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**Chinese Parents' Knowledge, Attitudes, and Practices about Sexuality
Education for Adolescents in the Family¹**

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Abstract

This study used a cross-sectional, multi-site survey design to examine Chinese parents' knowledge, attitudes, and practices in the area of sexuality education for adolescents. Three cities in China were selected for the survey, and the final sample contained 841 parents with children ranged from 11 to 19 years. The majority of Chinese parents were found to have reasonably accurate knowledge about sexuality and positive attitudes toward sexuality and sexuality education. However, most Chinese parents reported that they never talked with their children about sexuality. Parental education was strongly related to both knowledge and attitudes. Gender of parent was a significant predictor of parental practices, with mothers talking more with children about sexuality than did fathers. Both parental knowledge and parental attitudes were found to be significant predictors of education practices. Parents who were more knowledgeable and who had more positive attitudes talked more with their children about sexuality. Implications for practice are discussed.

Chinese Parents' Knowledge, Attitudes, and Practices about Sexuality Education for Adolescents in the Family

Sexuality is a central dimension of human functioning that includes a broad range of behaviors, attitudes, values, and beliefs. The construct of sexuality can be defined as follows:

“... a core dimension of being human, which includes the individual and social capabilities and conditions for eroticism, emotional attachment/love, sex, gender, and reproduction. It is anchored in thoughts, fantasies, desires, beliefs, and values and is expressed through identity, attitudes, values, roles, behaviors, and relationships. Sexuality is a result of the interplay of biological, psychological, socioeconomic, cultural, ethical and religious/spiritual factors” (PAHO, Regional Office of the WHO, 2000, p. 8).

Based on this broad definition of sexuality, sexuality education must also be understood in its widest sense to include many direct and indirect forms of instruction and socialization of the younger generation on any of the components of sexuality: “education in all aspects of sex and sexuality including physiological, reproductive, performative, emotional and interpersonal” (Reber, 1985, p. 692).

This study, conducted in the People's Republic of China, explores parents' knowledge, attitudes, and practices around sexuality education for adolescents in their family. It is the first ever empirical study of parents' perspectives on sexuality education in the PRC. Parent education around issues of sexuality is a newly emerging concern in the People's Republic of China, and research is needed for the design and implementation of programs for parent and child sexuality education and family intervention. This study of parental reports describes fathers' and mothers' knowledge, attitudes, and practices about sexuality education for adolescents; and then relates them to factors of parent and child gender, child age, and parental education.

North American Research about Sexuality Education in the Family

Many studies conducted in the United States suggest that parents are not usually their children's main sources of sexuality education, and that a majority would like the schools to take on a major role. For example, King and Lorusso (1997) surveyed 698 undergraduate students who enrolled in a human sexuality course at the University of New Orleans and their parents to ask if they had ever had a meaningful discussion about sex. Of the 530 students for whom at least one parent responded, 59.4% of them said that they had never had a meaningful discussion about sex with either parent. The reasons for this lack of communication were embarrassment and that sex was an unacceptable topic for discussion at home. At the same time, 60.3% of parents reported that they had had meaningful discussions about sex with their children. This study indicated that parents and their adult children have substantial disagreement about whether they ever had a meaningful discussion about sex in the home. In their literature review, Ansuini, Fiddler-Woite, and Woite (1996) found that in samples ranging in age from 9 to over 50 years of age, only 10 % of fathers and 16 % of mothers listed “parent” as their primary source of information about sexuality. Allgeier and Allgeier (2000) surveyed college students at Bowling Green State University in 1994 and 1998 in a large human sexuality course containing over 200 students on each occasion. These students tended to be more liberal and knowledgeable about sex than those enrolled in other classes at the same academic level, even at the beginning of the course. Nevertheless, these relatively well-informed students reported gaps in frank discussion with parents. For instance, only 14% of students enrolled in Allgeiers' sexuality course in 1994 had heard the word *clitoris* from their mothers; and in 1998 that figure had dropped to less than 1%. Only 3% of students (all of them male) had heard that word from their fathers in 1994, and this number dropped to less than 1% in 1998. A slight majority of students had heard the word *vagina* from their mothers (52% in 1994; 54% in 1998), and only 14% of the students reported hearing the word *vagina* from their fathers in both years. The Allgeiers also asked the students to indicate their most accurate source of information regarding the reproductive and passionate aspects of sexuality. Fewer than half the students in both years perceived their parents as providing accurate information about the

reproductive aspects of sex and even fewer about its passionate aspects. Thus, North American parents tend to shy away from providing their children with terminology and sexual facts as well as information about reproduction and sexual emotions.

In addition to finding that parents generally engage in little sexual discussion with children, researchers have gone further and documented strong gender differences in parent-child communication. Mothers provide their children with more sexuality education information than do fathers, and daughters receive more sexuality education from parents than do sons (King & Lorusso, 1997). For instance, Nolin and Petersen (1992) found that mothers were more likely than fathers to discuss birth control, adolescent pregnancy, and sexual morality with both sons and daughters.

Beyond holding back in communicating information about sexuality to their children, parents may not even possess all of the knowledge required. Hockenberry-Eaton, Richman, DiIorio, Rivero, and Maibach (1996) examined mothers' and adolescents' knowledge of sexual development terms and the effects of age and sexual experience on that knowledge. The authors found that the mothers were not able to adequately define many sexual development terms, and they concluded that mothers may be ill-prepared to teach their children about sex or to reinforce information that children learn in school. However, other studies have found parents to have fairly high levels of knowledge on some important topics. For example, Smith, Minden, and Lefebvre (1993) surveyed 243 children in grades 4-7 and 155 of their parents in Toronto (Canada) public schools to find out their knowledge and attitudes towards AIDS and AIDS education. About 83% of parents knew that testing positive for HIV was not the same as having AIDS, 92% knew that one can be HIV-positive and still look healthy, and 88% knew that some one who is HIV-positive but still healthy can transmit HIV.

Perhaps due to the gaps in the sexuality education that they provide their children, North American parents often look to the schools for backup. In a large study conducted by the Kaiser Family Foundation study (2000), the overwhelming majority of parents (65%) believe that sexuality education should encourage young people to delay sexual activity but also prepare them to use birth control and practice safe sex once they do become sexually active. And parents stated that they want schools to provide more sexuality education to their teenagers and want discussions to cover abstinence, avoiding pregnancy, sexually transmitted diseases, abortion, and sexual orientation. A majority agreed that sexuality education classes should last a semester or more, and that girls and boys should be given the instruction separately. About 84% of parents want sexuality education to explain how to obtain and use birth control. Even more parents want schools to teach child how to be tested for HIV or AIDS, how to respond to pressure to have sex, discuss birth control with a partner and deal with the emotional consequences of sex. Four out of five parents want teachers to discuss abortion with their children, and three out of four want their children to learn about homosexuality and sexual orientation in the classroom. In an earlier study, the Kaiser Family Foundation (1997) likewise reported that 97% of parents supported providing AIDS information in high schools. Guttmacher and colleagues (1995) found similar positive attitudes in parents of New York City high school students but with clear limits. Nearly half of the parents felt that they should have the right to prevent their child from participating in the condom availability program, but if permission was asked, 2/3 of parents would allow their child to receive condoms. McKay (1996) surveyed middle-school parents to explore their attitudes toward school-based sexual health education and the appropriateness of various topics. Results indicated that 90 % of parents either strongly agreed or agreed with the statement: "Sexual health education should be provided in the schools." Thus, in general, North American parents are favorable toward sex education in school.

Sexuality Education for Adolescents in China

Chinese history has unfolded over the past 5,000 years in what has been described by many observers as a rich and splendid cultural legacy (Liu, 2000). The culture surrounding sexuality down through the millennia in China has developed in remarkable ways. Sexual culture in ancient China was closely connected with the political and economic state of the times, flowering and decaying along with the contemporary political and economic situation. For example, ancient Chinese sexual culture reached its

peak in the Tang Dynasty (618-907). Sexuality is also linked to procreation in Chinese culture. Sexuality was not a taboo subject in ancient China (Liu, 2000), but instead was openly discussed in religious and fictional texts and depicted in paintings and sculptures, some with explicit erotic details.

After the middle of the Song Dynasty (960-1279), China's feudal society started to deteriorate, and sexuality also became a more closely circumscribed area. The asceticism of the Confucianists gradually restricted the development of sexual scholarship. This phenomenon affected the Chinese people for 700 to 800 years. Confucianism is still a dominant philosophy that influences Chinese family values and sexual values through its emphasis on social and family harmony and family hierarchy (Liu, 2000).

The importance of the family as the fundamental unit of the society is central to Chinese culture, past and present. The extended family is looked upon as the primary source of the individual's support and identity (Wu & Tseng, 1985). Children have a very important and central position in the family, and the parent-child relation is expected to be as important or more important than the husband-wife relation (Stevenson, et al, 1992). Parents have a strong duty to train their children in moral behavior and achievement motivation, and children have the reciprocal responsibility to support and assist their parents in old age (Wu, 1996). Family authority has hierarchical elements, and children are expected to remain obedient and respectful to their parents and to other older family members even after they have grown into adulthood. Non-confrontational communication among people is valued to preserve individual dignity and protect family harmony (Xia, Xie, Zhou, DeFrain, Meredith, & Combs, in press). However, in spite of pressure to preserve a "perfect face," Chinese families do manifest problems and children sometimes fall into destructive behavior patterns such as gangs, juvenile delinquency, organized crime, and other antisocial behavior (Lau & Yeung, 1996).

A traditional Chinese cultural value relevant to sexuality was virginity for girls at marriage. In past times, some people believed that Chinese girls would rather die than lose their virginity, and in practice, a woman who was not a virgin when she married usually suffered abuse by her husband and his family. Premarital sex was proscribed for girls, but not for boys (Liu, 2000). Because the chastity of women was very important for every family, families strongly safeguarded the virginity of unmarried women.

Another Chinese belief system relevant to sexual issues concerns gender role expectations. In premodern China, men were socialized to take over power and responsibility while girls were brought up to be subordinate to men and senior women in the family hierarchy and to take care of the home and children (Cheung, 1996). Sons traditionally had more opportunity at all levels of formal education, and daughters could be restricted in access to all kinds of knowledge about the outside world, including knowledge about sexuality. However, equality of rights and opportunities for women in education and work have been cardinal principles of Chinese society and law since Mao Zedong (Sidel, 1972). The 1950 Marriage Law, one of the first major laws of the Communist government, abolished arranged marriages, outlawed bride price, polygamy, concubines, and child marriage, prohibited interference in the remarriage of widows, and guaranteed women's rights to divorce. While Chinese women have made many gains in political and economic power relative to men, nevertheless old customs and beliefs about the differences between males and females die hard and it seems safe to say that they continue to influence parents' beliefs, attitudes, and practices with regard to the sexuality education of their sons versus daughters (Cheung, 1996).

A final feature of Chinese culture relevant to sexuality education is the prevailing sexual conservatism. In contemporary Chinese society, sexuality is an avoided topic of explicit public discussion (Okazaki, 2002). An important museum of ancient Chinese sexual culture and artifacts, famous in some international circles, has operated without government funding or even public recognition, hidden in the center of Shanghai with its name visible only through the large glass doors, "Museum of Ancient Sexual Culture" (*The Economist*, July 13, 2002, p. 18). Sexuality education in Chinese schools is minimal, and parents as well as health professionals are reluctant to discuss sexuality and sexual information (Chan, 1986). Homosexuality is widely regarded as deviant, and in a survey of 7,600 married couples' views on masturbation, Liu (1997) and colleagues found that only 13.1% of urban participants looked upon masturbation as normal. In general, the everyday culture of Chinese adolescents is not nearly as overtly sexualized as it is in European and North American societies, and the age of marriage for both men and women tends to be relatively late, in line with societal needs to slow the rate of population increase.

According to the Chinese Marriage Law, men must be 22 to marry and women must be 20, and the national government enforces even stricter guidelines than the Law and imposes a restrictive policy according to which women are not granted a permit to marry unless they are 23 years old, and men 25. Certainly, individuals in China as elsewhere do not always conform to espoused conventional ideals, and societal values are evolving, but many broad forces have tended to inhibit open communication about sexuality between parents and children. However, Chinese society is rapidly changing in ways that may impact cultural parenting values. A recent study conducted in two metropolitan high schools, and freshmen at a state university in Baoding, Hebei, China, found that parent-child communication style varied in degree of openness and was associated strongly with levels of parent-adolescent cohesion and conflict. Adolescents with more open communication with parents felt closer to them and reported less conflict (Xia et. al., in press). Girls were more likely than boys to experience a closer and more open relationship with parents.

Sexuality education for Chinese adolescents has been emerging in recent decades. It first appeared in Chinese schools during the 1980s, after the National Education Department and National Health Department jointly announced in 1979 an "Interim Regulation on Hygiene Education in Middle and High School," requiring the strengthening of adolescent hygiene education. On August 24, 1988, the National Education Department and National Family Planning Department jointly put forth a statement calling for sexuality education in middle and high school. From that time on, some urban schools have offered health education courses for students, including some courses on sexual issues (Yao & Liu, 1997).

Liu and colleagues (1997) conducted the first and largest nationwide survey of sexual behavior and sexuality education in China, and found that parents were not major sources of information. They surveyed 6,092 students in 28 secondary schools in 15 provinces, and found that students generally reported that parents were not helpful as a resource for sexuality education. Only 17.5 % of boys' fathers and 7.9 % of girls' fathers, and only 11.3 % of boys' mothers and 30.4 % of girls' mothers were the ones who were reported to give their children the answers on sexual questions. Similarly, Hong (1994) reported that Shanghai University students were much more likely to identify health and physiology classes, newspapers, and magazines, rather than their families, as their main source of sexual knowledge. Gao, Lu, Shi, Sun, and Cai (2001) suggest that Chinese parents continue to prefer their children to focus on their academic studies and put off interest in sex. If their children start to ask questions about sex, they become worried and upset. Many parents believe that their children do not need sexuality education, and as adults will know about sex automatically. The parents are not prepared to answer children's questions.

Information about even urgent health issues related to sexuality is not yet widely available to the public. Li and colleagues (1992) did a survey to find out Chinese professionals' knowledge, attitudes, and behaviors about HIV/AIDS and practices. The participants were administrators of major clinical sites, faculty in public health and medicine, health educators at the national and provincial level, and directors of prevention stations at provincial or municipal levels. For the question, "A pregnant woman who has human immune deficiency virus can give the virus to her baby," the percentage of correct answers was very high, 97.0%. However, for the question, "Looking at a person is enough to tell if that person is HIV infected," the percentage of correct answers was only 71.6%. Thus, knowledge barriers may be a factor in parent-child communication about sexuality.

Method

Sample

Three cities in China were selected for the survey. Beijing, the national capital with a population of 13,819,000, is in northern China. Xian, a provincial capital with a population of 7,411,400 is located in central China. Shanghai, with a population of 16,737,700, is the main city of southern China. One geographic district from each of these 3 cities was sampled, and then one middle school and one high school were sampled from each district. One or two classes from different grades were chosen for sampling in each school.

Eight hundred and forty-one parents in the three cities with a child between the ages of 11 and 19 (mean = 14.9; $SD = 1.7$) participated. Only one parent in a family participated, and those interviewed included 41.6% fathers and 58.4% mothers. Most participants (82.5%) were 40 years old or over (mean = 42.7; $SD = 3.6$). The average age at time of marriage was 26 years old (26.6 for fathers, 25.2 for mothers; $SD = 2.4$). Most participants (95.2%) were married, but 3.8% of them were divorced; and 0.6% of them were separated. The majority of the marriages (74.1%) were reported to be happy or very happy; only 4.8% of the marriages were reported to be unhappy or very unhappy.

Most participating parents (86.9%) had completed 12 years or more of formal schooling. More fathers (18.6%) than mothers (8.3%) had a Bachelors degree (16 years of school) or a Masters degree (19 years of school). The mean number of years that fathers had spent in formal schooling was 12.8, while the mean number of years for mothers was 12.6. Regarding occupation, participants identified themselves as factory workers (45.5%), government officers (14.8%), business persons (12.6%), self-employed (11.7%), physicians (6.1%), teachers (3.9%), technicians (2.6%), and unemployed (2.5%). Regarding income, 23.7% parents reported their mean family income to be under RMB 1,000 (US\$ 120); but 61.1% ranged from RMB 1,000 to 3,000 (US\$120 to \$361); 12.2% ranged from RMB 3,000 to 5,000 (US\$361 to \$602); and 3.0% were reported to be over RMB 5,000 (US\$602).

Most families (91.6%) had only one child. For the target adolescent child, there were more boys (53.0%) than girls (47.0%). About 35.8% of the children were 11-13 years old; 49.7% of the children were 14-16 years old; 14.5% of the children were 17-19 years old. About half of the children (50.3%) were in middle school and half (49.7%) in high school.

Procedures

This study used a cross-sectional, multi-site, survey design to collect data from the participating parents. No intervention of any kind had been applied to the students prior to the study. The data were collected by means of questionnaires distributed through the assistance of teachers in China. All instruments were translated into Chinese by an independent translator, and then back translated by a second translator who is fluent in both Chinese and English to ensure the accuracy of the wording.

With the assistance and permission of cooperating school administrators and personnel, questionnaires were sent home to parents through their students, filled out by either parent, and then mailed back to the researchers. The envelopes contained information about the study, instructions, and invitation to voluntarily participate. A total of 960 copies of the questionnaire were distributed, and 877 copies were returned, generating a return rate of 91%. Thirty-six questionnaires were later excluded because of incomplete data, and the final sample contained 307 parents from Beijing, 304 from Xian, and 230 from Shanghai.

Measures

Parental practices about sexuality education for adolescents. Parental practices about sexuality education for adolescents were measured by a self-report questionnaire developed by the researchers for this study. The questionnaire consisted of 4 items regarding what and how much parents talked with their adolescent child about sexuality. The items included: "Have you taught your son how to clean his penis?" (1 point for yes, for parents with son); "Have you taught your daughter how to handle menstruation before her menarche?" (1 point for yes, for parents with daughter); "Have you educated your child about sexuality?" (1 point for yes); and "How often during the past year have you talked with your child about what is right and what is wrong in sexual behavior?" (0 point for never, 1 point for one to two times, 2 points for three to four times, 3 points for five to six times, and 4 points for many times). Each participant received a total score (0-6 points) based on summing the scores on the four items. The Cronbach's Alpha was .88.

Parental knowledge about sexuality. Parental knowledge about sexuality was measured by 22 multiple-choice items with 3 subscales addressing: (1) parental knowledge about reproductive development (7 items), (2) sexual behavior including masturbation (5 items), and HIV/AIDS (3 items); and (3) additional

items about how their own parents had talked with them when they themselves were young. Some of the items were taken from Hockenberry-Eaton and colleagues' (1996) and Li's (1992) research, and other items were developed by the researchers. A total Knowledge score was calculated by summing correct answers on the 15 multiple choice items (with 1 point scored for each correct answer). The total scores could range from 0 to 15. For this scale, Cronbach's Alpha was 0.67.

Parental attitudes toward sexuality and sexuality education. Parental attitudes toward sexuality and sexuality education were measured by 22 items using a 5-point Likert-scale ranging from (1) strongly disagree to (5) strongly agree, for a series of statements assessing general attitudes toward sexuality, discussion of sexuality, and where children should learn about sexuality (home or school). Some of the items were obtained from Bloch's (1979) research, and other items were developed by the researchers. A total Attitudes score was calculated by summing scores on the 22 items (with a range of possible scores of 22-110 points). (Note: Some items were recoded and reversed in direction for the analysis, so that higher numbers indicated more positive attitudes). The scale contained 5 subscales: Attitudes toward Sexuality (6 items); Sexuality Education in General (6 items); Sexuality Education in the Home (3 items); Sexuality Education in School (5 items); and Sexuality in the Media (2 items). The Cronbach's Alpha was 0.70 for total Attitudes scale.

Analysis

The research questions were addressed through regression analysis. For the analysis of parental knowledge (subscales and total knowledge scores), parent gender (2 categories) and parental education (years of schooling) were the independent variables. For the analysis of parental attitudes (subscales and total attitudes scores), parent gender (2 categories), parental education (years of schooling), child gender (2 categories), and child age (age in years) were the independent variables. For the analysis of parental practices (total score), parent gender (2 categories), parental education (years of schooling), child gender (2 categories), and child age (age in years) were the independent variables. Finally, for the analysis of how parental knowledge and attitudes predict parental practices, a simple regression was performed with practices (total score) as the dependent variable and attitudes (total score) and knowledge (total score) as the independent variables.

Results

Parental Practices about Sexuality Education

Talking with Children about Sexuality. The findings suggested that many Chinese parents did not talk with their children about sexuality. Only 10.8% of parents with sons reported they had taught them how to clean their penis, and only 19.7% of parents with daughters taught them how to handle menstruation before their menarche. Just 15.4% of parents said that they had discussed sexuality with their children. Most parents (92.4%) said that they never talked during the last year with their children about what is right and wrong in sexual behavior.

In the regression analysis of parental practices, the overall model was significant, $F_{(4, 818)} = 6.54$; $p < .001$, accounting for 3.1% of the variance. Parent gender ($t = 4.14$; $p < .001$) was a significant predictor of practice about sexuality education for children; but parent education ($t = 1.71$; $p = .09$), child gender ($t = 1.6$; $p = .11$), and child age ($t = .91$; $p = .37$) were not significant. T-tests showed that more mothers (15.9%; $SD = .41$) than fathers (7.8%; $SD = .36$) taught their sons how to clean their penis ($t = 2.94$; $p < .01$). More mothers (23.5%; $SD = .48$) than fathers (13.5%; $SD = .51$) taught their daughters how to handle menstruation before menarche ($t = 3.29$; $p < .01$). More mothers (19.5%; $SD = .40$) than fathers (9.8%; $SD = .30$) educated their children about sexuality ($t = 3.69$; $p < .001$). More mothers (10.8%; $SD = .43$) than fathers (3.1%; $SD = .18$) talked with their children about what is right and wrong in sexual behavior during the past year ($t = 4.19$; $p < .001$).

In the regression analysis of how parental knowledge and attitudes predict parental practices, the overall model was significant, $F_{(2, 806)} = 24.36$; $p < .001$, accounting for 5.7% of the variance. Both parental knowledge ($t = 2.44$; $p < .05$) and parental attitudes ($t = 5.32$; $p < .001$) were significant predictors of practices about sexuality education for children.

Answering Children's Questions about Sexuality. According to the parental reports, more than half of the participants' children (59.8%) had asked them, "Where did I come from?" There were 455 participants who provided the age of their child when asking, and the results were as follows: 2-3 years old, 22.2%; 4-6 years old, 40.4%; 7-9 years old, 17.4%; 10-12 years old, 16.0%; 13-18 years old, 3.9%. The mean age reported was 6.2 years old. Looking at what parents told their children; it seems that most provided evasive or insufficient answers, with no differences between mothers and fathers. Among 472 participants, 73% gave insufficient answers. For example, 35.3% gave their children incorrect information (e.g. "I found you outside in the trash bin," "You came from a stone," or "I got you at the hospital"); 33.5% told their children that they were too young to understand the question; and 4.4% gave no answer. Even though only about 27% of participants gave their children correct answers, nevertheless they had done better in answering this question than their own parents had. Only 4.3% of participants reported that they had been given correct information when they had asked their parents where they had come from.

Using Correct Sexual Words. When participants were asked, "What words (*vagina*, *penis*, *clitoris*, *erection*, *vaginal lubrication*, *orgasm*, and *ejaculation*) did you use when you talked with your child about sexuality?" only 113 participants provided responses to these questions. About 42.5% said they never used these words; 20.0% used two of the words; 10.8% three of the words; and 1.5% five of the words. Among the 65 participants who used one of more of these words, the rate of using each word was 58.5% for *vagina*; 33.9% for *penis*; 23.0% for *ejaculation*; 12.3% for *vaginal lubrication*; 12.3% for *erection*; 6.2% for *clitoris*; and 6.2% for *orgasm*. No differences between mothers and fathers were found.

Parents' Difficulties and Needs in Talking with Children about Sexuality. Why were parents so reluctant to talk with children about sexuality? Asked about what made sexuality education difficult for them, most parents (70.9%) reported that they did not know how to talk with their children about sex (rather than choosing the alternatives, that it was too embarrassing, or that they lacked sexual knowledge). Asked what they most needed, the vast majority (86.0%) selected learning how to talk with children about sexuality (rather than getting more sex information or acquiring new attitudes). There were differences between mothers and fathers. More mothers (78.6%; $SD = .73$) than fathers (60.1%; $SD = .90$) thought they didn't know how to talk with children about sexuality ($t = 5.82$; $p < .001$). More mothers (86.0%; $SD = .54$) than fathers (74.3%; $SD = .65$) wanted to learn how to talk about sexuality with their children ($t = 4.02$; $p < .001$).

Parent-Child Relationship. When parents were asked about their parenting style, 66.0% reported that they "give children love and guidelines; and children also have the right to say something" (authoritative parenting). Some parents (24.6%) reported that they "give children love, but make few demands" (permissive parenting). Only 8.6% of parents thought they "expect strict obedience, and rely on power; children have no right to say something" (authoritarian parenting). Almost no parents (0.7%) reported that they "are aloof to children, and make no demands; don't care about what the children may become" (uninvolved parenting). There were no differences between mothers and fathers.

Parents were also asked about their children's feelings of trust. To the question, "Do you think your child trusts you?" 79.1% reported that their children often (47.8%) or always (31.3%) trust them. More mothers (35.4%; $SD = .79$) than fathers (25.6%; $SD = .81$) believed that their children always trust them ($t = 2.59$; $p < .01$).

There was a significant correlation between parental practices about sexuality education and children's trust ($r = .111$; $SD = .81$; $p < .001$). The more parents talked with children about sexuality, the more they answered yes when asked, "Do you think your child trusts you?" However, parental practices did not relate to parenting style as measured by the question about preferred discipline.

Parental Knowledge about Sexuality

Knowledge about Reproduction. Participants provided correct definitions for the term *ejaculation* at the rate of 93.6%, *wet dreams* 85.9%, *ovulation* 84.8%, *menstruation* 78.5%, *hormones* 75.5%, and *semen* 64.1%. However, only 23.5% of participants knew that fertilization occurs in fallopian tube. The average rate of correct answers across all these terms was 64.8%.

In the regression analysis, the overall model was significant, $F_{(2, 799)} = 21.97$; $p < .001$, accounting for 5.2% of the variance. Parental education was a significant predictor of knowledge about reproduction ($t = 6.62$; $p < .001$); but parent gender was not significant ($t = .07$; $p = .94$).

Knowledge about HIV/AIDS. Most participants (89.0%) knew that a pregnant woman carrying HIV can pass it to her baby, and the majority (69.0%) also knew that looking at a person is not enough to tell if that person is HIV infected. However, 54.2% of participants did not know AIDS is caused by virus. The average correct rate for these items was 66.4%.

In the regression analysis, the overall model was significant, $F_{(2, 795)} = 9.14$; $p < .001$, accounting for 2.2% of the variance. Parental education was a significant predictor of knowledge about HIV/AIDS ($t = 4.02$; $p < .001$); but parent gender was not significant ($t = 1.74$; $p = .08$).

Knowledge about Sexual Behavior. Most participants (79.5%) knew the correct way to clean the penis. Asked about the common Chinese saying, “One drop of semen is as precious as ten drops of blood” (implying that too much sex is debilitating for the male), 64.4% of fathers and 51.1% of mothers thought it was not correct. Some fathers (34.2%) and mothers (21.2%) looked on masturbation as normal behavior, but only 12.1% of fathers and 7.7% of mothers thought homosexual behavior was normal. Most of them (72.2%) thought that homosexuality was abnormal; while some of them (14.5%) thought it was even criminal. Most participants believed that the condom is the best method for birth control among the three choices (condom, rhythm, and withdrawal). The average correct rate for these items was 48.7%.

In the regression analysis, the overall model was significant, $F_{(2, 800)} = 28.95$; $p < .001$, accounting for 6.7% of the variance. Both parental education ($t = 4.40$; $p < .001$) and parent gender ($t = 5.85$; $p < .001$) were significant predictors of knowledge about sexual behavior. T-tests showed that more fathers (64.4%) than mothers (51.1%) thought the saying, “One drop of semen is as precious as ten drops of blood” is not correct ($t = 3.71$; $p < .001$). More fathers (34.2%) than mothers (21.1%) thought masturbation is normal behavior ($t = 4.08$; $p < .001$). More mothers (17.9%) than fathers (9.7%) thought homosexual behavior is a criminal behavior ($t = 2.11$; $p < .05$).

Total Knowledge. The mean of total knowledge score for fathers was 9.51 ($SD = 2.81$), for mothers was 8.97 ($SD = 2.82$). In the regression analysis, the overall model was significant, $F_{(2, 806)} = 31.60$; $p < .001$, accounting for 7.3% of the variance. Both parental education ($t = 7.47$; $p < .001$) and parent gender ($t = 2.16$; $p < .001$) were significant predictors of knowledge about sexuality. Fathers had more sexual knowledge than did mothers.

The Sources of Parental Knowledge about Sexuality. Parents’ own knowledge about sexuality came from magazines (43.5%), newspapers (18.9%), friends (11.9%), schools (8.9%), radio (4.7%), television (3.9%), parents (2.6%), books (2.1%), colleagues (1.6%), self (0.8%), spouse (0.7%), and movies (0.4%). Thus, media were the main source of sexual knowledge, and schools and their own parents were not seen as an important source of information by the respondents.

Participants’ Sexuality Education from Their Own Parents. Among 706 participants, 30.7% of them said that they had long ago once asked their parents, “Where did I come from?” Most of them (68.4%) had asked their parents this question prior to age 10. Mean of the age was 7.50. Fathers (mean = 6.61; $SD = 2.52$) had asked this question earlier than had mothers (mean = 8.38; $SD = 3.63$), and a significant difference existed between fathers and mothers ($t = 3.41$; $p < .01$).

Appropriate Age to Begin Sexuality Education for Children from Parents. Almost half of the parents (47.3%) believed that the appropriate age to begin sexuality education for children from parents should be 13-15 years old. Some of them (23.9%) thought 16-18 should be the appropriate age. (Note that this is almost 10 years beyond the point that our participants had asked their parents “Where did I come

from?”). Just 2.2% of parents thought the appropriate age should be 7-9 years old. Only 0.6% of parents said the appropriate age should be 1-3 years old.

Parental Attitudes toward Sexuality and Sexuality Education

Attitudes toward Sexuality. Many participants (44.4%) thought sexuality to be an embarrassing topic, but most (60.3%) also believed that sex is a basic appetite like hunger. The majority (67.2%) had negative attitudes toward masturbation but positive attitudes toward old people (55.5%) and handicapped people (86.4%) engaging in sex.

In the regression analysis, the overall model was significant, $F_{(4, 828)} = 11.61; p < .001$, accounting for 5.3% of the variance. Parent gender ($t = 4.22; p < .001$) and parental education ($t = 4.68; p < .001$) were significant predictors of attitude toward sexuality; child gender ($t = .57; p = .57$) and child age ($t = .26; p = .79$) were not significant. T-tests showed that more fathers (69.0%; mean = 3.56; $SD = .97$) than mothers (54.3%; mean = 3.25; $SD = 1.02$) agreed that sex is a basic appetite like hunger ($t = 4.33; p < .001$). More mothers (73.4%; mean = 2.17; $SD = 1.03$) than fathers (58.4%; mean = 2.54; $SD = 1.14$) had negative attitudes toward masturbation ($t = 4.85; p < .001$). More fathers (63.9%; mean = 3.62; $SD = .78$) than mothers (49.5%; mean = 3.43; $SD = .72$) believed that old people should have sex ($t = 3.52; p < .001$).

Attitudes toward Sexuality Education in General. Most participants (66.8%) thought sexuality education is too conservative in modern China. The majority (72.2%) agreed that children do need sexuality education as they are growing up, and disagreed (55.3%) with the idea that sexuality education should be delivered only when children are grown up and ready for marriage. Most parents (87.9%) believed that more sexuality education would help teach children to be more responsible in their sexual behavior, and most (72.8%) did not think sexuality education would result in more sexual activity for children. However, most (72.6%) parents agreed that the best way to reduce the rate of teenager pregnancy is to tell the teenager, “Don’t have sex before marriage.”

In the regression analysis, the overall model was significant, $F_{(4, 825)} = 2.69; p < .05$, accounting for 1.3% of the variance. Parental education ($t = 2.26; p < .05$) and child age ($t = -2.07; p < .05$) were significant predictors of attitude toward sexuality education in general; but parent gender ($t = .04; p = .97$) and child gender ($t = .40; p = .69$) were not significant.

Attitudes toward Sexuality Education in the Family. Most participants (80.3%) agreed that parents should be the first teachers about sexuality education for their children. The majority (73.8%) thought parents should be more responsible than schools in providing sexuality education for their children. More than half of them (55.3%) thought parents should tell children about intercourse and contraception only when children are ready for marriage.

In the regression analysis, the overall model was significant, $F_{(4, 827)} = 4.21; p < .005$, accounting for 2.0% of the variance. Parental education ($t = 3.54; p < .001$) was a significant predictor of attitude toward sexuality education in the family; but parent gender ($t = 1.59; p = .11$), child gender ($t = .30; p = .76$), and child age ($t = -.96; p = .34$) were not significant.

Attitudes toward Sexuality Education in School. The majority of the participants (62.7%) thought that teaching information about sexuality in school is as important as teaching reading, writing, and arithmetic. Most (86.2%) believed that if children were given a good sexuality education in school, they would make wiser decisions in sexual behaviors when they grow up, and 85.6% of them agreed that children should learn about how to prevent AIDS in school. However, only 37.5% of parents agreed that children should get information about contraception in school, and only 37.6% agreed that boys and girls should be combined together in classes during sex education. Fathers and mothers had different attitudes toward some items.

In the regression analysis, the overall model was significant, $F_{(4, 827)} = 6.62; p < .001$, accounting for 3.1% of the variance. Parent gender ($t = 3.11; p < .005$) and child gender ($t = 2.37; p < .05$) were significant predictors of attitude toward sexuality education in school; but parental education ($t = .93; p = .36$) and child age ($t = 1.83; p = .07$) were not significant. T-tests showed that more mothers (47.6%; mean = 2.83; $SD = .99$) than fathers (30.5%; mean = 3.21, $SD = .96$) disagreed that boys and girls should be

together in classes where the knowledge about sexuality is taught. More mothers (45.0%; mean = 2.82; $SD = 1.00$) than fathers (30.3%; mean = 3.17; $SD = .98$) disagreed that children should learn knowledge about contraception in school. The findings showed fathers' attitudes were more positive than mothers' toward contraception education for children in school ($t = 4.97$; $p < .001$) and boys and girls being together in sex education classes ($t = 5.45$; $p < .001$). Parents with sons had more positive attitude toward sexuality education in school than did parents with daughters.

Attitudes toward Sexuality in the Media. The majority of the parents (74.2%) agreed that there is too much sex on television and movies. Only 21.7% agreed that parents should not allow children to access the internet at home because of how easy it is for children to find sexual material on the worldwide web.

In the regression analysis, the overall model was significant, $F_{(4, 822)} = 5.11$; $p < .001$, accounting for 2.4% of the variance. Parent gender ($t = 3.35$; $p < .005$) was a significant predictor of attitude toward sexual media; but parental education ($t = 1.52$; $p = .13$), child gender ($t = .55$; $p = .58$), and child age ($t = 1.79$; $p = .07$) were not significant. T-tests showed that more mothers (79.5%; mean = 2.14; $SD = .85$) than fathers (67.1%; mean = 2.42; $SD = .98$) thought there is too much sex on television and in movies ($t = 4.32$; $p < .001$).

Total Attitudes. The mean of attitudes was 76.36 for fathers ($SD = 8.79$), 74.10 for mothers ($SD = 8.73$). In the regression analysis, the overall model was significant, $F_{(4, 828)} = 6.86$; $p < .001$, accounting for 3.2% of the variance. Parent gender ($t = 2.61$; $p < .005$) and parental education ($t = 3.78$; $p < .001$) were significant predictors of total attitudes; but child gender ($t = 1.25$; $p = .21$) and child age ($t = .18$; $p = .86$) were not significant. Fathers had more positive attitudes than did mothers toward sexuality and sexuality education.

Discussion

This research has examined parental knowledge, attitudes, and practices toward sexuality and sexuality education for adolescents in contemporary China and considered what factors predict parents' practices. The findings must be interpreted with caution because the sample was largely middle-class, urban, and well-educated, and based on parental reports.

Parental Practices

In this study, most Chinese parents agreed that parents should be the first teachers about sexuality education for children. However, only about 20% or less told boys how to clean their penis, told girls how to handle menstruation before their menarche, or talked about what is right and what is wrong in sexual behavior during the last year. We are left to wonder what the other parents did tell their children, and why they could not translate their desire to talk openly with their children into action.

The findings of this study reveal that even though some parents talked with their children about sexuality, they seldom used appropriate terms. The language of sex is a communication barrier frequently experienced in American families, too (Fitz-Gerald & Fitz-Gerald, 1987). Compared with Americans, however, Chinese parents used appropriate terminology less often. Lining up our results alongside those of Allgeier and Allgeier (2000), we find explicit usage of the word *clitoris* in 13% of American mothers, 3.5% of American fathers, 3.5% of Chinese mothers, 3.2% of Chinese fathers; for the word *vagina* in 54.0% of American mothers, 14.0% of American fathers, 37.6% of Chinese mothers, 16.1% of Chinese fathers; for the word, *penis* in 57.0% of American mothers, 23.0% of American fathers, 14.1% of Chinese mothers, and 29.0% of Chinese fathers.

The regression results showed that both parental knowledge and parental attitudes were significant predictors of education practices. Parents who were more knowledgeable and who had more positive attitudes also talked more with their children about sexuality. In addition, the second analysis showed that parent gender was a significant predictor of sexuality education practices. Mothers talked more with children about sexuality than did fathers. These findings accord with other literature, such as Nolin and

Petersen's (1992) conclusion that fathers play a less significant role as sexuality educator than do mothers and that gender differences in parent-child communication about sexuality may result from a sexual double standard.

The study suggests that Chinese parents want and need help and support in educating their children about sexuality. Most (70.9%) of the parents said that the most difficult thing for them in educating their child about sexuality was finding how to talk, and only 18.6% of them said embarrassment was the main barrier. Of course, such feelings of embarrassment are normal and natural between the generations, but it may be helpful to admit, accept, and express such feelings (Fitz-Gerald & Fitz-Gerald, 1987). The vast majority (98.4%) of Chinese parents said that they needed help in providing sexuality education to their children. The same is true in the United States. About 98% of parents reported they needed help (Alan Guttmacher Institute, 1986).

As was revealed by the findings, parent educational level was not a significant determinant for the parental practices about sexuality education. This finding contradicts the findings of previous research (Liu, et al., 1997), which showed that parents with higher educational levels were more likely to answer their children's questions about sexuality. However, the findings are consistent with previous studies conducted by Lundstrum (1996), which suggested that parental educational level was not a significant factor in a parent's ability to communicate sexuality information with children.

Parental Knowledge

The majority of Chinese parents were found to have reasonably accurate knowledge about sexuality. They were able to adequately define the six sexual development terms (*ovulation*, *wet dreams*, *menstruation*, *ejaculation*, *semen*, and *hormones*). Comparing them to American parents surveyed by Hockenberry-Eaton and colleagues (1996), Chinese parents had higher percentages of correct answers on some terms than did American mothers. The percentage of correct responses for *hormones* was 75.5% for Chinese parents, 9.6% for American mothers; *wet dreams* 85.9% for Chinese parents, 23.3% for American mothers; *ovulation* 84.8% for Chinese parents, 47.9% for American mothers; *ejaculation* 93.6% for Chinese parents, 57.5% for American mothers; *menstruation* 78.5% for Chinese parents, 87.8% for American mothers; and *semen* 64.1% for Chinese parents, 64.6% for American mothers.

The results of this study also indicate that Chinese parents are somewhat knowledgeable about HIV/AIDS. The level of parents' knowledge about HIV/AIDS in this study was good compared to Chinese professionals (Li, 1992). For the question, "A pregnant woman who has human immune deficiency virus can give the virus to her baby," the percentage of correct answers was 97.0% for professionals, 89.0% for parents. For the question, "Looking at a person is enough to tell if that person is HIV infected," the percentage of correct was 71.6% for professionals, 69.0% for parents. During the last decade, the Chinese government has directed more attention toward preventing HIV transmission in China. More and more people appear to have some information about HIV/AIDS.

The findings of this study reveal that Chinese parents do not accept masturbation and homosexual behavior as normal. An ancient Chinese saying is, "One drop of semen is as precious as ten drops of blood." In this study, only 26% of parents thought that masturbation is a normal behavior, but this percentage was higher than what Liu and colleagues (1997) found for urban participants (13.1%). Chinese parents' level of acceptance for masturbation was much lower than the 60% level reported 15 years ago for American parents (Gagnon, 1985). Furthermore, Chinese society exerts heavy pressure against homosexuality. In this study, 72.2% of participants thought that homosexual behavior is abnormal, and 14.5% even thought it is criminal behavior. Fathers were more likely than mothers to view masturbation and homosexual behavior as normal.

This study showed that Chinese parents were very conservative about the age when parents should start sexuality education for children. The majority of parents reported that their child had asked, "Where do I come from?" before age 6 (the mean of age was 6.2). This finding was consistent with the finding that most American children are interested in learning about sexuality and reproduction by age 5 (Segal & Segal, 1993). However, in spite of the children's early questioning, almost half the parents believed that

13-15 years old was the appropriate age to begin sexuality education, and many even thought 16-18 was appropriate. Responding to how old they themselves had been when they had asked their own parents, "Where did I come from," parents reported they had been a mean of 7.5 years old. Compared to 6.2 (the mean of age when participants' children asked this question) and 7.5 (the mean of age when participants asked their own parents this question), either 13-15 years old or 16-18 years old is too late to begin sexuality education for children. On the basis of our findings, we would suggest that Chinese parents could start earlier to educate their children about sexuality.

About the sources of sexual information, 71% of Chinese parents reported media were their own main source, including magazines, newspapers, radio, and television. Friends were the second resources (11.9%). School (8.9%) and parents (2.6%) did not play predominant roles in providing sexual information. These findings contrast with those of Borzekowski and colleagues (2001) of United States 10-grade adolescents (N = 412) from East Ramapo, New York, where 63.1% reported that they had obtained information related to sexual health from their friends, 31.6% from siblings and cousins, 31.3% from the internet, 31.3% from magazines, 29.6% from parents, and 28.9% from health care provider or clinic. It is very important for parents to initiate conversations and share timely, accurate information about sexuality with their children.

Putting all of the factors together in a regression analysis, we found that parental education was a significant predictor of knowledge about reproduction, HIV/AIDS, sexual behavior, and total knowledge. The higher the educational level of parents, the more knowledge about sexuality they displayed. Parent gender was a significant predictor of knowledge about sexual behavior as well as about total sexual knowledge. Fathers had more knowledge about masturbation, homosexual behavior, and contraception than did mothers. However, there were no significant difference between fathers and mothers regarding the knowledge about reproduction and HIV/AIDS, and no child gender or child age effects.

Parental Attitudes

The majority of Chinese parents were found to have positive attitudes toward sexuality and sexuality education. Most Chinese parents agreed that parents should be the first teachers about sexuality education, a finding consistent with Davis, Koblinsky, and Sugawara's (1986) study. Compared to Bloch's (1979) study, Chinese mothers (83.1%) were similar to American mothers (83.9%), in agreeing that parents should be the ones primarily responsible for sexuality education.

In this study, most Chinese parents (86.2%) had positive attitudes toward sexuality education in school, which was consistent with Wyness' (1992) study in Britain and the American Gallup poll in 1991 (87%). Most Chinese parents (85.6%) agreed that children should learn about how to prevent AIDS in school, a high percentage but less than the findings of the Kaiser Family Foundation's (1997) survey, where 97% of American parents were supportive of providing AIDS information in high schools.

The regression analysis showed that parental education was a significant predictor of attitude toward sexuality, sexuality education in general, sexuality education in the family, and total sexual attitudes. The higher the educational level of parents, the more positive were their attitudes about sexuality, sexuality education in general, and sexuality education in the family. Parent gender (fathers higher) was a significant predictor of attitudes toward sexuality, sexuality education in school, sexuality in the media, and total attitudes. Child gender and child age were not significant predictors of parental attitudes.

Limitations and implications

The study has many limitations. The selection of the sample restricts the generalizability of the findings to Chinese parents in large urban areas. Since the sampling procedure was not completely random in its nature, the findings should be interpreted with caution (but note that the return rate of questionnaires was extremely high). Moreover, because information was collected from parents only, it does not provide the child or adolescent perspective on sexuality education. Further research that includes both parents and children should be conducted to more fully determine whether parents and children agree on how much

sexuality education is provided in the family context. Finally, limitations arise from the research methodology. In-depth interviews analyzed through qualitative techniques could be helpful in adding to our findings and providing insight into why few Chinese parents take an active role in educating their children about sexuality. We found that mothers (particularly mothers of girls) were more likely to talk with children about sexuality than fathers, and additional research could explore what particular strategies and incentives would assist fathers (especially parents of sons) to become more comfortable in sexuality education, should they themselves desire to move in that direction.

In spite of these limitations, the findings from this study have significant implications for practical application. In China, sexuality education is a new and big challenge, and some parents seem to want and need more outside help and support in facing this challenge. Chinese educators have recognized the need for more parent education programs to help parents support their children moving out into a more complex modern society (Cheung, 1989; Cheung & Yau, 1996; Zheng, 1998; Gao, et al., 2001; Xia, et al., in press). A sense of urgency arises from public health issues such as the HIV/AIDS epidemic. In August 2001, the Chinese government belatedly recognized that the country faces a serious AIDS crisis, especially in rural areas where poor farmers flocked in the 1990's to donate blood at collection stations whose unsterile practices introduced HIV into their bloodstreams (Rosenthal, 2002). Government officials estimate that about 600,000 people are currently infected with HIV (Bates, et al., 2002). This number stands in stark contrast with the official figure for 2001, suggesting that China had only 22,517 people infected with HIV. Many experts working in China believe that even the figure of 600,000 is a serious underestimate and the true number of people living with HIV is closer to 1.5 million (Bates, et al., 2002).

We believe that there is an emergent need in China to develop some new sources of information and forms of sexuality education to help the adult generation gain the knowledge and skills they may need to communicate more effectively about sexuality with the children. Chinese parents currently receive little systematic education about sexuality. They have reported that they often have difficulty talking with their children about sexual topics. The majority of parents in our study reported that they need help to learn how to talk with their children about sexuality. Therefore, ways should be found to assist them. Parents in North American society have been shown to play an important role in influencing their adolescent children's sexual behaviors (Sieving et al., 2002), and the same is likely to be true in China. In the USA, even though most parents cannot control whether their children have sex, use contraception, or become pregnant, they can make a difference through providing accurate knowledge about sexuality, sharing their values and beliefs about sexuality, and building good relationships with children. Kirby (2001a) reported that United States research confirms the importance of parent-child communication about sexuality in reducing risky sexual behavior among teens. Miller (1998) likewise found in his review, commissioned by the National Campaign to Prevent Teen Pregnancy, that parent-child connectedness (support, closeness, warmth) and parental values disapproving of teen sex are associated with an older age of first intercourse. Jaccard and Dittus (2000) likewise found that teens whose parents recommended contraception were more likely to use it. Therefore, parental guidance is important even if it parents are only one source of children's sexual information.

Chinese parents have asked for better knowledge about how to talk about sexuality with their children. Where are they to get this knowledge and skills? There are few books available in China to help parents and children in answering their questions, in contrast to many other countries. Chinese publishers could play a useful role in organizing publication of new books and translation of good books from the outside into Chinese. Furthermore, parent education programs based in schools could be useful, as well as more school programs for children and adolescents themselves. Studies of programs to reduce teen pregnancy and HIV infection in the United States have found that they can take several directions and choose to highlight any or all of messages about delaying the onset of sex, reducing the frequency of sex, reducing the number of sexual partners, understanding sexually transmitted diseases and what behaviors increase their likelihood, and/or increasing the use of condoms and other contraceptives to decrease unprotected sex (Kirby, 2001b). Today, we are facing a world which is experiencing a new sexual revolution and a public health imperative (Coleman, 2002). We have a rare opportunity to develop global strategies to promote sexual health for the new century, and China needs to be a part of those efforts.

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