband does not co-operate	-	-	-	-	-	-	34.0	-
Other	11.0	-	7.5	7.5	10.0	-	10.6	-
Number of cases	***73***	***68***	***93***	***93***	***120***	***5***	***47***	***152***

Source: RRTIS 2001-2002.

Note: Includes multiple responses given by women who were very/somewhat worried on having each symptom. .

The notion of weakness again features prominently in the reasons given for worrying on having the RTI related symptoms, with a substantial proportion of women thinking that most of the symptoms would "cause weakness" (Table 5.12). There appears to be a cyclic relation between weakness as a cause and as a consequence. It is perceived to be a cause for these symptoms and also a consequence. For abnormal vaginal discharge, the idea is further strengthened by the belief that it "makes bones weak", thus causing the whole body-structure to weaken. Some other studies in the South Asian region have produced similar findings, including those done by Mazhar, et al., (2001), Bhatti and Fikree (2002), Bang and Bang (1991), Singh, et al., (2001), Chaturvedi, et al., (1995), and Ramasubban, et al., (2001). A possible explanation can again be found in the ancient Hikmat and Ayurvedic ethno-physiology, which have a strong influence on the health beliefs of the people of the region. Hikmat defines the state of the body into three different stages: health, disease and neutral. Disease is said to occur when the functions associated with the vital, natural and psychic forces of the body are obstructed or unbalanced due to some form of deviation in the four humors or *akhlaat* of the body, that is, air, earth, fire and water (see footnote 17). *Hikmat* divides the body into seven fundamental components, defined as:

1) *Arkan* – elements, the different states of matter and materials entering into and forming a part of everything in universe.
2) *Mizaj* – physico-chemical aspects, the bodily temperament.
3) *A'da* – anatomy, the fully developed mature organs.
4) *Ruh* – vital force, the mental or nervous energy.
5) *Quwaat* – physical energy, the bodily power.
6) *Af'al* – physiological and biochemical processes, the corporeal functions.
7) *Akhlat* – bodily humours, the structural components. (Zikria 1967; Said 1983).

It is believed that any loss or change in any one of these components could lead to disease. Thus, in the case of vaginal discharge it is the loss of this body fluid that is leading the body to lose "*quwaat*" (physical energy), causing "weakness". A possible explanation in the light of Ayurvedic view gives an even more interesting relation. According to the Ayurvedic philosophy, food is transformed into seven physiological elements or *dhatu*, namely: blood, flesh, bone, fat, chyle, marrow and semen (Zysk 1991). During the transformations, each *dhatu* becomes progressively purified. Semen is considered the most refined and purest *dhatu*, energising the body. Therefore, any loss of this *dhatu* is bound to create progressive weakness. This brings us to the question, how does the relation between loss of semen and weakness relate to a similar relation for loss of vaginal secretions? Many recent studies in the region have shown presence of a "female dhat syndrome", having an explanation similar to the one attached to the loss of semen in males (Bhatia and Malik 1991; Bhatia and Chaudhry 1998; Chaturvedi et al. 1993; Bang et al. 1994; Chaturvedi 1988). Excessive vaginal discharge is thus believed to be a loss of "female dhatu", causing weakness in the body of those suffering from it. Some authors even relate the presence of dyspareunia, specifically among younger women, to this "female dhat syndrome". Vaginal discharge during sexual intercourse is considered as a loss of vital fluids, leading women to not only complain of weakness after the act but also pain during it (Singh et al., 2001). Lack of knowledge regarding the physiology of their reproductive system and changes that take place in the body during the act of sexual intercourse promote these beliefs among women.

5.4.2 Identifying ways to protect against RTI related symptoms

Women reporting any symptom were asked how they think they could have protected themselves against having that specific symptom. In most cases, the reported ways of protection are related to the perceived causes for the symptom. Contraception, frequent child-bearing/pregnancies, weakness and too much domestic work were among the main causes given by women for having these symptoms, and as Table 5.13 shows, having fewer pregnancies/children, not using IUD, not having tubectomy, and having better rest and proper diet are the among the key ways of protection given by women against having these symptoms.

Table 5.13: Ways of protecting against RTI related symptoms

Reasons	Percentage of women perceiving it a way to protect against:							
	Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Having fewer pregnancies/children	8.6	-	6.8	11.3	2.0	-	12.8	10.4
Not having IUD	2.9	3.3	1.7	2.6	2.0	-	-	3.3
Not having tubectomy	2.9	3.3	1.7	3.0	1.0	-	-	2.2
Proper/better rest and diet	3.8	19.6	23.7	21.1	7.5	-	1.7	26.7
Getting regular treatment	21.0	22.8	38.3	18.8	16.4	12.2	17.1	21.3
Avoid eating cold/sour/hot food	-	6.5	4.2	5.3	9.0	-	-	-
Not having abortion	-	1.1	-	3.0	-	-	1.7	-
Nothing could be done/it is normal	23.8	20.7	6.8	9.0	17.4	-	17.9	8.2
Do not know	55.2	48.9	45.1	48.3	48.8	87.8	48.7	35.0
Number of cases	*105*	*92*	*118*	*133*	*201*	*8*	*111*	*183*

Source: RRTIS 2001-2002.
Note: Includes multiple responses given by women.

The lack of knowledge factor is evident again, as around half of women reporting each symptom do not know of any way to protect themselves (Table 5.12). Along with this, there is a sizeable proportion of women, for each symptom, who think that nothing could be done to protect against

these symptoms, as it is something normal and a natural part of womanhood, or give ways that are not linked to having the infections in any way. "Getting regular treatment" is also a given as a way of protection by many women. Getting treatment means that the symptom is already there so it cannot be exactly defined as a "way of protection" but women believe that if they keep getting medical attention for whatever other problems they have, they would not have these RTI related symptoms. Another reason for having this as a "way of protection" is that for many women these symptoms are recurrent, or have lasted for quite some time, and they perceive the lack of proper medical care as the reason for having these symptoms frequently.

5.5 Conclusions

The perceived morbidity level is as important in determining the health status of a population as the actual one, with the former becoming even more significant with regard to health seeking. Based on self-reported experiences with menstrual irregularity, dysmenorrhoea, dysuria, lower abdominal pain, abnormal vaginal discharge, sores/ulcers on genitals, dyspareunia and lower backache, a high rate of morbidity can be discerned among women in the present study. The most reported symptom is of abnormal vaginal discharge, followed by lower backache and lower abdominal pain. Evidence built through the bivariate and multivariate analysis shows that women's autonomy status is the most significant factor related to her reporting these symptoms. The more autonomous a woman the less likely she is to report any symptom. Presence of threats from the husband, mental more than physical, and not having any control over household income have an increasing affect on women's rate of reporting for most symptoms. Other important factors include her educational and economic status, age-difference between spouses and the number of pregnancies she has had. These factors are important not only in reporting

a particular symptom but also the number of symptoms reported by them. The reported symptoms could mean an actual presence of an infection but there are certain psychological trends appearing in the way the symptoms are reported. The high rate of dyspareunia reported by the young, newly wed women, and those not ever being pregnant are examples in this regard. Some of these trends could be inferred from the reasons of worry given by women on experiencing each symptom. There is a general lack of knowledge regarding the causes and consequences of these symptoms, and the ways to protect oneself against them. Most of the information in circulation is based on certain age-old myths or traditional medicine beliefs.

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CHAPTER SIX

Medical Diagnosis of Reproductive Tract Infections: Prevalence and Determinants

Laboratory testing remains the most accurate method of bio-medical diagnosis of reproductive tract infections. However, such tests generally are expensive, complex and largely inaccessible to women in resource poor countries. Efforts to find more cost-effective, but still accurate, methods to diagnose RTIs in resource poor settings have suggested in devising means like risk assessment or syndromic management of these infections, but there is a growing evidence proving them to be far from accurate. The present study, including both laboratory and clinical diagnosis, can thus also evaluate the syndromic management algorithms at the research setting, along with measuring the actual magnitude of morbidity associated with RTIs among women in the sample. The laboratory diagnosis also helps throw light on the factors linked with the risks of having these infections.

6.1 Participation in the medical component of the study

Participation rates and the issue of representativeness usually dog community-based biomedical studies, more so if the study concerns sensitive subjects, like reproductive health in settings where such topics are not discussed openly. Participants often refuse to undergo medical examination and in some cases, the participation rate is so low that the data cannot even be analysed (Younis, et al. 1993). Participation rates in studies done in the South Asian region, having objectives similar to the present one, show wide differences. Participation rates vary from a high 90 per cent or more (Wasserheit, et al. (1989) in Bangladesh; and Bhatia and Cleland (2000) in India) to a moderate ±60 per cent (Hawkes, et al. (2002) and Goodburn et al. (1995) in Bangladesh; and Bang et al. (1989)

and Koenig et al. (1998) in India). The participation rate in the medical part of the present study was 61.2 per cent, nearer to the ones achieved by the latter group, that is the one with moderate participation rates. Both the quoted studies, having high participation rates were done over a long period of time and had an advantage of developing better rapport with their respondents.

Another way to evaluate the sub-sample, comprising women who consented for the medical component of the study, is to compare its characteristics with those of the total sample. As Table 6.1 shows, there is not much difference between the two for most characteristics. In many instances, there is no difference at all, while for others the difference generally remains in the range of 1-5 per cent. The exceptions however are the differences in the proportions of the economic groups and the number of symptoms reported by women, where the differences are greater than other characteristics. The sub-sample has an almost 10 per cent under-representation of women from the upper economic group. Likewise, women with no reported symptoms are under-represented by 10 per cent, having over representation of women reporting more symptoms (Table 6.1). These differences are understandable as women with more symptoms and fewer resources would be more likely to give consent for a free medical check up and treatment than those who perceive themselves to be well or have enough economic resources to obtain treatment easily. It is likely that these two factors were the main reasons accounting for the differences within other characteristics as well. For example, if there is a 4 per cent under-representation and 3 per cent over-representation for those using sanitary pads and old/used cloth, respectively, in the medical sub-sample, it is because of the difference in the number of symptoms reported by women using the respective menstrual hygiene method, which in turn was linked to their economic status.

Table 6.1: Differences in background characteristics between women in the total sample and the sub-sample consenting for medical examination

Background characteristics	Medical sub-sample		Total sample	
	Per cent	Cases	Per cent	Cases
Total	100.0	311	100.0	508
Age of woman				
<25	19.9	62	18.9	96
25-34	42.1	131	42.1	214
34<	37.9	118	39.0	198
Ever been to school				
Yes	65.6	204	66.3	337
No	34.4	107	33.7	171
Level of education				
11 years or more	18.0	56	24.2	123
1-10 years	47.6	148	42.1	214
No education	34.4	107	33.7	171
Background area				
Urban	75.6	235	76.8	390
Rural	24.4	76	23.2	118
Family type				
Nuclear	71.7	223	71.5	363
Joint/extended	28.3	88	28.5	145
Economic group				
Upper	13.5	42	22.8	116
Middle	50.5	157	46.3	235
Lower	36.0	112	30.9	157
Inter-spousal age difference				
Wife older	4.5	14	3.0	15
Same age	5.8	18	5.9	30
Husband 1-10 yrs older	76.8	239	78.9	401
Husband >10 yrs older	12.9	40	12.2	62
Duration of marriage				
≤ 1 year	5.8	18	5.7	29
2-5 years	20.3	63	20.7	105
6-15 years	39.2	122	38.4	195
16 years or more	34.7	108	35.2	179
Number of pregnancies				
None	5.1	16	4.5	23
1-2	26.7	83	28.7	146
3-4	28.3	88	29.1	148
5 or more	39.9	124	37.6	191
Number of children				
None	7.4	23	8.1	41
1-2	35.4	110	36.4	185
3-4	32.8	102	32.2	164
5 or more	24.4	76	23.2	118
Currently pregnant				
Yes	10.9	34	9.4	48
No	89.1	277	90.6	460
Menstrual hygiene				
Commercial sanitary pads	14.5	45	18.7	95
Cotton wool/new cloth	18.9	59	19.7	100
Old/used cloth	32.5	101	29.9	152
Not menstruating	34.1	106	31.7	161
Frequency of baths per week				
1-2 times	55.9	174	50.2	255
3-4 times	37.3	116	39.0	198
5 or more	6.8	21	10.8	55

Continued:

Continued from Table 6.1:

Background characteristics	Medical sub-sample		Total sample	
	Per cent	Cases	Per cent	Cases
Current contraceptive use				
Not using	50.8	158	51.2	260
Pills	4.2	13	4.1	21
IUD	7.7	24	7.5	38
Injections	2.9	9	3.0	15
Condom	14.1	44	14.4	73
Tubectomy	11.6	36	9.8	50
Rhythm	1.9	6	2.2	11
Withdrawal	6.8	21	7.9	40
Ever wanted to get pregnant and could not				
Yes	10.9	34	11.4	58
No	89.1	277	88.6	450
Gap between the last two pregnancies				
<12 months	14.5	45	15.6	79
13-36 months	52.7	164	45.7	232
>36 months	16.7	52	22.1	112
None or only one	16.1	50	16.8	85
Number of symptoms reported				
No symptom	19.3	60	29.3	149
1-2 symptoms	40.2	125	38.8	197
3-4 symptoms	25.4	79	20.5	104
5 or more symptoms	15.1	47	11.4	58
Decision-making authority				
No sat at all	7.1	22	7.1	36
Moderate say	20.6	64	18.5	94
Substantial say	40.8	127	47.6	242
Major say	31.5	98	26.8	136
Freedom from threat[1]				
Battered	19.3	60	17.1	87
Anxious	29.9	93	29.5	150
Defiant	12.5	39	11.2	57
Contented	38.3	119	42.1	214
Freedom of mobility				
Needs permission:				
Always	65.3	203	61.8	314
Never	26.7	83	27.6	140
Depends	8.0	25	10.6	54
Control over household income				
Has control	71.7	223	71.7	364
Does not have controlr	28.3	88	28.3	144

Source: RRTIS 2001-2002.
Note: The used terms refer to: battered- Afraid and beaten; anxious- afraid but not beaten; defiant- not afraid but beaten; and contented- neither afraid nor beaten.

It is interesting to note the woman's autonomy indicators in this regard, as it concerns her decision-making authority and freedom of mobility to opt for the medical component of the study or otherwise. The differences found within these two indicators, with regard to participation in the

medical part of the study (Table 6.1), can also be attributed to the number of symptoms reported by women in each category (Table 5.1). Taking up the medical examination was a decision that was directly related to woman's mobility status, and it is of interest to see an over-representation of women who always needed permission to go out of home in the sub-sample. Women in this group did report more symptoms but being able to take the medical examination means that they obtained permission from their husbands to participate.

Despite the medical examination, and subsequent treatment if needed, being free, what were the reasons that stopped women from not participating in it? In response to this question, the most common reply, as can be seen from Table 6.2, was that they were well and did not need any medical examination (42 per cent), followed by those who thought it would be difficult to get permission from their husbands (16 per cent) or father/mother-in-law (9 per cent). Another important factor, as was visible in the economic composition of those consenting for the medical examination in Table 6.1, was the monetary position of women. Over 13 per cent said that they can afford it by themselves if they need it and were in no need to take a free examination, while 9 per cent refused saying they were already under care of doctors and would not like to go to another one. During the interviews, some women in the upper economic group even implied that it was insulting for them to take a free medical examination, while some were more diplomatic in implying the same by making statements like, "*yeh ghareebon ka haq hai kay muft ilaaj kerwaein*" (It is the right of the poor to get free treatment). Overall it was a combination of their self-perceived health, monetary and autonomy position that influenced their participation, or otherwise, in the medical component of the study.

Although not a major factor, mistrust of doctors also featured among the reasons given by women for refusing the medical examination. These were usually women who had these problems for a long time and now believed that it was of no use to see doctors (3 per cent). The rather coercive means applied by doctors, especially at the family planning clinics, also reflect in the response given by 4 per cent of the women refusing the medical examination, who believed they would be forcibly sterilised if they went to the hospital for the examination (Table 6.2).

Table 6.2: Reasons for refusing medical examination[1]

Reasons	% of women reporting
Am well so no need	42.1
Husband would not allow	15.7
Father/mother-in-law would not allow	8.6
Have seen doctors too much/it is of no use	3.0
Am already seeing a doctor	8.1
Can afford/go myself if there is a need	13.2
Children young, cannot leave them alone at home	6.1
You will sterilise me	3.6
Other	5.6

Source: RRTIS 2001-2002
Note: 1. Includes multiple responses given by 197 women refusing the medical examination.

6.2 Prevalence of RTIs

Two aspects are of interest to us with regard to prevalence of RTIs. First, what is the actual magnitude and nature of infections as diagnosed through medical examination, including both laboratory and clinical diagnoses, and second, how these infections vary in magnitude and nature across women with different background characteristics.

6.2.1 Magnitude and nature of prevailing RTIs

Laboratory diagnosis showed the presence of RTIs among 24 per cent women, while for the clinical diagnosis the rate was 40 per cent. As Table 6.3 shows, infections are primarily endogenous in nature, in both

laboratory (17.4 per cent) and clinical (37 per cent) diagnoses. Laboratory diagnosis, taken to be the most accurate means of identifying infections, found 2.3 per cent women having at least one STI, 1 per cent with more than one STI and 3.2 per cent having a combination of infections. Endogenous infection and STIs from all these categories put together had an infection rate of 20.6 per cent and 4.5 per cent, respectively. Although clinical diagnosis found 3.2 per cent women with sexually transmitted infections, it completely missed the co-existing infections, be it more than one STI or endogenous infections together with exogenous infections/STIs. The most common infection remained bacterial vaginosis for both kinds of diagnosis but the clinical examination over-diagnosed it by over 10 per cent. It was a similar case with candidiasis, the second most common infection among women in the sample, where clinical examination over-diagnosed the infection by over 5 per cent (Table 6.3). On the contrary, clinical examination failed to identify presence of STIs like gonorrhoea, chlamydia and syphilis altogether. These are the infections that have more serious sequelae and can very often be asymptomatic. Chancroid, that generally has a visible presence, and trichomoniasis were the two infections that had almost a similar prevalence rates in laboratory and clinical diagnoses.

The rather low rates of STI prevalence are consistent with the findings of some of the existing studies in Pakistan that include medical diagnosis for estimating prevalence of RTIs in their study populations (NACP 2002; PAVNA 2001; Ghauri, et al., 1997; KRHP 1997, as shown in Table 1.3). These studies show that endogenous infections, candidiasis more than bacterial vaginosis, are the most common RTIs prevalent among women in Pakistan, with mainly trichomoniasis contributing to the otherwise low STI prevalence rate. These findings are consistent to that of the current study, except that bacterial vaginosis was found to be more prevalent than

candidiasis. This trend is found not only in Pakistan but also studies in India and Bangladesh have also shown endogenous infections to be much more common than STIs (including, Hawkes, et al. 2002 and Ahmed et al., 1999 in Bangladesh, and Brabin et al. 1998; Garg et al. 2001; Kumar et al. 1997 and Mayank et al. 2001 in India). The slightly lower overall rate of infection in the present study, as compared to those found in the existing studies (presented in Table 1.3) could be because most of these studies were done in clinics, where the rate is likely to be higher than in the community as a whole.

Table 6.3: Prevalence of reproductive tract infections[1]: Laboratory and Clinical diagnoses (%)

	Laboratory diagnosis	Clinical diagnosis
Infections		
No infection	76.2	59.8
Endogenous Infections		
Candidiasis	6.8	11.9
Bacterial vaginosis	10.3	25.1
Candidiasis and bacterial vaginosis	0.3	0.0
Sexually Transmitted Infections/Exogenous Infections		
Trichomoniasis	0.6	2.3
Gonorrhoea	0.3	0.0
Chlamydia	0.3	0.0
Syphilis	0.3	0.0
Chancroid	0.6	1.0
Trichomoniasis and chancroid	0.6	0.0
Gonorrhoea and chlamydia	0.3	0.0
Endogenous-Exogenous Co-infections		
Bacterial vaginosis and syphilis	0.3	0.0
Bacterial vaginosis and staphylococcus aureus	1.9	0.0
Total	100.0	100.0
Nature of infection		
Endogenous- one or more	17.3	37.0
Sexually transmitted- any one	2.3	3.2
Sexually transmitted-more than one	1.0	0.0
Endogenous with sexually transmitted/exogenous	3.2	0.0
Any infection	23.8	40.2

Source: RRTIS 2001-2002.
Note: 1. Including 311 women who consented for the medical examination.

The results of the medical examination in the present study add to the ever-increasing evidence that laboratory testing is imperative for an accurate diagnosis of RTIs, and that the correspondence between the laboratory findings and results of the syndromic approach could be poor. The diagnosis done through clinical examination in this study, which followed the syndromic management approach, over-estimated the prevalence of some of the RTIs while missing completely on others.

The rather low prevalence of STIs among women in the study is a useful finding, as these RTIs could have graver consequences, but recent medical research shows that endogenous infections too are not as benign as they were considered in the past, especially bacterial vaginosis. There is growing evidence relating it to pelvic inflammatory disease and adverse pregnancy outcomes (USPSTF 2002; Berg 2001; Guise, et al., 2001; Steer 1999; Majeroni 1998; McGregor et al., 1995; Hay, et al., 1994; Kuirki et al., 1992). Bacterial vaginosis is now considered to be strongly associated with premature rupture of membranes, pre-term deliveries and spontaneous abortions. According to research done by Hay and colleagues, women with bacterial vaginosis have a fivefold increased risk of late miscarriage or pre-term delivery (Hay, et al., 1994). The association is further strengthened by evidence that metronidazole therapy, used to treat bacterial vaginosis, can reduce the incidence of pre-term labour and premature ruptures of membranes among infected women by 50 per cent (Penn and Steer 1999). Pre-term delivery is the most important cause of perinatal mortality and morbidity. In view of these facts, the presence of bacterial vaginosis as the most common infection among women in the study is a source of concern, more so because a large proportion of deliveries take place at home, and are thus ill-placed to cope with emergency situations. There is also a growing concern about trichomoniasis, the most common STI in the current study. Some recent

studies have linked it to adverse outcomes of pregnancy and an increased risk for HIV (Schwebke 2002; Klebanoff 2001; Bowden 1999). The concern becomes even bigger in light of the fact that these two infections, that is, bacterial vaginosis and trichomoniasis, are among the most common RTIs.

Causes and sequelae of all infections mentioned in Table 6.3 are frequently discussed in social science literature, with Staphylococcus aureus being the only exception. In the context of this study, its presence is associated with puerperal infection or septic abortion. It is a sign that aseptic surgical techniques may have failed (Grudzinskas 1999; Cheesbrough 1984). Presence of Staphylococcus aureus causes the same kind of signs as are linked to other RTIs, including offensive and profuse vaginal discharge and lower abdominal pain. In the present study, women testing positive for it included those who had gone through an induced abortion (1 woman), a spontaneous abortion (1 woman) or a delivery at home (2 women) within 6 months preceding the survey. The induced abortion and the deliveries at home were all carried out by *dais,* and the spontaneous abortion took place at home without any subsequent referral to a doctor. In the case of induced abortion, it could be inferred that they were carried out in aseptic conditions leading to the infection. With regard to the infection in the woman with spontaneous abortion, it can be a case of incomplete abortion. There is medical evidence that such infection can occur with missed abortion[19] or incomplete abortion[20], especially in case of unprofessional handling or from inadequate surgical evacuation in the first five months of pregnancy (Grudzinskas 1999).

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[19] Missed abortion: The pregnancy cease to develop, but the conceptus is not expelled. Symptoms of pregnancy disappear. There is a brownish vaginal discharge but no free bleeding. Pain does not develop. (Mackay and Evans 1999, p: 622).

[20] Incomplete abortion: Some portion of the products of conception, usually placental, remains in the uterus. Only mild cramps are reported but spotting is persistent and often excessive. (Mackay and Evans 1999, p: 622).

6.2.2 Differentials in aetiological prevalence of RTIs

Taking laboratory diagnosis as the true indicator of the presence or otherwise of infections, we would see how the prevalence rate and the nature of infections vary with different characteristics of women. The characteristics taken into account are those that could possibly have a bearing on having RTIs. These characteristics mainly fall in four categories, that is, indicators of women's socio-economic background, her hygiene practices, her obstetric and contraceptive history, and her autonomy status. As Table 6.4 shows, the economic status of women had a strong association with having RTIs. Women in the lower economic group have a rate of infection (36 per cent) more than twice that of women in the upper economic group (14 per cent). Lack of education is also positively associated with having an infection, as the most educated women have a rate almost one third to those who had never been to school (Table 6.4). Women who have higher rates of infection generally have higher disaggregated rates of prevalence for endogenous and sexually transmitted infections as well.

The autonomy indicators that were highly significant for reporting of symptoms show weaker association with actually having an infection. Except for the "control over household income" indicator, where women not having any control over household income had an infection rate 10 percentage points higher than those who had control, none of the indicators have significant relation with aetiological presence of infection. However, as Table 6.4 shows, women who had no say at all in household matters had a rate of infection (32 per cent) double of those who had a major say (16 per cent). Physical abuse could be associated with reproductive morbidity. Studies have found that women living with a physically abusive husband/partner report significantly more gynaecological problems than those living in violence-free relationships

(Shaikh 2000; Fikree and Bhatti 1999; Walker, et al 1992; Reiter et al., 1991). These studies also demonstrate an association between physical abuse and chronic pelvic pain. In the present study, as Table 6.4 shows, women who are beaten, but not afraid, have the highest infection rate (28 per cent). Although it would be a crude relation but if we look into data for pregnancies that took place in 24 months preceding the survey, their outcomes and the presence of an infection, we find the infection rates to be slightly higher among physically abused women who had an adverse pregnancy outcome. There were two women who had stillbirths in the 24-month period, both were physically abused by their husbands and both tested positive for having an infection. Likewise, rate of infection among physically abused women who had spontaneous abortions was 40 per cent, compared to 30 per cent among those who had a spontaneous abortions but were not abused. The number of cases is too small to draw any conclusive causal relationship but some degree of association could be inferred. The abuse may not directly be the cause of having an infection but it can trigger a problem leading to an infection resulting in an adverse pregnancy outcome, or even vice versa.

Woman's age, background area, family type or inter-spousal age difference do not have a significant association with having an infection (Table 6.4). Though, women in the 25-34 year age group, those living in nuclear households, and those who were older to their husbands have rates higher than their counterparts, as have those who had a rural background.

Table 6.4: Differentials in prevalence of infections, aetiologically, among women by selected background characteristics[1] (%)

Background characteristics	Any Infection	Nature of infection		
		Endogenous (one or more)	*Sexually transmitted (one or more)*	*Endogenous with STI/Other*
Total	23.8	*17.0*	*3.3*	*3.5*
Age of woman				
<25	17.7	*12.9*	*1.6*	*3.2*
25-34	27.5	*20.6*	*3.8*	*3.1*
34<	22.9	*15.3*	*3.4*	*4.2*
Ever been to school *				
Yes	20.1	*15.2*	*2.0*	*2.9*
No	30.8	*20.6*	*5.6*	*4.7*
Level of education *				
11 years or more	12.5	*10.7*	*0.0*	*1.8*
1-10 years	23.0	*16.9*	*2.7*	*3.4*
No education	30.8	*20.6*	*5.6*	*4.7*
Background area				
Urban	23.0	*16.6*	*3.4*	*3.0*
Rural	26.3	*18.4*	*2.6*	*5.3*
Family type				
Nuclear	26.5	*18.4*	*3.6*	*4.5*
Joint/extended	17.0	*13.6*	*2.3*	*1.1*
Economic group ***				
Upper	14.3	*9.5*	*2.4*	*2.4*
Middle	17.8	*14.0*	*1.9*	*1.9*
Lower	35.7	*24.1*	*5.4*	*6.3*
Inter-spousal age difference				
Wife older	50.0	*42.9*	*7.1*	*0.0*
Same age	22.2	*16.7*	*0.0*	*5.6*
Husband 1-10 yrs older	22.2	*15.9*	*3.3*	*2.9*
Husband >10 yrs older	25.0	*15.0*	*2.5*	*7.5*
Duration of marriage				
≤ 1 year	5.6	*5.6*	*0.0*	*0.0*
2-5 years	20.6	*15.9*	*3.2*	*1.6*
6-15 years	25.4	*19.7*	*4.1*	*1.6*
16 years or more	26.9	*16.7*	*2.8*	*7.4*
Number of pregnancies **				
None	0.0	*0.0*	*0.0*	*0.0*
1-2	15.7	*13.3*	*2.4*	*0.0*
3-4	28.4	*22.7*	*3.4*	*2.3*
5 or more	29.0	*17.7*	*4.0*	*7.3*
Number of children *				
None	4.3	*4.3*	*0.0*	*0.0*
1-2	19.1	*14.5*	*2.7*	*1.8*
3-4	31.4	*21.6*	*5.9*	*3.9*
5 or more	26.3	*18.4*	*1.3*	*6.6*
Currently pregnant				
Yes	14.7	*8.8*	*5.9*	*0.0*
No	24.9	*18.1*	*2.9*	*4.0*

Continued:

Continued from Table 6.4:

Background characteristics	Any Infection	Nature of infection: Endogenous (one or more)	Nature of infection: Sexually transmitted (one or more)	Nature of infection: Endogenous with STI/Other
Gap between the last two pregnancies ***				
≤12 months	46.7	*37.8*	*6.7*	*2.2*
13-36 months	20.7	*12.8*	*3.0*	*4.9*
>36 months	28.8	*21.2*	*3.8*	*3.8*
None or only one	8.0	*8.0*	*0.0*	*0.0*
Ever wanted to get pregnant and could not				
Yes	17.6	*14.7*	*2.9*	*0.0*
No	24.5	*17.3*	*3.2*	*0.0*
Pregnancy resulting in foetal loss in last 2 years[2] **				
Yes	45.8	*29.2*	*12.4*	*4.2*
No	19.2	*14.4*	*3.8*	*1.0*
Current contraceptive use ***				
Not using	22.8	*15.8*	*3.8*	*3.2*
Pills	23.1	*15.4*	*7.7*	*0.0*
IUD	54.1	*45.8*	*4.2*	*4.2*
Injections	11.1	*0.0*	*11.1*	*0.0*
Condom	9.1	*9.1*	*0.0*	*0.0*
Tubectomy	38.9	*27.8*	*2.8*	*8.3*
Rhythm	0.0	*0.0*	*0.0*	*0.0*
Withdrawal	14.3	*4.8*	*0.0*	*9.5*
Menstrual hygiene ***				
Commercial sanitary pads	13.3	*8.9*	*0.0*	*4.4*
Cotton wool/new cloth	22.0	*18.6*	*1.7*	*1.7*
Old/used cloth	35.6	*24.8*	*4.0*	*6.9*
Not menstruating/amenorrheic	17.9	*12.3*	*4.7*	*0.9*
Frequency of baths per week*				
1-2 times	27.6	*20.1*	*4.6*	*2.9*
3-4 times	21.6	*14.7*	*1.7*	*5.2*
5 or more	4.8	*4.8*	*0.0*	*0.0*
Decision-making authority				
No sat at all	31.8	*31.8*	*0.0*	*0.0*
Moderate say	26.6	*20.3*	*1.6*	*4.7*
Substantial say	26.8	*18.1*	*4.7*	*3.9*
Major say	16.3	*10.2*	*3.1*	*3.1*
Freedom from threat				
Afraid and beaten *(Battered)*	23.3	*16.7*	*5.0*	*1.7*
Afraid but not beaten *(Anxious)*	25.8	*20.4*	*1.1*	*4.3*
Not afraid but beaten *(Defiant)*	28.2	*17.9*	*5.1*	*5.1*
Neither afraid nor beaten *(Contented)*	21.0	*14.3*	*3.4*	*3.4*
Freedom of mobility				
Needs permission:				
Always	25.1	*18.2*	*2.5*	*4.4*
Never	22.9	*16.9*	*4.8*	*1.2*
Depends	16.0	*8.0*	*4.0*	*4.0*
Control over household income *				
Has control	21.1	*15.2*	*1.8*	*4.0*
Does not have control	30.7	*21.6*	*6.8*	*2.3*

Source: RRTIS 2001-2002. Note: 1. Including 311 women who consented for the medical examination, except where mentioned. 2: Including 128 women who have pregnant in the last 2 years, including 70 women giving live births, 34 who were currently pregnant, 2, 7 and 15 who had still births, induced abortion and spontaneous abortions, respectively. Chi-square/Fisher's Exact test significance levels: *** p<.001, **p<.01, and * p<.05, for having/not having any infection.

Personal hygiene can affect the vaginal environment, any alteration in which could lead to endogenous infections. In the present study the two indicators used for personal hygiene, that is menstrual protection and number of baths taken per week, are significantly associated with having an infection. Women having baths more frequently have an infection rate much lower to those who bathe just 1-2 times a week (Table 6.4). Likewise, women with better menstrual hygiene had lower infection rates. Women using old cloths for menstrual protection have an infection rate (36 per cent) almost three times to those using sanitary pads (13 per cent). The rate of infection for those using cotton wool or new cloth falls in the middle of these two categories, at 22 per cent (Table 6.4). Other studies in the region, including those done by Hawkes, et al., (2002) and Wasserheit, et al., (1989) done in Bangladesh, and Brabin, et al., et al (1998) and Mulgaonkar, et al., (1996) in India, found a similar pattern of relations between these variables. In the present study, women using old cloths for menstrual protection usually used it 3 to 4 times on average before discarding it. Instead of drying the cloth in sun after washing, they almost invariably dried it in shady, hiding places, increasing the chances of it being infected even more. It is interesting to note that the rate of infection among amenorrheic[21] women is higher (18 per cent) to those using sanitary pads (13 per cent). Analysis of data shows, twenty one per cent of these amenorrheic women were reaching menopause, while 26 per cent were pregnant at the time of the survey, with the remaining proportion going through post-partum amenorrhoea or stating no specific reason for it. Among women approaching menopause and those pregnant, 75 per cent and 60 per cent had endogenous infections, respectively. Both these conditions can result in alterations in the hormonal balance, which is a possible source of endogenous infections. These findings should be treated

[21] Amenorrhoea here refers to absence of menstruation for any reason, including post-partum period, pregnancy, menopause or any reason causing lack of menstruation in three months preceding the survey.

with caution because of the small number of observations, but there is evidence available that probability of having endogenous infections, especially bacterial vaginosis, increases among menopausal and pregnant women (Majeroni 1998; Wasserhiet, et al., 1989).

With sexual relations primarily initiating after marriage in Pakistan, especially for females, duration of marriage reflects the time period spent with a possibility of sexual contact. It is normally only after marriage that women experience pregnancies and use contraceptives, all of which are associated with RTIs. As Table 6.4 shows, the rate of having a RTI increases with increasing number of years in marital union. The rate increases dramatically after one year of marriage. This is complemented by the significant relationship between number of pregnancies women have had and the rate of having any infection, with the rate increasing with the increasing number of pregnancies. Longer duration of marriage, more pregnancies and more the risk of having an infection seems to be the emerging pattern. Women with more pregnancies do not just have a higher rate of infection but also have more infections at the same time. Among infected women with five or more pregnancies, 7 per cent have both endogenous and sexually transmitted infections, which is higher than those having fewer pregnancies (Table 6.4). The significant relationship between having an infection and the gap between women's last two pregnancies also gives credence to this association. Women having two pregnancies within a year have the highest rate of having an infection, which are mainly endogenous in nature. Apart from the endogenous factors that might be responsible for these infections, iatrogenic factors cannot be ruled out, given that a large proportion of deliveries are still taking place at home, not necessarily attended by trained practitioners. Thus, the obstetric methods used and the lack of aseptic conditions in

which births are taking place could be contributing to the prevalence of infections.

Table 6.4 shows a strong association between foetal loss and having an infection. Women who experienced a loss of foetus in two years preceding the survey had a rate more than twice as high as those who had only live births or were still pregnant. Although induced abortion is legally restricted in Pakistan it is not uncommon (Rehan et al., 2001; Saleem and Fikree 2001), as also confirmed by this study. However the laws restricting abortion mean that women opting for terminations have fewer options with regard to a safe abortion procedure and proper post-abortion care and treatment in case of complications. According to WHO (1995) there is a need for complete medical assessment after abortion, comprising identification of intra-uterine and abdominal injury, vaginal bleeding, infection, sepsis and pain. In contrast, women in Pakistan, especially those with fewer resources who get their abortions from *dais* or quacks, are exposed to lack of post-abortion care or proper treatment in case of complications, which take place often. The case of spontaneous abortion is no different, with many women failing to obtain any uterine evacuation after the event, increasing the risk of having infections. Table 6.5 shows the prevalence of infections among women experiencing foetal loss in 24 months preceding the survey by venue and person attending. We see that the rate of infection is higher when the process took place at home or when *dais* where in attendance.

Table 6.5: Rate of infection among women reporting foetal loss by venue and person attending in 24 months preceding the survey

Venue			Person assisting		
	Total number[1]	Infection rate[2]		Total number[1]	Infection rate[2]
Rate of infection for spontaneous abortion					
Home[3]	11	36.4	Doctor	3	0.0
Government hospitals	2	0.0	*Dai*	1	100.0
Private hospitals	2	50.0	Nurse/LHV[2]	1	100.0
MCH centre	0	0.0	Relative	0	0.0
			No one[3]	10	30.0
Total	15	33.3	Total	15	33.3
Rate of infection for induced abortion					
Home	3	66.7	Doctor	3	0.0
Government hospitals	0	0.0	*Dai*	2	100.0
Private hospitals	3	33.3	Nurse/LHV[2]	2	100.0
MCH centre	1	100.0	Relative	0	0.0
Total	7	57.1	Total	7	57.1
Rate of infection for stillbirths					
Home	2	50.0	*Dai*	2	50.0
Total	2	50.0	Total	2	50.0

Source: RRTIS 2001-2202.

Note: 1. Includes all women having spontaneous/induced abortion or stillbirth at that place/assisted by that person. 2. The rate of infection, in percentage, among women in that sub-group. 3. Cases of spontaneous abortion where no one was consulted or referred to. Chi-square/Fisher's Exact test significance levels: *** p<.001, **p<.01, and * p<.05, for having/not having any infection.

The number of cases is again small to draw any valid conclusions but there is a pattern emerging, with infections being more common among women having induced abortions at home and when *dais* are handling the procedure, who generally use some traditional method to abort the foetus and at times may even use some physical insertions for the purpose. The rate is lowest when the procedure is taking place at the hands of doctors, especially at government hospitals. However, due to existing laws these doctors cannot be legally approached for induced abortions for terminating pregnancies without any medical reason endangering life of the mother to be. The widespread prevalence of post-abortion complications in Pakistan has been confirmed by various studies, including those done by Mahmud and Mushtaq (2002), Saleem and Fikree (2001), Shah and Rasheeda (2002), Pervez (2002) and Najmi (1998). The most common problems identified in these studies are mild to severe haemorrhage, trauma,

infections and sepsis. These are conditions that need prompt referral and treatment, absence of which can lead to aggravating the problem. Some of the measures that might be needed in such situations, as proposed by WHO (1995) include:

i. ***Replacement of fluids***: Including saline solution, plasma substitute or safe blood in case of shock or vaginal bleeding.

ii. ***Laparotomy***: Surgery might be needed if an intra-abdominal injury is identified. Such an injury could take place due to uterine perforation in process of inducing abortion.

iii. ***Uterine evacuation***: It is important to remove retained products of conception. First and early second trimester incomplete abortions can be treated with dilation and curettage (D&C) or vacuum aspiration, with the latter being the preferred method, but middle- or late-second trimester incomplete abortions need to be carried out in a facility with full emergency set-up.

iv. ***Antibiotics:*** To take care of any infection or septic shock taking place after abortion.

v. ***Prevention of tetanus:*** There are chances of a woman getting exposed to tetanus during the process so tetanus vaccination should be given to her

vi. ***Rest and management of pain:*** Depending on woman's physical and emotional state, an appropriate pain management regimen needs to be recommended.

Comparing these measures with the scenarios revealed in the study findings, it is not surprising that the infection rates are higher among women experiencing abortions. As Table 6.5 (for the medical sub-sample) and Table 3.17 (for the whole sample) show, majority of the women experiencing spontaneous abortions were assisted by no one, and they

usually did not consult anyone later either in this regard, so there is no way of knowing if they had retained any product of conception and were in need of further treatment. Likewise, induced abortions taking place at homes, at the hand of *dais*, or at some clandestine clinics, at the hands of quacks or ill- or quasi-trained nurses, can hardly claim to be taking into account the measures considered to be important for handling an abortion procedure or any resulting complications. Excessive loss of blood was the most common complaint reported by women who had experienced induced abortion, with no available arrangement to replace it. In the absence of basic measures to take care of complications, the need for rest and pain management seem like luxuries for women.

The association between RTIs and infertility has long been established. There is enough evidence that infertility can result from untreated pelvic inflammatory disease (PID), a common sequela of RTIs (AVSC, 2000; Reproductive Health Outlook, 2001; Path 1997b). PID can scar the fallopian tubes, either blocking them completely or damaging them to an extent where they cannot function properly. Ascent of gonococcal and chlamydial cervical infections to the upper reproductive tract can lead to PID, as can post-partum and post-abortion infections, which characterise deliveries taking place in unhygienic conditions and unsafe abortions. It is believed that the risk of infertility due to tubal reasons doubles with successive episodes of PID (PATH 1997b). In the present study, however, this relationship could not be ascertained. In fact, the rate of infection is lower among women who report primary or secondary infertility[22], than those who do not (Table 6.5). Interestingly, none of the women reporting primary infertility tested positive for any infection. This corroborates the view given by these women when they said that they have been to doctors

[22] Of the 311 women in the sub-sample, 34 women reported experiencing infertility. Of these 38 per cent (13 women) complained of primary infertility and 62 per cent (21 women) reported secondary infertility.

too many times, and have been told that they have no problem, but their husbands do not agree to medical examination. This makes estimation of infertility by survey questions quite dubious. What is measured as infertility among women might well be because of infertility of their husbands. Another methodological issue is the social and personal connotation of infertility, especially in case of secondary infertility. For instance, women having an induced abortion and testing positive for an RTI might have a problem that leads to infertility, but the fact that they do not wish any more children leaves them out of the count for secondary infertility.

Contraceptives are often considered by its users to be the reason behind any health problem they are having, especially those related to the reproductive system. We saw this in the previous chapter too, where contraceptive use was given as a major cause of having RTI related symptoms, which in many cases could be totally unrelated, but Table 6.4 shows that there does exist a strong association between contraceptive use and having infections. Women using IUDs have the highest rate of infection (54 per cent) followed by those who were tubectomised (39 per cent). Those using condoms (9 per cent), injections (11 per cent) or traditional methods of rhythm (zero per cent) or withdrawal (14 per cent) have a rate lower than that of non-users (23 per cent). This trend is consistent with the findings of other studies in the region that found IUD users and sterilised women having higher rates of infection (Hawkes, et al., 2002; Wasserheit, et al, 1989; Shrikhande, et al., 1998).

IUD use has long been linked to infections (Guerreiro, et al., 1998; Grimes, 1987; Farley, et al., 1992; Paavonen and Vesterinen 1980; Soderberg and Lindgren 1981), and findings of the present study show that women using IUDs have an infection rate much higher than other method users or non-

users. Along with the iatrogenic factors playing their role at the time of the insertion, a variety of reasons are attributed to this relation between infections and IUD use, including changes in the cervico-vaginal environment making it more susceptible to vaginitis and cervicitis (Amsel, et al., 1983; Younis, et al., 1993). In the presence of these infections, the tail of the IUD could facilitate the ascent of organisms. Being a foreign body, an IUD could also predispose the body's defence against pathogens. Presence of primarily endogenous infections (Table 6.4), gives weight to the changes in the cervico-vaginal environment as a cause of the infections among IUD users.

Reasons similar to those mentioned for IUD use can be attributed to the presence of infections among tubectomised women. The nature of infections is largely endogenous in nature (Table 6.4), and if we look further into study data, of the fourteen tubectomised women who tested positive for any infection, eleven had bacterial vaginosis (79 per cent). This association between bacterial vaginosis and tubectomy can be due to the changes in the hormonal milieu that follow tubal ligation. DeStefano, et al., (1985) suggest that tubectomy affects the blood supply to uterus and ovaries that results in decreasing the oestrogen production. This in turn, affects the overall hormonal homeostasis of the body, specifically that of the cervico-vaginal environment. However, the two hormonal methods, pills and injections, do not appear to increase the infection rate. In fact injection users have a lower rate than non-users (Table 6.4). This result however should be interpreted cautiously because of the small number of women using pills and injections in the study sample. The same applies to women using rhythm as the method of contraception (Table 6.1). On the contrary, the number of women using tubectomy as their choice of contraception is large enough to give credence to the inferred relation between hormonal imbalance and endogenous infections. Barrier methods,

if used properly and consistently, are considered the best protection against STIs. In the present study also, none of the women using condoms tested positive for any STI, along with having the lowest infection rate among contracepting women, after rhythm users.

6.3 Multivariate analysis of the determinants of RTIs

In order to examine the factors most likely to determine the presence of infection, data were analysed using logistic regression method. Two models were created, each taking aetiological presence of at least one infection as the dependent variable. In Model 1, all factors that were believed to have a link to infections were included, while Model 2 was restricted to factors found to be significant in Model 1. Stepwise forward conditional logistic regression method was applied in Model 2, keeping the entry criterion for a variable at .05 and the removal criterion at 0.1. This procedure gave a model similar to the one created by including only the significant predictors in Model 1. Table 6.6 presents the results of these two models, finding Model 2 to be more robust and having better statistical values.

The risk of having an infection differs significantly with women's economic group, the menstrual hygiene practices, gap between two pregnancies, and current contraceptive use. There is no significant interaction between other predictors and risk of having an infection. Women with lower autonomy status are more likely to have an infection, for all four autonomy indicators, but the association is not significant. Similarly, there is an increasing likelihood of having an infection with decreasing educational levels but that association is also not significant. Women who have fewer baths are more likely to have an infection by a factor of six to eight times, but again the association is not statistically significant.

Table 6.6: Logistic regression analysis of aetiological presence of at least one infection

Predictor Variable	Model 1		Model 2	
	Co-efficient	Odds ratio	Co-efficient	Odds ratio
Age of women				
>25[a]				
25-34	.409	1.50	-	-
34<	-.118	0.89	-	-
Level of education				
11 or more years[a]				
Never been to school	.522	1.69	-	-
1-10 years	.281	1.32	-	-
Family Structure				
Nuclear[a]				
Joint/extended	-.763	0.47	-	-
Background area				
Urban[a]				
Rural	.076	0.93	-	-
Duration of Marriage				
16 years or more[a]				
1 year or less	.445	1.56	-	-
2-5 years	.327	1.39	-	-
6-15 years	.655	1.92	-	-
Economic group				
Upper[a]				
Middle	.353	1.42	-.452	1.57
Lower	1.407	4.09*	1.599	4.95**
Inter-spousal age difference				
Same age[a]	1.161	3.19	-	-
Wife older	.005	1.01	-	-
Husband 1-10 yrs older	-.041	0.99	-	-
Husband >10 yrs older				
Number of pregnancies				
1-2[a]				
None	-6.393	0.00	-	-
3-4	1.113	3.04	-	-
5 or more	.867	2.38	-	-
Gap between the last two pregnancies				
None or only one[a]		3.98*		
≤12 months	1.380	1.15	2.835	12.03***
13-36 months	.136	1.77	1.453	4.27**
>36 months	.569		1.871	6.50**
Frequency of bath per week				
5 or more[a]				
1-2 times	1.794	6.02	-	-
3-4 times	2.122	8.35	-	-

Continued:

Continued from Table 6.6:

Predictor Variable	Model 1		Model 2	
	Co-efficient	Odds ratio	Co-efficient	Odds ratio
Menstrual hygiene				
Not menstruating[a]				
Commercial sanitary pads	.831	2.30	.645	1.91
Cotton wool/new cloth	1.167	3.21*	.921	2.51**
Old/used cloth	1.066	2.90*	1.133	3.11**
Current contraceptive use				
Non-users[a]	-1.042	0.35	-.957	0.38
Pills	1.473	4.36*	1.248	3.49*
IUD	-1.973	0.14	-1.940	0.14
Injections	-2.018	0.13**	-1.845	0.16**
Condom	.503	1.65	.198	1.22*
Tubectomy	-6.533	0.00	-6.311	0.00
Rhythm	-.508	0.60	-.257	0.77
Withdrawal				
Decision-making authority				
Major say[a]				
No say at all	1.619	5.05	-	-
Moderate say	1.052	2.86	-	-
Substantial say	1.025	2.79*	-	-
Freedom from threat				
Neither afraid or beaten *(Contented)*[a]				
Afraid and beaten *(Battered)*	-.324	0.72	-	-
Afraid but not beaten *(Anxious)*	-.368	0.69	-	-
Not afraid but beaten *(Defaint)*	.083	1.09	-	-
Freedom of mobility				
Needs permission:				
Never[a]				
Always	.338	1.40	-	-
Depends	-.320	0.72	-	-
Control over household income				
Has control[a]				
Does not have control	.404	1.50	-	-
Constant	-7.197***		-4.176***	
Model Chi square	101.896***		72.535***	
Degrees of freedom	41		15	
R-square	41.9%		31.2%	
Reporting predictive correctly	83.0%		81.7%	
Hosmer- Lemeshow Test	.305		.690	
Number of cases	311		311	

Source: RRTIS 2001-2002.
Note: Chi-square/Fisher's Exact test significance levels: *** p<.001, **p<.01, and * p<.05, for having/not having any infection.

Women's economic status becomes even more significant when we exclude the insignificant factors in Model 2. Women from lower economic group are five times more likely to have an infection than women in upper

economic group (Model 2). The relation between having an infection and inter-pregnancy gap is even stronger. Women with two pregnancies within 12 months were twelve times more likely to have an infection than those with just one pregnancy or who have never been pregnant, in Model 2 (Table 6.6). Hormonal and iatrogenic factors, both, could be attributed to this high likelihood of having infections[23].

The likelihood of having an infection aetiologically increases by three times for those using old cloth for menstrual protection, a relation that was also shown in bivariate analysis. Those using cotton wool do not lag far behind, as they are over twice as likely to have an infection, compared to those using commercially produced sanitary pads/napkins. The cotton wool rolls available in market are usually not sterilised and many of the packings even state that they are "not for surgical use", implying that asepsis is not gauranteed. Using old cloth was primarily due to economic reasons but use of cotton wool could only be attributed to the lack of knowledge about the possible repercussions that the use of such materials can have, because there was not much price difference between some of the locally produced sanitary pads and cotton wool packs. The link between the protection used and the economic status of women is strengthened by the fact that in the upper economic group the use of old cloth was a mere 6 per cent, increasing to 40 per cent in the middle and 85 per cent in the lower economic group. There is also a similar linear trend in the use of sanitary napkins, though in the reverse direction.

Association of IUD use with RTIs proves to be significant in the multivariate analysis also, with women using IUDs 3.5 times more likely to have an infection than those using no contraceptive method (Method 2).

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[23] Three women having more than one pregnancy within 12 months opted for an induced abortion, while two each had stillbirths and spontaneous abortion, factors that were associated with high infection rate.

The likelihood of having an infection also increases by having a tubectomy by 22 per cent, while the use of condoms reduce the chance of having a RTI by 16 per cent in Model 2. Regardless of statistical significance, it is worth noting that all methods, be they traditional or modern, with the exception of IUD and tubectomy, have a negative association with the likelihood of having an infection. Non-users, thus are more likely to have a RTI except if they are using IUDs or are tubectomised.

6.4 Conclusions

The aetiological rate of infection among women was at a moderate level of 24 per cent, with 71 per cent of these women testing positive for endogenous infections. Bacterial vaginosis was found to be the most prevalent endogenous infection and trichomoniasis the most common STI. Clinical examinations, using the syndromic approach, tended to over estimate the presence of infections in total, but missed diagnosing some of the asymptomatic STIs and co-existing infections. Factors significantly increasing the likelihood of having an infection include IUD use or getting a tubectomy, shorter inter-pregnancy intervals, use of old cloth for menstrual hygiene and the lower economic status of women. Use of condom as the preferred contraceptive proves to be helpful in protecting against RTIs, specifically STIs, while better hygiene preventing women from endogenous infections.

§§§§§§§§§§§§§§

CHAPTER SEVEN

Self-Reports and Medical Diagnoses: The Question of Accuracy and Meaning

Validity and cost are the two main concerns in evaluating the accuracy of women's reports of their disease conditions to that derived from medical examination. Measuring morbidity in a community, including reproductive morbidity, through interview questionnaire seems to be the cheapest and most practical way, but there is a difference between incurring a lower cost and being cost-effective. The later quality largely depends on how valid the responses are when compared to the most thorough medical examination. The question of being cost-effective also arises in using alternative medical techniques, which in the case of the present study is clinical examination and laboratory testing. This gives us the opportunity to assess the WHO recommended syndromic approach to identify and manage reproductive tract infections in resource poor environments, as prevalent in low and middle-income countries, like Pakistan. Likewise, along with critically assessing the validity of self-reports for policy implications regarding health planning, we can evaluate any contribution they can make in our understanding of the prevalence of reproductive tract infections.

7.1 Comparison of medical and self-diagnoses

Our interest here is not just to compare information provided by women, expressed in reports of current experiences regarding RTI related symptoms, with the medical examination but to also compare two medical procedures, that is clinical and laboratory diagnoses. Most studies have found rather poor concordance between these three diagnostic approaches, including those done by Desai et al. (2003), Remez (2003), Bhatia and Cleland (2000), Kaufman et al. (1999), Hawkes et al. (1999), Filippi et al.

(1997), Zurayk et al. (1995), Klitsch (2000), Sloan et al. (2000) and Garg et al. (2001). The low level of agreement found in these studies are attributed to lack of clarity in the diagnostic criteria, asymptomatic nature of some infections leading to no clinical signs, and cultural perceptions of women regarding gynaecological health.

7.1.1 Comparison of clinical diagnosis with laboratory testing

Diagnosis in the clinic was based on algorithms defined in the manuals for syndromic management, which recognises several possible causes of frequently presented syndromes and recommends treatment based on an assessment of the most likely causative organisms. The assays used for laboratory diagnosis included culture testing, RPR (Rapid Plasma Reagin) and DFA (Direct Fluorescent Antibody test), depending on the infection to be screened (See Table 2.2 for details). Results of the comparison between these two instruments for the 311 women taking the medical diagnosis in the present study show very high sensitivity (95 per cent) and substantially high specificity (77 per cent) for infections (Table 7.1). This means that clinical examination is unlikely to miss the presence of an infection but is relatively more likely to miss the absence of an infection. From the low positive predictive value (56 per cent), an over-diagnosis of infections in the clinical diagnosis can be inferred. Likewise, the Kappa value of 58 per cent presents just a moderate strength of agreement between the clinical and laboratory diagnosis for the presence of any infection[24].

[24] See section 2.2.2 for the definitions and scales of the indicators used to measure the agreement between different diagnoses.

Table 7.1: Comparison of clinical diagnosis with aetiological assessment of infection

1. Having any Infection			
Has an infection clinically	**Has an infection aetiologically**		
	Yes	**No**	**Total**
Yes	70	55	125
No	4	182	186
Total	74	237	311
Sensitivity = 95%		Positive predictive value = 56%	
Specificity = 77%		Negative predictive value = 98%	
Kappa value = 58%		Percentage of agreement = 81%	
II. Having a STI %			
Has any STI clinically	**Has a STI aetiologically**		
	Yes	**No**	**Total**
Yes	7	3	10
No	7	294	301
Total	14	297	311
Sensitivity = 50%		Positive predictive value = 70%	
Specificity = 99%		Negative predictive value = 98%	
Kappa value= 57%		Percentage of agreement = 97%	
III. Having an Endogenous Infection %			
Has an endogenous infection clinically	**Has an endogenous infection aetiologically**		
	Yes	**No**	**Total**
Yes	58	57	115
No	6	190	196
Total	64	247	311
Sensitivity = 91%		Positive predictive value = 50%	
Specificity = 77%		Negative predictive value = 97%	
Kappa value = 52%		Percentage of agreement = 80%	

Source: RRTIS 2001-2002.

Sensitivity of the clinical diagnosis for STIs was much poorer (50 per cent) than the sensitivity for endogenous infections ((91 per cent), implying missing of sexually transmitted infections in cases where they are present. On the contrary, the specificity of clinical diagnosis for STIs is better (99 per cent) than its specificity for endogenous infections (77 per cent), referring to the comparative inability of the procedure to rule out presence of an endogenous infection when it is not present (Table 7.1). The over-diagnosis of endogenous infections in clinical diagnosis is also reflected in the rather low positive predictive value (50 per cent). There is just a fifty-fifty chance of a clinically diagnosed endogenous infection to be confirmed by laboratory testing. High percentage of agreements, for both, STIs and

endogenous infections, are mainly due to the high negative predictive values, as the positive predictive value, especially for endogenous infection is a low 50 per cent. Only a moderate level of agreement between clinical and laboratory diagnoses for the screening of STIs and endogenous infections is expressed in the respective Kappa statistics. After discounting the proportion of agreement that is to be expected according to chance alone, shown by the summary measure of Kappa value, the agreement between the clinical and laboratory diagnoses drops down to 57 per cent and 52 per cent for STIs and endogenous infections, respectively.

7.1.2 Comparison of self-reports with medical diagnoses

Table 7.2 compares women's report of the RTI symptoms with the diagnosis of reproductive tract infections from the clinical examination. Along with comparing the responses for the presence of any RTI, analysis is also done for STIs and endogenous infections separately[25]. Self-reported symptoms have high sensitivity (90 per cent) when compared with clinical diagnosis for presence of any infection but the specificity is a low 26 per cent. The positive predictive value and percentage of agreement are also a moderate 45 per cent and 52 per cent, respectively. These low values could be attributed to over-reporting of symptoms by women, in absence of clinically diagnosed infections. The Kappa value of 14 per cent further shows poor concordance between self-reported symptoms and presence of infection clinically.

Comparing self-reports with clinical examination for the nature of existing infection, we see the indicators to be slightly better for endogenous

[25] As stated in section 2.2.1, self-reported symptoms were classified as endogenous infections if the woman only complained about having abnormal vaginal discharge, with or without lower backache, and as STIs if the woman complained of experiencing one or more of the symptoms other than those categorising endogenous infections, and also when one or more of these symptoms were reported accompanying those categorising endogenous infections.

infections. For STIs, sensitivity is 90 per cent but the specificity is a low 28 per cent. On the contrary, the trend is reversed for the endogenous infections, with sensitivity being a poor 10 per cent and specificity at a high 90 per cent. The positive predictive value of self-reported symptoms is a poor 4 per cent, with the total percentage of agreement at a fair 30 per cent. The corresponding indicators for endogenous infections are comparatively higher but after discounting for agreement according to chance alone, comparison for both kinds of infections show a poor Kappa value (Table 7.2).

Table 7.2: Comparison of self-reports with clinical diagnosis

I. Having Any Infection			
Reports a symptom	**Has an infection clinically**		
	Yes	**No**	**Total**
Yes	113	138	251
No	12	48	60
Total	125	186	311
Sensitivity = 90%		Positive predictive value = 45%	
Specificity = 26%		Negative predictive value = 80%	
Kappa value = 14%		Percentage of agreement = 52%	
II. Having a Sexually Transmitted Infection %			
Reports STI related symptoms	**Has a STI clinically**		
	Yes	**No**	**Total**
Yes	9	216	225
No	1	85	86
Total	10	301	311
Sensitivity = 90%		Positive predictive value = 4%	
Specificity = 28%		Negative predictive value = 99%	
Kappa value= 2%		Percentage of agreement = 30%	
III. Having an Endogenous Infection %			
Reports endogenous infection related symptom	**Has an endogenous infection clinically**		
	Yes	**No**	**Total**
Yes	12	14	26
No	103	182	285
Total	115	296	311
Sensitivity = 10%		Positive predictive value = 46%	
Specificity = 93%		Negative predictive value = 64%	
Kappa value = 4%		Percentage of agreement = 62%	

Source: RRTIS 2001-2002.

Comparison of self-reports with the laboratory diagnosis for any infection shows a further decrease in the percentage of agreement (Table 7.3). The positive predictive value of self-reports is only 28 per cent, implying an over-reporting of symptoms by a big proportion of women, and the total percentage of agreement is just a fair 40 per cent. Since over eighty per cent women report having symptoms the chance of missing an infection is not much, reflected in the high sensitivity rate, but the actual infection rate diagnosed through laboratory testing being at 24 per cent, the comparison shows a much lower rate of specificity and positive predictive value for the self-reports (Table 7.2). The poor agreement between the self-reports and the laboratory diagnosis is also evident from the poor Kappa value for the comparison (10 per cent).

Comparison for the nature of infections as expressed in self-reports with laboratory diagnosis again shows weak concordance (Table 7.3). If the self-reports have strong sensitivity value, the specificity value is low and vice versa, for STIs and endogenous infections, respectively. Both comparisons, that is for STIs and endogenous infections, have poor positive predictive values, reflecting the wide gap between the reporting of symptoms and actual prevalence of infection. The overall agreement in the two comparisons is better for the endogenous infections, having a 74 per cent agreement between self-reports and laboratory screening, while for the STIs the rate goes down to 32 per cent (Table 7.3). However, if we discount the proportion of agreement that is to be expected by chance, represented by the Kappa values, the trend is reversed, with the self-reports for STIs, despite having very poor agreement (3 per cent), being somewhat better than the value for endogenous infections (-4 per cent[26]). Irrespective of the differences in patterns shown by different indicators, the overall agreement between self-reports and laboratory diagnosis remains weak.

[26] Expressed here as a percentage, Kappa value can range from 1 to –1 passing through zero, with 1 signifying total agreement, 0 no agreement and –1 total disagreement.

Table 7.3: Comparison of self-reports with laboratory diagnosis

I. Having any Infection			
Reports a symptom	**Has an infection aetiologically**		
	Yes	**No**	**Total**
Yes	70	181	251
No	4	56	60
Total	74	237	311
Sensitivity = 95%			Positive predictive value = 28%
Specificity = 24%			Negative predictive value = 93%
Kappa value = 10%			Percentage of agreement = 40%
II. Having a Sexually Transmitted Infection %			
Reports STI related Symptoms	**Has a STI aetiologically**		
	Yes	**No**	**Total**
Yes	13	212	225
No	1	85	86
Total	14	297	311
Sensitivity = 93%			Positive predictive value = 6%
Specificity = 29%			Negative predictive value = 99%
Kappa value = 3%			Percentage of agreement = 32%
III. Having an Endogenous Infection %			
Reports endogenous infection related symptom	**Has an endogenous infection aetiologically**		
	Yes	**No**	**Total**
Yes	4	22	26
No	60	225	285
Total	64	247	311
Sensitivity = 6%			Positive predictive value = 15%
Specificity = 91%			Negative predictive value = 79%
Kappa value = -4%			Percentage of agreement = 74%

Source: RRTIS 2001-2002.

Abnormal vaginal discharge is a key symptom characterising most of the reproductive tract infections so it would be worthwhile to compare woman's self-report of experiencing abnormal discharge with the aetiological presence of any RTI in general, and for STIs and endogenous infections specifically. Table 7.4 presents the results of comparing women's reports of experiencing abnormal vaginal discharge with the laboratory diagnosis for the same. The sensitivity of self-reports regarding abnormal vaginal discharge is 68 per cent while specificity is a moderate 53 per cent. The positive predictive value of only 31 per cent show an over-reporting of the symptom by women. The overall percentage of agreement

is also a moderate 60 per cent (Table 7.4). However, the Kappa value of 15 per cent shows poor concordance between reports of experiencing abnormal vaginal discharge and having an infection aetiologically. If we look into the accuracy of the self-reports regarding the symptom for STIs and endogenous infection separately, the agreement is even weaker, especially for STIs. While the sensitivity and specificity remains almost similar for STIs and endogenous infections, it is the positive predictive value that dips sharply, to 6 per cent, for STIs, though the value is not high for endogenous infections either (26 per cent). Along with over-reporting of the symptom by women, it could be concluded that complaints of abnormal vaginal discharge alone are inadequate to ascertain the presence of any RTI, more so for STIs. As compared to STIs, the endogenous infections show better overall agreement and Kappa value (Table 7.4). Thus, a complaint of abnormal vaginal discharge, which was the most reported symptom in the study, is a better indicator for the presence of endogenous infections than it is for STIs.

Table 7.4: Comparison of women's report of experiencing abnormal vaginal discharge with laboratory diagnosis

I. Having any Infection Aetiologically %			
Report having abnormal vaginal discharge	**Yes**	**No**	**Total**
Yes	50	110	160
No	24	127	151
Total	74	237	311
Sensitivity = 68%			Positive predictive value = 31%
Specificity = 53%			Negative predictive value = 84%
Kappa value = 15%			Percentage of agreement = 60%
II. Having a Sexually Transmitted Infection Aetiologically %			
Report having abnormal vaginal discharge	**Yes**	**No**	**Total**
Yes	9	151	160
No	5	146	151
Total	14	297	311
Sensitivity = 64%			Positive predictive value = 6%
Specificity = 49%			Negative predictive value = 97%
Kappa value= 2%			Percentage of agreement = 50%

Continued:

Continued from Table 7.4:

III. Having an Endogenous Infection Aetiologically %			
Report having abnormal vaginal discharge	**Yes**	**No**	**Total**
Yes	42	118	160
No	22	129	151
Total	64	247	311
Sensitivity = 66%			Positive predictive value = 26%
Specificity = 52%			Negative predictive value = 85%
Kappa value = 12%			Percentage of agreement = 55%

Source: RRTIS 2001-2002.

With knowledge about their bodies in general and reproductive system in specific being scant, there were misconceptions among women in the study about what comprises normal vaginal discharge. The question in the study asked women what they thought was normal vaginal discharge and then about their experiences regarding vaginal discharge that was not normal to their nature, thus being "abnormal". Women in the study very often confused the normal physiological changes in the discharge with pathological discharge, and any change was looked on with suspicion by them. Medically, normal vaginal discharge may appear clear, cloudy white, and/or yellowish when dry on clothing, and is non-offensive (Tindall 1997; Mackay and Evans 1999). It may also contain white flecks and at times may be thin and stringy. Changes can take place in the normal discharge for many reasons, including menstrual cycle, emotional stress, nutritional status, pregnancy, usage of medications, including birth control pills, and sexual arousal. Being a regular feature in the lives of women in the reproductive age, menstrual cycle is the most common cause of affecting changes in the normal vaginal environment. Increased wetness and clear discharge characterise the mid-cycle, and the pH balance of the vagina fluctuates during the cycle and is the least acidic on the days just prior to and during menstruation (Mackay and Evans 1999). Pathological discharge on the other hand is mucopurulent to frankly purulent, grey/white to yellow/green in colour, offensive in smell, which

may or may not be accompanied by rash, irritation, soreness and burning of skin during urination (Mackay and Evans 1999) In the absence of sound knowledge it is not surprising to find an over-reporting of experiencing abnormal vaginal in the present study, an over-reporting that comes to fore when we compare these self-reports with the laboratory examination for the presence of reproductive tract infections.

7.2 Classification and meaning of self-reports

The discordant responses given by women and the laboratory screening for RTIs need further analysis for explanation. The comparison between women's self-reports and laboratory testing helps us identify the magnitude of positive and negative responses, including both true and false reports. Table 7.5 presents these results achieved by comparing women's self-report for experiencing any symptom and an aetiological presence of any infection. Majority of the self-reports (58 per cent) fall in the false positive category, followed by true positive (22.5 per cent) and true negatives (18 per cent). Women who did not report any symptom but tested positive for at least one infection comprised 1.3 per cent of the sample (the false negatives in Table 7.5). The 58 per cent false positive responses support the notion of over-reporting of symptoms by women.

Table 7.5 also shows differences between these classifications of responses across women with different characteristics. Age does not show significant relation with the four measures, however, level of education does (Table 7.5). Women with more years of education have the lowest true positive rate (9 per cent), and the highest true negative (23 per cent), false positive (64 per cent) and false negative (3.6 per cent) rates. Likewise, women living in joint/extended households, with a false positive rate of 65 per cent, tend to over-report their symptoms. Differentials between economic groups also show a significant relation, with women in the upper economic

group having the lowest true positive responses (12 per cent), and the highest true negative (21 per cent), false positive (64 per cent) and false negative (2.4 per cent) responses. Women with more years of schooling and those belonging to the upper economic group had the lowest rate of reporting symptoms but they had an even lower rate of aetiologically diagnosed infections, giving them higher false positive response rates. Women on the other end of these two categories, that is those with no education and those belonging to the lower economic group, had the highest rate of self-reported symptoms but they actually had more infections too, so despite some over-reporting by them they still have a lower false positive response rate.

The inter-spousal age difference is highly significant for the four response classification (Table 7.5). Women with husbands more than ten years older to them have the highest false positive rate (68 per cent), while women who are older than their husbands have the highest true positive responses (36 per cent). The latter also have the highest false negative response rate (14 per cent). The number of pregnancies and children women have show significant relation with the response categories, as can be seen from Table 7.5. The true positive responses generally increase with the increasing number of pregnancies and children, accompanied by a gradual decrease in true negative responses. The false positive rate remains almost similar across women with different numbers of pregnancies and children, remaining within the 56-62 per cent range (Table 7.5). Not much difference is found between women who are using contraceptives and those who are not, however women using traditional methods of contraception have the lowest true positive rate (7 per cent), and the highest true negative (22 per cent), false positive (67 per cent) and false negative (4 per cent) responses. Another significant association for this response classification exists for women who reported to be

experiencing infertility, primary or secondary. Contrary to what is expected, women having the complaint have a lower true positive rate (12 per cent), compared to those who did not complain of infertility (24 per cent). There is not much difference between their false positive responses (Table 7.5). As would be expected, the number of symptoms reported by women is strongly related to this classification. The more the number of symptoms a woman report the more likely she is to have a true positive response, and the reverse being true for the false positive responses (Table 7.5).

Table 7.5: Classification of the results of the comparison between self-reports for any symptom and laboratory testing for any infection by selected characteristics of women

Background characteristics		True positive	True negative	False positive	False negative
Total		22.5	18.0	58.2	1.3
Age of woman					
	<25	17.7	25.8	56.5	0.0
	25-34	26.0	14.5	58.0	1.5
	34<	21.2	17.8	59.3	1.7
Ever been to school					
	Yes	18.6	18.1	61.8	1.5
	No	29.9	17.8	51.4	0.9
Level of education*					
	11 years or more	8.9	23.2	64.3	3.6
	1-10 years	22.3	16.2	60.8	0.7
	No education	29.9	17.8	51.4	0.9
Background area					
	Urban	21.7	18.3	58.7	1.3
	Rural	25.0	17.1	56.6	1.3
Family type					
	Nuclear	25.1	17.9	55.6	1.3
	Joint/extended	15.9	18.2	64.8	1.1
Economic group **					
	Lower	34.8	16.9	47.3	0.9
	Middle	16.6	17.8	64.3	1.3
	Upper	11.9	21.4	64.3	2.4
Inter-spousal age difference***					
	Wife older	35.7	7.1	42.9	14.3
	Same age	22.2	16.7	61.1	0.0
	Husband 1-10 yrs older	21.3	20.5	57.3	0.8
	Husband >10 yrs older	25.0	7.5	67.5	0.0

Continued:

Continued from Table 7.5:

Background characteristics	True positives	True negatives	False positives	False negatives
Duration of marriage				
≤ 1 year	5.6	27.8	66.7	0.0
2-5 years	19.1	23.8	55.6	1.6
6-15 years	24.6	13.1	61.5	0.8
16 years or more	25.0	18.5	54.6	1.9
Number of pregnancies *				
None	0.0	37.5	62.5	0.0
1-2	13.3	25.3	59.0	2.4
3-4	27.3	11.4	60.2	1.1
5 or more	28.2	15.3	55.7	0.8
Number of children *				
None	4.4	34.8	60.9	0.0
1-2	16.4	20.0	60.9	2.7
3-4	31.4	12.8	55.9	0.0
5 or more	25.0	17.1	56.6	1.3
Current contraceptive use				
Not using	21.5	19.6	57.6	1.3
Users	23.5	16.3	58.8	1.3
Traditional method users	*7.4*	*22.2*	*66.7*	*3.7*
Modern method user	*27.0*	*15.1*	*57.1*	*0.8*
Ever wanted to get pregnant and could not **				
Yes	11.8	26.5	55.9	5.9
No	23.8	17.0	58.5	0.7
Number of symptoms reported ***				
No symptom	0.0	93.3	0.0	6.7
1-2 symptoms	19.2	0.0	80.8	0.0
3-4 symptoms	26.6	0.0	73.4	0.0
5 or more symptoms	53.2	0.0	46.8	0.0
Decision-making authority				
No sat at all	31.8	0.0	68.2	0.0
Moderate say	25.0	18.8	54.7	1.6
Substantial say	24.4	17.3	55.9	2.4
Major say	16.3	22.5	61.2	0.0
Freedom from threat **				
Afraid and beaten *(Battered)*	23.3	3.3	73.3	0.0
Afraid but not beaten *(Anxious)*	24.7	15.1	59.1	1.1
Not afraid but beaten *(Defiant)*	28.2	23.1	48.7	0.0
Neither afraid nor beaten *(Contented)*	18.5	26.1	52.9	2.5
Freedom of mobility				
Needs permission:				
Always	23.6	14.8	60.1	1.5
Never	21.7	25.3	51.8	1.2
Depends	16.0	20.0	64.0	0.0
Control over household income **				
Has control	19.3	21.5	57.4	1.8
Does not have control	30.7	9.1	60.2	0.0

Source: RRTIS 2001-2002.
Note: Chi-square/Fisher's Exact test significance levels: *** p<.001, **p<.01, and * p<.05, for having/not having any infection.

Association of women's autonomy status with this response classification shows an interesting pattern. Women with lower autonomy level not only have higher true positive responses but also higher false positive responses, the relation being significantly strong for the freedom from threat and control over household income indicators (Table 7.5). Battered women have a false positive rate of 73 per cent compared to 53 per cent for the contented women, despite the former having a true positive rate of 23 per cent in comparison to 19 per cent for the latter. Likewise, women having no say at all in household decision-making have a false positive rate of 68 per cent with 32 per cent of their responses classified as true positives, both rates being higher than the ones for women in other categories of this indicator (Table 7.5). This pattern is generally shared by all the four autonomy indicators used in this study.

A notable aspect of this classification is the comparatively higher rate of false negative responses among women with better socio-economic and autonomy status. Despite a low overall rate of 1.3 per cent false positive responses, this trend could be inferred from Table 7.5. Women with most years of education, those in the upper economic group, having substantial say in household matters, have freedom from threat and have at least some control over household income are examples of women with better socio-economic and autonomy status having higher false negative responses. Women with 1-2 pregnancies and children have a comparatively low true positive rate compared to those with more pregnancies and children but have a higher false negative (2.4 and 2.7, respectively). A similar trend is also found for traditional contraceptive users, who have a low true positive rate (7 per cent) but a comparatively high false negative rate (4 per cent). Women who are older than their husbands present a peculiar situation that is not common in the socio-cultural environment of Pakistan. The rate of false negatives among them

is higher (14 per cent) than women having husbands older to them, irrespective of the age difference, along with having the highest true positive rate (36 per cent).

Psychogenic[27] factors seem to underlie the trends and the disparity that exist between the reported and actual infection levels. Women with better status are less likely to report any symptom, including those having an infection aetiologically, mirrored in their higher false negative responses. On the contrary, women with lower socio-economic and autonomy status do have high infection rates but their rate of self-reported symptoms is even higher, represented by their high false positive responses.

Before further discussing this suggested relationship, it is worthwhile looking into the factors that determine a woman's reporting of symptoms and her having an infection. Table 7.6 presents the results of the most robust models created through logistic regression to determine factors influencing the report of symptoms and aetiological presence of an infection. It is evident that factors determining the reporting of symptoms are quite different from those influencing the aetiological presence of an infection. Autonomy indicators, of freedom from threat and control over household income, are significantly related to the reporting of symptoms while they are not among the factors significantly affecting the aetiological presence of an infection. A similar trend exists for inter-spousal age-difference, which is significant for reporting of symptoms but not for actually having an infection. On the contrary, woman's economic status is significant for having an infection but not for reporting a symptom. This is understandable in the light of other factors that are significant for the aetiological presence of an infection. Among these is the means of protection used during menstruation, with the women from the lower

[27] See section 2.2 for description. In brief, the responses that are produced by psychological and mental factors, rather than organic factors.

economic group mainly using old cloth, which is a sub-group that is more likely to have an infection. Women's contraceptive use is highly significant for having an infection, but it is not so for reporting of a symptom (Table 7.6). Interestingly, it is the number of pregnancies that is significant for the reporting of symptoms but for actually having an infection, it is the gap between the last two pregnancies that is significant.

Table 7.6: Logistic regression analysis for factors significant for reporting of symptoms by women, and for aetiological presence of an infection

Predictor Variable	Reporting a symptom		Having an infection	
	Co-efficient	Odds ratio	Co-efficient	Odds ratio
Age of women				
>25[a]				
25-34	-	-	-	-
34<	-	-	-	-
Level of education				
11 or more years[a]				
Never been to school	-	-	-	-
1-10 years	-	-	-	-
Family Structure				
Nuclear[a]				
Joint/extended	-	-	-	-
Background area				
Urban[a]				
Rural	-	-	-	-
Economic group				
Upper[a]				
Middle	-	-	-.452	1.57
Lower	-	-	1.599	4.95**
Inter-spousal age difference				
Same age[a]				
Wife older	.451	.64	-	-
Husband 1-10 yrs older	-.340	.71	-	-
Husband >10 yrs older	1.871	6.49**	-	-
Number of pregnancies				
1-2[a]				
None	-.684	.51	-	-
3-4	1.121	3.07**	-	-
5 or more	.933	2.54*	-	-
Gap between the last two pregnancies				
None or only one[a]				
≤12 months	-	-	2.835	12.03***
13-36 months	-	-	1.453	4.27**
>36 months	-	-	1.871	6.50**

Continued:

Continued from Table 7.6:

Predictor Variable	Reporting a symptom		Having an infection	
	Co-efficient	Odds ratio	Co-efficient	Odds ratio
Menstrual hygiene				
Not menstruating[a]				
Commercial sanitary pads	-	-	.645	1.91
Cotton wool/new cloth	-	-	.921	2.51**
Old/used cloth	-	-	1.133	3.11**
Current contraceptive use				
Non-users[a]				
Pills	-	-	-.957	0.38
IUD	-	-	1.248	3.49*
Injections	-	-	-1.940	0.14
Condom	-	-	-1.845	0.16**
Tubectomy	-	-	.198	1.22*
Rhythm	-	-	-6.311	0.00
Withdrawal	-	-	-.257	0.77
Decision-making authority				
Major say[a]				
No say at all	-	-	-	-
Moderate say	-	-	-	-
Substantial say	-	-	-	-
Freedom from threat				
Neither afraid nor beaten *(Contented)*[a]				
Afraid and beaten *(Battered)*	2.234	10.21***	-	-
Afraid but not beaten *(Anxious)*	.550	1.7	-	-
Not afraid but beaten *(Defiant)*	.248	1.3	-	-
Freedom of mobility				
Needs permission:				
Never[a]	-	-		
Always	-	-	-	-
Depends	-	-	-	-
Control over household income				
Has control[a]				
Does not have control	1.185	3.27**	-	-
Constant		0.055*		-4.176***
Model Chi square		47.827***		72.535***
Degrees of freedom		10		15
R-square		39.4%		31.2%
Reporting predictive correctly		84.6%		81.7%
Hosmer- Lemeshow Test		0.740		0.690
Number of cases		311		311

Source: RRTIS 2001-2002.
Note: Chi-square/Fisher's Exact test significance levels: *** p<.001, **p<.01, and * p<.05, for having/not having any infection.

Reviewing the differences in factors significant for the reporting of symptoms and having an infection it is understandable to find a disparity between the two. While mainly socio-psychological factors influence the

reporting of symptoms, the demographic and physiological factors affect the actual presence of an infection. Being a battered woman is more likely to affect her psychological well being, than using any particular contraceptive method or menstrual protection, prompting her to report symptoms. Thus the reported symptoms, especially those classified as the false positives, are greatly influenced by woman's psychological and emotional state, and could be referred to as what Nichter (1981) calls the "idioms of distress".

"Idioms of distress" are "adaptive responses to circumstances where other modes of expression fail to communicate distress adequately or provide appropriate coping strategies" (Nichter 1981, p: 379). The term distress here refers to a broad range of feelings, including those of vulnerability, dissent, apprehension, resentment, inadequacy, dissatisfaction, suppressed anger and other anxiety states that if expressed overtly could lead to conflict and disharmony. Women thus speak through their bodies what they cannot express in words. They, consciously or unconsciously, convert a psychological conflict into a physical manifestation, which helps them to divert their focus away from a troublesome emotional or psychological issue to what may be a more acceptable physical problem, something they also find comparatively easier to express than the actual cause of the problem. Since women's health is socially and culturally constructed around woman's reproductive health, it is usually symptoms related, directly or indirectly, to the womb that become a means of expression. In the words of Zola, this is "what constitutes the necessary part of being a woman" (1966, p: 619). This conversion of psychosocial stress is reflected in the large false positive response rate in the present study, expressing woman's perceived balance, or imbalance, in different domains of her life, including, body, marriage, family and household.

Reported symptoms are associated to the cultural and personal meanings women attribute to them. Assigning weakness as a cause and consequence of vaginal discharge, as we saw in the earlier chapters, can in fact be expressions of powerlessness, vulnerability, control and psychosexual problems. As also pointed out by Patel and Oomman in India, the reporting of abnormal vaginal discharge is more a "somatic idiom" of depression and psychosocial distress than evidence of disease (1999, p: 30). Similarly, dyspareunia can be an expression of marital dissatisfaction, instead of a disease symptom. The high rate of reporting backache can in fact be a somatisation of stress and anxiety resulting from excessive and arduous housework that is not gratifying in itself. Dr. John D. Stoeckle very aptly refers to it as the "trapped housewife syndrome" (cited in Zola 1966). The fatigue and pain is more related to depression than to actual physical exertion. There is a substantial body of literature linking chronic pelvic pain and backache to psychological factors (Savidge and Slade 1996; Fry, et al. 1997; May et al. 1999; Wood et al. 1990). The battered women being ten times more likely than the contented ones to report a symptom (Table 7.6) and having a false positive rate of 73 per cent (Table 7.5) provide a clue to the psychogenic nature of self-reported symptoms.

The disparity between the self-reports and aetiological diagnosis arises because of interpreting reports having deep personal socio-psychological and cultural meanings attached to them, in a totally biomedical framework. Self-perceived morbidity is a function of both, the actual burden of pathology and the individual's social, psychological and cultural context, while the biomedical framework naturally takes only pathological factors into account, leading to the gap between the two. There is potential for mistranslation while interpreting one in the other's framework, but both biomedical and individual meanings of the symptoms are important. As findings of this study show, not all women reporting symptoms have

infections and not all those not reporting any symptom are without an infection. Not always are these symptoms used as an "idiom of distress" and may represent an actual presence of infection. Generalising the self-reports either way can result in excessive or inappropriate treatment in one case or missing of infection in the other.

7.3 Conclusions

Poor agreement exists between women's self-reports and laboratory diagnoses, with the former over-representing the presence of infection. Some of the self-reported symptoms are pathogenic in nature, as represented by the true positive reports, but majority of the self-reports are false positives when compared to laboratory diagnosis. Self-reports thus also have psychogenic origins, and are actually being used by women to express a state of psychological or emotional distress. Women in socially, culturally or emotionally weaker situations find their bodies to be the medium for their expression of distress. This could be especially true in situations where alternative means of expression or even stating the actual reasons of distress are judged to be more difficult and/or threatening than presenting them as physical conditions. This idea of psychogenic factors playing role in women's self-reported symptoms is further strengthened by the finding that for reporting of symptoms, socio-cultural and autonomy factors are significant while for actually having an infection it is mainly the demographic and physiological factors that play a significant role.

Clinical examination, based on the syndromic approach to manage RTIs, generally shows a moderate level of concordance with the laboratory diagnosis in this study. It not only over-diagnoses infections but in cases also misses infections. Validity of the reports is weaker for sexually transmitted infections than for endogenous infections. Although the cost of

clinical examination would be less than laboratory diagnosis for the screening of reproductive tract infections, but findings of this study prove it an unreliable way of assessing the presence or absence of these infections.

Weak diagnostic performance of women's self-reports and clinical examination, makes laboratory diagnosis, despite its higher cost, an imperative for a valid assessment for the presence, or otherwise, of RTIs. Along with the psychogenic factors that seem to be contributing to women's self-reports, the propensity of majority of the RTIs, especially STIs, to remain asymptomatic makes screening of symptom-free women essential to prevent sequelae of these infections. However, the self-reports are important for their socio-cultural and metaphorical connotations, and could be used to address issues, like social and emotional stress and excessive workload, that concern women's health in the broader context.

§§§§§§§§§§§§§

CHAPTER EIGHT

Addressing Reproductive Tract Infections: Health-Seeking Behaviour

In patriarchal societies, like that of Pakistan, women are considered responsible for taking care of the health of the family members, young or old. And as very aptly put by Kabira, et al., "The paradox of entrusting the woman with the responsibility of health and at the same time denying her the opportunities to influence policies remains a major obstacle" (1997, p: 23). In a broader perspective, these policies are not only those made at the national level but also the ones applicable at the personal and household level. Women are usually subservient to the decisions and authority of males in the household in matters relating health, despite being assigned the role of health carers. The issue is further complicated if the health problem is related to anything having sexual connotations in regions where it is deemed a taboo topic.

Evidence from the South Asian region shows that women's traditionally determined roles could greatly undermine their health, including reproductive health, and affect their use of health services, with majority not seeking any proper care for their problems. The present study looks into the health seeking behaviour of women reporting symptoms, including: whether they seek help or not; if they do, the nature of treatment they seek and the advice they get from health providers; compliance to the advice and its outcome; and if they do not seek help, reasons for it. The health seeking behaviour of women would be analysed here regardless of the accuracy or otherwise of the self-reported symptoms, because it is their perceived ill health that determines their behaviour not the actual presence or absence of disease.

8.1 Seeking help for each reported RTI related symptom

A woman's health seeking behaviour is a result of syncretism between her health beliefs and her socio-economic and demographic background, which affects factors defining her access to healthcare, in physical, social and psychological context. In Pakistan, as in most developing countries, the health system is a combination of modern and traditional medicine, and the nature of care sought depends on the health beliefs and socio-economic and demographic background of the concerned person. Thus, our interest here is not only in whether women seek help or not, but also the differentials that exist in health seeking among women with different backgrounds.

8.1.1 Proportion seeking help and reasons for not seeking help

Women's health seeking behaviour differed according to the symptom being reported. As Table 8.1 shows, the proportion seeking help varies from one fifth of the women reporting a particular symptom, as in the case of dyspareunia, to one half doing the same, as in the case of dysuria. The proportion seeking help is lowest for women reporting the symptoms of dyspareunia (21 per cent) and sores/ulcers on genitals (25 per cent), which could be due to the sense of shame associated with these symptoms.

Table 8.1: Proportion seeking help for each reported symptom

Symptom	Number reporting	% Seeking help
Menstrual Irregularity	105	41.9
Dysmenorrhoea	92	26.1
Dysuria	118	49.2
Lower abdominal pain	133	36.8
Abnormal vaginal discharge	201	45.8
Sores/ulcers on genitals	8	25.0
Dyspareunia	111	20.9
Lower backache	183	37.1

Source: RRTIS 2001-2002.

It is easier to understand these figures if we look into the reasons stated by women for not seeking help for each symptom. As Table 8.2 shows, lack of resources, and taking the symptom being experienced as part of womanhood are the two main reasons for not seeking help for all the symptoms. Women do not feel the need to seek help because for all these RTI related symptoms they feel that, *"aisa to hota hee hai aurton kay saath"* (it is a normal thing to happen to women). Interestingly, the proportion feeling so is highest for dyspareunia (51 per cent). It is not only lack of knowledge regarding RTIs that lead women to maintain the beliefs they have but also the socialisation process they go through, as was evident in the reasons perceived to be causing these symptoms (refer to Table 5.8). Another stated reason, that of "did not find time", which features for most of the symptoms, also implies lack of importance given by women to these symptoms. Time could be found if a thing is deemed important enough to give attention to. The "lack of resources" reason along with being a result of a general poor economic condition of the household could also be due to factors associated with money allocation within the household. Spending money on alleviating the health of women with these symptoms might not be a priority in a situation of economic constraints.

Contraceptive use also features consistently as a reason perceived to be causing the experienced symptoms, thus not warranting any treatment (Table 8.2). Contrary to what could be expected in the given circumstances, constraints due to lack of permission by husband or in-laws do not appear to be among the major reasons affecting woman's lack of action regarding her symptoms, while a feeling of shame, as expected, was among the major reasons for not seeking help for sores/ulcers on genitals (17 per cent) and dyspareunia (28 per cent). Dissatisfaction with prior treatments is also among the major reasons given by respondents for not seeking help for most of the symptoms, especially abnormal vaginal

discharge (20 per cent), which was a chronic problem for many women. The dissatisfaction stems from not just the failure of the treatment to help alleviate the problem but also the attitude of health providers during the course of consultation (Table 8.2).

Table 8.2: Reasons for not seeking help for each symptom

(%)

Reasons	Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Lack of resources	33.4	20.6	42.3	40.5	26.8	50.0	19.5	31.6
Did not find time	6.7	5.9	8.3	10.7	2.7	-	-	3.4
Do not feel the need	20.0	31.8	24.0	28.3	31.5	-	50.6	23.9
Know it is because of contraceptive use	11.7	8.8	-	6.0	2.7	16.7	4.6	9.4
Am tired of getting treatment, it doesn't help/doctors attitude	8.3	10.3	6.7	-	20.4	-	-	4.3
Do not get permission from husband/ in-laws	8.3	2.9	5.0	4.8	2.7	-	-	1.7
Feel ashamed	-	-	-	-	9.3	16.7	27.6	-
Know it is because of age	11.7	2.9	6.7	-		-	-	6.8
Self-medication	-	26.5	7.6	14.3	5.5	-	3.4	14.4
Other	10.0	7.4	5.0	6.0	3.7	16.7	3.4	9.4

Source: RRTIS 2001-2002.

Note: Includes multiple responses given by women not seeking help for menstrual irregularity (61), dysmenorrhoea (68), dysuria (60), lower abdominal pain (84), abnormal vaginal discharge (109), sores/ulcers on genitals (6), dyspareunia (88), and lower backache (115).

It is interesting to note that self-medication, in the absence of seeking help from anyone else, is high for symptoms associated with any kind of pain. As Table 8.2 shows, self-medication is highest among women experiencing dysmenorrhoea (27 per cent), lower abdominal pain (14 per cent) and lower backache (14 per cent). The highest rate for self-medication in case of dysmenorrhoea is of especial importance because it shows a rather low rate for seeking help otherwise (Table 8.1), as against lower abdominal pain and lower backache for which health providers are consulted more

often. Pain associated with menstruation is considered a routine thing by women, not motivating them enough to consult any health provider.

The factors affecting women's decision to seek help thus are a combination of their beliefs regarding the cause of the symptom (Table 5.10), the perceived consequences of the symptom (Table 5.12), and the constraints they face to seek help in situations where they decide to seek help but cannot (Table 8.2). To elaborate this synergy, we can take the example of the health seeking behaviour of women experiencing abnormal vaginal discharge. The rate for seeking help was lower for women who thought weakness (37 per cent), use of contraceptives (20 per cent), or sex after marriage (zero per cent) was the cause of their having the discharge, compared to those who thought they had a problem with their uterus (83 per cent) or those who did not know why they were having the symptom (56 per cent). The rate was also understandably low for women who considered this experience as a common thing (25 per cent). Similarly, the perceived consequences, expressed as the reasons for worrying on having a symptom, affected women's health seeking behaviour. Women had a higher rate of seeking help for abnormal vaginal discharge if they thought that the symptom could lead to something more serious (77 per cent), will cause infection "inside" (60 per cent), than if they thought that it can lead to weakness and backache (33 per cent). These perceptions and fears accompanied by the constraints offered by their socio-economic and demographic conditions define the course of action they take in response to the experienced symptom.

8.1.2 Choice of healthcare sought

Allopathic treatment is the most commonly reported choice of healthcare sought by women in the study sample, followed by the traditional doctors[28], for all the RTI related symptoms (Table 8.3). Not many women approach other health care providers, including nurses/lady health visitors/family welfare workers or the traditional birth attendants/*dais* to get relief from the symptoms they are experiencing. An even smaller proportion consults their husbands who get them medicines, without any formal direct consultation of women with any health provider (Table 8.3). It is however to be pointed out that all those considered "doctors" by women could be in some cases practitioners not having any professionally qualified allopathic training.

It is a common place happening in Pakistan, especially in rural areas but not absent in urban areas either, that persons having any exposure to medical procedures while working as a dispenser, compounder, nurse assistant, or an assistant in a pathological laboratory, after gaining experience for some time open clinics by themselves and dispense medical advice and prescribe medicines. This was evident from what one of the respondents said on being asked about what was she advised by the "doctor" she consulted for her problem. The advice she got was, "*uss nay bataya kay jism kay ander garmi hai, aur khanay kay liye do golian bhi di*" (he told that I have heat inside my body and gave me two kinds of tablets to eat). This advice shows a combination of treatment, finding a cause that lies in the domain of *Hikmat* but giving allopathic medicines,

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[28] **Traditional healers** here refer to *hakims*, homeopathic doctors and spiritual healers together. Though having different philosophies towards treatment they have been put together here because of fewer numbers of cases and showing them as a method parallel to allopathic treatment. **Hakims** give importance to the temperament of food and liquids and usually derive their medicines from herbs. Treatment recommended by them usually entails a strict diet pattern, stressing avoidance of certain types of food. **Homeopaths** base their treatment on the philosophy that "poison kills poison" and treat diseases by administering minute doses of drugs that would cause, in a healthy person, symptoms like those they aim to treat. **Spiritual healers** on the other hand provide treatment by using religious verses or approaching the spirits (Zikria 1967; Said 1983; Bhatti, et al., 2002).

which may or may not help. If such instances were found in a study conducted in a major urban area, where some sort of a monitoring system exists to check such malpractices, it could be imagined how big the problem of lay practitioners and quacks could be in the country otherwise, especially in rural areas, and the impact it might be having on the health of the population.

Table 8.3: Type of first treatment sought for each symptom

Symptom	Women seeking help (%)	% Seeking first help from:					
		Doctor	*Traditional healers*	*Nurse/LHV/ FWW*	*TBA/Dai*	*Husband*	*Relative*
Menstrual Irregularity	41.9	*38.1*	*1.9*	*1.0*	*1.0*	-	-
Dysmenorrhoea	26.1	*22.8*	-	*1.1*	-	*2.2*	-
Dysuria	49.2	*42.4*	*3.4*	*0.8*	*0.8*	*1.6*	-
Lower abdominal pain	36.8	*32.3*	*1.5*	*1.5*	*1.5*	-	-
Abnormal vaginal discharge	45.8	*31.3*	*10.9*	*1.5*	*0.5*	-	*1.5*
Sores/ulcers on genitals	25.0	*12.5*	*12.5*	-	-	-	-
Dyspareunia	20.9	*19.1*	*0.9*	-	-	*0.9*	-
Lower backache	37.1	*33.3*	*2.2*	*0.5*	*1.1*	-	-

Source: RRTIS 2001-2002.

The proportion seeking help from traditional healers is highest for those experiencing abnormal vaginal discharge, notwithstanding those having sores/ulcers on genitals as they have very few cases to base any valid inference on (Table 8.3). The choice of treatment could be linked to the perceived cause of having the symptom. As we saw in Table 5.8, the proportion of women perceiving reasons like weakness (41 per cent) and body heat/hot food (8 per cent) was highest for those reporting abnormal vaginal discharge, reasons that fall more in the realm of traditional medicine than modern medical practices. Several studies in developing countries have shown this link between the perceived cause of illness and

the choice of the type of treatment sought (Lambert 1996; Erwin 1993; Pool 1987; Colson 1971).

Gould (1965) in his study in India found that traditional medicine was used for illnesses that were not considered incapacitating, and doctors were consulted in situations where the illness was deemed incapacitating. The choice of treatment in the present study also hints towards a similar trend. The seriousness and gravity with which a symptom was perceived was reflected in the decision to seek or not seek help (as we will see later in this chapter) and in the nature of treatment sought. For example, dysuria was considered the most worrying symptom being experienced by women (Table 5.11) and as Table 8.3 shows, the proportion seeking help for it is higher than any other symptom (49 per cent). An examination of the relation between socio-economic and demographic characteristics of women and their choice of the type of treatment sought shows that more educated women and those belonging to the upper economic group tend to opt for doctors slightly more frequently than the uneducated women and those belonging to the lower economic group, however the differences are not so significant to warrant any detailed discussion. More than the choice of health provider, it is the basic decision of whether to seek help or not that confront women, reflected in the differences in their health seeking behaviour.

8.1.3 Differentials in seeking treatment

Indicators specific to each symptom show a more significant relation with women's decision to seek help, than the socio-economic, demographic and autonomy indicators (Table 8.4). Duration of experiencing a symptom, worry related to that experience and inter-spousal communication about it are strongly associated to women's consulting someone for her condition, for all the RTI related symptoms included in the study. Other factors

having strong relation include women's educational and economic status, and her control over household income, with all having a positive association on her ability to seek help for the symptom she is experiencing (Table 8.4).

Socio-economic indicators

Women's age does not generally show a statistically significant relation with her decision to seek help but increasing age does show an increasing trend for most symptoms (Table 8.4). Women aged over 34 years have the highest rate of seeking help for symptoms of menstrual irregularity (48 per cent), dysmenorrhoea (31 per cent), dysuria (56 per cent), and lower backache (45 per cent). The incidence of sores and ulcers was too low to draw any significant inference, while the lower rate of seeking help for dyspareunia (11 per cent) among women aged over 34 years could be because of the lack of desire for sexual intercourse, as discussed earlier in section 5.1.4.7. On the other hand, women in the youngest age group have the lowest rate of seeking help for almost all RTI related symptoms. This pattern supports the prevailing belief that women gain power and authority with age. One example in this regard is the increasing proportion of older women deciding by themselves to seek help when unwell. For women aged less than 25 years, the proportion is 34 per cent, increasing to 59 per cent for the 25-34 age group and 67 per cent for those aged 35 and over[29].

[29] This question was asked with reference to seeking help for any health problem they had, not specifically RTI related symptoms, but could also be applicable to the latter.

Table 8.4: Differentials in seeking help for RTI related symptoms by selected background characteristics of women

Characteristics	Women seeking help[1] (%)							
	Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Total	41.9	26.1	49.2	36.8	45.8	25.0	20.9	37.1
Age of woman (years)								
<25	25.0	19.0	47.8	33.3	38.9	0.0	7.7	29.6
25-34	39.5	25.7	42.2	41.1	48.4	50.0	32.1	33.0
34<	48.0	30.6	56.0	33.3	45.7	20.0	10.7 (*)	45.1
Ever been to school								
Yes	46.8	19.0	50.0	38.9	54.8	50.0	27.1	40.0
No	34.9	38.2 (*)	48.3	34.4	31.2 (**)	16.7	10.0 (*)	32.9
Level of education								
More than 10 years	54.5	23.1	64.7	43.5	54.1	0.0	31.8	51.9
1-10 years	42.5	17.8	44.2	36.7	55.2	100.0	25.0	36.1
No education	34.9	38.2	48.3	34.4	31.2 (**)	16.7	10.0	32.9
Background area								
Urban	43.8	33.8	51.9	36.3	47.3	28.6	25.0	40.6
Rural	36.0	4.2 (**)	43.2	38.7	41.2	0.0	7.7	28.3
Family type								
Nuclear	43.2	26.8	47.6	36.4	46.9	16.7	15.2	34.9
Joint/extended	37.5	23.8	52.9	38.5	43.1	50.0	29.5	42.1
Economic group								
Upper	48.0	27.8	71.4	36.4	66.7	-	18.8	56.5
Middle	54.8	27.5	51.0	43.1	47.1	50.0	25.0	37.5
Lower	23.7 (**)	23.5	41.8 (*)	28.3	34.3 (**)	16.7	15.8	30.7 (*)
Inter-spousal age difference								
Wife older	100.0	50.0	100.0	100.0	14.3	-	25.0	42.9
Same age	33.3	0.0	42.9	33.3	33.3	-	0.0	12.5
Husband 1-10 yrs older	41.3	26.0	48.8	35.8	51.3	25.0	24.7	39.5
Husband >10 yrs older	42.9	30.8	47.8	29.4	29.0 (*)	-	0.0	29.2
Duration of marriage								
One year or less	33.3	20.0	50.0	33.3	62.5	-	7.1	27.3
2-5 years	37.5	15.0	30.0	48.1	29.3	0.0	25.9	23.3
6-15 years	40.0	22.5	55.3	32.6	56.2	33.3	29.3	36.0
16 years or more	45.7	40.7	51.9	35.2	39.7 (**)	25.0	10.7	45.7

Continued:

Continued from Table 8.4

Characteristics	Women seeking help[1] (%)							
	Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Number of pregnancies								
None	27.3	30.0	0.0	40.0	14.3	-	40.0	14.3
1-2	31.8	13.0	53.8	48.4	45.7	50.0	9.1	36.6
3-4	62.5	26.1	48.3	38.9	51.5	33.3	34.5	35.5
5 or more	39.6	33.3	52.6	29.5	43.9	0.0	15.8	40.8
Number of children								
None	46.7	33.3	20.0	63.6	20.0	-	31.3	23.1
1-2	24.0	15.4	47.1	36.4	43.7	33.3	15.0	29.7
3-4	45.0	24.2	52.9	33.3	54.7	50.0	28.1	46.2
5 or more	52.0	38.1	55.0	33.3	40.0	0.0	13.6	38.6
Number of other symptoms experienced simultaneously								
Only this symptom	58.8	0.0	57.1	23.1	42.5	0.0	0.0	43.8
1 more	44.4	23.5	52.9	50.0	56.3	-	36.4	32.4
2-3 more	41.2	26.5	56.0	41.3	47.1	66.7	26.8	46.2
≥ 4 more	33.3	32.4	38.6	30.0	34.9	0.0	9.8 (*)	25.9
Had symptom in the past too								
Yes	42.9	23.5	47.1	28.6	45.5	28.6	20.8	-[a]
No	40.0	27.6	52.1	37.8	66.7	0.0	22.2	
Duration of experiencing the symptom								
< 30 days	0.0	0.0	29.7	19.0	17.4	0.0	2.9	17.5
31-90 days	33.2	16.2	37.8	28.1	38.5	0.0	14.0	25.0
> 90 days	63.3 (**)	54.2 (***)	75.0 (***)	49.4 (***)	52.5 (**)	66.7	50.0 (***)	53.3 (***)
Were you worried about it								
Yes, a lot	56.4	37.5	52.9	48.8	66.7	50.0	36.0	46.4
Yes, somewhat	50.0	25.0	59.5	38.0	52.4	0.0	27.3	42.6
No	15.6 (***)	12.5 (*)	24.0 (*)	22.5 (*)	25.9 (***)	33.3	12.7 (*)	2.9 (***)
Severity of the symptom								
Very severe, could not do house chores	58.6	38.5	65.2	53.3	60.0	0.0	40.0	58.8
Severe, but could do house chores	42.3	30.0	46.7	42.6	51.2	25.0	26.1	37.3
Not very severe	27.3 (*)	13.8	44.0	28.1 (*)	40.9	33.3	16.9 (*)	31.3 (*)
Inter-spousal communication about the symptom								
Yes	81.2	55.2	74.3	69.4	68.0	33.3	28.4	55.5
No	18.2 (***)	12.7 (***)	12.5 (***)	8.5 (***)	32.5 (***)	20.0	5.6 (**)	10.5 (***)
Decision-making authority								
No say at all	50.0	8.3	35.7	20.0	46.7	100.0	7.1	25.0
Moderate	40.9	38.1	39.3	41.2	38.9	-	21.4	28.6
Substantial	45.9	27.5	49.0	39.1	43.8	0.0	23.6	36.3
Major	35.3	21.1	68.0	32.0	52.5	50.0	23.1	50.0

Continued:

Continued from Table 8.4:

Characteristics	Women seeking help[1] (%)							
	Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Freedom from threat								
Afraid and beaten *(battered)*[a]	42.3	21.4	37.5	20.7	34.8	0.0	8.0	27.7
Afraid but not beaten *(anxious)*	38.5	30.0	57.9	35.7	48.4	50.0	23.5	34.9
Not afraid but beaten *(defiant)*	10.5	25.0	38.5	26.7	43.5	100.0	18.2	36.4
Neither afraid or beaten *(contented)*	61.8	25.0	54.3	51.1 (*)	51.5	0.0	27.5	48.1
Freedom of mobility								
Needs permission:								
Always	41.8	23.9	42.2	28.6	40.7	25.0	16.0	32.9
Never	50.0	35.0	66.7	53.8	55.1	25.0	33.3	51.4
Depends	12.5	20.0	62.5	56.3 (*)	58.8	-	25.0	44.4
Control over household income								
Has control	53.8	29.8	54.9	36.7	51.9	20.0	24.2	42.2
Does not have control	22.5 (***)	22.2	40.4	37.0	33.3 (**)	33.3	15.9	28.6 (*)

Source: RRTIS 2001-2002.

Note: 1. From among those reporting a particular symptom.

a: "Experienced in the past too" was not calculated for backache because its definition included the presence of any other symptom at the same time too, which would be difficult to measure due to recall problems.

Chi-square/Fisher's Exact test significance levels: *** p<.001, **p<.01, and * p<.05, for having/not having any infection.

The impact that the initial years can have on a person's life is evident from the higher rate of seeking help by women having urban background, as compared to those having a rural background (Table 8.4). Although the relation was not always statistically significant, the same pattern, of urban background women seeking help more often, exists for health seeking for all the symptoms. On the other hand, no trend is found for the type of family structure the woman is part of and her health seeking behaviour across different RTI related symptoms. For some symptoms, those living in nuclear households have a higher rate of consulting a health provider while for others it is those living in the extended/joint family households that are more likely to seek help (Table 8.4). This finding dispels the belief that extended/joint family households are essentially an obstacle for women's decision-making and behaviour, including those related to health.

Increasing level of education, as expected, has a positive relation with women seeking help for the symptoms they report to be experiencing (Table 8.4). Women with more than ten years of education were more likely to consult a health provider for alleviating her symptoms than those who had never been to school. The relation is not statistically significant for most symptoms but there is a pattern of more educated women being more likely to seek health care, a trend more visible if we look into the differentials between women who have been to school compared to those who have never been to school, instead of the figures for their level of schooling (Table 8.4). Education, as noted by Chatterjee (1990), affects an individual's perception of health needs, knowledge of services and the ability to access them. He considers the recognition of need as a first step for the utilisation of health services. Experiences from the present study show that illiterate women, specially those belonging to lower economic group, were even unable to use the available health facilities that were almost free to avail, comprising primarily of government run hospitals, not only because of lack of information but also due to lack of confidence to go there and approach the doctors. As Caldwell points out, an educated woman "is more likely to be listened to by doctors and nurses. She can demand their attention even when their reluctance to do anything more would completely rebuff an illiterate. She is more likely to know where the right facilities are and to regard them as part of her world and to regard their use as a right and not a boon" (1979, p: 410).

Economic status of women is significantly associated with their ability to seek help for most RTI related symptoms (Table 8.4). Women belonging to the lower economic group have the lowest rate of seeking help for all the symptoms. The relation between health disadvantage and economic disadvantage has been a theme of many recent studies, including those of Braveman and Tarimi (2002), Heuveline, et al., (2002), Gwatkin (2000),

Wagstaff and Doorslaer (2000), Ecob and Davey-Smith (1999). These studies highlight the inequalities that exist between the health of the poor and the rich, at all levels, that is, both between countries and within countries. The poor not only get sick more often but they also have lower accessibility to health services. In their study on social stratification and health in Pakistan, Hadden, Pappas and Khan (2003) found that the disease burden is borne differentially by individuals at different levels of economic status. Reproductive tract infections in this study show a similar trend. Women in the lower economic group, as we saw earlier, had a higher rate of infections and, as Table 8.4 shows, they are least likely to seek help for their problems.

Demographic indicators

Health seeking differentials based on selected demographic characteristics, including duration of marriage, number of pregnancies, number of children and inter-spousal age difference, show no statistically significant pattern across symptoms among women (Table 8.4).

Symptom specific indicators

Most of the indicators measuring different aspects of current symptoms, including their duration, severity, whether they were a source of worry, and if they were discussed with husbands show a statistically significant association with women's decision to seek help for most of the symptoms (Table 8.4). Women are more likely to seek help if they are having multiple symptoms, except for dysuria and menstrual irregularity, for which health care is sought more often even without the co-existence of any other symptom. Dysuria is a symptom that prompted most women to take action and is also considered a source of worry by the biggest proportion reporting any symptom. Past experience with the symptom does not have any statistically significant association with women's health

seeking behaviour (Table 8.4), but for majority of the symptoms any similar experience in the past has a negative affect on women's current health seeking behaviour. This could be a result of a feeling of dissatisfaction with prior treatment experiences or the fact that women reconcile having the symptom as something they must endure. Other factors, especially financial constraints, might also be a barrier to seek help repeatedly for the same symptom, especially if there is a perception that the treatment did not work on previous occasions. Example of this could be some of the women who were chronic sufferers of abnormal vaginal discharge. When asked why they were not seeking help for the symptom, most of them responded, "*Yeh aik purana masla hai. Her dafa doctor kay paas janay lagein to ghar ka baaqi kharch kaisay chalay ga?*" (It is an old problem. If we go to see a doctor every time, how would we manage other household expenses?).

The duration a symptom has been experienced is strongly associated with the women's decision to seek help for all the RTI related symptoms (Table 8.4). The duration between symptom recognition and seeking help can have important repercussions for women's health as obviously the more promptly help is sought the better it is for women, and by implications also their husbands. In the present study, the proportion seeking help within 30 days of experiencing a symptom is lowest, increasing with the passage of time, and is highest when a symptom is over 90 days old. Bhatia and Cleland (1995), in their study in South India on the health seeking behaviour of women with gynaecological morbidities, also found that there is a higher probability of seeking treatment among women who have been experiencing a symptom for a longer time than for those whose experience is a more recent one.

In the present study, the promptness with which treatment is sought varies between symptoms. Women with dysuria (30 per cent) were most likely to seek help within 30 days of recognising the symptom (Table 8.4). While the promptness to deal with lower abdominal pain (19 per cent), abnormal vaginal discharge (17 per cent) and lower backache (17 per cent) is not as much as with dysuria, but it is for menstruation irregularity, dysmenorrhoea and sores/ulcers on the genitals that women appear to delay seeking treatment the most, with no woman seeking help within 30 days. The cyclic nature of menstruation related symptoms could be a reason for women waiting for the next cycle to see if the symptom stays or goes away, inhibiting them to seek help promptly. Otherwise too, dysmenorrhoea was considered a normal thing by a big proportion of women and not many sought help for it at all, leave alone taking a prompt action. Perceived non-serious nature of symptom can delay seeking treatment by women. As Evans and Lambert (1997) found in their study in India, women sought help more promptly for symptoms they perceived as acute and debilitating, but delayed it for ambiguous symptoms, like vaginal discharge and menstrual disorders.

Whether a symptom is perceived as a source of worry or not by women is significantly associated with the decision to seek help, with those getting more worried about the symptom more likely to seek treatment, for all the symptoms (Table 8.4). The results conform to the existing evidence that suggests this pattern of higher health seeking behaviour among women who perceive their illness as something serious compared to those for whom it is not a source of worry (Crombz et al. 1999; Evans and Lambert 1997; Younis et al., 1993). As Table 8.4 shows, the proportion seeking treatment is highest for women who were "worried a lot" about the symptom, followed by those who were "somewhat worried" and those who were not worried at all, with the latter having the lowest rate. The

differentials between the health-seeking behaviour for sores and ulcers on genitals, for any of the selected characteristics of women, do not show any pattern or significant relation because of the very few women reporting the symptom (eight) and even fewer seeking help (two).

Another aspect of the experienced symptom that can affect the health seeking behaviour is the perceived severity of the symptom, and the way it affects women's daily activities. In the present study, women were predominantly housewives so the affected activity tended to be carrying out of household chores. As Table 8.4 shows, women had a higher rate for seeking treatment if the experienced symptoms were perceived as being so severe to affect the carrying out of daily household activities, compared to those who perceived them as severe but not to a level to affect daily chores. The rate is lowest for those who perceived the symptoms as not severe at all, a trend common among all the symptoms.

One of the strongest associations is found between women's communicating about their symptoms with their husbands and their health seeking behaviour (Table 8.4). Women talking about their experiences regarding the RTI related symptoms have a much higher rate of seeking help than those who do not. Santhya and Dasvarma (2002) in their study on reproductive illness among women in rural south India also found a significant impact of spousal communication about the illness on the curative behaviour of women regarding their problem. As they point out:

> "Gender differences in access to and control over, key material and social resources and resultant inequalities in power, knowledge and the capacity to make independent decisions and to act on them underlie the poor reproductive health status of women in most societies. In gender-stratified societies, men's attitudes and behaviours impact on women's ability to exercise

> reproductive choice and attain positive sexual and reproductive health outcomes".
>
> (Santhya and Dasvarma 2002 p: 223)

Along with these reasons, in many cases women have restricted mobility and need to take permission from their husbands before leaving the house for any purpose. They might also need to ask their husbands to take them to a health service. Given this scenario, it is understandable that women discussing their problems with their husbands have higher rates of seeking help than their counterparts.

Given the strength of influence **inter-spousal communication** about current symptoms has on women's health seeking behaviour, it would be of interest to see what factors affect this exchange of information between spouses. As Table 8.5 shows, duration of current experience with a specific symptom and women's level of worry regarding the experience are factors that are significantly associated with spousal communication, for most of the RTI related symptoms. Severity of a symptom and the level to which it affects women's ability to carry out household chores is also significant for some of the symptoms (Table 8.5). Level of spousal communication varies with the type of symptom. Women with dyspareunia (67.3) were most likely to discuss the problem with their husbands, followed by those reporting dysuria (59 per cent) and lower backache (59 per cent). The proportion being highest for women with dyspareunia is understandable considering the nature of the problem, and the time when they experience it. Dysuria was the symptom that worried women the most, and this worry could lead them to discuss the problem with their husbands. The symptom that is least discussed with the spouses is dysmenorrhoea (31.5), a symptom that was considered "normal/common thing" by a big proportion of women and for which only around one fourth sought treatment. The proportion talking about their experiences with their husbands for the

remaining symptoms of menstrual irregularity, abnormal vaginal discharge and lower abdominal pain, remain in the range of 37-47 per cent (Table 8.5).

No statistically significant association is found between a women's age and talking about the symptoms with their husbands, but younger women, that is those in the under 25 age group, had the smallest proportion communicating for majority of the symptoms. The proportion is highest for women in the middle age group, that is 25-34 years, for most symptoms (Table 8.5). Santhya and Dasvarma (2002) in their study also found younger women to be less likely to tell their husbands about their problems than older women. Contrary to what might be expected, level of education does not show any trend with inter-spousal communication on the current experiences regarding RTI related symptoms (Table 8.5). For some symptoms it is the more educated women who have a higher rate of communication with their husbands about the issue while in others it is those who have never been to school, with the later generally communicating more on the symptoms associated with pain, like lower backache, lower abdominal pain and dysmenorrhoea (Table 8.5). A similar irregular pattern is found when we take into account the background area of women, with the proportion talking to their husbands about the problem being higher for those having urban background for some symptoms and rural background for others.

Table 8.5: Inter-spousal communication on current symptoms by women[1]

Characteristics	Women talking about their experience of a symptom with their husbands (%)							
	Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Total	37.1	31.5	59.3	46.6	37.3	37.5	67.3	59.1
Age of woman (years)								
<25	33.3	28.6	52.2	33.3	30.6	0.0	61.5	51.9
25-34	32.6	34.3	64.4	55.2	45.3	50.0	71.4	58.0
34<	42.0	30.6	58.0	42.1	30.0	40.0	64.3	63.4
Level of education								
> 10 years	54.6	23.1	70.6	39.1	24.3	0.0	72.7	59.3
1-10 years	32.5	24.4	48.8	44.9	33.3	100.0	60.4	51.8
No education	32.6	44.1	63.8	50.8	48.1 (**)	33.3	72.5	67.1
Background area								
Urban	40.0	36.8	59.3	45.1	32.0	28.6	63.1	59.4
Rural	28.0	16.7	59.5	51.6	52.9 (**)	100.0	80.8	58.5
Family type								
Nuclear	39.5	32.4	61.9	45.8	41.3	33.3	69.7	60.5
Joint/extended	29.2	28.6	52.9	50.0	27.6 (*)	50.0	63.6	56.1
Economic group								
Upper	36.0	33.3	71.4	50.0	16.7	-	62.5	60.9
Middle	47.0	24.0	63.3	44.6	37.5	0.0	66.1	56.8
Lower	26.3	38.2	52.7	47.8	46.3 *	50.0	71.1	61.3
Inter-spousal age difference								
Wife older	50.0	50.0	50.0	50.0	14.3	-	25.0	71.4
Same age	33.3	0.0	57.1	33.3	33.3	-	33.3	25.0
Husband 1-10 yrs older	37.5	30.1	55.8	45.3	35.1	37.5	74.2	60.5
Husband >10 yrs older	33.3	38.5	69.6	47.1	54.8	-	45.5	58.3
Duration of marriage								
One year or less	33.3	20.0	62.5	33.3	37.5	-	64.3	36.4
2-5 years	37.5	20.0	10.0	40.7	34.1	0.0	70.4	53.3
6-15 years	37.5	42.5	71.1	50.0	43.8	66.7	61.0	58.7
16 years or more	37.0	25.9	57.7	48.1	30.2	25.0	75.0	65.7
Number of children								
None	46.7	33.3	40.0	63.6	30.0	-	43.8	61.5
1-2	32.0	38.5	52.9	45.5	43.7	66.7	75.0	57.8
3-4	42.5	27.3	67.6	38.1	32.0	-	62.5	53.8
5 or more	28.0	28.6	62.5	52.8	37.8	33.3	77.3	68.2
Number of other symptoms experienced simultaneously								
Only this symptom	52.9	28.6	57.1	30.8	20.0	0.0	66.7	56.3
1 more	38.9	23.5	64.7	54.2	37.5	-	77.3	64.7
2-3 more	35.3	35.3	68.0	50.0	42.9	66.7	73.2	60.3
≥ 4 more	30.6	32.4	47.7	44.0	44.2	25.0	56.1	55.2

Continued:

Continued from Table 8.5:

Characteristics	Women talking about their symptoms with their husbands (%)							
	Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Duration of experiencing the symptom								
< 30 days	18.8	0.0	59.5	17.2	24.1	0.0	48.6	35.0
31-90 days	34.9	26.5	51.4	47.5	29.6	33.3	69.8	50.0
> 90 days	60.0 (**)	45.8	65.9	59.4 (***)	42.4 (*)	50.0	84.4 (**)	75.6 (***)
Were you worried about it								
Yes, a lot	56.4	31.3	56.9	60.5	56.1	66.7	76.0	67.9
Yes, somewhat	32.4	38.9	66.7	56.0	47.6	0.0	68.2	63.2
No	18.8 (**)	20.8	52.0	20.0 (***)	16.0 (***)	50.0	63.5	29.4 (***)
Severity of the symptom								
Very severe, could not do house chores	46.8	53.8	65.2	66.7	80.0	100.0	70.0	70.6
Severe, but could do house chores	39.3	30.0	60.0	57.4	53.5	25.0	78.3	63.7
Not very severe	31.7	24.1	56.0	32.8 (**)	22.7 (***)	33.3	63.6	49.3 (*)
Decision-making authority								
No say at all	41.7	33.3	57.1	40.0	60.0	100.0	84.6	37.5
Moderate	45.5	47.6	57.1	52.9	50.0	-	42.9	50.0
Substantial	35.1	25.0	52.9	43.8	28.1	20.0	70.9	65.0
Major	32.4	26.3	76.0	48.0	37.7 (*)	0.0	85.7 (**)	64.6
Freedom from threat								
Afraid and beaten *(battered)*	34.6	28.6	43.8	44.8	30.4	0.0	72.0	46.8
Afraid but not beaten *(anxious)*	57.7	30.0	71.1	42.9	40.6	50.0	70.6	57.1
Not afraid but beaten *(defiant)*	10.5	33.3	53.8	53.3	43.5	0.0	63.6	77.3
Neither afraid or beaten *(contented)*	38.2 (**)	33.3	62.9	48.9	36.8	100.0	62.5	64.8
Freedom of mobility								
Needs permission:								
Always	37.3	35.8	61.4	45.1	43.0	50.0	64.0	58.6
Never	43.3	20.0	51.9	53.8	18.4	25.0	77.8	59.5
Depends	12.5	20.0	62.5	43.8	47.1 (**)	-	62.5	66.7
Control over household income								
Has control	10.0	29.8	62.0	48.1	34.8	40.0	71.2	64.7
Does not have control	32.5	33.3	55.3	44.4	42.4	33.3	61.4	50.0 (*)

Source: RRTIS 2001-2002.

Note: 1. Figures show proportion of women, with a specific symptom at the time of survey, communicating about their experiences with their husbands. That is proportion of women having inter-spousal communication from those reporting menstrual irregularity (105), dysmenorrhoea (92), dysuria (118), lower abdominal pain (133), abnormal vaginal discharge (201), sores and ulcers on genitals (8), dyspareunia (111) and lower backache (183).
Chi-square/Fisher's Exact test significance levels: *** p<.001, **p<.01, and * p<.05, for having/not having any infection.

Although, statistically not significant, women living in nuclear households are more likely to talk about their problems with their husbands than those living in joint/extended families for majority of the symptoms (Table 8.5). This could be because of the age effect on the household structure, with younger women more likely to be living in joint/extended arrangements whom we saw talked less about these matters with their husbands, but also due to the generally held idea of lack of privacy between couples in joint/extended households. Women living in such families might be talking about their problems with their mother-in-laws and sister-in-laws instead of their husbands, something quite common in such kind of household structures. Women's economic group, an indicator that has shown to be significant in most cases, is not significant with regard to inter-spousal communication on RTI related symptoms (Table 8.5). There is no pattern found across different symptoms, as for some symptoms it is women belonging to the upper economic group who are talking more to their husbands about the symptoms and for others it is those belonging to the lower economic group having more communication.

No statistically significant variation is found between women talking about their symptoms and the selected indicators of their demographic characteristics. As Table 8.5 shows, no discernible pattern of communication is found for different durations of marital union, inter-spousal age difference and the number of children a woman has.

The factors that seem to govern women's decision to talk about their symptoms with their husbands appear to be more symptom-specific, as can be seen from Table 8.5. The number of symptoms women are experiencing does not show any significant association with their decision to communicate with their husbands about the problem, but the duration, severity and worry associated with the symptoms have a significant

influence on their behaviour. Women who have experienced the reported symptom for longer periods, that is more than 90 days, are more likely to talk about the problem with their husbands than those whose experience is less than 30 days old (Table 8.5). Likewise, the more a woman is worried about the symptom she is experiencing the more likely she is to discuss it with her husband, as would those who perceive their symptoms so severe so as to affect their daily household routine

Women's autonomy indicators do not show any pattern of association, leave alone a statistically significant one, with inter-spousal communication about the symptoms (Table 8.5). In some cases it is women with lower autonomy status discussing the problem with their husbands and in others the ones having more autonomy. All four autonomy indicators in the study share this trend of no trend between women having a symptom and their discussing it with their husbands.

It could be inferred from the discussion above that women are generally prompted to talk to their husbands about the symptoms they are experiencing when enough time has passed and when they are worried about it. It would not be wrong to say that is not just a matter of sharing the information with their husbands but a need to take action that make them talk about their problem. As we saw earlier (Table 8.4), the two most significant factors for women's decision to seek help were the duration of the experience regarding the symptom and the level of worry associated with it, which are factors similar to those significant for their communicating about the problem with their husbands. This gives credence to the inference that it is her decision to seek help that needs to be sanctioned by her husband, which urges her to talk about the problem with him. In some cases she actually needs permission to leave home, in others she might need money for the consultation, and still in others she

might need her husband to take her to a health service. No matter what the situation, husband's consent and cooperation is needed in one way or another. Once that support is there, women are more likely to seek help because their decision to seek help is complemented by their husbands' support for them to seek help.

Now we come back to the bivariate analysis between women's background characteristics and their differentials in seeking health care for the reported symptoms (Table 8.4). Women's autonomy in mobility, decision-making and financial matters can have important repercussions for their ability to seek treatment for any health problem they face. Findings of the present study however do not generally show a significant relation between women's health seeking behaviour and their indicators of autonomy (Table 8.4). When women were asked, who takes the decision to consult or not to consult when they have any health problem, 58 per cent said that they take that decision themselves, while 30 per cent are a part of the decision-making process carried out jointly by women, their husbands and/or elders of the family, and for 12 per cent the decision is made by others, mainly the husband and/or his family (see footnote 28). However, this ability to take decision on their own also does not always materialise in actually seeking help, because there are accompanying issues of mobility and money. When asked specifically about their freedom in mobility regarding going to any health service, less than one third (27 per cent) said that they did not need permission for it, while 62 per cent always needed permission and for 11 per cent it depended on the kind/distance of the service they were thinking to access. With women having lower autonomy status but discussing their symptoms more often with their husbands, again highlights the same motivation for communication discussed about earlier, that is the need to have consent

from the spouse to take action regarding the symptom rather than just talking about the symptom for the sake of sharing information.

The only autonomy indicator showing a regular pattern for health-seeking behaviour, also statistically significant in some cases across the eight symptoms, is for women having at least some control over household income (Table 8.4). Women involved in controlling household income are more likely to seek help than those who are not. Her control over household income gives her more power to spend money where she wants to, including her access to health care if she decides to do so, removing at least one obstacle in seeking help. Gaining autonomy within the household is just part of the equation, and as reflected by restrictive mobility, it is the general social attitude towards women that form the whole picture, shared even by women themselves. The following statement by one of the respondents summarise this whole idea, when she says, "*Aurton kay liye yeh baat theek nahin kay who haspataal akaili jaein. Akaili kyon jana chahein gi woh? Logon ko fazool batein kernay ka mauqa kyon dein? Unn ko hamesha apnay shohar ya kisi aur ghar kay fard kay saath jana chahiye, taa kay kisi kay zehan mein koyi ghalat baat na aaye*" (It is not right for women to go to hospital alone. Why should they want to go alone? Why should they give an opportunity for others to talk bad about them. They should always go with their husbands or some other family member so that others do not get any suspicious ideas in their mind).

8.1.4 Determinants of women health-seeking behaviour: A multivariate analysis

The aforementioned discussion shows different patterns of health seeking behaviour among women having different socio-economic and demographic backgrounds. In order to determine the factors most likely to influence this behaviour we will analyse the data using the logistic regression

technique. The dependent variable being a dichotomy, that is, seeking treatment versus not seeking treatment, logistic regression is again the most suitable method. We will only look into the determinants for seeking help for abnormal vaginal discharge here. This symptom is selected for two reasons. One, it is the symptom most representative of RTIs, and two, it is the most reported symptom in the present study. Similar procedures were carried out for other symptoms as well but the analysis suffered due to small number of cases in many explanatory categories, making the analysis futile. As in earlier cases, two models were created. Model 1 included all possible factors that were considered to have a possible impact on the health seeking behaviour of women and Model 2, in which only those explanatory variables were included that proved to be significant in the Model 1. Stepwise forward conditional logistic regression method was also applied on Model 1, keeping the entry criterion for a variable at .05 and removal criterion at 0.1, and the resultant model was similar to Model 2, created by including only those variable that were significant in Model 1. Table 8.6 shows Model 2 to be a better model, with having much fewer variables it correctly predicts the variance in the health seeking behaviour almost as much as Model 1 does, with many more variables. The factors significantly associated with explaining the variance in women's decision to seek treatment for abnormal vaginal discharge include their level of education, their economic group, the duration they had experienced the symptom, their level of worry about the symptom, talking about the symptom with their husbands and their control over household income (Table 8.6).

Table 8.6: Logistic regression analysis of women's health seeking behaviour on experiencing abnormal vaginal discharge

Predictor Variable	Model 1		Model 2	
	Co-efficient	Odds ratio	Co-efficient	Odds ratio
Age of women				
>25[a]				
25-34	-1.571	0.21	-	-
34<	-.697	0.50	-	-
Level of education				
Never been to school[a]				
1-10 years	1.050	2.86*	1.525	4.60***
11 or more years	1.894	6.64*	1.751	5.76**
Family Structure				
Joint/extended[a]				
Nuclear	-.233	0.79	-	-
Background area				
Rural[a]				
Urban	-.259	0.77	-	-
Duration of Marriage				
1 year or less[a]				
2-5 years	-1.848	0.16	-	-
6-15 years	.092	1.10	-	-
16 years or more	-.549	0.58	-	-
Economic group				
Lower[a]				
Middle	.383	1.47	.411	1.51
Upper	2.232	9.32**	2.351	10.50***
Inter-spousal age difference				
Husband >10 yrs older[a]				
Same age	1.117	3.06	-	-
Wife older	-.145	0.87	-	-
Husband 1-10 yrs older	1.697	5.46	-	-
Number of pregnancies				
None[a]				
1-2	2.643	4.05	-	-
3-4	1.824	6.20	-	-
5 or more	2.161	8.68	-	-
Duration of experiencing the symptom				
≤ 30 days[a]				
31-90 days	1.693	5.44*	1.066	2.90
> 90 days	2.490	12.06***	1.988	7.16**
Number of symptoms				
Only this one symptom[a]				
One more symptom	1.428	4.17	-	-
2-3 more symptoms	-.055	0.95	-	-
4 or more other symptoms	-.825	0.44	-	-
Worry about the symptom				
No[a]				
Yes, a lot	2.523	12.47***	2.115	8.30***
Yes, somewhat	1.540	4.67**	1.084	2.97*

Continued:

Continued from Table 8.6:

Predictor Variable	Model 1		Model 2	
	Co-efficient	Odds ratio	Co-efficient	Odds ratio
Severity of symptom				
Not severe, could do house chores[a]				
Very severe, could not do house chores	.328	1.39	-	-
Severe, but could do house chores	.229	1.26	-	-
Inter-spousal communication about the symptom				
No[a]				
Yes	2.46	11.74***	2.132	8.44***
Decision-making authority				
No say at all[a]				
Moderate say	-.122	0.89	-	-
Substantial say	-.461	0.63	-	-
Major say	.121	1.13	-	-
Freedom from threat				
Afraid and beaten *(battered)*[a]				
Afraid but not beaten *(anxious)*	.503	1.65	-	-
Not afraid but beaten *(defiant)*	-.564	0.57	-	-
Neither afraid or beaten *(contented)*	.528	1.70	-	-
Freedom of mobility				
Needs permission:				
Always[a]				
Never	1.396	4.04	-	-
Depends	.091	1.10	-	-
Control over household income				
Does not have control[a]				
Has control	1.284	3.61*	1.718	5.57***
Constant	-8.959***		-6.217***	
Model Chi square	126.678***		97.802***	
Degrees of freedom	36		10	
R-square	62.5%		55%	
Reporting predictive correctly	85.6%		84.1%	
Hosmer- Lemeshow Test	.280		.807	
Number of cases	201		201	

Source: RRTIS 2001-2002.
Note: Chi-square/Fisher's Exact test significance levels: *** p<.001, **p<.01, and * p<.05, for having/not having any infection.

A positive relationship between education and better health has been shown by a number of studies, and the present study also shows that women were five times more likely to seek help if they had up to 10 year of schooling, increasing to six times with more than 10 years of schooling, compared to women who had never been to school, in Model 2 (Table 8.6). Likewise, the likelihood of seeking help increases dramatically (11 times) for women belonging to the upper economic group compared to those in the lower economic group, corroborating the findings of the bivariate analysis.

The increasing duration of current episode of abnormal vaginal discharge influences women's health seeking behaviour significantly in the multivariate analysis, as was also found in the bivariate analysis. The likelihood of seeking treatment increases with increasing duration, with women experiencing the symptom for 31-90 days being three times, and those for over 90 days being seven times more likely to seek help than those who had experienced it for under 30 days (Model 2, Table 8.6). A similar relation exists between the worry associated with experiencing abnormal vaginal discharge and women's decision to seek help. Women who are "worried a lot" about the symptom are eight times and those who are "somewhat worried" are three times more likely to seek help than those who are not worried at all about the experience (Model 2). Severity of the symptom, which has a significant association in the bivariate analysis, does not show a significant relationship in the multivariate analysis, but the likelihood of seeking help increases with increasing severity (Model 1). Although not a significant relation, the number of co-existing symptoms along with abnormal vaginal discharge and health seeking behaviour show an interesting pattern of relationship. The likelihood of seeking help increases by four times if a woman has one additional symptom accompanying abnormal vaginal discharge, but decreases with the increasing number of symptoms (Model 1). Inter-spousal communication, as in bivariate analysis, shows a strong statistically significant positive relationship with women seeking treatment. The likelihood increases by 8 times for women discussing their symptom with their husbands than those who do not (Model 2).

The autonomy indicators, except for women's involvement in controlling households income, do not show any significant relation with women's health seeking behaviour for abnormal vaginal discharge (Table 8.6). Women who are included in controlling households' income are 6 times

more likely to seek help than those who have no control (Model 2). However, despite not being significant, Model 1 does show women with more autonomy being more likely to seek help for all the indicators. Example in this regard being the health seeking behaviour of women with more say in household affairs (twice as likely than those having no say), contented women (2 times more likely than battered women) and women with free mobility (4 times more likely than those who always need permission to go out).

8.2 Advice given by health providers

The advice given to women varies with the health provider they seek help from. Allopathic doctors were the main source of seeking treatment (Table 8.1), who were generally identified by women through family members, friends and relatives who have had a positive experience with them in the past, or by just a matter of vicinity of the health service. Most of these doctors gave medicines to women without telling them anything about the causes and consequences of the symptoms and the way they could be prevented (Table 8.7). Communication barrier between health providers and receivers could be detrimental to seeking prompt and proper care, and it was the biggest grievance reported by women. They said that doctors just prescribe medicines, without telling them anything about their complaints. The prescribed medicines included tablets, syrups and vaginal creams and pessaries. Some of the women were asked to get certain kinds of injections for their complaints, again without stating the reason behind the experienced symptom and the purpose of giving the injection (Table 8.7). Some of the doctors conducted pelvic examination before prescribing medicines but many simply relied on the details provided by women. Laboratory testing was even more rare. When asked about what medicines they were asked to use, most women could not state the name and could only tell the colour of the tablets. Difficult names of the medicines and low

level of literacy of women are among the reasons for not knowing the medicines they were using but in most of the government hospitals and small clinics, these women were going to, tablets and pills are dispensed in paper sachets without having the names in most cases.

The belief that these symptoms are caused by "weakness" is also apparent in the advice given by some of the health providers. For majority of the symptoms, there is a proportion of women who were given "*taqat ki goli*" (tablets for strength) to treat the weakness causing their symptoms (Table 8.7). Strangely enough, this kind of explanation and diagnosis was in some cases also given by allopathic doctors. This gives credence to the belief that all those considered doctors by women were not necessarily qualified practitioners[30]. Avoidance of certain kinds of foods was also a recommended treatment for some women. This primarily comprised of food considered "hot" in nature, like beef, eggs, fish. Some women were using some home remedies to treat the symptoms they were having (Table 8.7). Home remedies, apart from refraining from certain food types and preferring others, included certain herbal procedures. For abnormal vaginal discharge, one woman was boiling leaves of *neem*[31] tree and washing her vagina with it.

[30] See Annex 5 for a brochure, found in a clinic of one such doctor, giving information that does not belong to allopathic medicine.

[31] *Neem* tree/leaves are considered to have many medicinal benefits in ethno-medicine. Scientific name for *neem* is Azadirachta indica, of the family Meliaceae. Its trunk exudes gum and has a bitter bark used as a tonic and whose fruit and seeds yield medicinal aromatic oil.

Table 8.7: Advice given by the first health provider accessed

Advice given	Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Gave medicine, told nothing	50.0	79.2	75.9	63.3	69.6	50.0	47.8	71.0
Said it is because of weakness, gave "*taqat ki goli*"	11.4	-	3.4	4.1	13.0	-	8.7	11.2
Gave injections, told nothing	6.8	-	3.4	12.2		-		2.9
Growth/cyst in uterus, gave medicine	6.8	-	-	-	2.2	-	8.7	-
Said it is normal to have the symptom/ nothing worrying/ nothing wrong	11.4	16.7	3.4	4.1	5.5	-	21.7	8.4
"*Garmi*" (heat) inside, abstain from certain foods, take water	-	-	5.1	-	-	-	-	-
Home remedies	-	-		4.1	5.5	-		2.9
Gave/said nothing	4.5	-	1.7	-		-	8.8	
Other	9.1	4.1	7.1	12.2	4.2	50.0	4.3	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: RRTIS 2001-2002.

For all the symptoms, a substantial proportion was told that there was nothing wrong with them, or what they had was nothing to worry about, and were not suggested any treatment (Table 8.7). Women who were told so were not happy with their consultation with health providers, as they thought their problems were not taken seriously. There is a possibility that there was actually nothing wrong with the women who were told so but there was a general feeling of dissatisfaction with the attitude of health providers, mainly allopathic doctors. Most of the women felt that doctors were insensitive to their problems, made them feel very uncomfortable during consultation and did not share any information about the illnesses when women asked question regarding their condition.

8.3 Compliance with treatment and outcome

A prescribed treatment can only be as effective as correctly it is complied with. In case of RTIs, non-compliance cannot only aggravate the problem but has the potential to spread to the partner too. In the present study a vast majority of women, seeking treatment, reported to have complied with the treatment regimen prescribed by health providers (Table 8.8). The rate of compliance is lowest for those seeking treatment for abnormal vaginal discharge, and the reason given for it was the nature of the prescribed medicines. Women did not prefer the use of any medicine that needed insertion inside the vagina, and in cases where they were prescribed use of vaginal tablets/creams they tended to avoid it. Meddling with the genitals is culturally a taboo and this behaviour of non-compliance by women indicates the socialisation process that inculcates a sense of shame with anything that is linked to the genitals. Like one of the respondents said, "*yeh mujhay koyi goli ya teeka nahin dai saktay thay? Iss tarah ki dawai dainay ka kya matlab jis ko main istimaal hee na karoon*?" (Couldn't they give me a tablet or an injection? What is the purpose of giving a medicine that I can't even use?"). The problem does not end here. Many women reported that they did not comply with the prescribed treatment because doctors did not explain what to do with the medicines and being illiterate they could not read what the instructions on the boxes of the medicines said. Finding those "*barhay barhay teekay*" (big big syringes), as one respondent called it, in the box containing vaginal cream baffled women and they had no clue what they were supposed to do with them.

There is a proportion of women, for most symptoms, who reported to have partially complied with the prescribed treatment. These were mainly women who started a treatment but stopped using it before completing the course, with the primary reason being that they were not satisfied with

the outcome of the treatment. This dissatisfaction could stem from the perception that it is not treating the problem it is meant to treat or that it is leading to an undesirable outcome. "Heating effect" of allopathic medicines is the most commonly complained undesirable outcome women talked about. According to the existing health beliefs, allopathic medicines create "heat" in the body and should not be eaten unnecessarily. This belief made women stop using a medicine when they thought their symptoms were alleviated, adding to the reasons for non-compliance. Lack of knowledge about the need to complete the treatment regimen compounds this problem. Like one of the respondents took the medicines for three days and started feeling better so stopped using them and saved the remaining tablets for future use. This reflects not just the lack of knowledge on the part of the health receivers but also flaws in the way health providers give advice to their patients.

Table 8.8: Compliance with the recommended treatment and its outcome

Advice given	Menstrual irregularity	Dysmenorrhoea	Dysuria	Lower abdominal pain	Abnormal vaginal discharge	Sores/ulcers on genitals	Dyspareunia	Lower backache
Compliance with the treatment								
Yes	84.1	87.5	87.7	93.9	62.4	100.0	70.9	82.6
No	9.1	4.2	7.0	2.0	33.3	-	13.0	10.1
Partially	-	-	3.5	4.1	4.3	-	-	4.3
Nothing to follow/comply	6.8	8.3	1.8	-	-	-	16.1	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Outcome of the treatment/consultation								
Got better	18.2	12.5	19.2	33.3	23.9	50.0	13.1	34.8
Did not work	40.9	12.5	25.0	22.9	25.0	-	47.8	20.3
Temporary benefit	29.5	62.5	53.8	41.7	41.3	-	39.1	37.7
Am still undergoing the treatment	6.8	12.5	2.0	2.1	9.8	-	-	4.3
Got worse	4.6	-	-	-	-	50.0	-	2.9
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: RRTIS 2001-2002.

In this backdrop it is not surprising to find only a small proportion of women reporting to be getting better after treatment, for all the symptoms (Table 8.8). Lack of proper recommended treatment notwithstanding, women are not following the treatment the way they should. A substantial proportion of women, for all the symptoms, felt that the treatment worked for some time but did not solve their problems permanently. This could be a result of discontinuation of treatment by women on feeling well without completing the course, and also because of the persistence of factors that cause the symptoms in the first place. Even if women comply to the treatment fully, as majority of them reported doing, there is a possibility of recurrence due to lack of knowledge regarding protection against the infections, giving an impression to women that the treatment only has temporary benefits. Another possible explanation for this perception that the treatment did not work or had temporary benefit or even made the problem worse could lie in the psychosocial nature of the symptoms, as discussed in section 7.2. In the absence of any medical problem in the first place it is difficult for women to be satisfied for long. Their dissatisfaction with the treatment can re-emerge with the re-appearance of the social or psychological situations that originally give rise to the reporting of the symptom. Medicines prescribed for the RTI related complaints, if rightly recommended and correctly used, could mitigate pathological reasons for a problem but not the psychosocial situations that might be the source of some of these complaints.

Another important factor that was found lacking, in the suggested treatment or compliance to it, was the issue of **partner notification**. Considering the nature of the problem, not all doctors asked women to get their spouses examined and treated, and even in situations where they did ask for it women were not always able to get their husbands to consult a doctor. Apart from the earlier discussed idea that burden of treatment for

such kind of problems is usually on women, there was also a problem of lack of communication between health providers and their patients regarding partner notification. Women said that doctors never told them why they should get their spouses examined, making it difficult for them to persuade their husbands to do so. In some cases the given information was so inadequate that it became a source of non-compliance in itself. What was narrated by one of the respondents best exemplify this situation. Diagnosed with trichomoniasis, this respondent was asked to administrator the same medicine regimen to her husband also (which was metronidazole, tradename Flagyl®). What she reported doing was, "*main nay dawai khareedi aur main nay aur meray shohar nay aadhi aadhi golian ker kay kha li*" (I bought the medicine and me and my husband divided them in two portions to eat them). The respondent and her spouse, instead of following two separate, but similar medicine regimens divided the same dose in two, just because the doctor was not clear enough when she told this respondent what she meant by, "*yeh golian tum nay aur tumahary shohar nay khaani hain*" (these tablets are to be taken by you and your husband). Given the general lack of awareness regarding RTIs and their treatment, the role of health providers becomes all the more important. In the present study, however, it was something that was found to be lacking, having serious implications for secondary transmission and re-infection.

8.4 Treatment sought by women actually having an infection

It would be of interest to see whether women who were aetiologically diagnosed having an infection were seeking any help or not. Table 8.8 shows that 57 per cent of the infected women were seeking some kind of help. While some women with STIs, having graver consequences, were

seeking treatment, like those having syphilis, there were others who were not, like those having gonorrhoea or chlamydia (Table 8.9).

Table 8.9: Health seeking by aetiologically infected women

Those diagnosed with:	Proportion seeking help (%)	Total number of infected women
Candidiasis	66.7	21
Bacterial vaginosis	53.1	32
Trichomoniasis	100.0	2
Gonorrhoea	0.0	1
Chlamydia	0.0	1
Syphilis	100.0	1
Chancroid	0.0	2
Candidiasis and bacterial vaginosis	0.0	1
Bacterial vaginosis and trichomoniasis	66.7	3
Bacterial vaginosis and syphilis	100.0	1
Bacterial vaginosis and staphylococcus aureus	50.0	6
Trichomoniasis and chancroid	50.0	2
Gonorrhoea and chlamydia	100.0	1
Total	56.8	74

Source: RRTIS 2001-2002.

The woman who had gonorrhoea complained of four symptoms, which were lower abdominal pain, dysuria, abnormal vaginal discharge and dyspareunia, but was not seeking help for any of the symptoms. Likewise, the woman diagnosed with chlamydia reported having two symptoms, abnormal vaginal discharge and lower abdominal pain, but sought help for neither. Not accessing any health service in cases of actual presence of infection could have serious implications for the health of the woman, her husband and in case of pregnancy even her child, and as Table 8.8 shows, a little less than half of the women with infections, were not seeking any medical care.

8.5 Conclusions

Less than half the women reporting any symptom seek help, while for some symptoms the proportion seeking help goes down to a mere one fifth. The decision to seek help is a result of a number of factors, important of these being, woman's educational and economic status, the level to which she is worried about the symptom, duration of experiencing the symptom and inter-spousal communication about the symptom. Lack of resources to access any health service and taking the symptom as something common, not needing attention, are the two main reasons for not seeking help. The choice of the health-provider consulted for a symptom is linked to the perceived cause of the symptom, but allopathic doctors are the most commonly reported choice of health providers. The authenticity of these allopathic doctors could at times be dubious but on behalf of women, it shows their preference for allopathic treatment in most cases.

Women generally report to be complying with the recommended treatment, but for each symptom there is a proportion not doing so. Communication gap between health-providers and receivers appear to be a major problem in the consultation process. Doctors usually prescribe medicines without explaining about the causes and consequences of these symptoms, and ways women could protect themselves against them. This lack of communication by doctors, in many instances, not only leaves women dissatisfied with the advice they get but also to the non-compliance with the recommended treatment, leading women to either use the medicines improperly or stop using them before completing the prescribed regimen. Another reason for non-compliance is the nature of the prescribed medicines, mainly those needing trans-vaginal insertions, due to cultural taboos regarding meddling with the genitals.

There is a general sense of dissatisfaction with the outcome of the treatment among women, with some reporting their symptoms getting worse after treatment or just giving them a temporary relief. Lack of proper advice given by health provider and lack of compliance with the recommended treatment by women could be the reasons for the lack of positive outcome, but psychosocial factors could as well be responsible for this perception. Symptoms with no bio-medically detectable pathology had their roots in factors that could not alleviated by medical treatment, and thus the belief that the treatment did not help may also have psychosocial connotations to it, as there were for a big proportion of self-reported symptoms by women.

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CHAPTER NINE

Conclusions and Policy Implications

The design of the Rawalpindi Reproductive Tract Infection Study 2001-2002 meant to ensure that it was "not just another KAP study", in the words of Koenig, et al., about women's gynaecological morbidity. In their study in 1998, Koenig and colleagues concluded:

> "... future research can be designed to achieve greater accuracy regarding prevalence and should go beyond a narrow medical focus to include causal factors, social and sexual behavioural issues and consequences of morbidity for women's lives." (1998, p: 84)

In Rawalpindi, all these facets of reproductive tract infections were addressed in the research design. The study included self-reported morbidity and the more accurate medical examination, especially the aetiological diagnosis, to estimate the prevalence of RTIs and its related symptoms among women in the study population. It then looked into the socio-economic, demographic and medical factors associated with these infections and women's perceptions regarding the causes and consequences of the conditions. In fact, it went a step further and included women's health seeking behaviour regarding the reported symptoms.

9.1 Summary and conclusions

Five broad objectives were set forth for the present study. A summary of findings, and conclusions, are presented here in the context of those objectives.

9.1.1 To record the awareness level and health beliefs of women regarding RTIs

Awareness about reproductive tract infections and its causes, consequences and ways of protecting against them was low among women. AIDS was the most known infection followed by hepatitis. Other illnesses named by women in this regard included, leucorrhoea, infertility, menstrual problems and infection in uterus. The comparatively higher rate for knowing about AIDS and hepatitis could be attributed to the public campaigns in media regarding them. This was also evident from the symptoms women thought were associated with these infections. Almost half of the women who reported knowing about RTIs considered extreme weakness leading to gradual death as a symptom of RTIs, an idea that is presented in the AIDS public campaign in the country. Likewise, the causes stated by women for having RTIs are heavily influenced by the campaign advertisement in media, including causes like, sexual promiscuity, sharing/using old syringes and blood transfusion. However, the worrying finding here, along with the general low awareness among women about RTIs, is the fact that even among the women who did report knowing about the infections, a big proportion had no knowledge about the associated symptoms. With government initiated public campaigns appearing to be the main source of information, it could be inferred that there are shortcomings in the way information is given.

Despite generally low awareness regarding RTIs, differentials could be found among women having different socio-economic backgrounds. Factors that had a positive effect on knowledge about RTIs included women who had been to school, belonged to upper economic group, had an urban background, read newspapers/magazines and watched television. It would not be wrong to believe that it was mainly access to education and media (printed and electronic), made more convenient by having better economic

position and living in urban areas, that affected women's knowledge about RTIs.

Conclusions: Women lack awareness about RTIs, its related symptoms, and the causes, consequences and ways of protecting against them. Media, especially television can play a vital role in disseminating this knowledge, given the interest in the medium and low literacy rates among women.

9.1.2 To determine the prevalence of RTIs and its differentials by socio-economic and demographic characteristics, and factors associated with it

Perceived and actual morbidity levels both are significant in determining the health status of a population. The present study included interviews with women to estimate perceived morbidity regarding symptoms associated with RTIs and a medical examination, clinical and laboratory, to estimate and ascertain the actual presence of RTIs, with laboratory diagnosis being the most accurate representation of actual disease presence.

Self-reported current experiences of RTI related symptoms present a heavy disease burden among women, with more than two thirds reporting having at least one symptom at the time of the survey. The rate of reporting and the number of reported symptoms increase for women who have not been to school, belong to lower economic group, have larger inter-spousal age difference, and do not have much autonomy. The four autonomy indicators, which were: decision-making authority; freedom from threat; freedom of mobility; and control over household income, have a highly significant association with the reporting of symptoms, with women having more autonomy being less likely to report symptoms and in case they do, they report fewer symptoms. Multivariate analysis substantiated the findings of the bivariate analysis, and showed three out of the four autonomy indicators (exception being freedom of mobility) to be

significant predictors for reporting of symptoms. Other factors significant in this regard were inter-spousal age difference and number of pregnancies a woman had. The rate of reporting increased with increasing age difference between spouses, while for the number of pregnancies the likelihood is higher for those who have never been pregnant and those who had more than two pregnancies.

Eight symptoms were included in the present study, that is menstrual irregularity, dysmenorrhoea, dysuria, lower abdominal pain, abnormal vaginal discharge, sores/ulcers on genitals, dyspareunia and lower backache. Abnormal vaginal discharge was the most reported symptom, and it is a symptom associated with majority of the RTIs. Except for sores/ulcers on genitals, all symptoms were reported by at least around one fifth of the respondents at the time of the survey. Socio-economic and demographic differentials in reporting current symptoms show a significant association with educational, economic and autonomy status of women for most symptoms. Women with better status, educational, economic and autonomy, have a lower rate of reporting, for all symptoms, than their counterparts. There are however peculiar patterns that are found for reporting of certain symptoms, examples in this regard being the higher reporting rate of menstrual irregularity and dysmenorrhoea among women who have never been pregnant, and dyspareunia among younger women. The prevailing belief strongly links menstruation with fertility and thus not being able to get pregnant might make women get suspicious of having abnormalities in menstruation. While for younger women, a higher rate of reporting dyspareunia could be because of lack of sex information, with the whole experience being somewhat intimidating for them, physically and psychologically.

Classifying women's self-reports, about current experiences with RTI related symptoms into the type of infections they may represent, indicate exogenous infections to be much more prevalent than endogenous ones. A similar trend could also be inferred if we look into the reported ever-experience with these symptoms by women. It was however worth noting that despite such a high reporting of RTI related symptoms by women, when specifically asked about a symptom, not many reported them when asked about their general health problems, without naming any problem. This could represent not only inhibition on part of women to talk about such issues, but also a separation of general health from reproductive health in their minds.

In the absence of any direct questioning with males in the present study, women were asked about the health status of their husbands, reproductive health in particular. Women were generally ignorant of any RTI related problems their husbands might be having, or at least were not vocal about them. Majority of the women believed their husbands had no health problem, and in a few cases where they did report a problem it was rarely a RTI related problem. Women said that their husbands seldom shared any health problem they had, more so if the condition was related to sexual/reproductive health.

The study had a reasonable participation rate for the medical part of the research design, giving results that could be considered meaningful and valid. **Laboratory diagnosis** showed the presence of at least one infection among approximately a quarter of the women in the sample, while **clinical diagnosis**, based on the syndromic management approach, gave an estimate higher by over sixteen percentage points than the aetiological diagnosis. Differences were also found in the type and nature of infections diagnosed by the two medical methods. Bacterial vaginosis

followed by candidiasis were found to be the most common infections among women by both diagnostic methods, though clinical diagnosis over-estimated their presence. Exogenous infections/STIs were not found to be common, and comprised around one fifth of the total aetiologically diagnosed infections. Clinical diagnosis, while over-estimating endogenous infections, failed completely to diagnose co-existing infections, whether it was presence of more than one exogenous infection or a combination of endogenous and exogenous infections.

Bivariate analysis of factors associated with aetiological presence of an infection showed significant relation with women's education, economic status, number of pregnancies, gap between their last two pregnancies, foetal loss in two years preceding the survey, contraceptive use, menstrual hygiene, and her frequency of taking baths. Women with higher education and belonging to upper economic group were less likely to have an infection than their counterparts. The rate of infection increased with increasing number of pregnancies and shorter birth intervals women had. Women experiencing foetal loss were twice as likely to have an infection than those who had a live birth in two years preceding the survey. Missed and incomplete abortions and carrying out of induced abortion procedures, mainly at home and by traditional birth attendants, in less than aseptic conditions, contributed to the higher infection rate among women experiencing foetal loss. IUD users, followed by those who had a tubectomy, had a much higher infection rate than other contraceptive users and non-users. Condom users had the lowest infection rate among all contracepting women, with a noticeable absence of any STI positive diagnosis among them. With endogenous infections being the main type of infections diagnosed in the study population, not surprisingly, women with better hygiene, menstrual and general, had lower rates of infections than those with bad hygiene practices. Women having more baths per week had

a lower infection rate than those having fewer baths, and likewise women using commercially made sanitary pads were less likely to have infections than those using old/used cloth for menstrual protection. Multivariate analysis supported the findings of the bivariate analysis and the most significant predictors of having an infection aetiologically were narrowed down to women's economic status, birth interval between her last two pregnancies, type of menstrual protection and contraceptive use.

Conclusions: A heavy RTI disease burden is presented by women's self-reports, while the clinical and laboratory diagnoses show a lower infection rate, especially the latter. Women with lower socio-economic and autonomy status report symptoms more often than their counterparts. Aetiological presence of infection is primarily associated with endogenous and iatrogenic factors.

9.1.3 To assess the consistency of self-reported symptoms with clinical and laboratory diagnosis

Women's self-reports had poor concordance with medical diagnoses, especially the laboratory findings. Comparison between self-reports and laboratory diagnosis for the presence of an infection have poor specificity and positive predictive value, showing an over-reporting of symptoms by women. When analysed for the type of infections, the comparison was worse for endogenous infections than exogenous ones. If the comparison showed better sensitivity, it suffered on specificity and vice versa. The comparison between self-reports and clinical diagnosis showed better agreement, than the comparison with laboratory diagnosis. For the presence of any infection, self-reports were found to be accurate at a moderate level when compared with the clinical diagnosis. Contrary to what was found in the comparison with laboratory diagnosis, self-reports were comparatively more accurate for endogenous infections than they were for exogenous infections when compared with clinical diagnosis, and there were no abysmally poor agreements for any comparison between self-reports and clinical findings.

For policy implications, clinical diagnosis, based on the syndromic management approach, was also assessed against laboratory diagnosis, that is considered to be a more reliable and accurate way of diagnosing the presence or otherwise of an infection. Based on the Kappa values, moderate agreement was found between the two. However, the worrying aspect of the comparison is the low sensitivity value for STIs and an equally low positive predictive value for endogenous infections in clinical diagnosis, representing missing of infections and over-diagnoses, respectively.

Discordant responses, including the false positive and false negative responses that comprised almost two thirds of the responses while comparing self-reports with laboratory diagnosis, warranted further analysis to decipher what they actually meant. Looking at the respective factors that were most significant, in the multivariate analysis, for reporting of symptoms and having an infection aetiologically, provide us a good lead in understanding the false responses given by women. For reporting of symptoms, inter-spousal age difference, number of pregnancies, freedom from threat and control over household income are the most significant predictors, while for having an infection, it is women's economic status, inter-birth interval between last two pregnancies, menstrual hygiene and contraceptive use that are most significant to predict the presence or absence of infection. Thus, it would not be wrong to infer that women's self-reports of experiencing symptoms and aetiological presence of infections represent two different aspects of health in the study population, and this difference is reflected in the gap between the perceived and the actual disease level. Women with lower autonomy status are more likely to report symptoms but are not necessarily prone to actually have an infection at the same rate. The high rate of false positive responses for women who were abused, had no say in household decision-

making, had restricted mobility and had no control over household income also show a similar trend. For actually having an infection it were mainly physical/tangible reasons that were responsible, like the nature of menstrual protection or contraceptive used, while for reporting of symptoms it were the perceived/intangible factors that were more dominant. Given the disparity between self-reports and aetiological assessment, it appears that reported symptoms were often psychosocial in nature, and were more an expression of distress then an indication of disease. What women could not say in words, they converted into bodily expressions, and with reproductive functions considered the primary focus of women's lives in the society, symptoms associated with this function were frequently used as the language to express their distress.

Conclusions: Poor concordance is found between women's self-reports and medical diagnoses, especially laboratory findings. Self-reports are often more psychosocial in nature than pathological. Clinical diagnosis, based on syndromic management approach, when compared with aetiological presence of infection, prove to be over-estimating overall infection rates, while missing completely on co-infections and asymptomatic infections.

9.1.4 To probe women's perceptions about the causes and consequences of their experiences with RTI related symptoms, and the ways they think they can protect themselves against them

Women generally lacked knowledge about the causes and consequences of the symptoms they reported to be experiencing at the time of the survey, nor were they much aware of ways to protect themselves against them. "Do not know" was a frequent response to the queries directed to women in this regard. Among those who did give a cause for their current symptom, contraception, especially IUD and tubectomy, was considered the reason by a substantial proportion. Experiencing of RTI related symptoms was also attributed to having "weakness" and to the nature of food consumed. Both these concepts fall in the commonly accepted traditional medicine

philosophy of *Hikmat/Unani* that classifies food according to its hot and cold temperament, and divides human body into seven fundamental components, including *quwwat* (strength, bodily power), the absence or imbalance in which causes weakness, as reported by many women to be the cause of their experiences. Another response worth noting was given by a proportion of women who thought these symptoms to be a common and normal thing for womanhood.

Not all women experiencing symptoms were worried about the experience. Among those who were worried about the possible consequences, worries were often pregnancy related, including getting pregnant when not wanting to, not getting pregnant when desired so, and a probable negative effect it could have on their unborn baby if they were already pregnant. The mystery of the cause of the experienced symptom, the pain/discomfort caused by it and the fear that it might lead to something serious were also among common worries. Weakness as a consequence of having most of these symptoms also worried a substantial proportion of women, the roots of this belief again being in the traditional medicine beliefs strongly held by the population.

Women were equally ignorant about ways they could protect themselves from having these symptoms in future, as they were of the causes and consequences associated with the symptoms. Approximately half the women reporting any symptom reported not knowing of any way to protect themselves from having a future episode of the symptom. Reported ways of protection were generally embedded in the perceived causes of having these symptoms, so among those who did report some ways, having better and right kind of diet, that is in cold/hot temperament, was a common response, as was avoiding frequent pregnancies and use of contraceptives. Linking again the perceived causes of having these symptoms with the

reported ways of protection, a sizeable proportion of women in the study believed that these occurrences were a normal part of womanhood and nothing could be done to protect against them.

Conclusions: Women lack awareness about their bodies and bodily functions, represented here with deficient knowledge about the causes, consequences and preventions for the symptoms they report to be experiencing. The frame of reference women use for assessing any disease often remains within the confines of child bearing. Traditional medicinal philosophies have a strong influence on the health beliefs of Pakistani women.

9.1.5 To determine whether women respond to these symptoms, and the factors affecting their treatment seeking behaviour

Seeking help for symptoms associated with RTIs was not common among the study population. For no symptom more than half the reporting women sought help, while for some symptoms the proportion seeking help went down to only one fifth. Women complaining of dysuria had the highest rate for seeking help, followed by those reporting abnormal vaginal discharge and menstrual irregularity, while the smallest proportion seeking help was for dyspareunia, sores/ulcers on genitals and dysmenorrhoea. The rates of seeking help for the remaining two symptoms, of lower abdominal pain and lower backache, fall in between the above mentioned symptoms. The main reasons given for not seeking help were lack of economic resources, not considering the problem worthy of taking action, self-medication and not finding time from household chores to go and see a doctor. For symptoms like sores/ulcers on genitals and dyspareunia, a sense of shame also inhibited women from seeking help. It was interesting to note that self-medication was more common among women reporting symptoms associated with pain, that is lower abdominal pain, dysmenorrhoea and lower backache. Another reason given by women for not seeking help, which has important policy

implications, is the dissatisfaction with prior treatments and attitude of doctors they had previously consulted.

Allopathic treatment was in general the most common choice of healthcare sought by women, reporting any current symptom. A link was found between the perceived cause of illness and the type of treatment sought, example in this regard being the symptom of abnormal vaginal discharge. A substantial proportion of women linked it to having "weakness" and the hot/cold temperament of food, and the proportion seeking help from traditional doctors is highest for this symptom, as this kind of causation falls more in the domain of traditional medicine than allopathic medicine. Dysuria was considered to be the most worrying symptom, that was feared to lead to further complications, and except for a few women, all those seeking help, consulted allopathic doctors. This strengthens the existing evidence in literature that traditional medicine is generally used for illnesses not considered incapacitating while doctors are consulted for problems that are deemed debilitating.

Bivariate analysis of differentials in whether women did or did not seek help for reported symptoms showed factors associated directly with the symptoms, like their duration, severity and the extent to which they were a source of worry, to be most significant in the decision to seek help. Other significant factors in this regard were women's economic status, their control over household income and their communication regarding the symptom with their spouses. Women were more likely to seek help in case the symptoms had lasted for a longer duration, were so severe so as to affect their household routine, were a source of serious worry, and if they belonged to upper economic group, had talked about the symptoms with their spouses and had control over household income. Women's level of education also showed a positive pattern of association with their seeking

help for various RTI related symptoms but the relation was not always statistically significant. Women's age, family type, background area, age-difference with husband, number of pregnancies, co-existence of multiple reported symptoms, and even autonomy indicators of having say in household decision making, freedom of mobility and freedom from threat, were not found to be significantly associated with women's decision to seek help. Multivariate analysis, carried out through logistic regression, supported the findings of bivariate analysis. With many factors being symptom specific, multivariate analysis was carried out for the health seeking decision for women reporting abnormal vaginal discharge, as it was the most reported symptom in the study population and is also most representative of RTIs. Women's level of education, economic status, duration of experiencing abnormal vaginal discharge, level of worry about the symptom, inter-spousal communication about the symptom and their control over household income were shown to be strong predictors of their ability to seek help in the multivariate analysis.

Inter-spousal communication about the symptoms, it appeared, was more to get permission to see a health provider and get financial and logistical support, than a matter of sharing information for the sake of it. It were mainly the symptom-specific indicators, including duration, severity and associated worry with symptoms, that made women talk about their experience with their husbands, with no significant differentials found for their socio-economic, demographic and autonomy indicators. It could be inferred that women talked to their husbands once they had decided to seek help and needed spousal support to do so.

Communication barrier between women and the health providers they sought help from, which were mainly allopathic doctors, was a major obstacle in the consultative process. Women blamed them for not sharing

information about the causes and nature of illnesses they presented and explaining the use of recommended medicine regimen, leading to dissatisfaction with treatments and recurrence of illnesses. In cases, the nature of prescribed medicines, especially ones needing trans-vaginal insertions, displeased women. Partner notification was another aspect that was found lacking in the consultation process, having repercussions for secondary transmission and re-infection. Along with health providers not communicating the need for it clearly, the problem was compounded by lack of cooperation by husbands, in cases where women were asked by doctors to get their husbands examined or to administer medicines to them as well.

Going by the nature of advice given by doctors, as reported by women, in instances, it appeared that not all of them were qualified practitioners, giving advice that was a mix of allopathic and traditional medicines. Inappropriate diagnosis and recommended treatment, leading to a non-resolution of illness, notwithstanding, the general dissatisfaction with the whole consultative procedure could be because of the very nature of the reported symptoms, which, as it turned out in most cases, were not reflective of any disease condition. Dissatisfaction with treatment could have the same roots as the psychosocial nature of the reported symptoms. Medical treatment, no matter how appropriately prescribed, cannot alleviate symptoms that have no pathological origin.

Conclusions: Women often do not seek help for the reported symptoms. Duration, severity and worry associated with a symptom, aided by woman's communicating about it with her husband, motivate her to approach a health-provider. Psychosocial factors have their impact on women's perceptions about the treatment she receives. Communication barriers between health providers and receivers, partner notification on testing positive for an infection, and the issue of quacks in the healthcare delivery system pose serious repercussions for the health of the population.

9.2 Hypotheses testing

In the light of the aforementioned findings, we can now judge the hypotheses that were set forth for the present study.

Hypothesis 1: RTIs are common among urban Pakistani women; is **rejected**

Hypothesis 2: knowledge about RTIs and their symptoms is low among women; is **sustained**

Hypothesis 3: with so many RTIs being asymptomatic, infected women are often unaware of being infected; presence of false negative self-reports does support the hypothesis but it **cannot be conclusively rejected or sustained.**

Hypothesis 4: iatrogenic infections are a major source of RTIs in urban Pakistan; is **sustained**.

Hypothesis 5: self-reported symptoms are not always consistent with medical examination; is **sustained**.

Hypothesis 6: even when women identify having a problem, they do not necessarily seek treatment; is **sustained**.

Hypothesis 7: women usually prefer the traditional methods of treatment; is **rejected**

The study, thus, maintains certain beliefs held by existing literature while rejecting some other widely held notions. Preference for allopathic treatment among women, instead of traditional medicines, and lower than expected prevalence of infections, especially STIs, present a need to re-look at issues going beyond the ones that are under focus of researchers and planners currently.

9.3 Policy Implications

The findings of the present study has certain policy implications for improving the reproductive health, specifically that of women, in the country. These implications can be grouped into five broad areas:

improved use of mass media and advocacy; integration, improvement and reorientation of health services; bettering women's position; male involvement; and future research needs.

9.3.1 Improved use of mass media, and advocacy

Public awareness campaigns should emphasise prevention of RTIs, alerting women of the risk factors and the medical meanings and consequences of various bodily signs and symptoms, and it should be done in a clear and focussed manner. Campaigns carrying messages in vague and implicit manner can often be without use, more so in the absence of any basic information among women to interpret any hidden messages. Women need to be more aware of their bodies and its functions, something found to be greatly lacking in the present study. The public awareness campaigns should thus stem from the needs of the people, and fill information gaps, remove misinformation and provide quality information in a way that is linked to the realities of women's lives.

Simple information, at times, can have drastic impact. In the present study, most RTIs were not sexually transmitted, and were found to have a negative association with women's hygiene practices, especially during menstruation. Women using rags/old cloth for menstrual protection had a much higher rate of infections than those using commercially produced sanitary pads. An increased infection rate was also found among women using IUDs. These trends could be reversed, at least to some degree, by educating women on better menstrual hygiene and proper use of IUDs. Due to economic constraints, if women cannot use commercially made sanitary pads during menstruation, they can at least boil the cloth before re-use, sterilising it that way, and dry it in sun instead of shady, hidden places. Likewise, women lacked the understanding about the duration an IUD should be used and when it should be removed or even if it should be

removed at all, leading many women not getting their IUDs removed at the appropriate time.

Having appropriate knowledge plays an effective role in not only prevention of disease but also in the health seeking process. As findings of this study showed, motivation of consulting a health provider for a symptom, and the kind of help sought, also depended on the health beliefs women had about the symptom, so having the right information can help them make more informed decisions. This association extends to conformity to the recommended treatment as well. As Horne and Weinman (1998) point out, health beliefs are stronger predictors of reported adherence to prescribed treatment than clinical and socio-demographic factors. They believe that, "many patients engage in an implicit cost-benefit analysis in which beliefs about the necessity of their medication are weighed against concerns about the potential adverse effects of taking it and that these beliefs are related to medication adherence" (Horne and Weinman 1998, p: 555).

Public campaigns should use local vocabulary and idioms, and refrain from making assumptions that any foreign symbols or words would carry the intended message. With many women not able to read, special consideration should be given to the need of the illiterate. Messages should be concise, unambiguous, and pretested, and should focus on providing information instead of using scare tactics. Given the interest shown in watching television by women, in the present study, it proposes to be the best medium to convey such messages. Within the cultural constraints prevalent in Pakistan regarding such issues, devising a relevant public campaign is a difficult task, but not an impossible one, as proven by the recent positive results for campaigns regarding tetanus toxoid vaccine for expecting mothers.

Where health messages fail to reach their audience through mass media, non-governmental organisations (NGOs) can play a useful role in disseminating such knowledge, but sadly, unlike in India or Bangladesh, the NGO activities in Pakistan lack any substantial contribution. There are NGOs working in reproductive health field, but none has a wide coverage and many still focus on family planning, with HIV/AIDS being a recent addition. The more commonly present and more easily preventable RTIs still elude their attention to the agenda. With enough funding available for reproductive health issues, it is about time NGOs in Pakistan played their role in educating people about RTIs.

9.3.2 Integration, improvement and reorientation of health services

Integration of services: The concept of reproductive and sexual health, as envisaged by ICPD and ICPD +5, proposes to deal these health issues holistically. What Wellings and Cleland (2001) describe as "one stop shopping in an integrated setting", it makes sense to control infection and unwanted conception in one clinical setting, by integrating RTI management services and the services provided by family planning clinics and MCH centres. It is an idea supported by many, including Guest (2003), Budiharsana (2002), Pachauri (1998), Piet-Pelon and Rob (1996), Mulgaonkar (1996), Costello (1998), Ndugga (1998), Wilkinson (1997), Amaral 1998 and WHO (1999). The rationale for making family planning and MCH services the focal point of managing RTIs, including STIs, and integrating the two services is:

i. These services address the needs of the same client, that is the sexually active population.

ii. Service providers at both need the same skills to address their clients' needs.

iii. Condoms and other barrier methods available for preventing unwanted pregnancies are effective in preventing RTIs.

iv. It would be cost effective to have expanded reproductive health services in one place.

v. As RTIs can affect the health of the mother and the newborn child, their diagnosis and treatment during pregnancy can have positive implications on the health of both.

Contracepting women, in the present study, had a higher rate of RTIs than those who were not using any contraception. Women using IUDs, which at most times was offered to them as the only available contraceptive option, were most likely to have an infection, followed by the ones having gone through tubectomy. Most of these women had their IUD insertions at family planning clinics without any infection diagnosis before the procedure. Family planning programme in Pakistan is part of the population welfare division, which states its mission to "centre around population issues with a view to achieve replacement level fertility". Despite this, Pakistan continues to have a fertility rate more than the desired one, even the one desired by women not just the state, and this preoccupation with reaching contraceptive use and fertility reduction targets has adversely affected the quality of family planning programme in the country. In an effort to achieve targets, women are offered limited choices, in some cases even coerced to use a particular method, without a concern for their choice and well-being. Behaviour stemming from an effort to achieve targets can in cases lead to infections, as presented in situations where IUDs are inserted without screening for existing infections, and lack of aseptic conditions during the procedure, increasing the likelihood of getting an infection. Incidence of infections among contraceptive users is becoming a hindrance in the acceptance and use of

contraceptives, which in turn is affecting the actual objective of reducing fertility rates.

Eradication of contraceptive targets can have mixed results on fertility rates, as found by Murthy, et al (2002) in India, but improving the quality of family planning services, by integrating RTI management services, can only have one result and that is positive. A lessened probability of infection, through pre-screening or treatment, can encourage women to adopt family planning practices, at least the ones for whom fear of infections is the main inhibiting factor for adopting any method.

Improved training of health professionals: Any improvement in health services would be of no avail without appropriate training and education of all professionals involved. Findings of this study showed that doctors, whom women were consulting, not always gave medically sound advice. This finding is supported by the study done by Khandwalla et al. (2000) about knowledge, attitudes and practices regarding STIs among general practitioners and medical specialists in Karachi, Pakistan. They found doctors, especially GPs, lacking in skills and knowledge to manage and counsel STI patients. Among specialists, they found urologists and dermatologists to be better equipped to manage STIs than gynaecologists, a finding having serious repercussions for the health of women. Most women, if consulting a specialist, would generally go to a gynaecologist, and not a urologist or dermatologist, and it is also gynaecologists who are present in FP/MCH centres. Another study in the country, done on the quality of care provided by private practitioners, showed poor prescribing practices among the health providers (Thaver et al 1998).

There is enough evidence to conclude that health providers are in need of better education, training and retraining. There could be problems with

medical curricula as well, that needs to include more recent developments in medicine. Due to lack of skills or simple lethargy, doctors hardly use the equipment that is available at hand. Like, microscopes have long been available at least at health centres at district level but are rarely used, if ever. If their use in RTI diagnosis becomes a standard practice, health practitioners would not need to rely only on syndromic management of infections. Lack of education and training is thus leading to an under-utilisation of available facilities. Better trained health providers at lower rungs of the health delivery structure would improve the existing poor patient referral system, as also found by Siddiqi et al (2001), and Zaidi (1994), and reduce pressure on tertiary health services.

Communication barrier with health providers, mainly allopathic, and dissatisfaction with the information given by them were among the main reasons given by women for not seeking help or for not being satisfied with the consultative process. It is mainly because doctors ignore the context in which women interpret their illnesses. Berlin and Fawke's LEARN Model (1983) provides a useful framework to overcome this problem:

L- Listening to the patient's perspective

E- Explaining and sharing one's own perspective

A- Acknowledging differences and similarities between the two perspectives

R- Recommending a treatment plan

N- Negotiating a mutually agreed-on treatment plan

Reorientation of the health context: Conventional epidemiology faces the problem of completely medicalising health, including reproductive health, ignoring the socio-cultural and individual determinants of morbidity. Findings of the present study, along with many existing ones, including Astiaza (1998), Patel (2003), May et al. (2000), Jyvasjarvi et al.

(2001), William et al. (2001) and Patel and Oomman (1999), show that a reported illness in many cases could be better understood in a non-medical context, as they might have their origins in psychosocial factors rather than pathological. An attempt to explain reported illness only in medical terms can at times lead to confusion, for both patient and provider. As May and colleagues, while studying non-specific low backache, found:

> "Patients dealt with clinical doubt by stressing their own expertise. They constituted their beliefs about the cause and trajectory of their pain and disability as accurate accounts of their disability. They resisted the suggestion that there might be psychological factors involved in their ill-health by locating culpability among clinicians, who were confused or uncertain about diagnosis and treatment." (2000 p: 223).

Reporting of abnormal vaginal discharge in the present study provides the best example in this regard, with a big proportion of reports having no pathological aetiology. Patel (2003) also found that strongest association of vaginal discharge complaints, in developing countries, is with depression not RTIs. Reported physical symptoms present psychosocial disorders through somatisation. There is evidence that anxiety and depression can have effect on autonomic nervous system, leading to muscle-tension related pains, and a distressed person is more likely to interpret normal physical experience as pathological (Patel and Oomman 1999; Hunter 1990; and Van Vliet et al. 1994). In this scenario, if the health of the population, specifically that of women, is to be alleviated, there is a need for a fresher approach to understand the non-medical context of illnesses. It could be referred to as an ethno-sensitive approach to epidemiology. The relation between physiological and non-physiological factors is not that straight forward. Even if symptoms are not found to be associated with pathology, the finding of pathology does not necessarily imply that it was the cause of the symptom. Example in this regard can be chronic pelvic

pain, caused by PID, which in turn may cause marital problems leading to depression, which in turn could aggravate the pain experience and delay recuperation. There is a need for, as put forward by Patel and Oomman (1999 p: 34), "An interactive model of aetiology which incorporates physiological and psychosocial factors" to understand this complex relation.

9.3.3 Improving women's position

No matter how many steps are taken to improve health of the female population in the country, nothing can work without improving the position of women as such. Pakistan's Gender Development Index[32] (GDI) of 0.469 is the lowest in South Asia, showing waste gender disparities. The indicator of Gender Empowerment Measure[33] (GEM), with a value of 0.414, is among the lowest in the world, among the ranked countries (UNDP 2003). Improving women's access to education can be a start in this regard. Eradication of illiteracy among women and the spread of education up to at least ten years of schooling should be a priority with government. As was also found in the present study, education had a positive relation with not having infections and in case of having infections a better rate for seeking help. It also had a positive impact on their access to knowledge regarding RTIs. Illiterate women have less chances of getting information, given lack of available information on electronic media. During the First World War when Lenin found that 88 per cent of Russian women were illiterate, he said, about their political participation, "A person who can neither read or write is outside politics; he must first learn the ABCs, without which there can be no such thing as politics, only rumours, gossip, fairy tales, and prejudices" (cited in

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[32] GDI measures gender differences in life expectancy at birth, literacy rates and estimated earned income (UNDP 2003).

[33] GEM measures gender differences in political participation and decision-making, economic participation and decision-making, and power over economic resources (UNDP 2003).

Newland, 1977 p: 9). This could very easily apply to women in the present study, regarding their awareness about the causes and consequences of RTIs.

Linked to this is an increased access to employment opportunities. Very few women were involved in paid employment in the present study, and existing evidence believes that neglect of girls is common in settings where women are economically dependent (Mason 1993, 1998; Winkvist and Akhter 2000). These opportunities should not be confined to low status informal sector jobs as they have not been found to have a positive effect on women's well being (Nayab 1998; Sathar and Kazi 1989). Women having control over household income in the present study were better off for almost all RTI related indicators, than their counterparts. On this basis, it would not be wrong to infer a positive effect of having paid employment by women on their health, along with providing women a source of fulfilment other than bearing children.

Better education and economic independence can also help reduce the existing gender power imbalances in the country, which in turn can have a positive impact on reducing domestic violence. It is not just a violation of women's human rights but has significant health repercussions too, especially during pregnancy. Some reforms in school curriculum in this regard could also prove helpful. Instead of projecting women only in weak, obedient and subservient roles, there is a need to give women a more dynamic and progressive image, in sync with the changing world conditions. This would also help women to break away from the restrictive norms of what Caldwell refers to as the "patriarchy-patriliny-patrilocality" system (1982).

9.3.4 Male involvement

Male partners are important in transmitting or maintaining lower genital track infections among women (Sahoo, et al. 2000), so it is logical to include them in any public health campaign or service while dealing with the issue. Syndromic approach, that is found to be lacking while diagnosing infections among women due to often asymptomatic nature of infections, is more effective in screening infections among males, due to often visible symptoms (Guest 2003). So even in resource poor conditions, diagnosing infections among males, and treating them, could have more significant impact than only focussing on women.

Condoms are the most accessible and effective contraceptive in preventing infections, so it makes further sense to include males in the whole scheme of things. Males must also be involved because they share the responsibility of reproductive health, and should know about their own and their partners' bodies. If they understood their own role in reproductive process, it is hoped that they would be more appreciative of the part they play in issues like infertility, lessening the burden that at present is experienced solely by women in such situations. A finding of the present study, further stressing the need for involving male in the reproductive health programme is the dependency of women on their husbands for health related decisions. This makes the attitudes and knowledge of men significant for the reproductive health status of their wives and the couples as such, with a possible contribution to the success of partner notification, when either of the spouse tests positive for an infection.

9.3.5 Implications for future research

More research is needed to implement all that is suggested in the discussion above. Changes cannot be made in medical curriculum or

healthcare delivery structure without having substantial and valid data about the issues. Three areas warrant special attention. There is a need to conduct studies, similar to the present one, focussing on the male population. Not much is known about the reproductive health and health beliefs of males in the country, and, as discussed earlier, it can have direct bearing on the health of females.

Despite advances in biomedical research on STIs, non-STI RTIs remains an under-researched area. As some of the recent studies have shown, endogenous infections, especially bacterial vaginosis, might not be as benign as they were previously thought. Populations, as that of the present study, where non-STIs were found to be much more common type of RTIs, such research can have significant repercussions. Likewise, further research is needed to evaluate the utility and cost-effectiveness of various algorithms and diagnostic tests to manage RTIs in developing countries, given the shortcomings found in the Syndromic Approach. Decreasing over-treatment and reducing the chance of missing infections through the use of improved algorithms or simple diagnostic tests would help save time and cost of treating uninfected women and screening the otherwise asymptomatic infections, respectively. Given the mostly negative feedback on Syndromic Approach in recent years, WHO in their 2002-2003 work plan appears open to the development of new practices for the diagnosis and management of RTIs in low-resource settings, instead of their own version of syndromic approach (WHO 2002).

In Pakistan, hardly any study is available that takes into account the economic evaluation of reproductive health intervention. To facilitate policy-making, economic evaluation studies are an imperative. They are needed to provide information on costs, benefits and effectiveness for

prioritisation of various policies and decisions throughout the health sector and with reference to reproductive health in particular.

Concluding remarks

The 1994 International Conference on Population and Development in its Programme of Action defined reproductive health as, "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes". Pakistan was among the enthusiastic signatories of this agenda, which provided a new paradigm for reproductive health. Even after a lapse of a decade, the basic realities encountered on the ground show a very different picture. If the actual presence of infection, in the present study, shows "physical infirmity" among women, the reporting of illness in the absence of any pathology hints towards "mental or social infirmity". Dismissing the condition as something that just exists in the minds of women is not the solution. Effort needs to be made to alleviate the factors that lead to any form of infirmity, be it physical, mental or social. Distresses of all kinds have to be addressed if the goal of reproductive health for women, as envisaged by the ICPD, is to be achieved in Pakistan. There is no straight forward or quick fix solution to the problem, as it is not just a health or political issue. There are moral, cultural and personal dimensions as well. Improving women's position in the society, however, can be the first step in the right direction.

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Annex I

Reproductive Tract Infections: Sources of infection, modes of transmission, symptoms, possible impacts on general and materno-foetal health, means of diagnosis, and treatment

Infection	Source of infection	Mode of transmission	Symptoms	Possible health problems	Impact on pregnancy	Means of diagnosis	Treatment
Chlamydia	Bacterium-Chlamydia trachomatis	Sexual contact- mainly vaginal or anal	Unusual vaginal discharge, bleeding after intercourse, bleeding between menstruation periods, abdominal or pelvic pain. But 75% have no symptoms.	Can spread into pelvic area and infect the uterus, fallopian tubes and ovaries, leading to PID.	Can cause early labour and delivery, and infect the unborn child causing neonatal conjunctivitis and pneumonia.	Tests can be done with urine sample or a sample from the woman's cervix using a cotton swab.	Easily treated with antibiotics.
Gonorrhoea	Bacterium-Neisseria gonorrhoeae	Sexual contact- vaginal, anal or oral	Unusual vaginal discharge, burning during urination or increased frequency of urination, bleeding after intercourse, bleeding between menstruation periods, abdominal or pelvic pain. But up to 50% may have no symptoms.	PID, which can lead to infertility, chronic pelvic pain and a risk of ectopic pregnancy. Infection of throat can occur following oral-genital sex with infected partner.	Ectopic pregnancy, transmission of infection to the child damaging child's eyes seriously or permanently.	Urine sample, cotton swab sample from the cervix, and also from rectum and throat if infection is suspected there.	Treated with antibiotics. Chlamydia often accompany gonorrhoea infection so generally treatment is given to both together.
Herpes	Herpes simplex virus's two subtypes: HSV-1 and HSV-2.	Intimate skin contact, lesions or secretions or asymptomatic shedding. Oral herpes can be transmitted through kissing and genital herpes through sexual contact, and also from oral to genital regions and vice versa.	Could be asymptomatic. Fever, fatigue, muscle aches, swollen glands/lymph nodes, blisters and ulcers on and around the genitals, lips, mouth, throat, tongue and gums. Pain and itching where the sore is located or burning with urination.	Painful recurrent genital ulcers and increased risk of HIV.	Transmission to bay, in utero or during passage from through the infected birth canal, increased risk of miscarriage, decreased foetal growth and preterm labour.	Sample from ulcer or blister. No test for asymptomatic individuals.	No cure for genital herpes. Severity of symptoms can be reduced through various drugs.
Genital Warts or Human Papillomavirus	Human papilloma virus (HPV) of 70 types can cause warts or papillomas.	Direct contact during sex with a wart or infected skin. Warts on hands and mouth through contact during foreplay or oral sex.	Warts, that maybe small or large, flat or raised, single or multiple, or no wart at all, outside/inside vagina, on the cervix and around the anus.	Genital and anal cancers, especially cervical cancer.	Genital warts may grow large enough due to hormonal changes to obstruct the birth canal. In cases HPV can also infect the newborn causing warts in his throat.	See warts on the cervix or in the vagina using colposcope. Pap smear test.	No cure for HPV.

Continued:

Continued from Annex I:

Infection	Source of infection	Mode of transmission	Symptoms	Possible health problems	Impact on pregnancy	Means of diagnosis	Treatment
Pelvic Inflammatory Disease (PID)	Infection caused by STIs if left untreated, especially chlamydia and gonorrhoea	Untreated STIs	Lower abdominal or pelvic pain, pain during intercourse, abnormal vaginal discharge, abnormal or heavy vaginal bleeding, bleeding between periods, fever/chills and nausea/ vomiting	Complications can be serious, even lead to death. Tubo-ovarian or pelvic abscess, infertility, chronic pelvic pain, ectopic pregnancy,	Difficulty in getting pregnant, increased risk of ectopic pregnancy, infertility.	Pelvic exam and lab tests, checking for abdominal tenderness, tenderness of the cervix, ovaries and fallopian tubes, fever, abnormal cervical or vaginal discharge, and lab tests to check for the presence of chlamydia or gonorrhoea.	With antibiotics, at times intravenous. If infection has spread deeper into the abdomen or an abscess has formed surgery might be needed.
Syphilis (primary, secondary and latent)	Bacterium Treponema pallidum	Sexual contact, vaginal, anal or oral. Contact with syphilis sores which occur in the genital area.	Small painless sores (chancre) in the area of sexual contact (vagina, anus, rectum or mouth). Sores heal but followed by a rash all over body including palms of hands and soles of feet, swollen lymph nodes, fever, and fatigue.	Can spread through the whole body. If left untreated can lead to heart diseases, dementia, blindness, paralysis, and death.	Can be transmitted to child- congenital syphilis, that may lead to blindness, and severe organ damage, and death.	Sore can be examined under a microscope. A blood test can be used to too, like the rapid plasma reagin test (RPR) or the VDRL- venereal disease research laboratory tes.	Treated and cured with antibiotic penicillin.
Trichomoniasis	Protozoan- Trichomonas vaginalis	Through vaginal sex with infected person	Many times no symptoms- up to 50%. Unusual and increased vagina discharge (bubbly, pale green or grey) with an unpleasant odour. Itching, burning and redness of the vulva and vagina.	Not known to lead to any serious complications. Can increase the risk of acquiring HIV.	May cause early labour and delivery.	Sample of vaginal discharge under a microscope showing motile bi-flagellated trichomonads. A pH usually < 4.5 of the frothy vaginal discharge.	Antibiotic, like Flagyl.
Bacterial Vaginosis	Anaerobic bacterium- Gardnerella vaginalis. Normal balance of bacteria in the vagina changes and an over-growth of bacteria normally found in the vagina occurs.	Not transmitted through sexual contact. Over growth of bacteria can be because of douching, use of vaginal sprays and wipes, and bubble baths.	Unusual vagina discharge with an unpleasant odour, and vaginal itching or irritation.	Increased risk of PID if present with chlamydia or gonorrhoea, and risk of infection after vagina surgery or abortion.	Can cause early labour and delivery, and low birth weight babies.	Examination of vaginal discharge to evaluate acidity, odour (fishy on adding alkali, like 10% KOH) and microscopic characteristics. A pH of > 4.5.	Can be treated with antibiotics, like Flagyl.

Continued:

Continued from Annexl:

Infection	Source of infection	Mode of transmission	Symptoms	Possible health problems	Impact on pregnancy	Means of diagnosis	Treatment
Candidiasis	Fungus- Candida albicans. Vaginal yeast infection.	Overgrowth of yeast that are present in low numbers in the vagina. Pregnancy, antibiotics, and frequent exposure to semen over a short time can lead to it. Recent use of antibiotics, douching, use of vaginal sprays and wipes, hormonal changes associated with pregnancy, breastfeeding and menopause, having other RTIs.	Vaginal itching, irritation or burning, and unusual vaginal discharge, often white and thick.	No complications. If infection is severe women can experience extreme discomfort.	Role less clear so far.	Examination of discharge under a microscope. A culture can also be done. A pH of vaginal fluid 4 to 4.5. Gram stain test on vaginal discharge.	Can be treated and cured with antifungal medication, which can come in the form of tablets, vaginal suppositories, or cream.
Chancroid	Bacterium Haemophilus ducreyi.	Sexually transmitted	Genital ulcers, sores that are painful and tender when touched, glands in infected areas swollen. Genital and oral areas most infected. The ulcers can become fluctant and rupture, releasing thick pus, leading to extensive ulceration.	May cause partial loss of tissue at the areas of infection, but it does not cause systematic infection or spread to other areas.	Scarring, fibrosis formation of the fistula.	Culture of scrapping or Gram stain of scrapings.	Can be treated and cured with antibiotics.

Source: *Reproductive Tract Infections*, 2001, Reproductive Health Outlook, www.rho.org/html/rtis.htm; Daniels 1999; and Population Council 2001.

Annex II

List of Primary Sampling Units included in the Rawalpindi Reproductive Tract Infection Study 2001-2002

Serial #	*PSU number*
1.	102053101
2.	102051607
3.	102052841
4.	102052831
5.	102053101
6.	102050801
7.	102051003
8.	102051628
9.	102053307
10.	102052501
11.	102050320
12.	102053436
13.	102053027
14.	102052813
15.	102052302
16.	102052001
17.	102052822
18.	102050140
19.	102050337
20.	102050605
21.	102051615
22.	102050152
23.	102050211
24.	102053137
25.	102050334

Annex III: Survey Questionnaire

The Australian National University
Research School of Social Sciences
Demography and Sociology Program

Woman's Ability to Identify and Address Reproductive Tract Infections:
A case study in Pakistan
(Ph.D. Research)

Principal Investigator: Durre Nayab

Principles for conducting the questionnaires/interviews

At the Beginning:

1. Start by giving a brief introduction of self: name and affiliation
2. Give a brief introduction of the study and the importance of her responses, views and opinions for the research.
3. Inform the respondent that her responses will remain confidential and will be used exclusively for the research purposes. Ensure her that her identity will not be revealed nor will her name be mentioned in any of the reports resulting from the study.
4. Tell the respondent that there are no right or wrong answers to any of the questions being asked to her, and that the study only wants to know about her opinion on the subject.
5. Inform the respondent that the interview will take approximately two hours, and check if this is convenient for her.
6. Inform the respondent that she has the right to refuse the interview or leave it at any point in time during the interview if she feels so.

At the end:

1. Check that all questions/topics have been discussed.
2. Ask the respondent if there is anything else she would like to add.
3. Thank the respondent for her time and views.

QUESTIONNAIRE

WOMAN'S ABILITY TO IDENTIFY AND ADDRESS REPRODUCTIVE TRACT INFECTIONS: A Case-study in Pakistan

Household Schedule

I. Identificaton

Question number		
1.	Name of the interviewer	
2.	Locality/suburb	
3.	PSU number	
4.	Household number	
5.	Address of the household	
6.	Name of the head of the household	
7.	Visits First: _____ (Date) Second: _____ (Date) Third: _____ (Date) Total visits:	
8.	Result of Interview 1. Completed 2. Refused 3. Incomplete	

II. Household Composition

Sr.No.	Usual Residents: Please give the names of the persons who usually live in this household, starting with the head of the household.	Relationship to the head of the household **What is the rel. of (name) with the head of the HH?** Head =1 Wife/husband= 2 Son/daughter = 3 Son-in-law/ Daughter-in-law= 4 Grand child= 5 Parent = 6 Grand parent =7 Parent in law =8 Brother/sister =9 Brother in law/ sister-in-law =10 Other relatives =11 Not related =12	Sex Is (name) male or female? Male=1 Female=2	Age How old is (name)? In completed years. If less than 1, enter 00.	Marital Status If age 12 years or more. What is the marital status of (name)? Currently married=1 Widowed=2 Divorced=3 Separated=4 Never married= 5	Education		If over 12 years of age, does (name) work for cash? Yes=1 (specify) No=2	Eligible women Circle resp. # of eligible women, ie., currently married women aged 15-49, with husband living with her
						Ever gone to school? Yes=1 No=2 Still in school=3	Number of years in school?		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1									1
2									2
3									3
4									4
5									5
6									6
7									7
8									8
9									9
10									10
11									11
12									12
13									13
14									14
15									15

19.Total HH members_____ 20. Total Males_____ 21. Total Females_____ 22.Total number of eligible women_____

III. Household Amenities

Q #	Questions and Filters	Code	
23	**What is the main source of water for the household?**		
	Piped water	1	
	Well in the residence	2	
	Public well	3	
	Tanker/truck/vendor	4	
	Other _____ (specify)	5	
24	**How long does it take to go there and get water?**		
	Minutes	-----	
	On premises	999	
25	**How many rooms are there in your house, and how many are used for sleeping?**		
	Total rooms	------	
	Used for sleeping	------	
26	**What kind of toilet facility does your household have?**		
	Flush	1	
	Bucket	2	
	Pit	3	
	Other _____ (specify)	4	
	No facility	5	
27	**Does your household have:**	**Yes**	**No**
	Electricity	1	2
	Gas	1	2
	Geyser	1	2
	Television	1	2
	Radio/tape recorder	1	2
	Telephone	1	2
	Refrigerator	1	2
	Room cooler	1	2
	Air conditioner	1	2
	Washing machine	1	2
28	**Does any member of the household own:**	**Yes**	**No**
	Bicycle	1	2
	Motorcycle	1	2
	Car/jeep	1	2
	Other means of transportation _____ (specify)	1	2
29	**Housing structure: (record observation)**		
	Mud/*katcha*	1	
	Semi-*pacca*	2	
	Pacca	3	
	Flat	4	
	Bunglow	5	
	Other _____ (specify)	6	

30	**Where is the washing place?** Inside the house Outside the house On some public water place Other _____ (specify)	 1 2 3 4
31	**Where is the garbage disposed?** Collected inside the house Collected outside the house Burned Other _____ (specify)	 1 2 3 4

QUESTIONNAIRE

WOMAN'S ABILITY TO IDENTIFY AND ADDRESS HER NEEDS REGARDING REPRODUCTIVE TRACT INFECTIONS:
A case study in Pakistan

Woman's Questionnaire

I. Identificaton

Question number		
1	Name of interviewer	
2	Locality/suburb	
3	PSU number	
4	Household number	
5	Address of the household	
6	Name of the eligible woman	
7	Line number of the respondent	
8	**Visits** First: _____ (Date) Second: _____ (Date) Third: _____ (Date) Total visits:	---------
9	**Result of Interview** • Completed • Refused • Incomplete	 1 2 3
10	**Medical Diagnosis** • Laboratory tests • Clinical examination	**Yes** **No** 1 2 1 2

II. Background information

Question number	Questions and Filters	Codes/Answers
	First I would like to ask you some questions about you and your household.	
11	**In what month and year were you born?** Month Don't know Year Don't know	 ---------- 98 ---------- 98
12	**How old are you in completed years?** Age in completed years Don't know (assessed by interviewer)	 --------- ---------
13	**Where did you live for most part of your life until you were 12 years old?** City Village	 1 2
14	**How long have you been continuously living at your current city of residence?** Years Always	 --------- 88
15	**Have you ever been to a formal school?** Yes No	 1 2 Go to 20
16	**How many years did you attend a formal school?**	
17	**Can you read and write a simple letter?** Yes No	 1 2
18	**How often do you read any newspaper/magazine?** Daily Once a week Occasionally Never	 1 2 3 4 Go to 20
19	**Which language newspaper/magazine do you read?** Urdu English Regional	 1 2 3
20	**Is this your first marriage?** Yes No	 1 Go to 24 2
21	**How many times have you married (number)?**	
22	**At what age did you (first) get married?**	
23	**What was the age of your (first) husband at the time of marriage?**	
24	**For how many years have you been in the present union?** Years	 --------
25	**How old were you when you married your present husband?**	
26	**How old was your husband when you got married to him?**	

27	**How old is your husband now?**		
28	**Were you his first wife?**		
		Yes	1
		No	2
29	**Are you his only wife at present?**		
		Yes	1
		No	2
30	**Has your husband ever been to any formal school?**		
		Yes	1
		No	2 Go to 32
31	**For how many years did he attend any formal school ?**		
32	**Other than household chores do you do anything else?**		
		Yes	1
		No	2 Go to 36
33	**What do you do?**		
34	**Do you get any money for what you do?**		
		Yes	1
		No	2 Go to 36
35	**How much do you earn?**		
36	**What is your husband's main occupation?**		
37	**How much is your household's average monthly income?**		
38	**How often do you listen to radio in a week?**		
		Daily	1
		Once a week	2
		Occasionally	3
		Never	4
		Don't have one	9
39	**How often do you watch TV in a week?**		
		Daily	1
		Once a week	2
		Occasionally	3
		Never	4
		Don't have one	9

III. General Health and Hygiene

40	**Do you have any health problems?** Yes No	 1 2 Go to 50
41	**What kind of problem(s) do you have (name all)?**	
42	**Which of these would you consider most serious?**	
43	**Did you consult anyone for this problem?** Yes No	 1 2 Go to 47
44	**Whom did you usually consult first?** Husband Mother/sister Mother/sister-in-law Other relative Friend Traditional doctor Spiritual healer Doctor Nurse/FWW/LHV TBA/Dai Other	 01 02 03 04 05 06 07 08 09 10 11
45	**Are you under medication for this problem?** Yes No	 1 2 Go to 47
46	**Who prescribed you this medicine?** Self Husband Mother/sister Mother/sister-in-law Other relative Friend Traditional doctor Spiritual healer Doctor Nurse/FWW/LHV TBA/Dai Other	 01 02 03 04 05 06 07 08 09 10 11 12
47	**Who takes the decision to consult or not consult?** Myself Husband My family My husband's family Friends/neighbours Others: _____ **(specify)**	 1 2 3 4 5 6
48	**Who accompanies you?** Myself Husband My family My husband's family Friends/neighbours Others: _____	 1 2 3 4 5 6

49	**Who pays the physicians fee?** Myself Husband My family My husband's family Friends/neighbours Others:_____ (specify)	 1 2 3 4 5 6
50	**Why did not you consult anyone?** (write in verbatim) _____ _____ _____	
51	**On average, how often do you take bath per week?**	
52	**Is soap frequently used while washing/bathing?** Yes No	 1 2
53	**Who do you generally seek advice from when your children are ill?** Nobody Self Husband Mother/sister Mother/sister-in-law Other relative Traditional doctor Spiritual healer Doctor Nurse/FWW/LHV TBA/Dai Other No child/not applicable	 01 02 03 04 05 06 07 08 09 10 11 12 13 Go to 57
54	**Who takes this decision?** Myself Husband My family My husband's family Friends/neighbours Others:_____ (specify)	 1 2 3 4 5 6
55	**Who accompanies you?** Myself Husband My family My husband's family Friends/neighbours Others:_____ (specify)	 1 2 3 4 5 6
56	**Who pays the physicians fee?** Myself Husband My family My husband's family Friends/neighbours Others:_____	 1 2 3 4 5 6

IV. Obstetric History

57	**Have you ever been pregnant?** Yes No	 1 2	 Go to 99
58	**How many times have you been pregnant?** (irrespective of the outcome)		
59	**Have you ever given birth?** Yes No	 1 2	 Go to 61
60	**How many children do you have?**		
61	**Did any of your pregnancy end with an abortion?** Yes No	 1 2	 Go to 64
62	**How many abortions have you had?**		
63	**How many of these were induced and how many were spontaneous abortions?** Induced Spontaneous	 ------- -------	
64	**Have you ever experienced a stillbirth?** Yes No	 1 2	 Go to 66
65	**How many stillbirths have you experienced?**		
66	**Did any child born to you died?** Yes No	 1 2	 Go to 68
67	**How many children have died?**		

Table of Obstetric History

Order of Preg.	Date of Preg.	Outcome of pregnancy Live birth= 1 Still birth = 2 Induced abortion = 3 Spontaneous abortion = 4 Currently pregnant=5	Where did this outcome take place? Home = 1 Govt. hospital = 2 Private hospital=3 MCH Clinic = 4 Other = 5	Who was attending you? Doctor =1 Nurse =2 TBA =3 Dai = 4 Relative=5 Other = 6	Did you have antenatal care? Yes = 1 No = 2	If yes, from where Home = 1 Govt. hospital = 2 Private hospital=3 MCH Clinic = 4 Other = 5	How many times did you visits Write number	Did you face any problem during the pregnancy Yes = 1 No = 2	If yes, what kind of problem Bleeding=1 Vaginal discharge=2 High fever=3 Persistent headaches=4 Swollen legs and hands=5 Problems in urination= 6 High BP=7 Other = 8 (specify)	Did you face any problem during delivery Yes =1 No = 2	If yes, what kind of problem Specify	Was the delivery normal or caesarean Normal=1 Caesarean=2	Date of birth of the child
	68	69	70	71	72	73	74	75	76	77	78	79	80
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													

Continued:

Ord. of Preg.	Name of the child	Sex of the child Male1 Fem=2	How was the weight of the baby at birth Normal= 1 Under weight= 2 Over weight = 3 DK = 4	Did baby's eyes show any sign of illness. Yes = 1 No = 2	Did baby have any heart prob. Yes = 1 No = 2	Did the baby have any cerebral prob. Yes = 1 No =2	Did the baby have any other prob. Specify	Did you receive any postnatal care Yes=1 No=2	If yes, from where Home = 1 Govt. hospital = 2 Private hospital=3 MCH Clinic = 4 TBA=5 Dai=6 Other = 7	Present status of the child Alive =1 Dead = 2	Child's age at present	In case dead, how old was he/she	In case of abortion/ stillbirth at what month of pregnancy did it happen	Who carried out the induced abortion	How was it done? Write in verbatim	Did you suffer any problems after that? What were they? Yes=1 (specify) No=2 Write in verbatim
	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
11																
13																
14																

97	**Are you currently pregnant?** Yes No	 1 2 Go to 99
98	**How many months pregnant are you?**	
99	**Was there ever a time when you wanted to become pregnant but could not?** Yes No	 1 2 Go to 107
100	**How many times this has happened?**	
101	**When did this happen each time (month/year)?** First time Second time Third time Fourth time	 -------- -------- -------- --------
102	**What do you think was the reason for it?** (write in verbatim) _____ _____ _____	
103	**Did you see any one for it?** Yes No	 1 2 Go to 106
104	**Whom did you consult?** Self Husband Mother/sister Mother/sister-in-law Other relative Friend Traditional doctor Spiritual healer Doctor Nurse/FWW/LHV TBA/Dai Other_____ (specify)	 01 02 03 04 05 06 07 08 09 10 11 12
105	**What did that person say?** (write in verbatim) _____ _____ _____	
106	**Why did not you consult anyone?** _____ _____ _____ (Write in verbatim)	
107	**Have you ever had any operations on your reproductive organs?** Yes No	 1 2 Go to 113

108	**What kind of operation was it?** **1.**_____ **2.**_____ **3.**_____ 4._____		
109	**When did it take place?**		Date
		1.	-------
		2.	-------
		3.	-------
		4.	-------
110	**Where did it take place?**		Place
		1.	----------
		2.	----------
		3.	----------
		4.	----------
111	**Did you have any complaints after that?**		Yes / No
		1.	1 / 2
		2.	1 / 2
		3.	1 / 2
		4.	1 / 2
112	**What kind of complaints were they?** 1._____ 2._____ 3._____ 4._____		

V. Contraceptive History

Methods	Have you heard about the method Yes=1, No=2 113	Do you know how to use it Yes=1, No=2 114	Are you currently using it Yes=1, No=2 115	When did you start using it 116	Have you ever used it Yes=1, No=2 117	When did you start using it 118	When did you stop using it 119	Why did you stop using it (verbatim reason) 120	Did you have any complaints Yes=1 (specify), No=2 121	Who decided to use the method (ever used) 122	Who decided to use the current method 123
Pills (a)						1. 2. 3.	1. 2. 3.	1. 2. 3.	1. 2. 3.		
IUD (b)						1. 2. 3.	1. 2. 3.	1. 2. 3.	1. 2. 3.		
Injections (c)						1. 2. 3.	1. 2. 3.	1. 2. 3.	1. 2. 3.		
Implants (d)						1. 2. 3.	1. 2. 3.	1. 2. 3.	1. 2. 3.		
Condom (e)						1. 2. 3.	1. 2. 3.	1. 2. 3.	1. 2. 3.		
Female sterilisation (f)											
Male sterilisation (g)											
Rhythm (h)						1. 2. 3.	1. 2. 3.	1. 2. 3.	1. 2. 3.		
Withdrawal (i)						1. 2. 3.	1. 2. 3.	1. 2. 3.	1. 2. 3.		
Other: specify											

VI. Reproductive Tract Infections

124	**Do you know about reproductive tract infections?**		
		Yes	1
		No	2 Go to 131
125	**What kind of symptoms do you think are associated with it?**		
	_____		
	_____		
	_____		
	Write in verbatim		
126	**What do you think cause such infections?**		
	_____		
	_____		
	_____		
	(Write in verbatim)		
127	**What consequences do you think such infections can have?**		
	_____		
	_____		
	_____		
	(Write in verbatim)		
128	**How should these infections be dealt with?**		
	_____		
	_____		
	_____		
	(Write in verbatim)		
129	**Why do you think this is the best way to be deal with these infections?**		
	_____		
	_____		
	_____		
	(Write in verbatim)		
130	**Do you think there is a way to protect against these infections? If yes, what?**		
	_____		
	_____		
	_____		
	(Write in verbatim)		
The questions I'll ask now would be regarding your current state, that is within a period of one week at the most, except for the two menstruation related symptoms for which a period of three months would be considered current. Write all responses in verbatim.			
131	**Are you still menstruating?**		
		Yes	1
		No	2 Go to 135
132	**What is the protection you use during menstruation?**		
		Commercially produced sanitary pads	1
		Cotton wool	2
		New cloth	3
		Old/reused cloth	4
		Other: _____ (specify)	5
133	**How do you wash these?**		
		Cloth	----------
		Underwear	----------

134	**Where do you get them dried?**	
135	**Why are you not having your periods?** Menopause Pregnancy Breastfeeding Contraception Other:_____ (specify)	 1 2 3 4 5
136	**When did you have your last periods?** Month Don't know month Year Don't know year	 ------ 98 ------- 98
137	**How long do your periods last?** Days	 ---
138	**Have your PERIODS BEEN REGULAR in the last three months?** Yes No, more frequent No, less frequent No, irregular	 1 2 3 4
139	**Has there been a CHANGE IN THE FLOW DURING PERIODS?** Same Heavier with clots Heavier without clots Lighter	 1 (If 1 in 138 & 139 2 go to 156) 3 4
140	**For how long do you have this problem?** Days Weeks Months	 ____ ____ ____
141	**Does this change worry you?** Yes, a lot Yes, somewhat No	 1 2 3 Go to 143
142	**What makes you worried?** _____ _____ _____	
143	**How severe is the pain?** Very severe, as couldn't continue daily chores Severe but could continue daily routine with difficulty Not very severe, could continue daily routine	 1 2 3
144	**Did you talk about it with your husband?** Yes No	 ____ ____
145	**Are you seeking any help or treatment in this regard?** Yes No	 1 2 Go to 151

146	**Whom are you seeking help from? If more than one, rank the order in which help was sought?** Husband Mother/sister Mother/sister-in-law Other relative Friend Traditional doctor Spiritual healer Doctor Nurse/FWW/LHV TBA/Dai Other:_____ (specify)	 ------ ------ ------ ------ ------ ------ ------ ------ ------ ------ ------
147	**What did they tell you do?** _____ _____ _____	
148	**Are you following what they told you to do?** Yes No	 1 2 Go to 150
149	**What is the outcome?** _____ _____ _____ Go to 152	
150	**Why did not you follow it?** _____ _____ _____ Go to 152	
151	Why did not you consult anyone? _____ _____ _____ _____	
152	**What do you think caused it?** _____ _____ _____	
153	**Do you think you could have protected yourself against it? If yes, how?** _____ _____ _____	
154	**Are you continuing to have sexual relations with your husband while having this problem?** Yes No Other	 1 2 Go to 156 ----------

155	**Why did you stop?** _____ _____ _____		
156	**Do you get DEEP ABDOMINAL PAIN ACCOMPANYING MENSTRUATION?**		
	Yes	1	
	No	2	Go to 174
157	**Do you normally get such kind of pain?**		
	Yes	1	
	No	2	
158	**For how long do you have this problem?**		
	Days	____	
	Weeks	____	
	Months	____	
159	**Are you worried about this pain?**		
	Yes very	1	
	Yes somewhat	2	
	No	3	Go to 161
160	**What makes you worried?** _____ _____ _____		
161	**How severe is the pain?**		
	Very severe, as couldn't continue daily chores	1	
	Severe but could continue daily routine with difficulty	2	
	Not very severe, could continue daily routine	3	
162	**Have you talked about it with your husband?**		
	Yes	1	
	No	2	
163	**Are you seeking any help or treatment in this regard?**		
	Yes	1	
	No	2	Go to 169
164	**Who are you seeking help from? If more than one, rank in order in which help was sought?**		
	Husband	------	
	Mother/sister	------	
	Mother/sister-in-law	------	
	Other relative	------	
	Friend	------	
	Traditional doctor	------	
	Spiritual healer	------	
	Doctor	------	
	Nurse/FWW/LHV	------	
	TBA/Dai	------	
	Other_____ (specify)	------	

165	**What did they tell you do?**		
166	**Are you following what they told you to do?**	Yes No	1 2 Go to 168
167	**What is the outcome?**		Go to 170
168	**Why did not you follow it?**		Go to 170
169	**Why did not you consult anyone?**		
170	**What do you think caused it?**		
171	**Do you think you could have protected yourself against it? If yes, how?**		
172	**Are you continuing having sexual relations with your husband while you having this problem?**	Yes No Other	1 Go to 174 2 ----------
173	**Why did you stop?**		
174	Are you URINATING MORE FREQUENTLY than usual?	Yes No	1 2
175	**Do you get a burning sensation while urinating?**	Yes No	1 2
176	**Do you urinate with difficulty (intermittent urination)?**	Yes	1 (If 174/175/176

	No	2	are No, go to 194)
177	**Do you have fever/shivers at the same time?**		
	Yes	1	
	No	2	
178	**For how long are you having this problem?**		
	Days	----	
	Weeks	----	
	Months	----	
179	**Are you worried about these symptoms?**		
	Yes very	1	
	Yes somewhat	2	
	No	3	Go to 181
180	**What makes you worried?**		
	_____		
	_____		
	_____		
181	**How severe was/is are the symptoms?**		
	Very severe, as couldn't continue daily chores	1	
	Severe but could continue daily routine with difficulty	2	
	Not very severe, could continue daily routine	3	
182	**Have you talked about it with your husband?**		
	Yes	1	
	No	2	
183	**Are you seeking any help or treatment in this regard?**		
	Yes	1	
	No	2	Go to 189
184	**Who are you seeking help from? If more than one, rank in order in which help was sought?**		
	Husband	------	
	Mother/sister	------	
	Mother/sister-in-law	------	
	Other relative	------	
	Friend	------	
	Traditional doctor	------	
	Spiritual healer	------	
	Doctor	------	
	Nurse/FWW/LHV	------	
	TBA/Dai	------	
	Other_____ (specify)	------	
185	**What did they tell you to do?**		
	_____		
	_____		
	_____		
186	**Are you following what they told you to do?**		
	Yes	1	
	No	2	Go to 188
187	**What is the outcome?**		
	_____		
	_____		
	_____		

188	**Why are you not following it?**		
189	**Why did not you consult anyone?**		
190	**What do you think caused it?**		
191	**Do you think you could have protected yourself against it? If yes, how?**		
192	**Are you continuing having sexual relations with your husband while you having this problem?**	Yes No Other	1 Go to 194 2 ----------
193	**Why did you stop?**		
194	**Are you having severe LOWER ABDOMINAL PAIN (not related to menstruation)?**	Yes No	1 2 Go to 211
195	**For how long are you having this pain?**	Days Weeks Months	___ ___ ___
196	**Are you worried about this pain?**	Yes very Yes somewhat No	1 2 3 Go to 198
197	**What makes you worried?**		
198	**How severe is the pain?**	Very severe, as couldn't continue daily chores Severe but could continue daily routine with difficulty Not very severe, could continue daily routine	1 2 3
199	**Have you talked about it with our husband?**	Yes No	1 2
200	**Are you seeking any help or treatment in this regard?**	Yes	1

	No	2	Go to 206
201	**Whom are you seek help from? If more than one, rank the order in which help was sought?** Husband Mother/sister Mother/sister-in-law Other relative Friend Traditional doctor Spiritual healer Doctor Nurse/FWW/LHV TBA/Dai Other_____ (specify)	 ------ ------ ------ ------ ------ ------ ------ ------ ------ ------	
202	**What did they tell you to do?** _____ _____ _____		
203	**Are you following what they told you to do?** **Yes** **No**	 1 2	 Go to 205
204	**What is the outcome?** _____ _____ _____		Go to 207
205	**Why are you not following it?** _____ _____ _____		Go to 207
206	**Why did not you consult anyone?** _____ _____ _____		
207	**What do you think caused it?** _____ _____ _____		
208	**Do you think you could have protected yourself against it? If yes, how?** _____ _____ _____		
209	**Are you continuing to have sexual relations with your husband while having this symptom?** Yes No Other	 1 2 ----------	 Go to 211

210	**Why did you stop?** _____ _____ _____		
211	**How would you describe normal discharge?** _____ _____ _____		
212	**Are you having an ABNORMAL VAGINAL DISCHARGE?**		
		Yes	1
		No	2 Go to 235
213	**For how long are you having this discharge?**		
		Days	-----
		Weeks	-----
		Months	-----
214	**What colour is the discharge?** _____ (verbatim)		
		Clear (colourless)	1
		White (milky)	2
		Yellowish	3
		Greenish	4
215	**What consistency/texture does the discharge have?** _____ (verbatim)		
		Cheesy	1
		Mucoid	2
		Other: _____ (specify)	3
216	**Does the discharge also have a bad odour?**		
		Yes	1
		No	2
217	**Does it remind you of a certain odour?** (Write in verbatim)		
218	**Do you have any irritation/itching down below at the same time?**		
		Yes	1
		No	2
219	**Are you worried about these symptoms?**		
		Yes very	1
		Yes somewhat	2
		No	3 Go to 221
220	**What makes you worried?** _____ _____ _____		
221	**How severe are these symptoms?**		
		Very severe, as couldn't continue daily chores	1
		Severe but could continue daily routine with difficulty	2
		Not very severe, could continue daily routine	3

222	**Have you talked about it with your husband?** Yes No	 1 2	
223	**Are you seeking any help or treatment in this regard?** Yes No	 1 2	 Go to 229
224	**Whom did you seek help from? If more than one, rank the order in which help was sought?** Husband Mother/sister Mother/sister-in-law Other relative Friend Traditional doctor Spiritual healer Doctor Nurse/FWW/LHV TBA/Dai Other _____ (specify	 ------ ------ ------ ------ ------ ------ ------ ------ ------ ------	
225	**What did they tell you to do?** _____ _____ _____		
226	**Are you following what they told you to do?** Yes No	 1 2	 Go to 228
227	**What is the outcome?** _____ _____ _____		
228	**Why are you not following it?** _____ _____ _____		Go to 230
229	**Why did not you consult anyone?** _____ _____ _____		Go to 230
230	**What do you think caused it?** _____ _____ _____		
231	**Do you think you could have protected yourself against it? If yes, how?** _____ _____ _____		

232	**Are you continuing to have sexual relations with your husband while having this symptom?**		
		Yes	1 Go to 235
		No	2
		Other	----------
233	**Why did you stop?**		
	_____		
	_____		
	_____		
234	**Do you use vaginal douching/powder/other agent for cleaning?**		
		Yes	1
		No	2
235	**Do you have any SORES/ULCERS ON YOUR GENITALS?**		
		Yes	1
		No	2 Go to 253
236	**For how long have you had these sores/ulcers?**		
		Days	____
		Weeks	____
		Months	____
237	**Are these sores/ulcers accompanied by pain?**		
		Yes	1
		No	2
238	**Are you worried about these sores/ulcers?**		
		Yes very	1
		Yes somewhat	2
		No	3 Go to 240
239	**What makes you worried?**		
	_____		
	_____		
	_____		
240	**How severe are these symptoms?**		
		Very severe, as couldn't continue daily chores	1
		Severe but could continue daily routine with difficulty	2
		Not very severe, could continue daily routine	3
241	**Have you talked about it with our husband?**		
		Yes	1
		No	2
242	**Are you seeking any help or treatment in this regard?**		
		Yes	1
		No	2 Go to 248
243	**Whom did you seek help from? If more than one, rank the order in which help was sought?**		
		Husband	------
		Mother/sister	------
		Mother/sister-in-law	------
		Other relative	------
		Friend	------
		Traditional doctor	------
		Spiritual healer	------
		Doctor	------

	Nurse/FWW/LHV TBA/Dai Other_____ (specify	------ ------ ------ ------
244	**What did they tell you to do?** _____ _____ _____	
245	**Are you following what they told you to do?**	1 2 Go to 247
246	**What is the outcome?** _____ _____ _____ Go to 249	
247	**Why are you not following it?** _____ _____ _____ Go to 249	
248	**Why did not you consult anyone?** _____ _____ _____	
249	**What do you think caused it?** _____ _____ _____	
250	**Do you think you could have protected yourself against it? If yes, how?** _____ _____ _____	
251	**Are you continuing to have sexual relations with your husband while having this symptom?** Yes No Other	 1 2 ----------
252	**Why did you stop?** _____ _____ _____	
253	**Do you feel PAIN DURING INTERCOURSE?** Yes No	 1 2 Go to 270
254	**For how long are you having this pain?** Days Weeks Months	 ----- ----- -----

255	**Is the pain accompanied by bloody discharge/spots of blood?**		
		Yes	1
		No	2
256	**Are you worried about this pain and spotting?**		
		Yes very	1
		Yes somewhat	2
		No	3 Go to 258
257	**What makes you worried?** _____ _____ _____		
258	**How severe are these symptoms?**		
		Very severe, as couldn't continue daily chores	1
		Severe but could continue daily routine with difficulty	2
		Not very severe, could continue daily routine	3
259	**Are you seeking any help or treatment in this regard?**		
		Yes	1
		No	2 Go to 265
260	**Whom did you seek help from? If more than one, rank the order in which help was sought?**		
		Husband	------
		Mother/sister	------
		Mother/sister-in-law	------
		Other relative	------
		Friend	------
		Traditional doctor	------
		Spiritual healer	------
		Doctor	------
		Nurse/FWW/LHV	------
		TBA/Dai	------
		Other_____	------
		(specify	------
261	**What did they tell you to do?** _____ _____ _____		
262	**Are you following what they told you to do?**		
		Yes	1
		No	2 Go to 264
263	**What is the outcome?** _____ _____ _____ Go to 264		
264	**Why are you not following it?** _____ _____ _____ Go to 264		

265	**Why did not you consult anyone?**		
266	**What do you think caused it?**		
267	**Do you think you could have protected yourself against it? If yes, how?**		
268	**Are you continuing to have sexual relations with your husband while having this symptom?**		
	Yes	1	Go to 270
	No	2	
	Other	----------	
269	**Why did you stop?**		
270	**Do you feel pain at your LOWER BACK? Does this pain increase at the end of the day?**		
	Yes	1	
	No	2	Go to 285
271	**Are you worried about these symptoms?**		
	Yes very	1	
	Yes somewhat	2	
	No	3	Go to 273
272	**What makes you worried?**		
273	**How severe are these symptoms?**		
	Very severe, as couldn't continue daily chores	1	
	Severe but could continue daily routine with difficulty	2	
	Not very severe, could continue daily routine	3	
274	**Are you seeking any help or treatment in this regard?**		
	Yes	1	
	No	2	Go to 280
275	**Who are you seeking help from? If more than one, rank the order in which help was sought?**		
	Husband	------	
	Mother/sister	------	
	Mother/sister-in-law	------	
	Other relative	------	
	Friend	------	
	Traditional doctor	------	
	Spiritual healer	------	
	Doctor	------	

	Nurse/FWW/LHV TBA/Dai Other_____ (specify)	------ ------ ------
276	**What do they tell you to do?** _____ _____ _____	
277	**Are you following what they told you to do?** Yes No	 1 2 Go to 279
278	**What is the outcome?** _____ _____ _____	
279	**Why are you not following it?** _____ _____ _____ Go to 281	
280	**Why did not you consult anyone?** _____ _____ _____ Go to 281	
281	**What do you think caused it?** _____ _____ _____	
282	**Do you think you could have protected yourself against it? If yes, how?** _____ _____ _____	
283	**Are you continuing to have sexual relations with your husband while having this symptom?** Yes No Other	 1 Go to 285 2 ----------
284	**Why did you stop?** _____ _____ _____	

Reproductive Tract Infection History

Symptoms	Ever had it Yes=1 No=2 285	No. of episodes 286	Can you remember when did it happen each time		How severe were the symptoms? Very severe=1 Severe=2 Not severe=3 289	What were the outcomes of these symptoms? 290	Sought treatment? Yes=1 No=2 291	Where treated? Self =1 Relatives =2 Friends/ Neighbours=3 Doctor=4 Nurse/LHV /FWW=5 TBA/Dai=6 Traditional Healer=7 Spiritual healer=8 Others (specify)=9 292	What was the diagnosis, and the recommended treatment? 293	Why no treatment was sought? 294
			Began month/year 287	Ended Month/year 288						
Excessive vaginal discharge (a)										
Bad odoured vaginal discharge (b)										
Coloured vaginal discharge (c)										
Abdominal pain during intercourse (d)										
Sores and ulcers on genitals (e)										
Severe lower abdominal pain (f)										
Problems in urination (g)										
Abnormalities in menstruation (h)										

VII. Woman Mobility and Autonomy

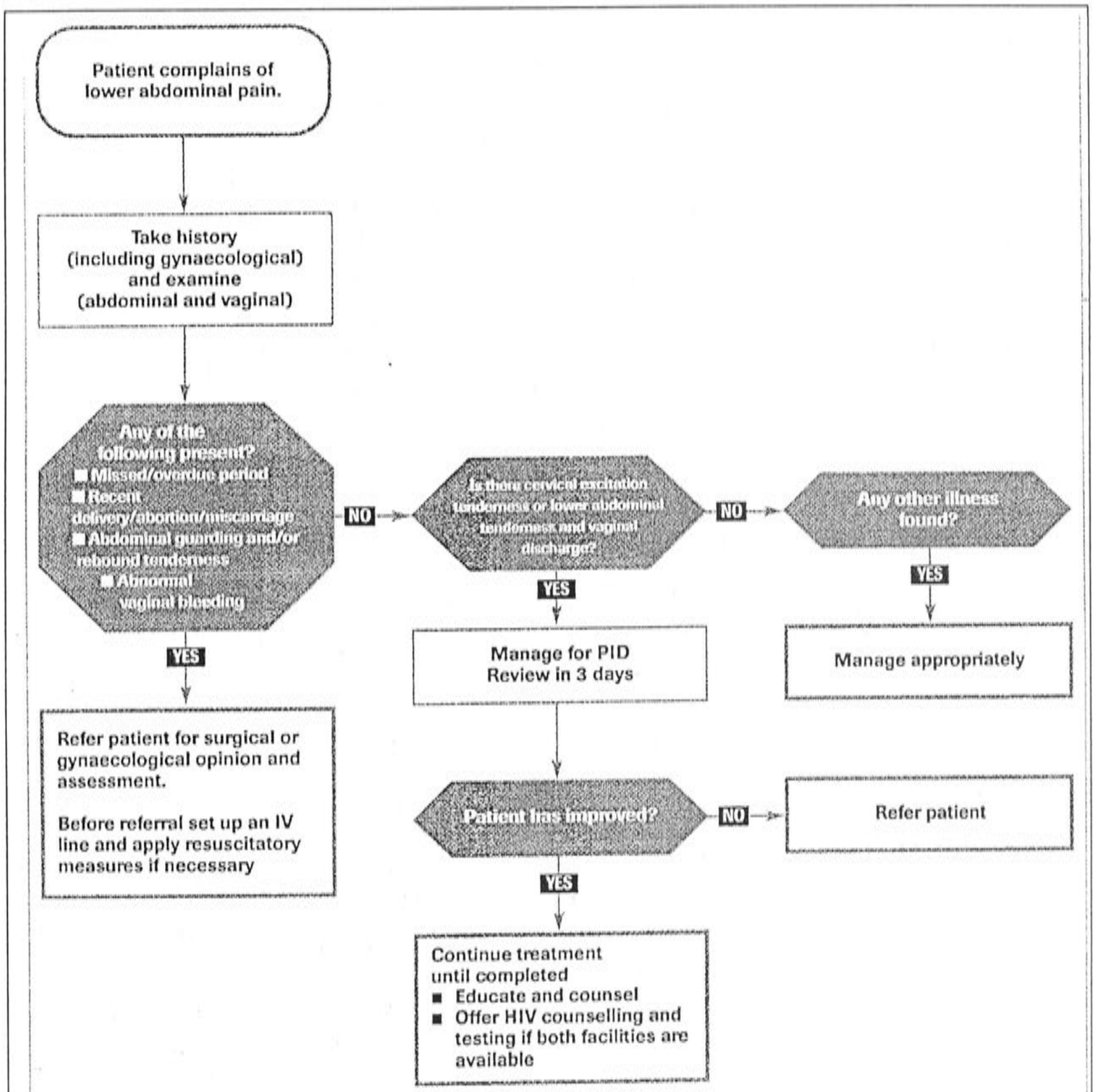
295	(For those saying yes to Q , otherwise go to Q) **Do you keep all the money you earn with yourself?** Keep all Keep some Do not keep any	1 2 3			
296	**What is your level of say in household matters regarding:** If no say, who among these has the say: Husband=1 Respondent's family=2 Husband's family=3 Other=4 Not applicable=9 a. What food to cook b. Children health care c. Children education e. Support of own parents/relatives f. Support for husband's parents/relatives g. Buying/selling of household items h. Gifts on marriages	Major say 1 1 1 1 1 1 1 1	Minor say 2 2 2 2 2 2 2 2	No say 3 3 3 3 3 3 3 3	If no say, who has it?
297	**Do you have control over household income so as to spend money independently, without seeking permission from anyone?** Yes, total Yes, partial No, no control	1 2 3			
298	**Do you have to ask for permission from your husband or any other senior family member to:** a. To the market b. To a health centre/hospital c. Home of some relative d. A nearby shrine	Yes 1 1 1 1	No 2 2 2 2		
299	**Are you afraid to disagree with your husband because he will get angry?** Yes No	1 2			
300	**Is any disagreement with your husband followed by physical abuse?** Yes, he always beat me Yes, I always beat him Yes, he sometimes beat me Yes, I sometimes beat him Yes, we both beat each other No, never	1 2 3 4 5 6			
301	**Who is the first person to reconcile?** Self Husband Both Else No one	1 2 3 4 5			
302	**Is there anything else you would like to tell me about the things we have talked today?** _____ _____ _____				

303	**Would you like to have a medical examination to ascertain your reproductive health status?**	
	Yes, I'll take a medical exam	1
	No, I would not like to have a medical exam	2
304	**Would you like to elaborate your reasons for refusing a medical examination?**	

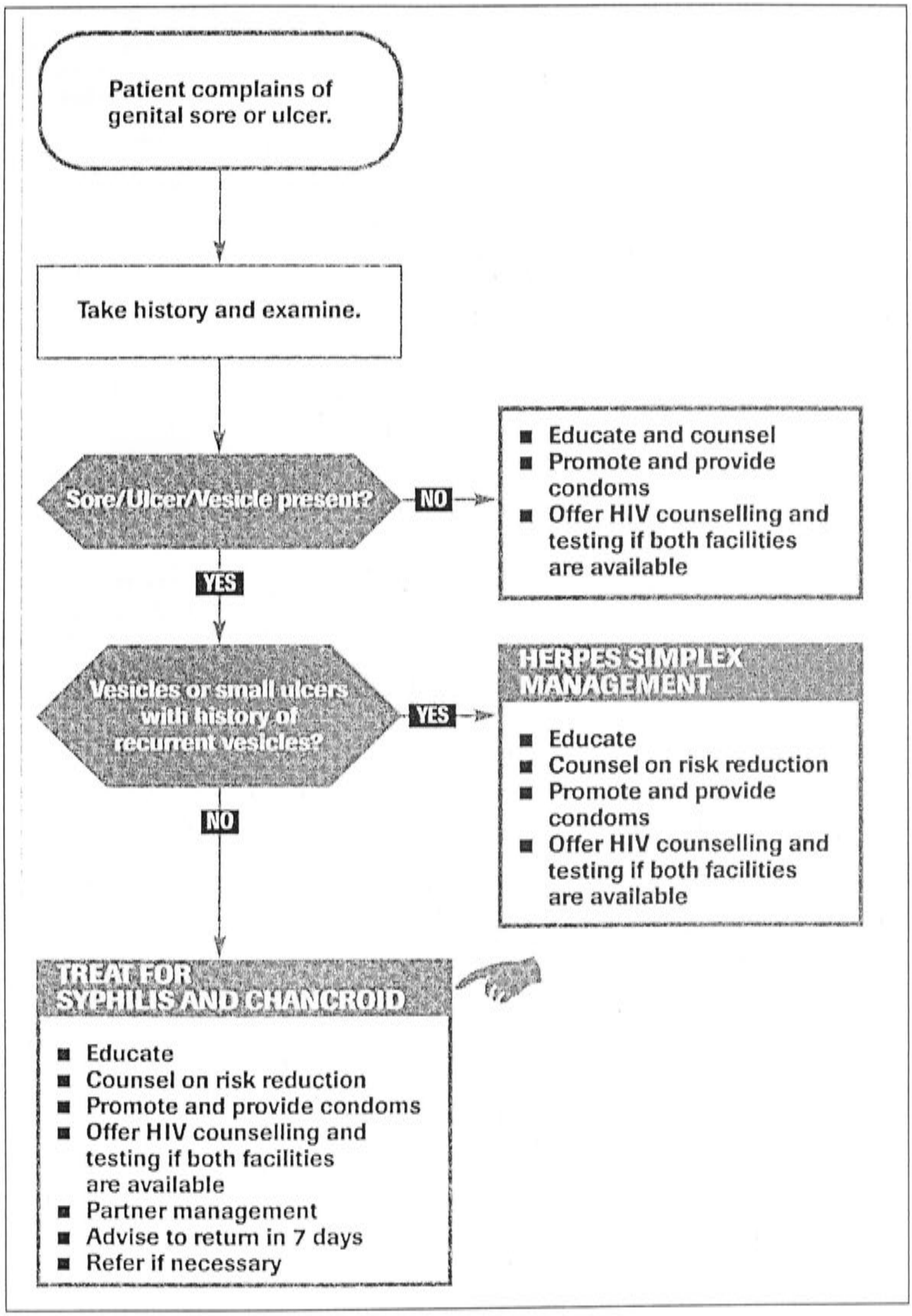
Thank the respondent for her time.

Annex IV

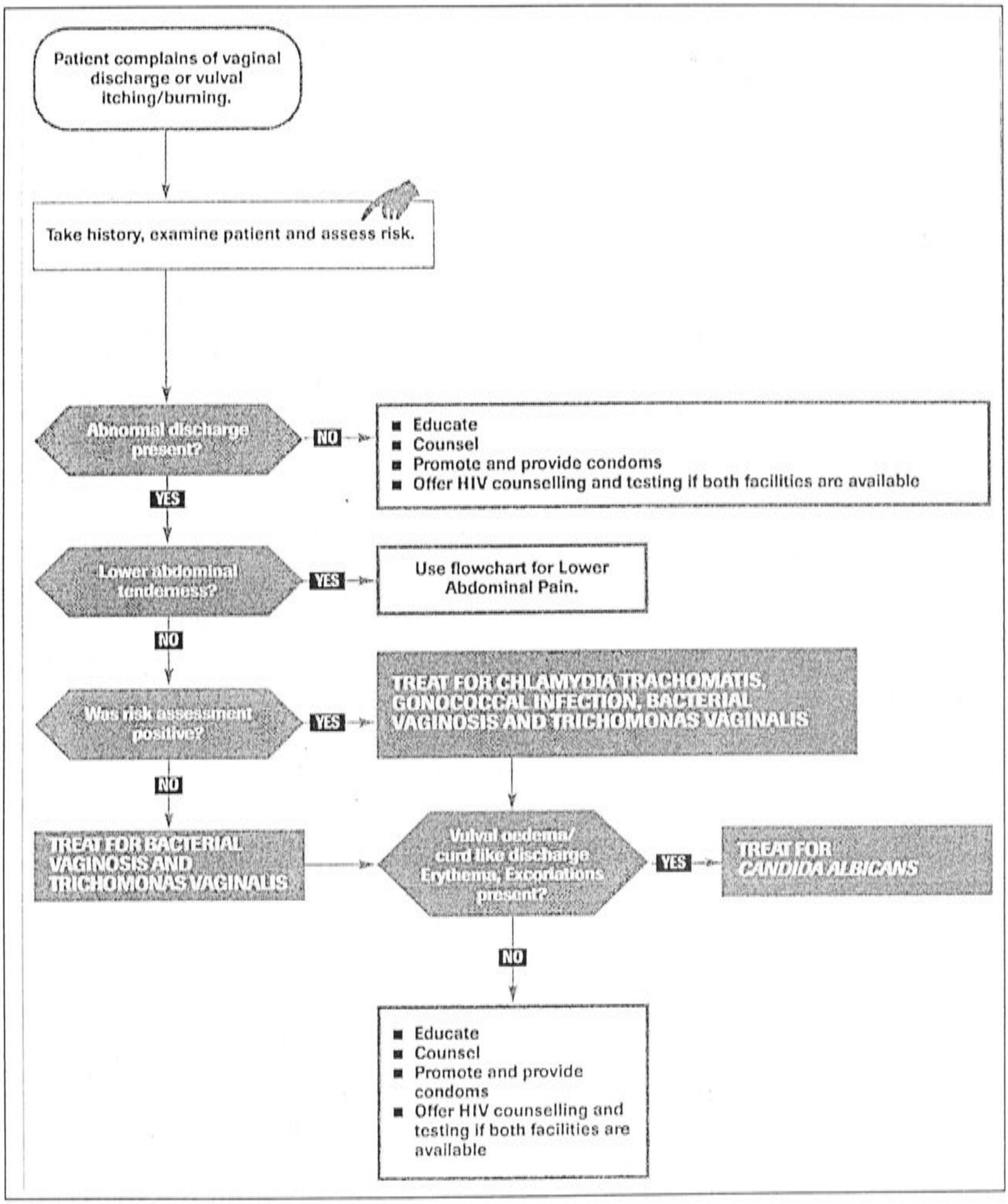
WHO Algorithms for Treatment of RTI-Associated Syndromes



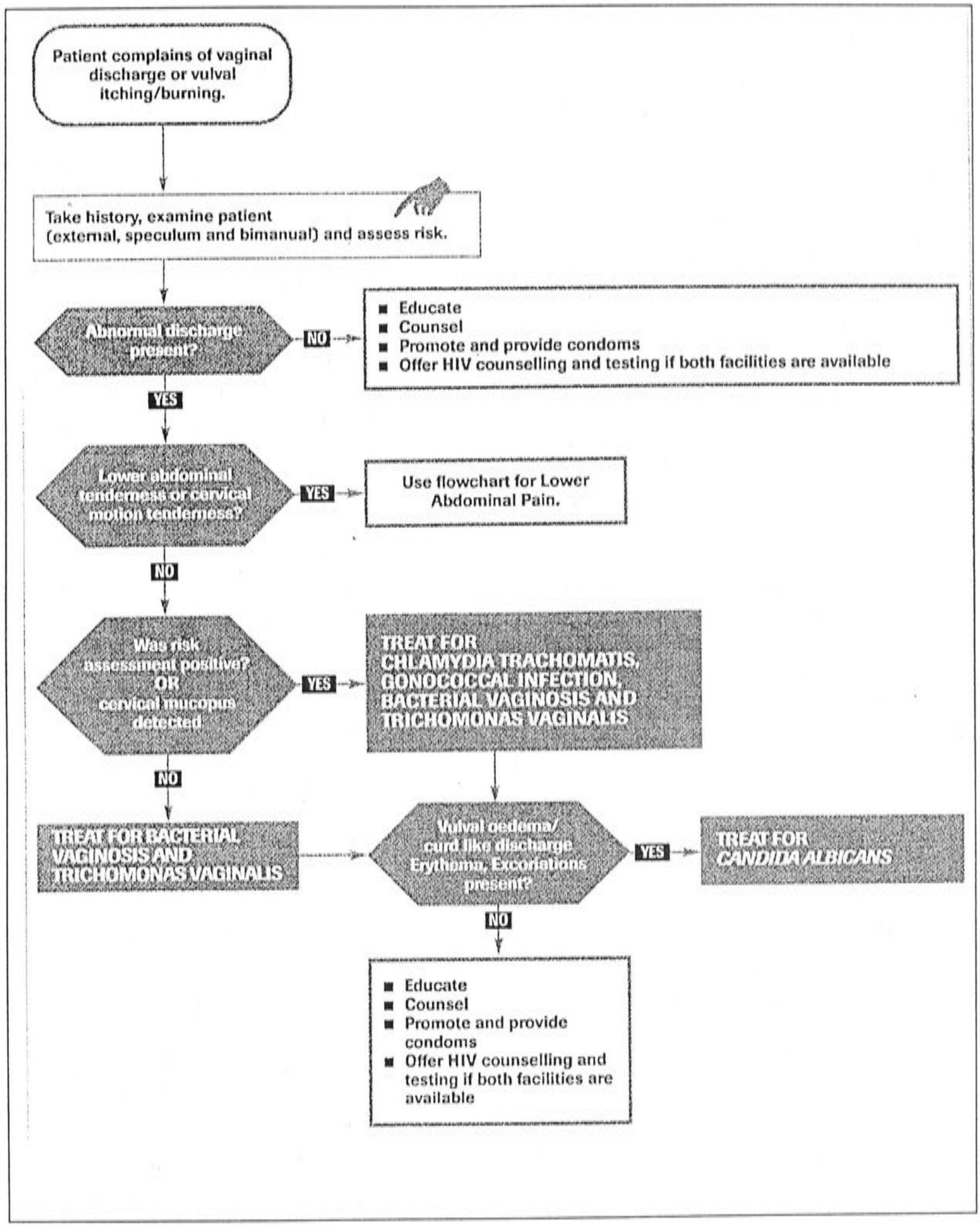
Lower Abdominal Pain



Genital Ulcers



Vaginal Discharge



Vaginal Discharge (Speculum and Bimanual)

Source: WHO 2001.

Annex V
Details of Laboratory Assays used to Detect RTIs

Within the constraints of time and budget, attempt was made to select laboratory assays that had better diagnostic efficiency. Exception in this regard however was detection of HPV infection. For HPV, cellular morphology, having lower diagnostic efficiency, was selected to screen women for the infection because the more efficient alternative through DNA detection was neither affordable nor available.

Since samples were collected within the premises of the laboratory, there was no transportation time involved and the probability of samples being contaminated were thus minimised. The details of these assays are as follows:

Infection	Nature of Sample	Method of Detection
Candidiasis	Vaginal Smear	A swab of the vaginal secretions was inoculated into Sabouraud's agar within an hour of collection and incubated for up to two days at 37° C. Colonies were identified as yeast by performing a Gram stain. The quantity of yeast was determined, with more than 103 colony-forming units/ml of vaginal secretions usually being associated with disease.
Trichomoniasis	Posterior vaginal smear	A swab of secretions taken from the posterior vaginal fornix was used within an hour of sample collection to inoculate a tube of Diamond's modified medium. The culture was incubated at 35°C for up to four days with daily examination by wet prep for motile trichomonas.
Bacterial Vaginosis	Vaginal Smear	A swab of vaginal secretions was rolled onto a glass slide and air-dried. The slide was gram stained and a standardised 0-10 point scoring method was used to evaluate the smears. Points were given by estimating the number of three different bacterial morphotypes from 0 to 4+, including large Gram-negative rods, small Gram-negative/variable rods, and curved Gram-negative/ variable rods under the microscope.

Continued:

Infection	Nature of Sample	Method of Detection
Chlamydia	Endogenous-cervical vaginal smear	In direct immunofluorescence assay (DFA), cells collected on swabs were rolled onto glass slides, fixed and stained with fluorescein-labelled monoclonal antibodies specific for the major outer membrane protein of C. trachomatis. DFA allows for the visualisation of the distinctive morphology and staining characteristics of chlamydial inclusions and elementary bodies. It also permits simultaneous assessment of the specimen adequacy. The presence of ten or more elementary bodies is generally accepted for the test to be positive.
Gonorrhoea	Endogenous-cervical vaginal smears	The endo-cervical swab was used immediately after collection to inoculate a plate of modified Thayer-Martin. The selective medium contains anti-microbial agents that allow the growth of N. gonorrhoea and inhibit the growth of other bacteria. The plate was incubated at 35 degrees C for up to three days. Typical colonies were tested with Gram-stain, oxidase and catalase and superoxal tests for presumptive identification of N. gonorrhoea. To confirm a presumptive culture, the isolated organism was tested for sugar fermentation by growth in standard carbohydrate fermentation tubes.
Syphilis	Serum	Nontreponemal antibody tests for syphilis, which are used for screening patient serum, are based on detection of antibodies to a cardiolipid-cholesterol-lecithin antigen. Undiluted serum was added to the antigen on a slide. The reagents were then mixed and rocked and observed for flocculation. The rapid plasma reagin (RPR) test, in which the antigen is mixed with charcoal so the antigen-antibody complexes can be seen without a microscope, was used to screen women for syphilis.

Continued:

Infection	Nature of Sample	Method of Detection
Genital Herpes	Cells from lesions	Lesions were rubbed at their base with a cotton swab after breaking any intact vesticles. The sample was then used to inoculate a fibroblast cell-line . The diagnosis was made by observation of a characteristic cytopathic effect on the cells after incubation for up to one week (although most positives occur within 48 hours of cell inoculation) and confirmation of the virus by staining the infected cells with monoclonal antibodies specific for HSV.
Chancroid	Smear from the base of the ulcer	Before obtaining material for culture, the ulcer base was exposed and made free of pus. Culture material was obtained from the base of the ulcer with a cotton swab and immediately inoculated directly onto culture plates. H. ducreyi is a fastidious organism and requires special media for growth. An effective medium for H. ducreyi isolation contains Columbia agar base, foetal bovine serum, haemoglobin, IsoVitalex, activated charcoal and vancomycin. Plates were incubated for up to three days at 33-35 degrees C in 5% CO2 atmosphere. A Gram stain was performed on suspected colonies. Gram-negative bacilli from colonies compatible with H. ducreyi were identified based on their requirements for X but not V factor for growth.
HPV	Endo/ecto-cervix cells	Epithelial cells were collected from the endo-cervix and ecto-cervix using a wooden spatula. Cells were rolled onto a glass slide, and stained with the Papanicolaou stain and read by the pathologist. Particular abnormal cellular morphology is indicative of an HPV infection.

Source: Pathology Department, Holy Family Hospital Rawalpindi.

Brochure from an "Allopathic" Doctor's Clinic

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