



An Overview of the Sexual Behaviour of Adolescents and Young People in Contemporary China

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REVIEW

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Abstract

Traditional Chinese sexual values and morality are mainly based on the Confucian and Taoist traditions, which overwhelmingly stress the reproductive function of sex and its role in cementing family and societal structures. In recent years, attitudes towards sex, love and marriage have changed dramatically since China's open-door policy and the economic reforms of the 1980s. Sexual attitudes become more open, while the negative consequences of early sexual initiation increasingly become issues of social and health concern. In this paper, the author provides an overview of the current literature relating to the sexual behaviour of adolescents and young people in contemporary China and suggests ways forward to positively promote the sexual health of its population. The results show that teenage sex and premarital sex are no longer disapproved of by the young. Some young people lost their virginity while still at high school and the rate of sexual initiation was generally higher among those who had left school and those at university. The take up of contraceptives was found to be low and multiple sexual partners, casual sex, pregnancies, sexually transmitted infections and sexual abuse were also reported. These rapid changes in sexual values and behaviour call for the introduction of comprehensive sex education programmes and their associated services which are inclusive, accessible and available to all adolescents and unmarried young people in China.

Key Words

Adolescents; China; sexual values; sexual behaviour; young people

Introduction

Situated in East Asia, with an area of 9.6 million square kilometres and a population of 1.3 billion people, China is the third largest and the most populated country in the world.¹ It contains 56 ethnic groups, with the Han people making up the largest group, accounting for over 90% of the total population.² The Chinese mainland is administratively divided into 22 provinces, five autonomous regions and four municipalities (Beijing, Tianjin, Shanghai and Chongqing). The provinces are top-level administrative divisions. Autonomous regions are similar to provinces, but have a higher proportion of minority ethnic groups and more legislative rights. Municipalities have the same rights as provinces and are directly under the administration of the central government.

Since China's open-door policy and the economic reforms of the 1980s, social mores relating to sex, love and marriage have changed dramatically under the influences of rapid modernisation, economic development and exposure to western culture. In the last decade, increasing numbers of scholars have begun to study sex-related topics among young people living in the country and some changes have been reported. In this paper, the author aims to provide an overview of the current literature relating to the sexual attitudes and behaviour of adolescents and young people in contemporary China, and suggest ways forward to positively promote the sexual health of its population.

Methods

A literature search was undertaken for the period between 2000 and 2010, using both Chinese and English language databases (China National Knowledge Infrastructure and Wanfang database; Medline, CINAHL, PsycINFO and ScienceDirect, respectively) and the keywords 'China', 'Chinese', 'sex', 'sexual attitudes', 'sexual value' and 'sexual behaviour' in combination. The studies included in this review were those conducted with adolescents and young people aged 13-24 years living in mainland China. The review excluded studies carried out with young people who worked in the sex industry and those who were homosexual, due to the complexity of these areas.

The findings were organised into themes using a narrative approach. Three key themes emerged: attitudes to sex,



sexual behaviour, and the use of contraception and sexual health of adolescents and young people.

Attitudes to sex of adolescents and young people

Traditional Chinese sexual values and morality are mainly based on the Confucian and Taoist traditions, which overwhelmingly stress the reproductive function of sex and its role in cementing family and societal structures.³ Thus, sexual activity is approved of solely within marriage for reproductive purposes, whereas other forms of sexual relationships, such as premarital sex, extramarital sex, homosexuality and masturbation, are culturally unacceptable. In recent years, dramatic changes have taken place in relation to social tolerance towards sex.

Sexual values were broadly examined, mainly focusing on attitudes towards premarital sex in high school pupils and university students. Among junior high school respondents in Wuhan, the capital city of Hubei province in central China, 16% thought sex acceptable for consenting couples, but 38% considered it immoral.⁴ Similarly, in Shenzhen, a southern coastal city of Guangdong province, 18% of those responding approved of premarital or extramarital sexual intercourse.⁵

Respondents attending senior high schools tended to hold more permissive attitudes to sex. For example, in Shaanxi province, 34% of those responding accepted or approved of premarital sex,⁶ while the rate was as high as 80% in Shanghai municipality.⁷ Among vocational school students in Chengdu, the capital city of Sichuan province, 70% held a neutral attitude,⁸ while in Beijing municipality, 76% approved of young people having sex prior to marriage and 43% also believed that premarital sexual intercourse could strengthen a relationship.⁹ With regard to attitudes to uncommitted sex, in Guangdong province, 14% of junior and 27% of senior high school respondents accepted or approved of one-night stands,¹⁰ and in Chongqing municipality, the reported rate was 17% among high school respondents.¹¹

Consistent findings were revealed in a study of young people (14-24 years) who had left school in Shanghai, in which 60% believed that it was acceptable for people of their age to engage in sexual intercourse if they wanted to or were in love.¹² In studies of undergraduate students, 44% considered premarital sexual activity acceptable,¹³ while about half of respondents in Beijing held a neutral attitude.¹⁴ In a study of female undergraduates in Wuhan, 60% agreed with premarital sex, while 12% went so far as to approve of multiple sexual partners.¹⁵ Similarly, only 12% of males and 31% of females at universities in Ningbo city disapproved of premarital sex, but 62% of males and 86% of females disapproved of pupils having sex while still at high school.¹⁶

Attitudes to teenage dating were also examined. In studies of junior high school pupils in Shenzhen, 24% thought it acceptable for young people of their age to go on a date⁵ and 59% wanted to have a date.¹⁷ Again, among high school pupils in Chongqing, half of those responding approved of teenage dating,¹¹ while the percentage of respondents who had ever

had a date varied, from 14% in Wuhan to 64% in Guangzhou, the capital city of Guangdong province.¹⁸⁻¹⁹

Sexual behaviour of adolescents and young people

Sexual behaviour was also examined, mainly focusing on first coitus. Among junior high school respondents, the percentage of those who had already lost their virginity was 1% in two studies carried out in the northern cities of Dalian and Beijing.²⁰⁻²¹ Slightly higher rates were found in recent studies. These were 2% in Shenzhen and Wuhan cities^{4,17} and 4% in rural areas of Beijing.²² Among senior high school respondents, the reported rate was around 5% in most studies.²³⁻²⁶ However, considerably higher rates were reported in some other studies. For example, in a study of high school pupils in Guangzhou, 17% were sexually active, while more males than females had lost their virginity (24% vs. 12%, $P < 0.01$).²⁷ These findings were also found in studies carried out in Guangdong province, in which 18% of high school respondents had had sex (26% of males vs. 10% of females, $P < 0.05$),¹⁰ and in Chengdu, in which 14% of vocational school respondents had initiated sexual intercourse (23% of males vs. 10% of females, $P = 0.000$).⁸

In Shanghai, sexual behaviour was examined among young people who had already left school (14-24 years).¹² It was found that 18% of respondents were sexually active and the mean age for first coitus was about 20 years. Generally, sexual intercourse was more common in university students than in high school pupils. For example, in a large survey of 22,493 undergraduates in Ningbo, 18% of males and 9% of females were sexually active, with a mean age at first sexual intercourse of 19.4 for males and 19.7 for females ($t = -3.37$, $p = 0.001$).¹⁶ Yan et al. (2009) supported these findings, reporting that, of 4,769 female undergraduates in Wuhan, 18% had lost their virginity.¹⁵ A lower rate was found in a study of university students living in the Xingjiang autonomous region, where only 6% reported having had sex.²⁸ However, 14% of respondents there did not answer this question. Such non responses were also experienced by others. For example, only 10 out of 294 males and 3 out of 229 females in a study of university students in Beijing gave their age at first sexual intercourse.¹⁴ Among junior high school pupils, Gong et al. (2007) also found that 55% of males and 74% of females refused to answer whether they had had sex.¹⁷ This may be due to recall difficulties and the desire to retain privacy, but it could also have been caused by young people's reluctance to reveal any sexual behaviour that does not match traditional Chinese values. Such methodological issues challenge the reliability of research in this area and may suggest that the actual level of sexual activity among young people in China is somewhat either higher or lower.

Multiple sexual partners have on occasions been reported. Among high school pupils in Guangzhou, Zhu et al. (2009) found that 60% of those sexually active had had more than one sexual partners,¹⁹ while Liang and Jiang



(2006) found this to be true of 3% of all respondents in their study.²⁹ In a study of female university students in Wuhan, the prevalence was 29% among those who had lost their virginity.¹⁵ These findings were supported by Ma et al. (2009), who found that respondents who were sexually active prior to attending university were more likely than those who lost their virginity at university to have engaged in casual sex (26% vs. 8%) and have had multiple sexual partners (40% vs. 11%).³⁰ Similarly, in a study of unmarried young women seeking abortions (≤ 24 years), 43% had had multiple sexual partners.³¹

There have been some reports of sexual abuse. Studies showed its prevalence at 1% of junior high school pupils in Guangzhou and 2% of senior high school and vocational school students in Guangdong province.^{19,32} In the three rural areas of Shanxi, Zhejiang and Qinghai provinces, 25% of those sexually active said that their first sexual intercourse was forced.³³ Similarly, in a study of young people who had left school in Shanghai, 5% reported that they had either forced others or had been forced to have sex.¹² The rate was even higher among unmarried young women seeking an abortion, of whom 14% had experienced sexual violence.³¹

Pregnancy and abortion were also reported. In studies of high school pupils in Guangzhou, Liang and Jiang (2006) found that 11 respondents had had an abortion and of the sexually active 13% had become pregnant,²⁹ while the rate of pregnancy was 21% in Zhu et al. (2009).¹⁹ Similarly, in Shanghai, 26% of those who had left school and sexually active had experienced a pregnancy or made others pregnant.¹² Among university samples, the reported rate of pregnancy was around 10%, while a similar rate of those sexually active had had an abortion.^{16,30,34}

The use of contraception and sexual health of adolescents and young people

The reported take up of contraceptives was generally low. Among high school respondents, only 13% of those in Wenzhou city and 35% in Guangdong province had used a condom during their last sexual intercourse,^{10,35} while only half of those in Guangzhou had ever used condoms.^{19,27} In a study of high school pupils in rural areas across three provinces (Shanxi, Zhejiang and Qinghai), only 29% had used contraceptives at least once.³³ Similarly, 69% of respondents in rural areas of Shanghai knew very little about contraception, while 82% had not used any contraceptives when they lost their virginity.³⁶ In another study of post education youth in Shanghai, 21% of those sexually active had always used a contraceptive method, but 29% had never used contraception.¹² Of a university sample in Ningbo, 30% of males and 27% of females had used condoms during their first sexual intercourse, but 35% had never used one.^{16,34}

Similar findings were reported in studies of teenagers and unmarried young women seeking an abortion. Among those seeking the procedure at a hospital in Shanghai, 20% were attending high school, 37% were at vocational or technical school, 11% were at university and 33% were either at work or unemployed.³⁷ In a study of seven hospitals in Shanghai, 44%

of those who responded had never used contraceptives, while 19% had previously had an abortion.³⁸ In Shanghai, it was also found that half of respondents had experienced contraceptive failure, while nearly all had had unprotected sex at least once and 52% had never heard about emergency contraception.³⁹ Similarly, in Beijing, 27% of respondents seeking an abortion had never used contraceptives, 73% of whom stated that their main reason for this choice was a lack of awareness of the risks of getting pregnant.⁴⁰

Like the rest of the world, the prevalence of sexually transmitted infections (STIs) has increased over the last few decades in China.⁴¹⁻⁴² Of a sample of high school pupils in Yunnan province and of four cities (Beijing, Tianjin, Shenzhen and Shenyang) ($n=16,580$), 3% of those sexually active had at some time had a STI.⁴³ Similarly, in a survey of university students in Ningbo, 2% of those sexually active had been diagnosed with a STI, while males who lost their virginity before attending university tended to be more likely to report having had a STI than those who became sexually active at university (7% vs. 1%).¹⁶ The prevalence was as high as 43% among young women seeking abortions across the four cities in southern and northern China.³¹

Ways forward

Comprehensive sex education programmes

Since 1988, education on reproductive and adolescent health has been introduced in high school curricula across China.⁴⁴ Although it is a legal requirement to offer this education to pupils, the policy has not been well implemented.⁴⁵ Sex education is often taught in biology classes, involving reading the reproduction sections of textbooks or through self study without any discussion in class.⁴⁵ The content normally tends to narrowly focus on biological and psychological development, while issues surrounding sexual morality, negotiation skills and the practice of safe sex are rarely addressed at school.

It appears that some schools have never provided sex education. For example, studies of senior high school pupils in Henan province showed that less than half of city respondents and one third of rural respondents said that they had received any sex education at school.²³⁻²⁴ Similar findings were reported in studies carried out in central and northern China.^{6,22,46} Only 23% of high school respondents in Chongqing were satisfied with school sex education,¹¹ while gaps in this provision have been identified in some school-based studies.^{6,11,46} Research has often indicated that high school pupils do not have a strong enough knowledge of reproduction, contraception and STIs.^{4,6,47} It is not surprising that failures in provision have resulted in some university students not even having a basic understanding of sexual issues.⁴⁸⁻⁴⁹

It is widely recognised that sex education should be provided before most young people become sexually



active. In China, it has been compulsory to provide nine-years of basic education to every child since 1986. Therefore, schools are appropriate places in which to target sex education for young people before they leave at age 16. School-based sex education should move beyond providing information about reproduction and STIs, to offer young people opportunities to discuss the wider issues surrounding sexual values, morality and negotiation skills. Information and advice on contraception should also be provided, because although most young people are not sexually active at school age, a small proportion of teenagers are. When they start to have sexual intercourse, such knowledge would help them to make informed choices about safe sex practice and to avoid getting pregnant and/or contracting STIs.

Although sex education at university is also of benefit, it is better to initiate this work much earlier, as by the time young people get to university some of them have already lost their virginity and most young people in China do not go to university. Therefore, strategies also need to be put in place to reach young people who have left school. Some community-based pilot projects in Shanghai targeting 15-24 year olds have shown some positive effects on respondents' sexual knowledge, attitudes and contraceptive use.⁵⁰⁻⁵²

Another neglected group of young people are young migrants. As part of the process of economic development, China has experienced a high rate of internal rural-urban migration, with migrants accounting for 10% of the total population.⁵³ Many migrant workers are young, single and are largely excluded from sexual health education and its associated services. In Shanghai, Zhao et al. (2008) found that migrant youth had a poor understanding of sex, few had ever received any formal sex education at school, and most had not benefited from ongoing sex-related education programmes available in cities due to their long working hours.⁵⁴ Similar findings have also been reported by others.⁵⁵⁻⁵⁶ Workplace-based interventions would be useful to target young migrants and have been shown to be feasible and welcomed by young female migrants in Shanghai.⁵⁶

The role of family and the social environment

However, school and university based sex education alone is not sufficient to mitigate excesses in teenage sexual activity. The family has a profound role to play on how young people shape their sexual values and behaviour, mainly through positive parental interaction and monitoring of children's behaviour.⁵⁷ Young people of course live at home while at school before they ever go to university or migrate to cities to work. Evidence has shown that they often receive very limited input on sex from their parents.^{5, 11, 58-59} This was also reflected in a qualitative study of Chinese families living in Scotland, United Kingdom, where embarrassment, lack of knowledge and skills, limited free time for their children and generational differences in sexual values prevented parents from talking about sex-related topics with their children.⁵⁹⁻⁶¹

Sex is always a sensitive topic in Chinese culture, open discussion being taboo both at home and in public. It is not

realistic to ask parents to teach factual information about reproduction, contraception and STIs at home, because they do not have the specific knowledge and skills required. These areas are best covered at school either by health care professionals or trained teachers, while family dialogue could better focus on sexual morality and values.^{57, 60, 62} The positive impact of such a dialogue on teenage sexual behaviour has been reported elsewhere.⁶³⁻⁶⁴ A good parent-child relationship and an open family environment are also essential to provide a context within which parents can communicate with their children and pass on their values effectively.^{57, 62}

The general social and cultural environment can also be influential, especially in how sexual information is portrayed by the mass media, such as television, films, the Internet, health magazines, leaflets and books. Adults serve as role models to young people, purposively or accidentally, consciously or unconsciously.⁶⁵ Adult behaviour probably has more influence on children than what they say.⁶⁶ Additionally, the wider societal environment also helps young people decide the time when they wish to initiate sexual intercourse, with whom to have sex and how to protect themselves from unsafe sexual practices. The media is seen by most Chinese young people as their main source of information about reproductive issues and STIs^{11, 54, 59} and therefore plays a key role in equipping them with relevant information, when consideration is taken of the lack of information on sexual issues that young people receive at home and at school. More importantly, the media reaches all young people, be they at school, at university, at work or unemployed. This can also be a particularly useful means by which to reach migrant workers who are often not included in other forms of sex education programmes.

The ways in which young people take note of media content are also crucial, while concerns about adverse influences were raised in some US studies.⁶⁷⁻⁷⁰ However, the negative impacts of the media may be mitigated through parental monitoring and dialogue about values between young people and parents or other adults.^{57, 68} The media can also be used by parents to open up a channel for parent-child discussion about sexual issues and values, as reported in a UK study of British-Chinese families.⁶² Thus, young people may form values which are consistent with those held within their families and by society in general.

Accessible sexual health services

In 1979, China implemented the 'one family, one child' policy to control its fast growing population. Reproductive health services were, and still are, provided through health and family-planning systems and mainly target married people for the purpose of family planning.⁷¹ Health care systems consist of hospitals, mother and child health centres, and drug stores, while the family-planning system is made up of family planning service units available from the community to province level. Free



consultations, health checks and contraceptives are available for married couples through these services.

However, adolescents and unmarried people are often excluded from these services. The findings discussed previously have shown an inconsistent use of contraception among adolescents and young people.^{12, 16,19,27,34} This may, in part, be caused by a lack of understanding of contraception or by a lack of awareness of the risks of getting pregnant and contracting STIs.⁴⁰ Even so, barriers to family planning service provision have certainly contributed to the limited take up of contraceptives among young people. In a study of family-planning workers across eight sites in China, respondents were ambivalent about providing services to young people, while only a quarter thought that such services should be extended to high school pupils, although most recognised the efficacy of the sexual health provision for unmarried young people.⁷¹ High school pupils themselves were found to be unsure about their exact needs in relation to advice on contraception although some thought it important.^{46,72} Similar uncertainties were also voiced by Chinese parents in one qualitative study although they did tend to be aware of the changes taking place in the sexual values and behaviour of young people.⁵⁸

As the HIV/AIDS epidemic has worsened worldwide, it has also been on the increase in China.⁴¹⁻⁴² It has been estimated that there were seven million people living with the condition in 2007 and by that time heterosexual transmission had become its dominant route, accounting for 45% of new infections.⁷³ About half of all new HIV infections worldwide occur among people aged 15-24 years, while in China about 60% of HIV carriers are 15-29 year olds.⁷⁴ Considering the prevalence of causal sex among Chinese young people, unprotected sexual intercourse puts them at risk of STIs, including AIDS. If the barriers to accessing sexual health services are not removed, young people will continue to become victims of STIs, pregnancies and abortions.

It can be very challenging to provide sexual and reproductive services to young people in a society where traditionally sexual intercourse is closely associated with marriage and childbearing. Changes in attitudes by policy makers, service providers and parents are crucial. Such services should be complemented by other holistic educational programmes which put emphasis on sexual values, morality and abstinence. When young people do start to have sex, efforts should be made to encourage them to take responsibility for their own sexual and reproductive health.

Conclusion

To some extent, the sexual values and practice of young people have moved away from what have been perceived to be traditional Chinese values. It is challenging to develop programmes that meet the needs of all Chinese young people, due to uneven social-economic development and the massive geographic area to be covered. However, the reported rapid changes in values and behaviour in relation to sex calls for the introduction of comprehensive sex education programmes and their associated sexual and reproductive health services

for young people. It seems prudent that the development of policy should inclusively take account of empirical evidence in this area. The government needs to engage schools, families, communities, health care professionals and young people themselves in developing future programmes and services that are more appropriate, inclusive and accessible to all adolescents and unmarried young people in China.

References

1. China pop. Population of China in 2008. [WWW document] 2009; http://www.chinapop.gov.cn/wxzl/rkgk/200903/t20090309_166730.htm
2. China Ethnic Museum. The 5th census of China: Ethnicity. [WWW document] 2005; http://www.cnmuseum.com/intro/renkou_intro.asp
3. Ruan FF. Sex in China: Studies in sexology in Chinese culture. London: Plenum; 1991.
4. Peng A, Qi X, Huang X, Wu J, Shi S. Study on the sexual knowledge and attitudes of 1341 school girls in Wuhan. Chinese Journal of School Health (Chinese) 2004; 25(5):543-4.
5. Jia X, Lu C, Chen W, Huang W, Yan Y, Dai C. Investigation on KAP for AIDS among junior high school students in Shenzhen. Chinese Journal of Public Health (Chinese) 2007; 23(2):183-5.
6. Wang L, Wang Q, Hou X, Wang M, Wang M. A survey of attitude toward sex, AIDS/sex related knowledge and education among high school students. Chinese Journal of AIDS & STD (Chinese) 2009; 4:385-6,389.
7. Tu X, Zuo X, Lou C, Gao E. Sex related knowledge, attitudes and behaviours among middle school students in Shanghai city. Chinese Journal of Public Health (Chinese) 2007; 2:144-6.
8. Sun L, Cao L, Wang J, Wei L. Analysis of sexual behaviours of occupational school students and its contributing factors. Chinese Journal of School Health (Chinese) 2004; 25(3):302-4.
9. Song S, Zhang Y, Zhou Y, Liu Y, Xu S. Comparison on sex knowledge, attitude, behaviour, and demand between common high school students and occupational high school students. Maternal and Child Health Care of China (Chinese) 2006; 4:507-9.
10. Liu Y, Lin P, Xu Y, Wu B, He Q, Wang Y et al. Survey of HIV/AIDS and sexual knowledge, attitude and behaviour among the town middle school students in the delta region of Pearl River. Journal for China AIDS/STD (Chinese) 2004; 10(4):260-2.
11. Tang X, Zhong C, Wang H. Cross-sectional investigation on the sexual knowledge, attitude and behaviour of middle school students in Chongqing. Modern Chinese Preventive Medicine (Chinese) 2008; 35(15):2915-7.
12. Wang B, Li X, Stanton B, Kamali V, Naar-King S, Shah I et al. Sexual attitudes, pattern of communication, and sexual behaviour among unmarried out-of-school youth in China. BMC Public Health. 2007; 7:189.
13. Fan CX, Ma SB, Wu CL, Chen J, Wang HS, Liu GN. A



- survey on KAP of the sex and reproduction among the university students. *China Public Health (Chinese)* 2004; 20(3):275-6.
14. Higgins LT, Zheng M, Liu Y, Sun CH. Attitudes to marriage and sexual behaviors: A survey of gender and culture differences in China and United Kingdom. *Sex Roles* 2002; 46(3/4):75-89.
 15. Yan H, Chen W, Wu H, Bi Y, Zhang M, Li S et al. Multiple sex partner behaviour in female undergraduate students in China: A multi-campus survey. *BMC Public Health* 2009; 9:305.
 16. Ma Q, Ono-Kihara M, Cong L, Xu G, Zamani S, Ravari SM et al. Sexual behaviour and awareness of Chinese university students in transition with implied risk of sexually transmitted diseases and HIV infection: A cross-sectional study. *BMC Public Health*. 2006; 6:232.
 17. Gong L, Yan C, Ding R, Zhang B, Pen X. A survey on sex psychology development, knowledge and attitude among Shenzhen middle school students. *China Health Education (Chinese)* 2007; 23(4):280-2.
 18. Wu J, Xiong G, Shi S. Study on sexual knowledge, attitudes and behaviours of adolescents. *Chinese Journal of Child Health Care (Chinese)* 2007; 15(2):120-1,124.
 19. Zhu C, Wang J, Zhou Z, Li F. Investigation on sex behaviours among secondary school students in Guangzhou City. *Chinese Journal of School Doctor (Chinese)* 2009; 3:294-6.
 20. Zhou K, Ye G. Evaluation of health risk behaviours of the first grade junior middle school students. *Journal of School Health (Chinese)* 2000; 21(6):454-5.
 21. Yang L, Yu B. Analysis of sexual health education for junior high school pupils in Dalian. *Chinese Journal of School Health (Chinese)* 2000; 21(2):106-7.
 22. Chen J, Du X, Han W, Zhou T. AIDS prevention knowledge, attitudes and behaviours of the junior high school students in the rural area of Beijing. *Chinese Journal of Human Sexuality (Chinese)* 2009; 18(1):3-6, 13.
 23. Liang Z, He J, Yang B, Zhong Y, Peng Y. Study on sexual behaviour and relative factors among city high school students. *Journal of Medical Forum (Chinese)* 2008; 29(14):59-61.
 24. Liang Z, He J, Yang B, Zhong Y, Mao J. Sexual behaviour and relative factors among rural high school students in Henan province. *Chinese Journal of School Health (Chinese)* 2009; 6:502-3.
 25. Song Y, Ji C, Xi Y, Zhang L, Cheng T, Hu P. Sexual behaviours among Urban senior middle school students in 18 provinces in China. *Chinese Journal of School Health (Chinese)* 2008; 29(12):1079-81.
 26. Jia X, Lu C, Chen W, Huang W, Yan Y, Dai C. Investigation on KAP for AIDS among senior middle school students in Shenzhen city. *Modern Preventive Medicine (Chinese)* 2007; 34(10):1841-4.
 27. Li Z. A study of adolescent sex in Guangzhou city. *Chinese Journal of School Health (Chinese)* 2000; 21(2):105.
 28. Lönn E, Sahlholm K, Maimaiti R, Abdulkarim K, Andersson R. A traditional society in change encounters HIV / AIDS: knowledge, attitudes, and risk behavior among students in north-western China. *AIDS Patient Care STDs* 2007;21(1):48-56.
 29. Liang S, Jiang D. Knowledge, attitudes and practice related AIDS among 2562 secondary students. *Chinese Journal of Health Education (Chinese)* 2006; 22(7):493-5.
 30. Ma Q, Ono-Kihara M, Cong L, Xu G, Pan X, Zamani S et al. Early initiation of sexual activity: a risk factor for sexually transmitted diseases, HIV infection, and unwanted pregnancy among university students in China. *BMC Public Health* 2009; 9:111.
 31. Wu J, Wang L, Zhao G, Zhang X. Sexual abuse and reproductive health among unmarried young women seeking abortion in China. *Int J Gynecol Obstet* 2006; 92:186-91.
 32. Nie S, Li H, Xu Y, Ma W, Xu H. Analysis on sex-related behaviours of senior high school and professional technical school students in cities of Guangdong province. *China Preventive Medicine (Chinese)* 2007; 8(5):581-4.
 33. Zhao G., Zhang X, Zhou M, Wang L, Guo S, Xue L. Study on reproductive health situation, knowledge, attitude and practice and health needs of middle school students in rural China. *Maternal and Child Health Care of China (Chinese)* 2005; 17:2251-3.
 34. Ma Q, Ono-Kihara M, Cong L, Xu G, Pan X, Zamani S et al. Unintended pregnancy and its risk factors among university students in eastern China. *Contraception* 2008; 77:108-13.
 35. Xue F, Sun Z, Lin S, Zheng G. Survey on awareness of AIDS-related knowledge and sexual behaviours among middle school students in Lucheng district, Wenzhou city, Zhejiang province. *Disease Surveillance (Chinese)* 2008; 23(10):610-2.
 36. Yu Y, Lou C, Gao E, Marshall T. Investigation on sexual knowledge, attitudes and behaviour of adolescent of Shanghai rural areas. *China Public Health (Chinese)* 2003; 3:117-9.
 37. Xu J, Chen Y, Cheng L. A questionnaire survey of pregnant teenagers on their knowledge and behaviour of sexuality and contraception in Shanghai. *Maternal and Child Health Care of China (Chinese)* 2005; 20(10):1184-6.
 38. Xu J, Quan H, Gu G. Study on teenage pregnancy and the status of adolescent sexuality education. *Chinese Journal of Child Health Care (Chinese)* 2009; 4:364-6.
 39. Xu J, Cheng L. Awareness and usage of emergency contraception among teenagers seeking abortion: A Shanghai survey. *Eur J Obstet Gynecol Reprod Biol* 2008;141:143-6.
 40. Wu J, Wang L, Oratal R, Suvajee G. Contraceptive use behaviour among never married young women who are seeking pregnancy termination in Beijing. *Chinese Medical Journal* 2002; 115(6):851-5.
 41. WHO. China: epidemiological fact sheets on HIV/AIDS and sexually transmitted infections. [WWW document] 2004; http://data.unaids.org/publications/fact-sheets01/china_en.pdf
 42. Zhang KL, Ma SJ, Xia DY. Epidemiology of HIV and sexually transmitted infections in China. *Sex Health* 2004; 1(1):39-46.



43. Sun J, Ma Y, Chen H, Chen J, Song Y, Yu X et al. Risk behaviours of Chinese middle school students in 5 provinces and cities. *Chinese Journal of School Health (Chinese)* 2001;3:202-4.
44. Beijing Education Bureau. Introduction of sex education. *Annu Rev Popul Law* 1988;15:223.
45. Gao Y, Lu ZZ, Shi R, Sun XY, Cai Y. AIDS and sex education for young people in China. *Reprod Fertil Dev* 2001;13:729-37.
46. Jia Y, Xue L, Pan S. Research on attitude towards sex and education needs of adolescents in Tangshan. *Modern Preventive Medicine (Chinese)* 2007;8:1520-1,1524.
47. Liu C, Pan X, Wang Y. Investigation and analysis on knowledge and attitude of AIDS among high school students in Xinzhou city in 2005. *Preventive Medicine Tribune (Chinese)* 2007;13(8):711-3.
48. Chen F, Xu Y. Sex knowledge, attitude and sexual behaviours in college students. *Journal of Public Health (Chinese)* 2009; 25(9):1029-30.
49. Yu L, Li Y, Liu A. Sexual attitude and sexual education method of the undergraduates. *Reproduction & Contraception (Chinese)* 2008;28(3):183-7.
50. Lou C, Wang B, Shen Y, Gao E. Effects of a community-based sex education and reproductive health service program on contraceptive use of unmarried youth in Shanghai. *J Adolesc Health* 2004;34:433-40.
51. Wang B, Meier A, Shah I, Li X. The impact of a community-based comprehensive sex education program on Chinese adolescents' sex-related knowledge and attitudes. *J HIV AIDS Prev Child Youth* 2006;7(2):43-64.
52. Tu X, Lou C, Gao E, Shah IH. Long-term effects of a community-based program on contraceptive use among sexually active unmarried youth in Shanghai, China. *J Adolesc Health* 2008;42:240-58.
53. Hu X, Cook S, Salazer MA. Internal migration and health in China. *Lancet* 2008;372:1717-9.
54. Zhao S, Gao E, Zabin LS. Unmet needs for reproductive health knowledge among unmarried migrant youth. *J Reprod Contracept* 2008;19(4):227-38.
55. Zheng Z, Zhou Y, Zheng L, Yang Y, Zhao D, Lou C et al. Sexual behaviour and contraceptive use among unmarried, young women migrant workers in five cities in China. *Reprod Health Matters* 2001;9(17):118-27.
56. Qian X, Smith H, Huang W, Zhang J, Huang Y, Garner P. Promoting contraceptive use among unmarried female migrants in one factory in Shanghai: a pilot workplace intervention. *BMC Health Serv Res* 2007;7:77.
57. Yu J. Sex education beyond school: Implications for practice and research. *Sex Education* 2010;10(2):187-99.
58. Cui N, Li M, Gao E. Views of Chinese parents on the provision of contraception on unmarried youth. *Reprod Health Matters* 2001;9(17):137-44.
59. Zhi Y. Survey on AIDS health education among middle school students in a county of Henan province, *Journal of Zhengzhou University (Medical Sciences) (Chinese)* 2008;43(1):109-12.
60. Yu J. British-born Chinese teenagers: The influence of Chinese ethnicity on their attitudes towards sexual behaviour. *Nurs Health Sci* 2007;9(1):69-75.
61. Yu J. School sex education: Views within British-Chinese families. *Asian J Nurs* 2007;10:171-8.
62. Yu J. Perspectives of Chinese British adolescents on sexual behaviour within their socio-cultural contexts in Scotland. *Diversity in Health and Social Care* 2008;5(3):177-86.
63. Vesely SK, Wyatt VH, Oman RF, Aspy CB, Kegler MC, Rodine S et al. The potential protective effects of youth assets from adolescent sexual risk behaviours. *J Adolesc Health* 2004;343:56-65.
64. Romo LF, Lefkowitz ES, Sigman M, Au TK. A longitudinal study of maternal messages about dating and sexuality and their influence on Latino adolescents. *J Adolesc Health* 2002;31:59-69.
65. Wilder EI, Watt TT. Risky parental behaviour and adolescent sexual activity at first coitus. *Milbank Q* 2002;80(3):481-524.
66. Hovell M, Sipan C, Blumberg E, Atkins C, Hofstetter CR, Kreitner S. Family influences on Latino and Anglo adolescents' sexual behaviour. *J Marriage Fam* 1994;56:973-86.
67. Collins RL, Elliott MN, Berry SH, Kanouse DE, Hunter SB. Entertainment television as a healthy sex educator: The impact of condom-efficacy information in an episode of Friends. *Pediatrics* 2003;112:1115-21.
68. Collins RL, Elliott MN, Berry SH, Kanouse DE, Kunkel D, Hunter SB et al. Watching sex on television predicts adolescent initiation of sexual behaviour. *Paediatrics* 2004;114:e280-9.
69. Somers CL, Tynan JJ. Consumption of sexual dialogue and content on television and adolescent sexual outcomes: Multiethnic findings. *Adolescence* 2006;41:15-38.
70. Chandra A, Martino SC, Collins RL, Elliott MN, Berry SH, Kanouse DE et al. Does watching sex on television predict teen pregnancy? Findings from a national longitudinal survey of youth. *Pediatrics* 2008;122:1047-54.
71. Tu X, Cui N, Lou C, Gao E. Do family-planning workers in China support provision of sexual and reproductive health services to unmarried young people? *Bull World Health Organ* 2004;82(4):274-80.
72. Zhou Y, Song S, Zhang Y, Liu Y, Liu H. A survey of reproductive health KSP and need among senior high school pupils. *Maternal and Child Health Care of China (Chinese)* 2005; 20(1):102-4.
73. Wang L, Wang N, Wang L, Li D, Jia M, Gao X et al. The 2007 estimates for people at risk for and living with HIV in China: progress and challenges. *J Acquir Immune Defic Syndr* 2009;50:414-8.
74. Xinhua News Agency. Sixty Percent of Chinese HIV Carriers Are Young People. [WWW document] 2003; <http://www.china.org.cn/english/Life/69741.htm>

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CONFLICTS OF INTEREST

The author declares no competing interests.