Figure 2. Abortion rate, by contraceptive prevalence (weighted for effectiveness of methods), regions of Colombia, 1976, 1986 and 1990

Figure 3. Abortion rate, by contraceptive prevalence (weighted for effectiveness of methods), regions of Mexico, 1977, 1987 and 1992

with each possible combination of the four levels (see Table 4, page 12). The results show a strong relationship between contraceptive and fertility: The GFR drops from 164 births per 1,000 women of reproductive age to 94 births per 1,000 as contraceptive prevalence rises, from low (25% or fewer of all women of reproductive age) to high (38% or more), across all levels of abortion prevalence.

The level of abortion also has an impact on fertility: The GFR falls from 147 births per 1,000 women to 100 births per 1,000, as abortion rates rise from low (20 or fewer abortions per 1,000 women of reproductive age) to high (40.5 or more abortions per 1,000 women) across all contraceptive prevalence levels. The relationship between abortion and fertility is most consistent and strongest in areas where contraceptive use is low.

Fertility does not decline much, however, as levels of abortion and contraceptive use move from medium-high to high. Instead, as was suggested above, fertility is lowest when contraceptive use is high but abortion is only medium-high. Moreover, a high degree of reliance on either abortion or contraceptive use alone is associated with low fertility, regardless of the extent of reliance on the other factor.

We also explored whether these associations would be different or stronger in any one country. We collapsed the four contraceptive and abortion prevalence groups into two, because of the small number of cases in each country. This less-detailed breakdown revealed no inconsistencies or reversals of the relationships in any country (not shown). However, it was still evident that in each country, if contraceptive use levels are high, the prevalence of abortion makes relatively little difference to the GFR. However, if contraceptive prevalence is low, abortion makes a substantial difference.

Factors other than abortion and contraception may also influence the observed relationship, however. Differences in the effectiveness of contraceptive use, beyond that controlled for by standard weighting for failure rates, could account for some of the inconsistencies. The small number of cases on which these averages are based, and the fact that the levels and patterns of relationships vary by country and within countries, also contribute to inconsistencies when all three countries are combined.

Discussion

According to demographic experience and theory, as couples become increasingly motivated to restrict their family size, they seek all available means to achieve their family size goals. This theory seems to have been borne out in Latin America, at least in the three countries studied here—Brazil, Colombia and Mexico. Their experience fits the second of the two hypotheses advanced by Tietze and Bongaarts in the mid-1970s: Declines in abortion would be slow in arriving, because when the fertility transition began in Latin America in the 1960s, contraceptive prevalence was low and the incidence of abortion was either rising or already high in many areas.

Although our analysis does not cover the 1960s, we can surmise from the high fertility in these countries in that period (typically 6–7 children per woman) that voluntary restriction of fertility was minimal. Moreover, abortion rates were probably relatively low before the fertility transition began, but rose during the 1960s and early 1970s to the moderate levels we found during the mid-1970s. This suggests that in the early stages of the demographic transition, abortion probably played an important role in fertility decline in all three countries.

The results of these analyses broadly support the hypothesis that abortion rates can rise as contraceptive use increases, but that they ultimately begin to stabilize and then decline. However, these patterns varied considerably both among countries and within countries. In Colombia and Mexico, the level of abortion stabilized after contraceptive use began to rise, whereas in Brazil, abortion continued to rise through the early 1990s, as contraceptive use also climbed.

There was even wider variation by region. In the large metropolitan regions of Colombia and Mexico, for example, the abortion rate declined—from the mid-1970s in Bogotá and from the mid-1980s in the region containing Mexico City. In