Similarly, with use of the STD history criterion alone, 98% of the women not infected were correctly identified as uninfected (specificity) and 62% of women with a history of STD infection were indeed infected; on the other hand, because so few women had a history of STDs, this criterion had a sensitivity of only 6%. And while focusing on a low level of schooling as the sole marker appeared much more effective at identifying infected women (sensitivity of 83%), such information is of limited utility in this setting, since the vast majority of the women (85%) were not educated beyond the elementary level. Thus, this criterion’s ability to accurately identify uninfected women (specificity) and to single out only the infected women (positive predictive value) is limited (18% and 37%, respectively).

Discussion

We attempted to identify social and demographic characteristics and sexual behavior indicators for women and their partners that were statistically associated with the presence of STDs and other reproductive tract infections. In this population, however, the prevalence of infection was relatively low, and only a prior history of STDs and fewer years of schooling were significantly associated with any infection of the reproductive tract. An association between a history of STDs and current sexually transmitted infection has been previously described. This association highlights the importance of including a thorough medical and sexual history as part of contraceptive counseling.

However, although we found an association between prior STD infection and current reproductive tract infection, we observed no link between prior infection and current infection with a specific STD. While this may be the result of limited statistical power, given the low STD prevalence in this population, it may also reflect an imprecision in current terminology. Further qualitative research to identify local terminology regarding reproductive tract morbidity and to understand health-seeking behavior patterns among women with infections is required to more fully understand such observations.

If we consider education as a socioeconomic indicator, the association between reproductive tract infection and fewer years of schooling may be in keeping with the findings of other studies, in which lower socioeconomic status is often associated with a higher prevalence of reproductive tract infection.

Our findings regarding chlamydial infection are particularly important in light of the fact that 42% of the women chose the IUD. The association between chlamydial infection and women’s longer cohabitation with their current partner is difficult to interpret, though, because it contrasts with results of previous studies, which have shown that chlamydia is typically associated with more recent partner change or multiple partnerships. Additional data on the duration of infection and the sexual behavior of the women and their male partners might have been helpful in interpreting this observation.

Our attempts to use history of STDs and years of education to identify women at high risk of current infection proved unsuccessful. The vast majority of infected women in the study population could not be identified using these criteria. Similar problems have also been noted in attempts to apply the risk approach to other serious health events, such as maternal morbidity and mortality.

While a risk-assessment approach may sometimes achieve high levels of specificity, it may have poor sensitivity, as seen in our results. The limited utility of this approach must be weighed against its costs in terms of training, provider time, and the mistaken impression it may foster among service providers that they are adequately addressing an important problem simply by applying an incompletely developed form of risk assessment.

Based on our findings, the risk approach appears to have limited value among new contraceptive users in a typical family planning service delivery setting, although the predictive value of these variables may be higher where the prevalence of either current infection or STD history is greater. This is likely to be the case in a clinic specializing in the treatment of STDs, for example.

Our findings have significant implications for family planning service provision. We found that despite relatively little reported high-risk sexual behavior, new contraceptive users in the clinic had a moderate prevalence of chlamydia. These women were not easily identified on the basis of other variables.

While these findings reinforce the specific need for less expensive chlamydia tests, they also suggest an urgent need to explore alternative options for improving the safety of contraceptive service provision. This poses a significant problem for clinicians in a setting where routine testing of all new contraceptive clients is not financially viable. For example, should scarce chlamydia testing be rationed to those at greatest risk of pelvic inflammatory disease and its complications, such as infertility?

Selective screening of women requesting an IUD and women who have yet to attain their desired family size would be one approach to rationing such costly case finding. Alternatively, perhaps improved counseling to encourage new clients to self-screen for their risk of STDs would be more effective than provider screening. Or perhaps the most effective strategy is careful follow-up and management of incident infections to minimize long-term complications, such as infertility. These important programmatic issues, along with an exploration of their relative cost-effectiveness, urgently require additional research.

An important limitation of our findings concerns the tests we used to determine reproductive tract infections. Several of the reference tests that we employed are less sensitive than more expensive alternatives. For example, diagnosing trichomoniasis infection by wet preparation is only approximately 60–80% sensitive compared to trichomonal culture. The sensitivity of using clue cells as a diagnostic criterion for bacterial vaginosis is 80–98% when compared with more elaborate criteria for determining bacterial vaginosis. Similarly, a fluorescent antigen detection test for chlamydia is less sensitive than cell culture or DNA amplification tests. The use of koilocytosis on Pap smear as a proxy for human papillomavirus infection may be particularly insensitive. Our results must be considered in this context.

Nonetheless, recent literature on the design of STD prevention and control programs has repeatedly stressed the need for STD and reproductive tract infection case-finding and management strategies guided by local epidemiology and validated whenever possible in local service environments. Such local adaptation is impossible if we insist on the exclusive use of the latest “gold standard” technology, since these tests will be available only in atypical service settings associated with tertiary care and centralized research facilities.