

Unintended Pregnancy Among Newly Married Couples In Shanghai

By Yan Che and
John Cleland

Yan Che is research fellow, Shanghai Institute of Planned Parenthood Research; at the time this article was written, he was postdoctoral research fellow, Centre for Population Studies, London School of Hygiene & Tropical Medicine. John Cleland is professor, Centre for Population Studies.

CONTEXT: Though contraceptive failure and induced abortion in China have both attracted research attention, the somewhat broader topic of unintended pregnancy has been neglected.

METHODS: A total of 7,872 newly married couples, enrolled between 1987 and 1988, were followed up until 1994–1995; only 2% were lost to follow-up. During face-to-face interviews, background and fertility-related data were collected. Chi-square tests and logistic regression were used to assess associations with unintended pregnancy.

RESULTS: By three months after marriage, 461 couples had conceived; 57% of nonpregnant wives said that their preferred interval between marriage and conception was no more than three months. Twenty-one percent of pregnancies occurring between marriage and first birth were reported as unintended; 81% of these resulted from contraceptive failure. The majority of unintended pregnancies were carried to term; 13% were aborted. The younger the wife and the greater her desired interval between marriage and conception, the greater the likelihood that a pregnancy occurring before first birth was unintended. After first birth, 43% of couples experienced one or more unintended pregnancies, 98% of which were aborted in accordance with the one-child policy. The majority of these pregnancies occurred in the 12 months after first birth, when couples tend to rely on ineffective methods of contraception. The odds of having an unintended pregnancy after first birth were slightly elevated if at least one spouse desired a second child.

CONCLUSIONS: Unintended pregnancies are common among married couples in Shanghai. Policies to reduce unintended pregnancies, and abortions, should focus particularly on postpartum contraception.

International Family Planning Perspectives, 2004, 30(1):6–11

In the United States, a substantial literature, much of it based on successive rounds of the National Survey of Family Growth, documents the incidence and correlates of unintended pregnancy and childbearing.¹ For developing countries, the Demographic and Health Surveys have provided a major database.² The essential approach to determining the intention status of pregnancies is similar in the two sets of surveys, though the questions differ. Pregnancies (or births) are classified as intended if they were wanted at the time they occurred or earlier, and as unintended if they occurred sooner than wanted or were unwanted at any time. The consequences, for the child and the family, of unintended pregnancies that are carried to term have also attracted research interest both in the United States and in developing countries.³

Published research on unintended pregnancy in China is limited, though studies of contraceptive failure and induced abortion have appeared in the literature.⁴ This neglect stems from the nature of government policy on family-size limitation. Since the introduction of the one-child policy in 1979, most couples in urban areas have been prevented from having more than one child, and most rural couples have been pressured to have no more than two children. It is, therefore, perhaps not surprising that more interest, at least internationally, has focused on desired childbearing that has been deterred by the state than on unintended births or pregnancies.

In this article, we start to redress this imbalance by analyzing unintended pregnancies, using data from a prospective study of newly married couples in Shanghai. Because the vast majority of couples in Shanghai are allowed to have only one child, we examine separately unintended pregnancy before and after first birth. For the period before first birth, the research questions concern the proportion of conceptions that occur earlier than couples wish and the correlates of such mistiming. For the period following the birth of the first child, the proportion and characteristics of couples who have unintended pregnancies are of interest. Additionally, we wanted to ascertain whether unintended pregnancies after the first birth reflect either family-size aspirations or son preference. We hypothesized that couples who would have liked to have a second child are more likely than others to conceive after having a child and, though a preference for sons over daughters may be less pronounced in Shanghai than in many other parts of China,⁵ that couples with a daughter are less satisfied than those with a son and thus more likely to wish for a second child.

METHODS

For logistic and cost reasons, the cohort was drawn from only two of Shanghai's 12 districts (Luwan and Hongkou). Luwan is a slightly more affluent area than Hongkou, but in general, Shanghai has a more homogeneous population

TABLE 1. Percentage distribution of couples interviewed three months after marriage, by wife's desired interval between marriage and conception, and by both spouses' desired number of children, according to selected characteristics, Shanghai, 1987–1988

Characteristic	Desired interval (mos.)					Desired no. of children				Total
	N*	≤3	4–6	7–12	≥13	N	Both want one	One wants two	Both want two	
Total	6,877	56.6	14.0	18.9	10.5	7,337	50.3	27.1	22.7	100.0
Wife's age at marriage (yrs.)										
20–23	438	49.3	6.6	21.2	22.8	506	53.6	22.1	24.3	100.0
24–25	1,605	45.7	14.8	24.4	15.1	1,769	48.8	25.7	25.4	100.0
26–27	2,221	50.9	15.5	21.9	11.6	2,318	48.8	28.3	22.9	100.0
28–29	1,175	59.8	15.8	17.1	7.2	1,222	52.8	25.9	21.3	100.0
≥30	1,435	77.3	11.4	8.9	2.4	1,521	51.2	29.2	19.7	100.0
Couple's education										
Both spouses ≤middle school	1,344	72.7	12.7	10.6	4.0	1,475	56.1	23.2	20.7	100.0
At least one completed high school	4,287	55.7	14.5	19.6	10.1	4,575	49.6	27.4	23.1	100.0
At least one ≥college	1,246	42.5	13.4	25.4	18.6	1,285	46.1	30.4	23.4	100.0
Couple's occupation										
At least one white-collar	2,387	46.5	14.5	23.2	15.8	2,465	45.4	30.7	23.9	100.0
Both blue-collar	4,489	62.0	13.7	16.6	7.7	4,872	52.8	25.2	22.0	100.0
Education of wife's parents										
Both ≤primary school	2,490	62.9	14.8	15.3	7.1	2,713	52.0	27.0	21.0	100.0
At least one completed middle school	3,511	54.9	14.2	20.1	10.9	3,718	49.9	26.7	23.4	100.0
At least one ≥college	874	45.9	10.9	24.6	18.6	905	46.5	28.8	24.6	100.0

*Excludes 461 wives who conceived within three months after marrying. Notes: Ns are weighted. Ns for subgroups may not add to totals because of missing data. Associations between each characteristic and outcome measure are significant at $p < .05$.

than most cities in North America or Europe. The contraceptive profile of residents in the two districts is similar to that in the entire city: In 1998, roughly seven in 10 married couples used the IUD, and two in 10 used condoms; hormonal methods accounted for about 5% of use, and reliance on sterilization was negligible.⁶

Newly married couples were identified at the districts' marriage license offices between August 1987 and August 1988. All couples with an intention to delay the first conception after marriage were enrolled (7,220 couples), as were a random sample of 13% of couples without such an intention (691 couples).^{*} Only 39 couples refused to participate.

Three months after their wedding, consenting couples were jointly interviewed at home by a trained field interviewer using a structured questionnaire. Other trained field interviewers, blinded to the previous data, reinterviewed the couple 15 months after the wedding and again during 1994–1995. A total of 7,872 couples completed the first interview, 7,826 completed the second and 7,693 the third; thus, the attrition rate over the course of the study was only 2%. Information on couples' demographic characteristics, sexual behavior, pregnancy histories and outcomes, and contraceptive use was obtained at each interview. Only couples who had had a live birth by the time of the third visit (92% of the original cohort) were included in the analysis because of the aim of comparing unintended pregnancy before and after childbirth. It should be stressed that voluntary childlessness is almost nonexistent in China.⁷

Both husbands and wives were asked whether each pregnancy after marriage was intended. The precise question

was: "Did you want to become pregnant at that time?" If either spouse reported that a pregnancy was mistimed, it was regarded as unintended. We present results in terms of proportions of pregnancies that were unintended. In addition, we calculated the rate of unintended pregnancy by dividing the number of unintended pregnancies by the total couple-years of exposure to the risk of pregnancy in specific periods.

We performed bivariate analyses to assess associations between outcome variables and selected factors, measured as binary or ordered categorical variables; we used the chi-square test for trend to determine whether ordered categorical variables were linearly associated with unintended pregnancy. To control for confounders, we performed binary logistic regressions to assess factors predicting that a pregnancy before first birth was unintended, that a couple had a first unintended pregnancy after childbirth, and that a couple had two or more unintended pregnancies after first birth.

SPSS 10.0 and STATA 7.0 were used for this analysis. Data were weighted according to the initial selection probabilities, and weights were normalized to retain equality between the total unweighted and weighted sample sizes.

RESULTS

Fertility Preferences

By the time of the first follow-up interview, three months following marriage, 461 couples had conceived. When non-pregnant wives were asked how long a delay they had want-

^{*}All couples obtaining marriage licenses were asked how soon after marriage they planned to conceive.

ed between marriage and conception, 57% said three months or less, 33% said 4–12 months and 11% said more than one year (Table 1, page 7). Very strong relationships are apparent between the desired timing of the first birth and wife’s age at marriage, the education and occupation of couples, and the education of the wife’s parents. For instance, 23% of wives who married before age 24 wished to postpone conception for more than one year, compared with 2% of wives who married at age 30 or older. Nineteen percent of couples in which either spouse had a college education wished to postpone for more than a year, compared with 4% of those in which neither partner had progressed beyond middle school.

At the same interview, couples were asked whether they would have wanted a second child in the absence of the strict birth control regulations. In 50% of cases, neither the husband nor the wife would have wanted a second child. In 27% of cases, one spouse would have wanted a two-child family, and in the remaining 23%, both would have wanted a second child. Like the desired interval between marriage and conception, the desired number of children was related to the wife’s age at marriage, the couple’s education and occupation, and the educational attainment of the wife’s parents. For example, the proportion of couples in which at least one spouse would have wanted two children was 44% if neither spouse had more than a middle school education and 54% if one or both were college graduates.

Unintended Pregnancies Between Marriage and First Birth

A total of 7,846 pregnancies occurred between marriage and first birth; of these, 21% (occurring among 1,543 couples) were reported as unintended. Most unintended pregnancies (81%) were caused by contraceptive failure rather than nonuse. The main contraceptive methods used to postpone the first birth were all ones with relatively high failure rates: withdrawal and periodic abstinence (which together accounted for 52% of episodes of use), and the condom (which accounted for 37%).⁸ The majority of unintended pregnancies (79%) were carried to term; 13% were terminated by induced abortion and 8% ended in miscarriage or stillbirth.

The proportion of pregnancies that were unplanned was very low—5%—among women who wanted to delay pregnancy for three months or less after marriage (Table 2). Among women who wished to postpone childbearing, the proportion was much higher—41% overall (not shown), ranging from 38% for those who wanted an interval of 4–6 months between marriage and conception to 47% among those who wanted to postpone conception for more than a year. Other factors were also significantly related to the occurrence of unintended pregnancy before first birth: The younger the wife at marriage and the higher the level of schooling of the couple or of the wife’s parents, the high-

*A total of 122 intended pregnancies were reported, of which 48% were carried to term, 36% were terminated and 16% ended in miscarriage or stillbirth. Virtually all intended pregnancies (95%) followed the death of a first child.

er the proportion of pregnancies that were reported as unintended; the proportion also was higher if one spouse had a white-collar job than if both were blue-collar workers.

When these relationships were reassessed using logistic regression to control simultaneously for all factors listed in Table 2, the wife’s preference with regard to postponement of the first birth remained a strong and statistically significant predictor: Compared with pregnancies among women who wished to postpone conception for three months or less, those among women who wanted to wait longer had 13–16 times the odds of being unintended (odds ratios, 12.7–16.2). Age at marriage also remained a significant predictor; the odds of being unintended were about twice as high for pregnancies among women who had married at ages 20–25 as for those among women who had been 30 or older. However, the associations with education and occupation became nonsignificant.

Unintended Pregnancies After First Birth

After the birth of the first child, 3,167 couples (43% of the cohort) reported a total of 3,684 pregnancies, of which 97% were unintended.* Eighty-nine percent of these couples experienced one unintended pregnancy, and 11% (or 5% of the entire cohort) experienced two or more. Virtually all of the unintended pregnancies (98%) were aborted; 1.7% ended in miscarriages or stillbirths, and 0.2% in live births.

The proportion of couples experiencing at least one preg-

TABLE 2. Percentage of pregnancies between marriage and first birth reported as unintended, and adjusted odds ratios (and 95% confidence intervals) from logistic regression analysis of the likelihood of a pregnancy’s being unintended, by selected characteristics

Characteristic	N	% unintended	Odds ratio
Desired interval between marriage and conception			
≤3 months	4,379	4.5	1.0
4–6 months	1,093	38.2	12.71 (9.74–16.58)
7–12 months	1,488	39.4	12.64 (9.92–16.09)
≥13 months	886	46.8	16.15 (12.52–20.83)
Wife’s age at marriage (yrs.)			
20–23	480	27.9	2.21 (1.62–3.01)
24–25	1,841	27.1	1.92 (1.43–2.57)
26–27	2,491	22.6	1.59 (1.20–2.11)
28–29	1,348	19.5	1.67 (1.19–2.33)
≥30	1,684	9.0	1.0
Couple’s education			
Both spouses			
≤middle school	1,529	13.1	1.0
At least one completed			
high school	4,853	20.9	1.03 (0.93–1.69)
At least one ≥college	1,464	27.3	1.25 (0.72–1.01)
Couple’s occupation			
At least one white-collar	2,770	24.9	1.07 (0.90–1.26)
Both blue-collar	5,076	18.2	1.0
Education of wife’s parents			
Both ≤primary school			
At least one completed	2,820	18.8	1.0
middle school	4,010	20.9	0.85 (0.72–1.01)
At least one ≥college	1,015	23.9	0.77 (0.62–1.00)

Notes: Ns are weighted. All bivariate associations are significant at p<.05.

nancy, the first of which was unintended, after having had a child, declined steadily as the wife's age at first birth increased and as the length of postpartum sexual abstinence increased (Table 3). Better educated couples had a lower incidence of unintended pregnancy than less educated couples, and a similar difference was apparent by occupation. Unintended pregnancy was slightly but significantly more common among couples in which one or both spouses would have wanted a second child in the absence of the one-child policy than among couples in which neither would have; its incidence did not differ by the sex of the first child.

The majority of couples had experienced no unintended pregnancy before the first birth, but 17% reported that the conception leading to the first birth had been unintended, and small proportions had experienced an unintended pregnancy that terminated in induced abortion (3%) or in miscarriage or stillbirth (2%). Unintended pregnancy after first birth was less common among couples who had terminated an earlier unintended pregnancy (24%) or whose earlier unintended pregnancy had ended in miscarriage or stillbirth (31%) than it was among couples with no prior unintended pregnancy (43%) or those whose first live birth had been unintended at conception (47%).

When reassessed by logistic regression, most of these relationships remained statistically significant. However, after adjustment for the effects of all other factors listed in Table 3, neither couples' education nor their occupation was significantly associated with the likelihood of experiencing an unintended pregnancy, and the desire for a second child was only marginally so.

Our analysis of the likelihood of two or more unintended pregnancies following the first live birth did not include duration of sexual abstinence after childbirth and the occurrence of unintended pregnancies before the first birth, because we did not consider them relevant to the outcome variable. Among the remaining factors, the wife's age at first birth, the couple's occupation and their desire for a second birth emerged as significant net predictors. Couples in which the wife was younger than 28 and those in which at least one spouse would have wanted two children had increased odds of having two or more unintended pregnancies (odds ratios, 1.5–2.2); those in which at least one spouse worked in a white-collar job had reduced odds of this outcome (0.5).

Incidence of Unintended Pregnancy

The incidence of unintended pregnancy declined markedly as the amount of time since first birth increased (Figure 1, page 10). The highest incidence (32.5 per 100 couple-years) was recorded for the interval between marriage and the first birth, and most of these pregnancies were carried to term. In the first year following the initial birth, the incidence was still high—18.9. It then fell steeply until five or more years after childbirth, when it stabilized at a rate of 3–4 per 100 couple-years.

The proximate reason for this trend concerns the prevalence and nature of contraceptive protection. As noted ear-

TABLE 3. Percentage of couples who reported unintended pregnancy after first birth, and odds ratios (and 95% confidence intervals) from logistic regression analysis of the likelihood of unintended pregnancy, by selected characteristics

Characteristic	N	One unintended pregnancy		≥2 unintended pregnancies	
		%	Odds ratio	%	Odds ratio
Wife's age at first birth (yrs.)					
<26	1,605	51.0	1.57 (1.36–1.81)	6.4	1.98 (1.42–2.76)
26–27	2,257	45.9	1.36 (1.19–1.54)	4.9	1.47 (1.06–2.03)
28–29	1,532	37.9	1.00 (0.86–1.15)	4.2	1.32 (0.92–1.88)
≥30	1,943	37.3	1.0	3.2	1.0
Duration of abstinence after birth (mos.)					
<3	1,049	52.0	2.40 (2.00–2.88)	na	na
3	1,563	49.6	2.15 (1.81–2.54)	na	na
4	2,182	44.4	1.80 (1.53–2.11)	na	na
5–6	1,430	39.3	1.47 (1.23–1.74)	na	na
≥7	1,018	30.1	1.0	na	na
Couple's education					
Both spouses ≤middle school	1,475	43.3	1.17 (0.97–1.40)	5.3	0.92 (0.59–1.43)
At least one completed high school	4,576	44.2	1.08 (0.93–1.25)	4.6	0.73 (0.50–1.07)
At least one ≥college	1,285	38.9	1.0	3.9	1.0
Couple's occupation					
At least one white-collar	2,465	41.0	0.99 (0.87–1.11)	3.2	0.53 (0.38–0.73)
Both blue-collar	4,871	44.1	1.0	5.4	1.0
Couple's desire for children					
Both spouses want one	3,690	41.4	1.0	3.4	1.0
One wants two	1,985	44.4	1.12 (1.00–1.25)	4.8	1.53 (1.16–2.01)
Both want two	1,662	45.2	1.14 (1.01–1.29)	7.2	2.22 (1.71–2.88)
Sex of baby					
Male	3,723	42.2	0.93 (0.84–1.02)	4.4	0.94 (0.76–1.17)
Female	3,590	44.1	1.0	4.9	1.0
Previous unintended pregnancy and outcome					
None	5,794	43.2	1.0	na	na
Live birth	1,218	46.7	1.07 (0.94–1.22)	na	na
Induced abortion	197	24.4	0.45 (0.32–0.64)	na	na
Miscarriage/stillbirth	128	30.5	0.56 (0.38–0.82)	na	na

Notes: Ns are weighted. In the bivariate analyses, all characteristics except sex of baby are associated at $p < .05$ with the proportion of couples reporting one unintended pregnancy; wife's age at first birth, couple's education and couple's desire for children are associated at $p < .05$ with the proportion reporting two or more unintended pregnancies. na—not applicable, because variable was not included in the analysis.

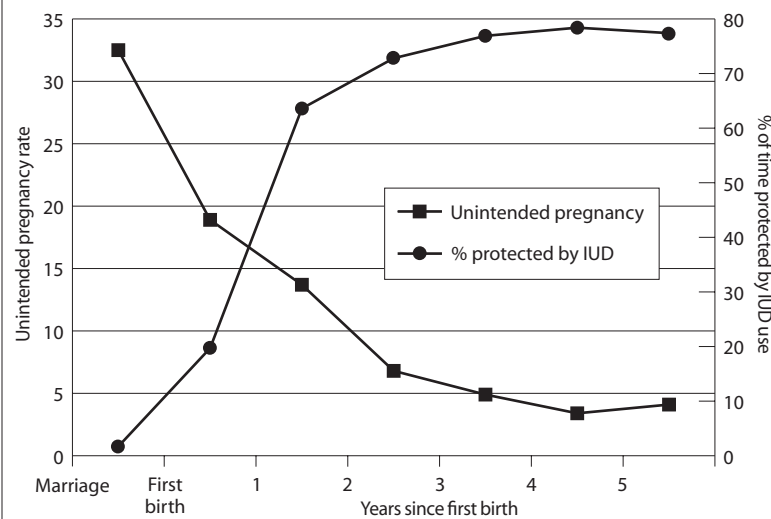
lier, contraceptive use between marriage and first birth was dominated by less effective methods. This was also true in the year after first birth, when 34% of exposed time was protected by condoms, withdrawal and periodic abstinence (not shown), and 20% by the much more effective IUD. The proportion of time protected by IUD use rose to 64% during the second year after the first birth and exceeded 70% in subsequent years.

DISCUSSION

Our analysis offers unique insights into the dynamics of reproductive control in Shanghai. As in all major cities of China, a one-child policy has been strictly enforced in Shanghai since 1979. Only a tiny fraction of couples have more than one child, usually following the death of the first child.

Like their counterparts in most Asian societies, couples in Shanghai generally do not wish to postpone childbirth following marriage. More than half of wives wanted a preg-

FIGURE 1. Rate of unintended pregnancy per 100 couple-years of exposure, and percentage of time protected by IUD use, between marriage and first birth, and by years since first birth



nancy within three months; only one in 10 wanted a delay of more than one year. Nevertheless, one in five pregnancies occurring before first birth were reported as unintended, a proportion similar to that found in neighboring Indonesia.⁹ Among couples wishing to delay pregnancy for more than three months, control of the timing of first birth was poor: Four in 10 had an unintended pregnancy, mostly because of contraceptive failure. Understandably, most of these pregnancies were carried to term. Educated couples and those with white-collar jobs were more likely than others to experience an unintended pregnancy at this phase of life. However, once the desired length of postponement was controlled for, the relationship between education or occupation and unintended pregnancy was not statistically significant; thus, it is largely explained by couples' desire to postpone childbearing.

All couples in Shanghai are well aware of the one-child policy. It might therefore be expected that pregnancy would be exceedingly uncommon following a first birth, except in the few cases in which the child dies. To the contrary, the analysis revealed a total of 3,684 pregnancies, nearly all of them unintended. More than four in 10 couples reported at least one unintended pregnancy, the vast majority of which were terminated. These pregnancies were concentrated in the 12 months following the first birth and, to a lesser extent, the subsequent year. For this reason, the duration of postpartum sexual abstinence emerged as a strong predictor of unintended pregnancy. Younger wives were significantly more likely than their older counterparts to have an unintended pregnancy after first birth, but surprisingly, neither education nor occupation was a significant predictor.

The few couples in which the woman had an induced abortion prior to first birth were much less likely than others to report an unintended pregnancy after childbirth. This finding, together with the fact that only 5% of couples had

two or more unintended pregnancies following childbirth, suggests that repeated failures of reproductive control, leading to repeated abortions, are uncommon in Shanghai.

Does the occurrence of a pregnancy following first birth in a city where the one-child policy is rigorously enforced reflect the wishes of couples to have more than one child? In half of couples, at least one partner would have liked to have a second child; thus, adults in Shanghai apparently have little hesitation in articulating differences between the state requirement and their personal wishes. The likelihood of having one unintended pregnancy after first birth, and the likelihood of having two or more such pregnancies, were higher among pronatalist couples, but the differentials were not large and the associations were not always strong. The adjusted odds ratios show that couples wanting a second child had 12–14% higher odds of conceiving than other couples. The association with the likelihood of having more than one unintended pregnancy was more pronounced, but this outcome is rare.

Overall, we infer that the widespread resort to abortion by married couples in Shanghai reflects primarily not conscious or semiconscious reproductive wishes, but rather imperfect fertility control. This conclusion is strengthened by the absence of any link between sex of the first child and subsequent pregnancy, and is further buttressed by the close relationship between IUD use and the rate of unintended pregnancy. The proximate cause of the pattern is the type of contraceptive couples choose. Before and immediately following first birth, most couples use less effective methods; with the passage of time, they switch to IUDs. By the third year following first birth, nearly three-quarters of potential exposure to risk of conception is protected by this highly effective method.

Unintended pregnancies are common among married couples in Shanghai, mainly because of nonuse of effective contraceptive methods in the early years of marriage, both before and immediately following the first birth. Policies to reduce unintended pregnancies, and abortions, should focus particularly on postpartum contraception. Small-scale qualitative research is needed as a precursor to major policy initiatives, to establish why couples choose not to use any method or resort to ineffective methods.

REFERENCES

- Williams LB and London KA, Changes in the planning status of births to ever-married U.S. women, 1982–1988, *Family Planning Perspectives*, 1994, 26(3):121–124; and Trussell J, Vaughan B and Stanford J, Are all contraceptive failures unintended pregnancies? evidence from the 1995 National Survey of Family Growth, *Family Planning Perspectives*, 1999, 31(5):246–247 & 260.
- Adetunji JA, Unintended childbearing in developing countries: levels, trends and determinants, *Demographic and Health Surveys (DHS) Analytical Report*, Calverton, MD, USA: Macro International, 1998, No. 8; Bankole A and Westoff CF, The consistency and validity of reproductive attitudes: evidence from Morocco, *Journal of Biosocial Science*, 1998, 30(4):439–455; and Williams L, Sobieszczyk T and Perez AE, Consistency between survey and interview data concerning pregnancy wantedness in the Philippines, *Studies in Family Planning*, 2001, 32(3):244–253.
- Brown SS and Eisenberg L, eds., *The Best Intentions: Unintended Preg-*

nancy and the Well-Being of Children and Families, Washington, DC: National Academy Press, 1995; Montgomery MR et al., The consequences of imperfect fertility control for children's survival, health and schooling, *DHS Analytical Report*, Calverton, MD, USA: Macro International, 1997, No. 7; Marston C and Cleland J, Do unintended pregnancies carried to term lead to adverse outcomes for mother and child? an assessment in five developing countries, *Population Studies*, 2003, 57(1):77-93; Baydar N, Consequences for children of their birth planning status, *Family Planning Perspectives*, 1995, 27(6):228-234; Eggleston E, Unintended pregnancy and women's use of prenatal care in Ecuador, *Social Science & Medicine*, 2000, 51(7):1011-1018; Joyce TJ, Kaestner R and Korenman S, The effect of pregnancy intention on child development, *Demography*, 2000, 37(1):83-94; Kost K, Landry DJ and Darroch JE, Predicting maternal behaviors during pregnancy: does intention status matter? *Family Planning Perspectives*, 1998, 30(2):79-88; Magadi M, Madise NJ and Rodrigues RN, Frequency and timing of antenatal care in Kenya: explaining the variations between women of different communities, *Social Science & Medicine*, 2000, 51(4):551-561; Pagnini DL and Reichman NE, Psychosocial factors and the timing of prenatal care among women in New Jersey's HealthStart program, *Family Planning Perspectives*, 2000, 32(2):56-64; and Weller RH, Eberstein IW and Bailey M, Pregnancy wantedness and maternal behavior during pregnancy, *Demography*, 1987, 24(3):407-412.

4. Wang Y et al., Induced abortion in eight provinces of China, *Asia-Pacific Journal of Public Health*, 1991, 5(1):32-40; and Wang DL and Diamond I, The impact on fertility of contraceptive failure in China in the 1980s, *Journal of Biosocial Science*, 1995, 27(3):277-284.

5. Lou C, Guo Y and Chou LP, Sex preference for offspring and its determinants among newly married couples in Shanghai, *China Public Health*, 1999, 15(3):235-238.

6. Zhou JP, ed., *Shanghai Almanac of Population and Family Planning*, Shanghai: Shanghai Science and Technology Press, 1999.

7. Xie Z, Reproductive requirement of Chinese farmers and its changes in Zhejiang, *China Population Today*, 1997, 14(5):3-4.

8. Yan C and Cleland J, Contraceptive use before and after marriage in Shanghai, *Studies in Family Planning*, 2003, 34(1):44-52.

9. Adetunji JA, 1988, op. cit. (see reference 2).

RESUMEN

Contexto: Si bien en China la falla anticonceptiva y el aborto inducido han atraído la atención de los investigadores, se ha descuidado el tema un tanto más amplio del embarazo no planificado.

Métodos: A 7.872 parejas de Shanghai recién casadas, registradas en el estudio entre 1987 y 1988, se les siguió hasta 1994-1995; se perdió al seguimiento solamente el 2% de las parejas. Durante las entrevistas personales se recopilaron datos relacionados con las características y la fecundidad. Se utilizaron pruebas de regresión logística y de Chi-cuadrado para determinar si existen asociaciones con el embarazo no planificado.

Resultados: A los tres meses de casadas, 461 parejas ya habían concebido; el 57% de las mujeres no embarazadas indicaron que preferían que el intervalo entre el matrimonio y la concepción no fuera más de tres meses. El 21% de los embarazos ocurridos entre el matrimonio y el primer nacimiento fueron no planificados; el 81% de estos embarazos se debieron a fallas del método anticonceptivo. La mayoría de los embarazos no planificados resultaron en un nacimiento, y el 13% en un aborto inducido. Cuanto más joven era la mujer y más largo su intervalo preferido entre el matrimonio y la concepción, más alta era la probabilidad de que el embarazo antes del primer nacimiento fuera no planificado. Después del primer nacimiento, el 43% de las parejas tuvieron uno o más embarazos no plani-

ficados, de los cuales el 98% fueron abortados, de conformidad con la política de un hijo único por pareja. La mayoría de estos embarazos se registraron durante los 12 meses posteriores al primer nacimiento, cuando las parejas tienden a recurrir a métodos anticonceptivos ineficaces. Las probabilidades de tener un embarazo no planificado después del primer nacimiento fueron un poco más elevadas si por lo menos uno de los cónyuges deseaba tener un segundo hijo.

Conclusiones: El embarazo no planificado es común entre las parejas de Shanghai. Las políticas destinadas a reducir el embarazo no planificado y el aborto deben prestar particular atención a la anticoncepción postparto.

RÉSUMÉ

Contexte: La recherche s'est penchée sur les questions de l'échec contraceptif et de l'IVG en Chine. Celle, un peu plus large, de la grossesse non planifiée a toutefois été négligée.

Méthodes: Un total de 7.872 couples de jeunes mariés de Shanghai, inscrits à l'étude entre 1987 et 1988, a été suivi jusqu'à 1994-1995. Deux pour cent seulement ont été perdus au suivi. Les données socioculturelles et de fécondité ont été recueillies dans le cadre d'entretiens personnels. Les associations de grossesse non planifiée ont été évaluées par tests chi carré et régression logistique.

Résultats: Après trois mois de mariage, 461 couples avaient conçu; 57% des épouses non enceintes ont déclaré préférer un intervalle entre le mariage et la conception limité, au plus, à trois mois. Vingt et un pour cent des grossesses survenues entre le mariage et la première naissance ont été qualifiées de non planifiées; de cette proportion, 81% étaient le produit d'un échec contraceptif. La majorité des grossesses non planifiées avaient été menées à terme; 13% avaient été interrompues. Plus l'épouse était jeune et plus elle désirait un intervalle long entre le mariage et la conception, plus il était probable qu'une grossesse survenue avant une première naissance avait été non planifiée. Après une première naissance, 43% des couples avaient connu une ou plusieurs grossesses non planifiées; 98% avaient été interrompues, conformément à la politique de l'enfant unique. La majorité de ces grossesses étaient intervenues durant les 12 mois ayant suivi la première naissance, lorsque les couples tendent à se fier à des méthodes contraceptives peu efficaces. La probabilité d'une grossesse non planifiée après une première naissance était légèrement supérieure quand au moins un des conjoints désirait un deuxième enfant.

Conclusions: Les grossesses non planifiées sont courantes parmi les couples mariés de Shanghai. Les politiques de réduction des grossesses non planifiées et de l'IVG devraient se concentrer, tout particulièrement, sur la contraception post-partum.

Acknowledgments

The research on which this article is based was supported by the Special Programme of Research, Development and Research Training in Human Reproduction, World Health Organization, and the analysis was supported by the Wellcome Trust under project 058857/Z/99/Z. The authors thank Youning Guo for providing the data set.

Author contact: yan_che2002@hotmail.com