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BIRTH CONTROL, PREGNANCY AND ABORTION AMONG ADOLESCENTS IN CHIANG MAI, THAILAND

**Arunrat Tangmunkongvorakul, Cathy Banwell,
Gordon Carmichael, Iwu Dwisetyani Utomo and Adrian Sleigh**

The authors studied more than 1750 young urban Chiang Mai residents regarding pre-marital sex, contraception and reproductive health outcomes. Almost two-thirds of the males had had sexual intercourse, compared to one-third of the females. Withdrawal was the most popular method of birth control followed by condom use. There were more females (30.5 per cent) reporting that they had been pregnant than males (17.5 per cent) reporting that they had caused pregnancies. Two-thirds of the respondents who had experienced or caused pregnancy reported that it ended in abortion. Almost half of those who had experienced abortion had induced it themselves, usually using illegal abortifacients. One-third went to a private clinic or hospital illegally. Self-induced abortions were sometimes associated with complications that were treated with pharmacy medications or severe complications requiring hospital treatment. Adolescents in northern Thailand need improved sexual health services and programmes. To be effective though, attention should also be given to underlying cultural attitudes toward sexuality and young people, especially women.

KEYWORDS: sexual experience; birth control; pregnancy; abortion; adolescents; Thailand

Introduction

The sexual and reproductive health of adolescents is of growing concern in Thai society. Since the late twentieth century, economic expansion and Western influences have helped modernise Thailand. In particular, with the rapid development of information technology, ways of living and social practices have changed dramatically. Adolescents, who are in a pivotal phase of their development, are the generation that would most easily adapt to these changes. Young Thai people are healthier, more urbanised and better educated than earlier generations; they experience puberty at younger ages, and marry and have children later than in the past (Jones 2005; Ministry of Public Health 2005). The downside of this globalisation phenomenon and associated social transitions has been the adoption of unhealthy lifestyles, such as the increasing consumption of fast food, alcohol and tobacco, narcotic use, and more widespread engagement in night-time recreational activities and unsafe pre-marital sexual behaviours (Jirapramukpitak *et al.* 2008; Xenos & Kabamalan 2005).

As most acts of pre-marital sexual intercourse in Thailand are unprotected (Jenkins *et al.* 2002; Srisuriyawet 2006), sexually-active adolescents are increasingly at risk of

contracting sexually-transmitted infections (STIs), including the human immunodeficiency virus (HIV/AIDS). In addition, young women are particularly vulnerable to coerced sexual intercourse as a result of gender-based power imbalances (Im-em *et al.* 2005; Manopaiboon *et al.* 2003). Sexually-experienced female adolescents are often unaware of the consequences of unprotected sexual intercourse, and are poorly informed about the means of protecting themselves; this often leads to unwanted pregnancies and abortions (Allen *et al.* 2003; Bearinger *et al.* 2007; van Griensven *et al.* 2001).

Teenage pregnancies in Thailand accounted for 14.7 per cent of all pregnancies in 1998 (Warakamin & Phoolcharoen 2000). Due to the low overall fertility level in Thailand, it is expected that pregnancies in the very young will constitute an important share of all births. Teenage pregnancies add to the burden of disease in Thailand. For example, Piyasil (1998) found a significantly higher prevalence rate of depression in teenage mothers compared to a control group, together with social problems such as stigma due to their unmarried status, peer rejection, school dropout, economic dependence on families, lack of support from a partner and inadequate education.

Induced abortion is mainly illegal in Thailand. However, it is legal when a gynaecologist performs it under two conditions, i.e. when continuing a pregnancy is a risk to the woman's health or when the pregnancy results from rape or incest (Warakamin *et al.* 2004; Whittaker 2002a). Physicians and health care personnel have variously interpreted the term, 'health', but generally speaking, it is defined in a strictly physical sense as endangerment to the woman's life (Warakamin & Poonkhum 1999; Whittaker 2002b). Induced abortion performed on grounds other than these two is considered to be a criminal act, according to the penal code, Article 305, enacted in 1956 (Boonthai & Warakamin 2001).

Nevertheless, the law is not rigorously enforced in practice. The occurrence of illegal abortions has been widely recognised (Warakamin *et al.* 2004). Non-medical personnel, such as self-trained practitioners, perform most illegal abortions within the first trimester of pregnancy. Whereas some abortions obtained in private clinics and hospitals illegally use vacuum curettage, the most frequently used procedure is traditional massage abortion, followed by uterine injections. As unqualified practitioners perform an increasing number of illegal abortions under unsanitary conditions, hospitalisation for complications from illegal abortion occurs frequently. At Ramathibodi Hospital in Bangkok, a quarter of maternal deaths were due to complications from induced abortions improperly performed outside the hospital (Warakamin *et al.* 2004). It had been estimated that more than 25 per cent of Thai women who had abortions were aged 15–20 years (United Nations 2001).

Due to the illegality of abortion, Thai statistics are uncertain. However, one study (Boonthai & Warakamin 2001) did estimate the incidence of induced abortion over a 12-month period in 1999 in 787 public hospitals in 76 provinces, including Bangkok. The private sector did not participate since service providers were reluctant to provide data. The study found that of a total of 45,990 abortion cases, 28.5 per cent were induced (19.5 per 1000 live births), with the rest being miscarriages. Among the induced abortion cases, 30 per cent involved women less than 20 years of age. The main reason for abortion induction was socio-economic problems (60.2 per cent), and the main serious complication was septicaemia (28.8 per cent), with 14 deaths (0.11 per cent) occurring.

In northern Thailand, a Chiang Rai study of 832 unmarried female vocational students (Allen *et al.* 2003) showed that 43.1 per cent of women reported sexual intercourse histories, with an average age at first sex of 17.6 years, and a mean number of

lifetime sex partners of 2.6. Among those with sexual intercourse experience, 27.3 per cent ($n=98$) had been pregnant, and the majority (82.7 per cent) of their most recent pregnancies had been terminated.

Young pregnant women commonly use misoprostol—a synthetic prostaglandin analogue drug—to procure ‘self-induced’ abortions by applying the drug vaginally or taking it orally. From June 1999 to June 2001, 103 pregnant women admitted to Chiang Mai University Hospital following self-use of misoprostol for induced abortion were interviewed using a standard set of questionnaires (Pongsatha *et al.* 2002). The mean ages of the women and their partners were 20.8 and 22.5 years, respectively, and the mean gestational age was 13.85 weeks. The most common reason given for pregnancy interruption was that they wanted to continue studying. The number of misoprostol tablets used ranged from 1 to 11, and 87.4 per cent of the women had applied the drug vaginally. The main source of the drug was friends, while the mean total cost was 663 Baht (20 US dollars). A majority of those who came to the hospital had encountered bleeding or incomplete abortion, and required a hospital stay. The data from this study reflect only the tip of the iceberg of changing sexual behaviours and abortion techniques among young people in Thai society.

To fill important gaps in our knowledge of contemporary sexual practices and reproductive health for young people in northern Thailand, we conducted a detailed study of 17 to 20-year-olds. Here, we report the emerging information on sexual experience, birth control, pregnancy and abortion, and we relate the findings to gender, socio-economic status and membership of various educational groups.

Methodology

Study Setting

This study is set among adolescents living in the relatively less studied northern region of Thailand, which is an area that is culturally, linguistically and geographically different from other Thai regions, and which has specific sexual health issues. In the 1990s, it had the highest levels of HIV infection in Thailand (Nelson *et al.* 1994). The study was conducted in Chiang Mai—the second largest Thai city, and the cultural, economic, communication and tourism centre of northern Thailand. Chiang Mai has become a major site of in-migration by young people who move for education and work (Timpan 2005). For young rural migrants, the city is a new social space removed from the social and community surveillance, or support, of families and relatives. The young rural migrants live in rented rooms among strangers who pay little attention to them, and as they gain new friends and social networks, they adopt new social behaviours and values, and eventually, sexual partners (Tangmunkongvorakul 2009; Timpan 2005).

Study Population

The study focused on literate, unmarried males and females aged 17–20 years. The samples were designed to include young people both in and out of school or university, and if out, both the employed and unemployed, to reflect the varying socio-economic and educational statuses within the population. Three samples were selected: (1) an

out-of-school urban adolescent sample; (2) a vocational school student sample; and (3) a general school and university student sample.

For each educational group, a sample of males and females was obtained as follows. The out-of-school sample was recruited from non-formal education centres and youth-focused non-governmental organisations (NGOs) in Chiang Mai city. Non-formal education centres provide classes for young people outside the formal education system, which the young people generally attend for three hours on weekends. The six largest centres were approached on teaching days and all age-eligible youths invited to participate in the study. The NGOs assisting with the recruitment were the 'Harm Reduction Youth Programme', the 'Street Youth Outreach Team', the 'Adolescent Sex Education Outreach Team' and the 'Men's Sexual Health Outreach Team'. Working with the NGO staff, the research team recruited respondents from an array of public gathering places, including playing fields, shopping malls and public gardens, at various times of the day and night. This sample was non-random, but it did ensure that those respondents in the out-of-school group were quite diverse and not dominated by any single source. The vocational school sample was drawn from the two public and 10 private vocational schools in Chiang Mai city. One public technical, one private technical and one private commercial school were chosen at random. At each of these schools, age-eligible students from three departments were invited to participate. In practice, almost all eligible students responded and the target sample size (about 70 per school) was usually exceeded. The selected departments were electronics, mechanics and computer technologies at the two technical schools, and marketing, hotel management and finance at the commercial school. The general school and university sample was drawn from the nine public and 11 private high schools, and the two public and two private universities in Chiang Mai city. One large public and one large private high school were chosen along with Chiang Mai University, so that all components of this educational group were represented. At the general schools, a sample of respondents was obtained from the pure and applied sciences, and language study groups. The university sample was drawn from the health sciences, the science and technology, and the humanities and social sciences groups. All respondents participated on a voluntary basis after being issued an invitation.

The sample size estimate was calculated for an error of ± 7 per cent at the $p < 0.05$ significance level when measuring key indicators, e.g. percentage with experience of sexual intercourse. It was applied to males and females in each of the three educational groups, i.e. to six samples. If the expected prevalence was 50 per cent (the proportion requiring the largest sample to be estimated with a specified level of precision), the required sample size would be 192, and the total sample size 1152, i.e. six multiplied by 192. Therefore, the aim was to sample about 200 young people in each sex/educational group, which would give a total sample size of around 1200. In five groups, this sample size was exceeded; for the out-of-school females, the sample size reached only 169 because relatively few females were encountered in the various facilities we visited. Overall, the final total sample was 1749, which was made up of 909 males and 840 females.

Data Sources and Collection Methods

The field research team consisted of the first author and five young research assistants, aged 20–23 years, trained in sociology and anthropology, and with additional

training specific to the project. The team members were good at interacting with young people of all sexual orientations.

This study consisted of three components. One component was the adolescent lifestyle and relationships questionnaire administered as a computer-assisted self-interview (CASI) via the internet, or as a self-administered questionnaire (SAQ) with paper and pen. The second and third components of the study were, respectively, individual in-depth interviews and focus group discussions (FGDs), both supplemented by participant observations and field notes.

For the lifestyle and relationships questionnaire, CASI was used at field sites where computers and the internet were readily accessible, i.e. the big schools and Chiang Mai University. At other locations, i.e. the smaller schools, and open or public places, the SAQ method was used. The questionnaire was 22 pages long. It covered socio-economic background, recreational activities, alcohol, tobacco and drug use, relationships, sexual identity and experience, sexually-transmitted diseases, birth control, pregnancy and abortion, mental health, and need for sexual health services.

Most questions were close-ended, and the questionnaire was pre-tested in both CASI and SAQ formats. Also, to test whether the two formats produced similar results, responses obtained on 10 selected items from 218 heterosexual male vocational school students who used CASI, and 140 who used SAQ, were compared. On only one item, i.e. 'ever smoked cigarettes during past year', was a statistically significant difference in affirmative response obtained (39.4 per cent CASI; 53.1 per cent SAQ). Crucially, on the key attribute of whether the respondent had ever had sexual intercourse, the difference was minimal (68.8 per cent CASI compared to 69.2 per cent SAQ), and differences were also small on such other important items as whether they had ever had oral sex with a date (40.5 versus 43.6 per cent), vaginal sex with a date (79.2 versus 74.4 per cent), casual sex (39.0 versus 39.6 per cent) and whether they had ever drunk alcohol in the past year (87.6 versus 87.2 per cent). It was concluded that the method of interview did not have a major influence on the results obtained.

The in-depth interviews were conducted by team members and lasted for 60–90 minutes. Interviewees were recruited from survey participants once enough rapport had been established to be able to discuss their sexual activities. Along with ensuring that they were drawn from the three educational groups, they were purposively selected to represent the range of gender diversity. Sixteen males and 14 females were interviewed, of whom 21 (11 males and 10 females) were students who ranged from grade 12 at general or vocational schools to second year at university, and nine (five males and four females) were employed, waiting for jobs or unemployed. About half of them lived with their parent(s).

The focus groups lasted for around 60–90 minutes and included eight male and eight female groups, each with four to eight participants. Four groups were recruited from the out-of-school sample, six from the vocational school sample, and six from the general school and university sample. The groups were purposively sampled to represent the diverse gender identity of participants who were invited to join the study after they had completed the survey by the research team. Some survey respondents also brought their friends to the group, but more than three quarters of the people who participated in the focus group discussions were questionnaire survey respondents. Both the individual and group interviews were used to probe the normative aspects of young people's daily

lives, intimate relationships and their perceptions of sexual and reproductive health services.

This research received ethical approval from Chiang Mai University and the Australian National University. Efforts were made to protect participants' anonymity and confidentiality. To ensure their comfort and security, participants chose the venue and time for interviews and group discussions. After the interviews, they were provided with information, advice and brochures regarding the matters under discussion and available services.

Data Analysis

Data were collected in 2006. Those from SAQs were double-entered using Microsoft Access 2003. The CASI data were digitised as they were collected, and merged with the SAQ data before analysis. The merged data were analysed using SPSS version 14. Information from in-depth interviews and focus group discussions were collected on digital recorders and in field notes. Digital recordings were fully transcribed in Thai into Microsoft Word documents. The qualitative software package, 'Atlas Ti' (version 5.2), was used to manage the process of identifying and collecting repeated normative themes, some of which arose spontaneously from the interview interaction, and some, in response to open-ended questioning concerning the values, attitudes and practices of young people related to sexual issues and their reproductive health-seeking strategies. Passages most relevant to the study were later translated into English.

Results

Sexual Experience

Sexual intercourse was defined in the questionnaire to include both vaginal and anal intercourse. Males and females from the different educational groups reported having had different sexual experiences (Table 1). Among all males, around a third reported never having had either sexual contact (genital touching of/by a partner for erotic stimulation) or sexual intercourse, 1.9 per cent had had sexual contact only, and a little under two-thirds had had sexual intercourse. By contrast, almost two-thirds of female respondents had never had either sexual contact or sexual intercourse, 2.3 per cent had had sexual contact only, and a third had had sexual intercourse.

By educational background, out-of-school males were the most likely to report having had intercourse (81.1 per cent). Around two-thirds of vocational school males (68.7 per cent) had had intercourse. Females in this group also reported a high prevalence of having had sexual intercourse (63.2 per cent). This was the group for which the gender difference in intercourse experience was the smallest. Out-of-school females reported having had sexual intercourse in 52.7 per cent of the cases. Respondents from the general school and university group reported the lowest male level of sexual experience, with only 35.5 per cent having had sexual intercourse. Females from this group likewise reported the

TABLE 1

Sexual experience of adolescents, by sex and educational group.

Sex and educational group	Ever had sexual contact or sexual intercourse?							
	Never had either		Had sexual contact only		Had sexual intercourse		Total	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
<i>Males</i>								
Out-of-school	45	18.9	0	0.0	193	81.1	238	100.0
Vocational school	116	28.6	11	2.7	279	68.7	406	100.0
General school and university	163	62.2	6	2.3	93	35.5	262	100.0
Total	324	35.8	17	1.9	565	62.4	906	100.0
<i>Females</i>								
Out-of-school	76	45.0	4	2.4	89	52.7	169	100.0
Vocational school	73	34.6	6	2.8	132	62.2	211	100.0
General school and university	382	83.2	9	2.0	68	14.8	459	100.0
Total	531	63.3	19	2.3	289	34.4	839	100.0

lowest female level of sexual experience, 14.8 per cent having had sexual intercourse. The male-female differentials were quite wide for the out-of-school group and the general school and university group.

Respondents Who Had Had Sexual Intercourse

Age at first sex. Sexually-experienced respondents reported that they first had sexual intercourse (sexual debut) at a mean age of 16.7 years. The mean age, in years, at sexual debut for male respondents was a little younger than for females, i.e. 16.6 versus 17.2 years, $p < 0.001$. Out-of-school males had a mean age of sexual debut of 16.0 years compared to 16.9 and 16.8 years, respectively, for the vocational school group and the general school and university group ($p < 0.001$). Out-of-school females had a mean age at sexual debut of 16.5 years compared to 17.2 years and 17.4 years, respectively, for the vocational school group and the general school and university group ($p < 0.001$).

Numbers of sexual partners. Among respondents who had had sexual intercourse, the mean numbers of lifetime sexual partners were 6.6 for males and 3.5 for females ($p < 0.001$). Among males, the mean number of sexual partners was 8.4 for the out-of-school group, 6.2 for the vocational school group, and 4.2 for the general school and university group ($p < 0.05$). Among females, the mean number was

5.1 for the out-of-school group, 3.2 for the vocational school group, and 2.0 for the general school and university group ($p < 0.05$).

Birth control. Among sexually-active respondents, the most popular methods of birth control in order of frequency were withdrawal, condoms, periodic abstinence and oral pills (Table 2). Nearly 90 per cent of respondents had ever used withdrawal, and nearly half of males and about half of females used it most or all of the time.

Males were more likely to report using condoms all of the time or most of the time, while females were more likely to have never used them with their partners. Almost a quarter of the females reported that their sexual partner(s) never used condoms with them, while little more than one in 10 males reported never using condoms. The educational group most likely to report that they used condoms most or all of the time was the general school and university group.

The use of oral contraceptive pills was more widespread among female respondents; almost one-third of them used this method all or most of the time. Only one-fifth of the males, however, reported that their partners regularly used it, possibly because some males were not aware of their partner's pill use.

Periodic abstinence was also quite common, with more than half of the sexually-active respondents of both sexes having ever used it. Around 30 per cent of the respondents had ever used the morning-after pill, and the great majority had used it only occasionally. Less than one-tenth of all the respondents reported ever using injection, intra-uterine devices (IUDs), Norplant and traditional herbal remedies for birth control.

Pregnancy. As shown in Table 3, more than one-fifth of the sexually-active respondents had ever been pregnant or made a sexual partner pregnant. Females reported this more often than males (30.5 per cent for females, or 32.0 per cent after standardising for educational group, compared to 17.5 per cent for males). Among females, 40.4 per cent from the out-of-school group of sexually-active respondents had ever been pregnant, compared to 32.0 per cent from the vocational school group, and 14.7 per cent from the general school and university group. Among males, 25.4 per cent of the out-of-school group reported ever having made a partner pregnant, compared to 14.8 per cent from the vocational school group, and 8.8 per cent from the general school and university group.

When asked about the outcome of their own or their partner's pregnancy/pregnancies, two-thirds of the sexually-active respondents reported ever having a pregnancy ending in abortion, even though abortion is illegal in Thailand. One-fifth reported a pregnancy ending in a miscarriage, and another one-fifth, a pregnancy ending in a delivery. Less than one-tenth of the respondents reported being still pregnant or having a sexual partner who was still pregnant. These fractions total more than 1.0 because respondents with multiple pregnancies could have had multiple outcomes. Generally, there was no statistically significant difference between males and females in the patterns of pregnancy outcomes reported. However, after standardising for educational group, 32.1 per cent of the ever-pregnant females reported having delivered a child, while the corresponding figure for males ever having had a partner who delivered a child was 17.5 per cent.

When compared by educational group, 85.4 per cent of the females from the vocational school group who had ever been pregnant reported that they had had an abortion, as against 60 per cent of those from the general school and university group,

TABLE 2Birth control among respondents who reported having had sexual intercourse by sex and educational group.^a

Birth control methods	Frequency of birth control (since first intercourse)									Total (standardised) ^b (%)
	All	Males				Females				
	Total (n = 850) (%)	Group O (n = 193) (%)	Group V (n = 275) (%)	Group G (n = 93) (%)	Total (n = 561) (%)	Group O (n = 89) (%)	Group V (n = 132) (%)	Group G (n = 68) (%)	Total (n = 289) (%)	
Withdrawal ^{c,d}										
All times	3.8	1.6	1.8	7.0	2.6	3.4	6.3	9.7	6.2	5.9
Most times	45.4	42.8	50.7	38.4	46.1	39.1	51.2	37.1	44.2	44.7
Occasionally	37.1	46.5	34.2	34.9	38.5	37.9	28.3	41.9	34.4	33.9
Never	13.6	9.1	13.2	19.8	12.8	19.5	14.2	11.3	15.2	15.5
Periodic abstinence ^d										
All times	11.8	7.0	19.1	7.0	13.0	6.9	10.2	11.3	9.4	9.2
Most times	17.8	19.3	19.9	17.4	19.3	11.5	15.7	17.7	14.9	14.6
Occasionally	29.1	33.7	28.7	19.8	29.0	31.0	23.6	38.7	29.3	28.6
Never	41.3	40.1	32.4	55.8	38.7	50.6	50.4	32.3	46.4	47.5
Condom ^{c,d,e}										
All times	3.8	2.7	2.9	14.0	4.6	1.1	1.6	4.8	2.2	2.0
Most times	42.8	50.3	44.1	51.2	47.3	35.6	23.6	51.6	33.7	32.4
Occasionally	37.6	39.0	39.0	22.1	36.3	40.2	46.5	27.4	40.2	41.2
Never	15.8	8.0	14.0	12.8	11.7	23.0	28.3	16.1	23.9	24.5
Oral pill ^{c,d}										
All times	3.7	2.1	2.6	1.2	2.2	11.5	5.5	1.6	6.5	6.9
Most times	20.7	18.7	21.8	7.0	18.4	26.4	23.6	27.4	25.4	25.2
Occasionally	18.8	18.2	24.4	11.6	20.2	17.2	12.6	21.0	15.9	15.6
Never	56.8	61.0	51.3	80.2	59.2	44.8	58.3	50.0	52.2	52.3
Morning after pill ^d										
All times	0.9	0.0	0.4	3.5	0.7	0.0	1.6	1.6	1.1	1.0
Most times	6.6	9.6	7.7	1.2	7.4	4.6	3.1	9.7	5.1	4.7
Occasionally	23.2	19.3	23.6	17.4	21.1	24.1	25.2	35.5	27.2	26.5
Never	69.4	71.1	68.3	77.9	70.8	71.3	70.1	53.2	66.7	67.7

TABLE 2 (Continued)

Birth control methods	Frequency of birth control (since first intercourse)									
	All	Males				Females				Total (standardised) ^b
	Total (n = 850) (%)	Group O (n = 193) (%)	Group V (n = 275) (%)	Group G (n = 93) (%)	Total (n = 561) (%)	Group O (n = 89) (%)	Group V (n = 132) (%)	Group G (n = 68) (%)	Total (n = 289) (%)	
Injection ^{c,e}										
All times	0.5	0.5	0.0	0.0	0.2	2.3	0.8	0.0	1.1	1.2
Most times	2.0	3.7	3.0	0.0	2.8	1.1	0.0	0.0	0.4	0.4
Occasionally	5.9	5.3	7.0	7.0	6.4	10.3	3.1	0.0	4.7	5.1
Never	91.7	90.4	90.0	93.0	90.6	86.2	96.1	100.0	93.8	93.3
Intra-uterine device										
All times	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Most times	2.4	4.3	1.8	0.0	2.4	3.4	2.4	1.6	2.5	2.6
Occasionally	6.2	6.4	8.5	5.8	7.4	3.4	6.3	0.0	4.0	4.3
Never	91.3	89.3	89.7	94.2	90.3	93.1	91.3	98.4	93.5	93.1
Norplant										
All times	0.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.4	0.4
Most times	1.2	2.7	1.5	0.0	1.7	1.1	0.0	0.0	0.4	0.4
Occasionally	3.8	4.3	5.9	5.8	5.3	1.1	0.8	0.0	0.7	0.8
Never	94.9	93.0	92.6	94.2	93.0	96.6	99.2	100.0	98.6	98.4
Traditional herbs ^c										
All times	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Most times	1.2	2.7	1.1	0.0	1.5	1.1	0.0	1.6	0.7	0.6
Occasionally	4.9	6.4	6.6	2.3	5.9	1.1	4.7	1.6	2.9	2.9
Never	93.9	90.9	92.3	97.7	92.7	97.7	95.3	96.8	96.4	96.4

^aGroup O, out-of-school; group V, vocational school; group G, general school and university.

^bPercentages that would have been observed had females had the same distribution by educational group as males.

^cThe chi-square statistic between male and female groups is significant at the 0.05 level.

^dThe chi-square statistic between different educational groups of males is significant at the 0.05 level.

^eThe chi-square statistic between different educational groups of females is significant at the 0.05 level.

TABLE 3Pregnancy among respondents who reported having had sexual intercourse by sex and educational group.^a

	All				Males				Females			
	Total (<i>n</i> = 850) (%)	Group O (<i>n</i> = 193) (%)	Group V (<i>n</i> = 275) (%)	Group G (<i>n</i> = 93) (%)	Total (<i>n</i> = 561) (%)	Group O (<i>n</i> = 89) (%)	Group V (<i>n</i> = 132) (%)	Group G (<i>n</i> = 68) (%)	Total (<i>n</i> = 289) (%)	Total (standardised) ^b (%)		
Ever pregnant or made a sexual partner pregnant ^{c,d,e}	21.9	25.4	14.8	8.8	17.5	40.4	32.0	14.7	30.5	32.0		
Ever associated with the following pregnancy outcomes	(<i>n</i> = 186)	(<i>n</i> = 49)	(<i>n</i> = 41)	(<i>n</i> = 8)	(<i>n</i> = 98)	(<i>n</i> = 36)	(<i>n</i> = 42)	(<i>n</i> = 10)	(<i>n</i> = 88)			
Abortion ^e	65.2	55.1	72.5	75.0	63.9	47.2	85.4	60.0	66.7	64.2		
Miscarriage	19.0	24.5	17.5	25.0	21.6	8.3	22.0	20.0	16.1	15.0		
Delivery ^{d,e}	22.8	26.5	10.0	0.0	17.5	52.8	9.8	20.0	28.7	32.1		
Currently pregnant ^d	6.0	14.3	0.0	0.0	7.2	8.3	2.4	0.0	4.6	5.2		

^aGroup O, out-of-school; group V, vocational school; group G, general school and university.^bPercentages that would have been observed had females had the same distribution by educational group as males.^cThe chi-square statistic between male and female groups is significant at the 0.05 level.^dThe chi-square statistic between different educational groups of males is significant at the 0.05 level.^eThe chi-square statistic between different educational groups of females is significant at the 0.05 level.

and less than half of those from the out-of-school group. One-quarter of males from the out-of-school group reported that their partner had had a delivery, while no males from the general school and university group claimed this.

Abortion. Table 4 shows the data on abortion experiences. Among those who acknowledged having had an abortion or a partner who had an abortion, most had had only one such experience but some had as many as four. Around one-third of the respondents had gone to a private clinic or hospital for their most recent abortion. About a quarter had a friend help by buying illegal abortifacients, and almost a fifth had induced the abortion themselves, mostly after buying illegal abortifacients. Less than one-tenth had sought help by going to public health organisations, which normally did not provide abortion services unless there were strong medical reasons that threatened the pregnant woman's life. Only a few reported visiting traditional healers for abortions. There was no statistically significant difference between male and female respondents in the ways most recent abortions had been sought.

More than one-third had paid less than 1000 Baht (31 US dollars) for their most recent abortion. A little over a quarter had paid 1000–2499 Baht (31–78 US dollars), 16.5 per cent had paid 2500–4999 Baht (78–156 US dollars), and the rest had paid 5000 Baht (156 US dollars) or more. There was no statistically significant difference in reported costs by sex or educational group. However, those who had self-induced the abortion had spent significantly less money than those who had gone to private clinics or hospitals ($p < 0.001$).

While 66.0 per cent of the males reported that the most recent abortion had involved no complications at all, only 56.8 per cent of the females (53.3 per cent after standardising for educational group) reported this. Among the females, after standardising for educational group, 5.3 per cent reported minor complications with no need for medication, 14.5 per cent reported minor complications with medication obtained from a pharmacy, and 9.0 per cent reported severe complications requiring treatment at a clinic or hospital. Those who had been associated with self-induced abortions, however, were more likely to report minor complications treated with pharmacy medications, or severe complications requiring clinic or hospital treatment, while those who had gone to private clinics or hospitals for (illegal) abortions tended to report no complications at all, or only minor complications with no need for any advanced treatment ($p < 0.001$).

Sexual Experiences, Pregnancy and Abortion. Young people's narratives of the impacts of sexual experiences fleshed out their responses to the questionnaire, providing a more nuanced and emotional record of these issues. While many boys and girls use birth control, particularly condoms, young women are not expected to be sexually active and are therefore, not expected to be prepared for sexual activity:

We've been taught that preserving virginity is the best way for oneself and one's parents. . . . But if we can't avoid having sex, we haven't been taught much about what we should do to stay away from bad outcomes or to not feel shameful. (Pim, female, 18 years, university student)

It is common for young women in many developing countries to find it difficult to insist on condoms for protection against pregnancy and STIs (Brown *et al.* 2001; Jejeebhoy *et al.* 2001). As one young woman from a non-formal education centre said

TABLE 4Abortions among respondents who reported having had sexual intercourse by sex and educational group.^a

	All		Males			Females				Total (standardised) ^b (%)
	Total (n = 122) (%)	Group O (n = 27) (%)	Group V (n = 30) (%)	Group G (n = 6) (%)	Total (n = 63) (%)	Group O (n = 17) (%)	Group V (n = 36) (%)	Group G (n = 6) (%)	Total (n = 59) (%)	
How most recent abortion procured										
Went to a private clinic/hospital	31.7	33.3	27.6	0.0	27.4	35.3	34.3	50.0	36.2	36.2
Went to public health place ^c	6.7	3.7	3.4	33.3	6.5	11.8	5.7	0.0	6.9	7.8
Visited traditional healer	5.8	3.7	10.3	0.0	6.5	5.9	2.9	16.7	5.2	5.5
Had friend help by buying abortifacients	25.8	14.8	41.4	33.3	29.0	23.5	20.0	33.3	22.4	22.8
Did it by myself/herself	18.3	14.8	20.7	33.3	19.4	11.8	17.1	33.3	17.2	16.4
Don't know	1.7	7.4	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0
Money paid for that abortion (Baht)										
< 1000	37.1	36.8	42.9	33.3	39.6	33.3	34.6	33.3	34.1	33.9
1000–2499	27.8	26.3	25.0	50.0	28.3	50.0	23.1	0.0	27.3	32.4
2500–4999	16.5	31.6	14.3	0.0	18.9	8.3	15.4	16.7	13.6	12.5
≥ 5000	18.6	5.3	17.9	16.7	13.2	8.3	26.9	50.0	25.0	21.1
Don't know	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Outcome of that abortion										
No problems	61.9	63.2	64.3	83.3	66.0	41.7	57.7	83.3	56.8	53.3
Minor complications	5.2	5.3	0.0	16.7	3.8	0.0	7.7	16.7	6.8	5.3
Minor complications; medication from drugstore	6.2	0.0	0.0	0.0	0.0	16.7	15.4	0.0	13.6	14.5
Severe complications; went to clinic/hospital	7.2	5.3	7.1	0.0	5.7	8.3	11.5	0.0	9.1	9.0
Not sure	17.5	21.1	25.0	0.0	20.8	33.3	7.7	0.0	13.6	17.9
Others	2.1	5.3	3.6	0.0	3.8	0.0	0.0	0.0	0.0	0.0

^aGroup O, out-of-school; group V, vocational school; group G, general school and university.^bPercentages that would have been observed had females had the same distribution by educational group as males.^cThe chi-square statistic between different educational groups of males is significant at the 0.05 level.

in a focus group discussion, '[i]f they [men] don't want to use it [condom] how can women beg them to use it?' Instead, girls often rely on their partners to successfully withdraw.

It is clear that both young men and women are engaging in often unprotected sexual activity and some women are getting pregnant. From the qualitative information, for girls, love and sexuality are closely intertwined. Their ideas of love involve a sense of surrender and a fear of abandonment. As they fear negative responses, girls rarely confide in their partners. Instead, they turn to friends first and then pharmacies for self-treatment.

As a 20-year-old female factory worker said, 'I didn't tell my boyfriend as I felt he was not the right person from whom I would get help'. She continued to tell a fairly common story of her self-induced abortion at home in which her friend helped her to buy abortifacients from the black market:

I did the abortion at home and felt that I was almost dead because of the bleeding. I went to the bathroom more than 10 times because I had got cramps. However, the abortion was not successful. I still remained pregnant. . . . My boyfriend left me before my child was born. Now my mum helps me raising the baby. (Tim, female, 20 years, factory worker)

Both boys and girls feel guilt and shame about negative sexual health outcomes, but they deal with problems differently. Boys tend to choose silence and 'close their eyes' to such problems, pretending that nothing has happened. Some male informants described having reacted to their partner's pregnancy with silence and ignorance. Perhaps reflecting their more powerful social position, males may question whether the pregnancy is theirs to the extent of implying that the girl is promiscuous, while having multiple sexual partners themselves:

It was last year that my girlfriend told me that she got pregnant. I was so scared. I did not know what to do, really. A few weeks later she told me again not to worry. She had already taken care of it herself [by having an induced abortion]. (Moo, male, 18 years, general school student)

I once had one of my girlfriends get pregnant. She asked me to give her some money since she wanted to have an abortion. I was quite angry as I only slept with her a few times and I was not her first guy. I gave her money, as much as I had in my pocket, and never saw her again. (Tum, male, 20 years, unemployed)

The inhibitions that traditional Thai norms generate in parents and school authorities also increase the vulnerability of female adolescents, who lack not only the appropriate knowledge, but also the means, to ensure safe sexual practices. As stated elsewhere (Warakamin *et al.* 2004; Whittaker 2004), unplanned pregnancies remain a common dilemma for young women, causing them shame and stigma. Abortion is considered to be a life-destroying act that constitutes a Buddhist sin or demerit. If confronted with unwanted pregnancies, young women fear consulting their parents, teachers or other trusted adults because of the need to reveal their disgrace and loss of

virginity. Many stated that parents or teachers would be the last resources they would turn to in the event of unwanted pregnancies or abortions. Indeed, several informants indicated that they had never informed their parents or teachers of the adverse outcomes of their sexual activity:

After I slept with him [ex-boyfriend] I was really scared that my mum would find out. I cried alone at home as I knew that what I had done was wrong. I know that a proper girl should not do that [have sex before marriage]. (Duan, female, 18 years, general school student)

My mum was the last person to know that I was pregnant. She was very angry and slapped me and also yelled at me that I was always a troublemaker. I left home and was in an Emergency House for quite some time. (Jane, female, 18 years, unemployed)

Teachers would be the last people to talk to if I needed to have any advice [related to pregnancy]. I would be expelled from school if they found out that I got pregnant. . . . It's impossible to talk about pregnancy and abortion experiences with teachers. They will not accept them, as abortion is considered a sinful act. (Jeeb, female, 18 years, commercial school student)

Problems related to adolescent sexual and reproductive health can be considered a consequence of a clash between modern lifestyles and traditional Thai sexual norms. With the influence of modernity, young people's lives have changed. Boys and girls have more opportunities to socialise with both the opposite and the same sex at school or in the workplace. They have also learned more about equality and freedom, which can raise the incidences of both committed and uncommitted sexual relationships. However, while widespread access to education, information and knowledge has encouraged liberal ideas and narrowed gender inequity in some respects, traditional negative attitudes of Thai society toward adolescent sexual activity remain strong. Young people, therefore, remain poorly equipped to prevent such outcomes of sexual activity as infections and unwanted pregnancies:

First informant: We talk a lot about the gender equality and freedom of young people's lives. It seems acceptable among youths. But when boys and girls engage in sex, those to be blamed are always girls.

Second informant: I think the point is we all have been taught [by parents or teachers] that girls are supposed to preserve their bodies and dignity until marriage, and boys should respect [good] girls. Everyone knows it, but some may not be able to follow this virtue. (Female FGD, 18–20 years, general school)

I felt ashamed of myself when I had sex with my boyfriend. Girls have never been taught that having sex before they are married is acceptable For the means of protection, I have no one to talk to except a few close friends. But, mainly, it's up to my boyfriend. He used a condom with me only once. Other than that we used withdrawal and safe period techniques. In the end, I got pregnant. (Jeeb, female, 18 years, commercial school student)

I don't talk about sex issues with my parents. . . . When I have a girlfriend, my mum was curious and told me to be careful of AIDS. I just told her [his mother] that there was nothing to worry about. My dad doesn't ask anything. He told mum that I am old enough to know what is right or wrong. (Toey, male, 19 years, technical school student)

Discussion

This paper has explored the perspectives of a range of young people regarding the issues of sexual experience and reproductive health consequences. The qualitative findings support the quantitative data by highlighting the vulnerability of sexually-active young people in northern Thailand to health problems arising from sexual activity. Together, both sets of findings build an understanding of young people's sexual choices and their consequences.

Our principal findings are that pre-marital sexual intercourse among adolescents in Chiang Mai is common, and that most of these acts are unprotected or poorly protected against pregnancy or disease. Females, and those with modest education or lower socio-economic backgrounds, are the young people most likely to experience negative health outcomes, such as unwanted pregnancies, the ill-effects of self-induced abortions, and rejection by family and partners. Sexually-active young women fear disclosure of their sexual activity status to their parents and so tend to conceal that status, and to seek or perform unsafe abortions. Many seek the counsel of peers and pharmacies rather than parents and other older people. It is also clear, from the data, that the majority of sexually-active young people face huge obstacles in addressing their sexual health problems, and acquiring proper information and services. The problems and constraints appear to exist at both the partner and family levels.

It has been argued that a gender double standard and power imbalance continue to have considerable influences on the sexual and reproductive lives and health of young people in many settings (Jenkins & Kim 2004; Marston & King 2006). It is the young females who bear the brunt of these forces because of their limited decision-making power in sexual partnerships, and their limited access to contraceptive, counselling and other services, while it is their bodies that experience pregnancies and infections. The traditional Thai way of raising and educating children plays a significant role in exposing young people, especially girls, to their vulnerability. This evidence is also found in previous research conducted in this area in Chiang Mai (Pongyuen 2004; Tangmunkongvorakul *et al.* 2005; Timpan 2005).

The current findings call for, as other studies have (Aggleton & Campbell 2000; Fathalla *et al.* 2006; Jejeebhoy *et al.* 2001), improved programmes offering appropriate sex and life skills education, including empowerment to adolescents, tailored to the local context. Friendly sexual and reproductive health services should be developed specifically for unmarried adolescents, along with special initiatives to reach disadvantaged groups such as young women, and those with modest education or who are not in school. Programmes are also required to help older people acknowledge the risks that young people, particularly females, face, and to educate them on how to support these young people through improved communication.

Thailand has already embarked on a number of programmes and services regarding sexual and reproductive health among young people (Ministry of Public Health 2005; Warakamin & Phoolcharoen 2000). However, they have not been widely effective, as this

research demonstrates. In the past, the issues addressed in this paper have received mainly superficial consideration instead of firm commitment. This study suggests a need for policy support and advocacy. Policy change alone is not sufficient to achieve the necessary aims; policy must, in addition, be successfully implemented. Furthermore, advocacy efforts for young people need to be furthered at the local and national levels. In Thailand, the underlying gender and power inequalities remain. While changing the cultural underpinnings of gender discrimination is a difficult and time-consuming task, it is likely to be an important element in addressing the problems described in this paper.

Limitations of the Study

The main difficulty faced by our study arose from the intrinsic sensitivity of research on such a personal topic. This problem was tackled by using a young team of trained investigators who were known to relate well to the study population. Another issue was access to representative samples of this hard-to-reach population of late adolescents, especially those who were out of school. Our approach to the issue of representation was to make the samples quite large, and to pre-stratify them by attributes likely to influence the outcomes of interest, especially sexual experience. Thus, we had balanced samples in three educational categories for both males and females. The samples were not random, but they were large and diverse enough to credibly capture much of the extant variation. Thus, we feel confident that our quantitative estimates are of the correct order of magnitude and show the relative frequencies well. Random samples would have been impracticable and we have kept this limitation in mind when interpreting the quantitative data. Our estimates, while as good as most others, are imperfect.

Conclusion

Our study shows there is a serious public health problem with sexual health and associated services for adolescents in Chiang Mai, Thailand. Pre-marital sex is frequent, usually unprotected, and often leads to unwanted pregnancies or STIs. The risks are not evenly distributed, and are higher for those of lower socio-economic status and who are not in school. Females are particularly stressed by the current situation, trapped by pre-modern traditions, which only value virginity, and modern expectations from boyfriends, which lead to frequent unprotected sex. Furthermore, females do not have sufficient power or knowledge to protect themselves. To a large extent, this situation results from cultural barriers not yet confronted by appropriate sexual health programmes directed at modern adolescents in northern Thailand.

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REFERENCES

- AGGLETON, P. & CAMPBELL, C. (2000) 'Working with young people—towards an agenda for sexual health', *Sexual and Relationship Therapy*, vol. 15, no. 3, pp. 283–296.
- ALLEN, D. R., CAREY, J. W., MANOPAIBOON, C., JENKINS, R. A., UTHAIVORAVIT, W., KILMARX, P. H. & VAN GRIENSVEN, F. (2003) 'Sexual health risks among young Thai women: implications for HIV/STD prevention and contraception', *AIDS and Behavior*, vol. 7, no. 1, pp. 9–21.
- BEARINGER, L. H., SIEVING, R. E., FERGUSON, J. & SHARMA, V. (2007) 'Global perspectives on the sexual and reproductive health of adolescents: patterns, prevention, and potential', *The Lancet*, vol. 369, no. 9568, pp. 1220–1231.
- BOONTHAI, N. & WARAKAMIN, S. (2001) *Induced Abortion: Nationwide Survey in Thailand*, 25th International Congress of the Medical Women's International Association, Ministry of Public Health, Nonthaburi.
- BROWN, A., JEJEEBHOY, S. J., SHAH, I. & YOUNT, K. M. (2001) *Sexual Relations among Young People in Developing Countries: Evidence from WHO Case Studies*, Department of Reproductive Health and Research, Family and Community Health, World Health Organization, Geneva.
- FATHALLA, M. F., SINDING, S. W., ROSENFELD, A. & FATHALLA, M. M. (2006) 'Sexual and reproductive health for all: a call for action', *The Lancet*, vol. 368, no. 9552, pp. 2095–2100.
- IM-EM, W., KANCHANACHITRA, C. & ARCHAVANITKUL, K. (2005) 'Sexual coercion among ever-partnered women in Thailand', in *Sex without Consent: Young People in Developing Countries*, eds S. J. Jejeebhoy, I. Shah & S. Thapa, Zed Books Ltd, London, pp. 74–85.
- JEJEEBHOY, S., BATHIJA, H., SHAH, I. H. & WARRINER, I. K. (2001) *Promoting Sexual and Reproductive Health of Adolescents*, [Online] Available at: http://whqlibdoc.who.int/hq/2002/WHO_RHR_02.5_section5.pdf (accessed 8 April 2010).
- JENKINS, R. A. & KIM, B. (2004) 'Cultural norms and risk: lessons learned from HIV in Thailand', *The Journal of Primary Prevention*, vol. 25, no. 1, pp. 17–40.
- JENKINS, R. A., MANOPAIBOON, C., SAMUEL, A. P., JEYAPANT, S., CAREY, J. W., KILMARX, P. H., UTHAIVORAVIT, W. & VAN GRIENSVEN, F. (2002) 'Condom use among vocational school students in Chiang Rai, Thailand', *AIDS Education and Prevention*, vol. 14, no. 3, pp. 228–245.
- JIRAPRAMUKPITAK, T., PRINCE, M. & HARPHAM, T. (2008) 'Rural-urban migration, illicit drug use and hazardous/harmful drinking in the young Thai population', *Addiction*, vol. 103, no. 1, pp. 91–100.
- JONES, G. W. (2005) 'The "flight from marriage" in South-East and East Asia', *Journal of Comparative Family Studies*, vol. 36, no. 1, pp. 93–119.
- MANOPAIBOON, C., KILMARX, P. H., LIMPAKARNJANARAT, K., JENKINS, R. A., CHAIKUMMAO, S., SUPAWITKUL, S. & VAN GRIENSVEN, F. (2003) 'Sexual coercion among adolescents in northern Thailand: prevalence and associated factors', *Southeast Asian Journal of Tropical Medicine and Public Health*, vol. 34, no. 2, pp. 447–457.
- MARSTON, C. & KING, E. (2006) 'Factors that shape young people's sexual behaviour: a systematic review', *The Lancet*, vol. 368, no. 9547, pp. 1581–1586.
- MINISTRY OF PUBLIC HEALTH (2005) *Thailand Health Profile 2001–2004*, Bureau of Policy and Strategy, Bangkok.

- NELSON, K. E., SURIYANON, V., TAYLOR, E., WONGCHAK, T., KINGKEOW, C., SRIRAK, N., LETSRIMONGKOL, C., CHEEWAWAT, W. & CELENTANO, D. (1994) 'The incidence of HIV-1 infections in village populations of northern Thailand', *AIDS*, vol. 8, no. 7, pp. 951–955.
- PIYASIL, V. (1998) 'Anxiety and depression in teenage mothers: a comparative study', *Journal of the Medical Association of Thailand*, vol. 81, no. 2, pp. 125–129.
- PONGSATHA, S., MORAKOT, N. & TONGSONG, T. (2002) 'Demographic characteristics of women with self use of misoprostol for pregnancy interruption attending Maharaj Nakorn Chiang Mai Hospital', *Journal of the Medical Association of Thailand*, vol. 85, no. 10, pp. 1074–1080.
- PONGYUEN, N. (2004) *Sexual Experiences among In-school Female Adolescents in Amphoe Muang Chiang Mai Province*, Masters Thesis, Faculty of Graduate Studies, Mahidol University, Nakhon Pathom.
- SRISURIYAWET, R. (2006) *Psychosocial and Gender-based Determinants for Sexual Risk Behaviours among Adolescents in School*, PhD Thesis, The Graduate School, Chiang Mai University, Chiang Mai.
- TANGMUNKONGVORAKUL, A. (2009) *Sexual Health in Transition: Adolescent Lifestyles and Relationships in Contemporary Chiang Mai, Thailand*, PhD Thesis, Australian National University, Canberra.
- TANGMUNKONGVORAKUL, A., KANE, R. & WELLINGS, K. (2005) 'Gender double standards in young people attending sexual health services in northern Thailand', *Culture, Health & Sexuality*, vol. 7, no. 4, pp. 361–373.
- TIMPAN, U. (2005) *Sexuality of Male Adolescents: A Case Study of Urban Male Adolescents at Risk to Sexual Behaviour in Chiang Mai Province*, Masters Thesis, Faculty of Graduate Study, Mahidol University, Nakhon Pathom.
- UNITED NATIONS (2001) *Adolescent Reproductive Health in the Asian and Pacific Region*, United Nations, New York.
- VAN GRIENSVEN, F., SUPAWITKUL, S., KILMARX, P. H., LIMPAKARNJANARAT, K., YOUNG, N. L., MANOPAIBOON, C., MOCK, P. A., KORATTANA, S. & MASTRO, T. D. (2001) 'Rapid assessment of sexual behavior, drug use, human immunodeficiency virus, and sexually transmitted diseases in northern Thai youth using audio-computer-assisted self-interviewing and noninvasive specimen collection', *Pediatrics*, vol. 108, no. 1, p. e13.
- WARAKAMIN, S. & PHOOLCHAROEN, W. (2000) *Institutionalising Reproductive Health Programmes in Thailand*, Family Planning and Population Division, Department of Health, Ministry of Public Health, Nonthaburi.
- WARAKAMIN, S. & POONKHUM, Y. (1999) *Project on Development Model to Improve Reproductive Health Services for Thai Adolescents*, Family Planning and Population Division, Department of Health, Nonthaburi.
- WARAKAMIN, S., BOONTHAI, N. & TANGCHAROENSATHIEN, V. (2004) 'Induced abortion in Thailand: current situation in public hospital and legal perspectives', *Reproductive Health Matters*, vol. 12, no. 24, pp. 147–156.
- WHITTAKER, A. (2002a) 'Eliciting qualitative information about induced abortion: lessons from northeast Thailand', *Health Care for Women International*, vol. 23, nos. 6 & 7, pp. 631–641.
- WHITTAKER, A. (2002b) 'The struggle for abortion law reform in Thailand', *Reproductive Health Matters*, vol. 10, no. 19, pp. 45–53.
- WHITTAKER, A. (2004) *Abortion, Sin and the State in Thailand*, Routledge-Curzon, London.
- XENOS, P. & KABAMALAN, M. (2005) 'A comparative history of age-structure and social transitions among Asian youth', in *Population, Resources and Development: Riding the Age Waves*, eds S. Tuljapurkar, I. Pool & V. Prachuabmoh, Springer, Dordrecht, pp. 57–88.

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