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Prevalence and correlates of contraceptive use among vocational schools adolescents in Northern Thailand

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Abstract

Purpose – This study aimed to determine the prevalence of and factors associated with contraceptive use among school-going adolescents.

Design/methodology/approach – A cross-sectional study was conducted among vocational school students in Phitsanulok, Northern Thailand. The study employed a multistage random sampling technique to select 391 students from three schools that were purposively selected.

Findings – The prevalence of contraceptive use during the most recent sexual intercourse was 75.8%. The condom was the most commonly used contraceptive method, followed by emergency pills and the rhythm/calendar method. Being male, in the second academic year, sexual communication with parents, sex with a casual partner or sex worker and contraceptive use at sexual initiation were significant risk factors for contraceptive use ($p < 0.05$). The preventive factors were subdistrict municipality area residency, extended family, medium or high income and partners who drank ($p < 0.05$).

Originality/value – The authors found a high prevalence of contraceptive use among school-going adolescents. Maintaining and improving this trend would require a concerted effort from all stakeholders to promote early sexuality communication and ensure access and use of contraceptive services.

Keywords Prevalence, Correlates, Contraceptives, Adolescents, Northern Thailand

Paper type Research paper

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Introduction

Achieving vibrant sexual and reproductive health for global adolescents has been the focus of the world's attention for many years. Arguably, one of the promising ways to attain this global goal is to ensure the adolescents' needs of modern methods of contraception are duly met. Unfortunately, women 15–19 years old are more likely than women 20–24 years old to have unmet needs for contraceptives [1]. Even where those needs are met, the contraceptive options must be used effectively to make the best return on this ambitious global investment. Commendable progress has been made, especially in decreasing mortality from HIV/AIDS which could be credited to making antiretroviral therapy (ART) and contraceptives more readily available and accessible in the recent past [2]. However, despite these positive developments, HIV/AIDS is still the second highest cause of adolescent deaths in the world and, unfortunately, adolescent girls accounted for more than two-thirds of the new HIV infections globally [3].

Additionally, unintended teenage pregnancy is still at increasing rates in many societies around the globe. The estimated annual number of pregnancies among girls aged 15 to 19 years in low- and middle-income countries (LMICs) is approximately 21 m, and about half of that number is unintended. Of these, between 12 and 16 m give birth, accounting for about 11% of the global births [4, 5]. Although the effectiveness of a contraceptive depends on the chosen method [6], effective use of any of the methods could have averted most of these pregnancies [7].

Thailand, as a middle-income economy, is faced with an increasing number of adolescent pregnancies including repeat births [8]. According to the Nakorn Pathom Institute for Population and Social Research, Thailand is Asia's leading nation in the number of unintended teenage pregnancies [9]. Annually, more than 10% of all adolescent girls in Thailand become pregnant [7]. Further, despite having the second highest decline (56%) in mortality related to AIDS in Asia and the Pacific region, Thailand, alongside Indonesia, Vietnam, China, Myanmar and India accounted for over 90% of people living with HIV in the entire region [10]. These increasing rates of new HIV/sexually transmitted disease (STD) infections and teenage pregnancies have been attributed to the consistently falling prevalence of contraceptive use in recent years [11].

Overall, the use of contraceptives among Thai adolescents is reportedly low. The national survey on the prevalence of consistent condom use at the last sex among young people aged 15–24 years revealed that only 60% had consistently used condoms [12]. To the best of our knowledge, research regarding factors influencing contraceptive use among vocational school adolescents in Northern Thailand has been lacking. Evidence has previously been documented regarding the inconsistency of condom use among high school adolescents [13] and their out-of-school counterparts [14] but rarely among vocational school students in Northern Thailand. However, studies from other parts of the country suggested that vocational school students engage in unprotected sexual intercourse and perceive poorly the benefits of using a condom [15]. Despite the current lack of knowledge of contraceptive use among the northern vocational schools' adolescents, high rates of risky sexual behaviors such as inconsistent condom use and multiple sexual partners; high prevalence of coerced sexual relationships and greater risks of commencing sexual activities earlier than adolescents of general schools have been widely reported [16–18]. To better understand the dynamics of contraceptive use among this cohort, there is a need to provide up-to-date knowledge of the influencers and barriers of contraceptive use among this population. This study aimed to determine the prevalence and factors associated with contraceptive use among vocational school adolescents aged 15 to 19 years.

Methodology

Study design, settings and participants

A cross-sectional study was carried out among vocational school students in Phitsanulok, Northern Thailand, between July and August 2019. The study employed a multistage random

sampling technique. Vocational schools in Phitsanulok comprise three study levels: first year, second year and third year. In total, three schools were purposively selected, from which a sample of 391 participants was drawn based on population size and gender ratio. This selection procedure was applied to each of the three study levels. Only students aged 15 to 19 years were included in this study. Informed consent forms were obtained from participants 18 years and older, whereas assent forms were obtained from parents/guardians of participants lower than 18 years at the time of the data collection. Participants' information was treated with the strictest level of confidentiality. While the soft copy of the data will be archived for later referencing and/or use, the hard copy, which is the questionnaire papers would be burnt 12 months following the completion of the study.

Research tool

A well-developed questionnaire consisting of two distinct parts – sociodemographic characteristics and items for contraceptives use – was developed and used for data collection. Both the content validity and reliability of the questionnaire were evaluated by experts and the questionnaire was tested among 30 school adolescents. All questions with item objective congruence (IOC) index of >0.5 were said to pass the validity test and hence were retained. The reliability test yielded Chronbach's alpha of 0.89.

Data collection

Data were separately collected at the three selected schools through self-administering the questionnaire to the respondents. Given the sensitivity of information the respondents provided, they were spaciously seated to maximize confidentiality and also to minimize possible contamination of information due to peer discussions. Responding to the questionnaire was not time-bound so that respondents had enough time to correctly recollect past events.

Data analyses

The analysis of the data was performed using the Statistical Package for Social Sciences program. Sociodemographic variables of the participants were analyzed using frequency (%), mean and standard deviation. A bivariate analysis was performed using a chi-square test to determine the variables that were independently significantly associated with contraceptive use. Where greater than 20% of the cells in a two-by-two table contained expected counts fewer than 5, a Fisher's exact test was considered instead. Binary logistic regression was performed to determine factors associated with contraceptive use holding other variables constant. All analyses, except otherwise indicated, were performed at a 5% level of statistical significance.

Operational definitions

(1) Other types of family: This includes single-parent family, stepfamily or grandparent family.

(2) There are three administrative divisions of Thailand: central division, provincial division and local division. The local division is further divided into city–municipality; town–municipality; subdistrict–municipality and subdistrict administrative organization.

- Municipality area: This is regarded as a city with a population of at least 50,000 and a sufficient gross income to facilitate the economic and social activities of a city.

- Subdistrict–municipality area: This is similar to a town with a gross income of not less than 5 m baht (approximately 160,000 US$) and at least 5,000 population with a minimum density of 1,500 km^2.
- Subdistrict administrative organization area: This is similar to a small town overseeing other smaller villages. The population is less than 5,000 with a density below 1,500 km^2. This is considered the administrative division at the grassroots of Thai society and directly involves community members in activities that directly affect their lives [19].

Ethical issue

The research was approved by the Naresuan University Institutional Review Board with certificate of approval number 0058/2562.

Results

Sociodemographic characteristics

The participants were approximately equally distributed by gender (Table 1), with nearly half (47%) of them in middle adolescence (15–17 years), while 53% were in late adolescence (18–19 years). The majority (50.9%) belonged to a middle-income group (20,000–3,999 baht), 30% to a high-income group (≥4,000 baht) and 19% to a low-income group (0–1,999 baht). In total, 182 (46.5%) participants were sexually experienced [males: 109 (59.9%); females: 73 (40.1)]. The majority were from a nuclear family background (44.2%), followed by extended family (23%) and other family types (32.8%).

Relationships between contraceptives use and sociodemographic variables

In Table 2, more than 4/5 of both genders who had used some form of contraception during the most recent sexual intercourse preferred condoms. The bivariate analysis identified variables independently significantly associated with contraceptive use (table is not shown). The proportions of contraceptive users between adolescents in middle and late adolescence were significantly different ($p = 0.031$). Income class was also significantly associated with contraceptive use ($p = 0.014$), with the highest proportion among the middle-income class (52%) and the lowest among the low-income class (14%). The relationship between contraceptive use at the first and the most recent sexual experiences was statistically significant ($p < 0.001$). Finally, the type of sexual partner at the most recent sexual encounter was also found to be statistically significantly associated with contraceptive use ($p < 0.001$).

Factors associated with contraceptive use

Table 1, the prevalence of contraceptive use at the most recent sex was 75.8%, with the majority (84%) opting for condoms, 5.8% using the rhythm/calendar method and 10% using emergency pills. The multivariate regression analysis identified nine factors associated with contraceptive use in Table 3.

The multivariate analysis revealed that gender was associated with contraceptives use. The odds of using any method of contraception were 11 times more likely among males than females [OR = 10.79 (95% CI 2.35–49.56) $p = 0.002$]. This means that the probability of using a contraceptive method was exceedingly higher in the male than female gender. Similarly, participants' year of study was also associated with contraceptives use. Being in the second year of study was associated with eight times the odds of using contraceptives at the most recent sex as compared to being in the third year [OR = 7.89 (95% CI: 1.07–58.11), $p = 0.043$].

Variables	*n* (%)	Variables	*n* (%)
Gender		*Family type*	
Male	196 (50.1)	Nuclear family	173 (44.2)
Female	195 (49.9)	Extended family	90 (23.0)
		Other family types	128 (32.8)
Age		*Sex partner smokes*	
Middle adolescence	183 (46.8)	*Yes*	36 (19.8)
Late adolescence	208 (53.2)	*No*	146 (80.2)
Academic year		*Sex partner drinks*	
First	235 (60.1)	Yes	68 (37.4)
Second	61 (15.6)	No	114 (62.6)
Third	95 (24.3)		
Academic major		*Ever used alcohol last year before sex*	
Arts cluster	86 (22.0)	Yes	89 (48.9)
Science cluster	185 (47.3)	No	93 (51.1)
Commercial cluster	120 (30.7)		
Income (baht)		*Ever used a drug last year before sex*	
Low	74 (18.9)	Yes	18 (09.9)
Middle	199 (50.9)	No	164 (90.1)
High	118 (30.2)		
Residence		*Cont* used at last sex*	
Subdistrict administrative organization area	162 (41.4)	Yes	138 (75.8)
Subdistrict municipality area	113 (28.9)	No	44 (24.2)
Municipality area	116 (29.7)		
*Sc** with parents*		*Cont* option at last sex*	
Never	195 (49.9)	Condom	116 (84.1)
Rarely	130 (33.2)	Rhythm method/calendar	08 (05.8)
Regularly	66 (16.9)	Emergency pills	14 (10.1)
Sexually active	182 (46.5)	*Last sexual partner*	
Cont used at first sex*		Boy/girlfriend	151 (83.0)
Yes	135 (74.6)	Friend/casual	24 (13.2)
No	47 (25.4)	Male/female sex worker	7 (03.8)

Note(s): *contraceptive, **sexuality communication

Table 1. General characteristics of the participants

Gender	Condom *n* (%)	Method Rhythm *n* (%)	Emergency pills *n* (%)	Total *n* (%)
Males	70 (83.3)	5 (6.6)	9 (10.7)	84 (60.9)
Females	46 (85.2)	3 (5.6)	5 (9.3)	54 (39.1)

Table 2. Contraceptive preference by gender

The residential area of the respondents and contraceptive use were significantly associated. The results showed that as opposed to participants living in subdistrict administrative organization area, those residing in subdistrict–municipality area were 77% less likely to use contraceptives [OR = 0.23 (95% CI: 0.07–0.74), $p = 0.014$]. Being from an extended family was associated with 80% decreased probability to use contraceptives compared to being from a nuclear family [OR = 0.20 (95% CI: 0.06–0.65), $p = 0.007$]. This implies that the likelihood of an adolescent from an extended family using contraceptives at the last sexual encounter was 80% less likely than adolescents from a nuclear family. The monthly income index was negatively associated with contraceptive use. It can be observed that compared to a

Variables	$OR_{Adjusted}$	95% CI	*p*-value
Age			
Late adolescence	1.00	–	–
Middle adolescence	0.25	0.05–1.21	0.084
Gender			
Female	1.00	–	–
Male	10.79	2.35–49.56	0.002*
Academic year			
Third	1.00	–	–
Second	7.89	1.07–58.11	0.043*
First	0.68	0.12–3.90	0.664
Residence			
Subdistrict administrative org. area	1.00	–	–
Subdistrict municipality area	0.23	0.07–0.74	0.014*
Municipality area	0.78	0.24–2.60	0.688
Family type			
Nuclear family	1.00	–	–
Extended family	0.20	0.06–0.65	0.007*
Other family types	0.61	0.17–2.20	0.451
Average monthly income (baht)			
Low	1.00	–	–
Middle	0.19	0.05–0.68	0.010*
High	0.08	0.02–0.36	0.001*
*Sc*** *with parents*			
Never	1.00	–	–
Rarely	1.00	0.33–3.06	0.994
Regularly	4.49	1.38–14.62	0.013*
Last sexual partner			
Boy/girlfriend	1.00	–	–
Friend/casual	7.70	1.92–30.80	0.004*
Male/female sex worker	7.37	1.01–54.35	0.049*
Sex partner drinks			
No	1.00	–	–
Yes	0.30	0.09–0.95	0.040*
Contraceptive use at first sex			
No	1.00	–	–
Yes	6.31	2.04–19.53	0.001*

Note(s): *p value < 0.05, **sexuality communication; OR: odds ratio; CI: confidence interval

Table 3. Factors associated with contraceptive use controlling for all other variables

low-income class, belonging to the middle-income class was associated with approximately 80% decreased likelihood to use contraceptive at last sex [OR = 0.19 (95% CI: 0.05–0.68), $p = 0.010$]. Being in the high-income stratum was associated with an over 99.9% smaller probability of contraceptive use [OR = 0.08 (95% CI: 0.02–0.36), $p = 0.001$].

As opposed to adolescents whose parents never communicated with them about sex, those whose parents regularly communicate with them were 4.5 times more likely to use contraceptives at the most recently sexual debut [OR = 4.49 (95% CI: 1.38–14.62), $p = 0.013$]. The most recent sexual partner was found to be a significant risk factor. The odds of contraceptives use were 7.70 and 7.37 times more likely among adolescents whose most

recent sexual partners were casual [OR = 7.70 (95% CI: 1.92–30.80), $p = 0.004$] and sex workers [OR = 7.37 (95% CI: 1.01–54.35), $p = 0.049$] compared to those whose partners were their boy/girlfriends. Participants whose sexual partners drink were less likely to use contraceptives during sexual intercourse. The odds of contraceptives use were 70% less likely among those whose partners use alcohol than those whose partners did not [OR = 0.30 (95% CI: 0.09–0.95), $p = 0.040$]. A strong association was determined between contraceptive use at sexual initiation and the most recent sexual experience. Participants who used contraceptives during their first-ever sexual adventure were 6.31 times as likely to use it during their most recent encounter as those who did not use it during their first sexual debut [OR = 6.31 (95% CI: 2.04–19.53), $p = 0.001$].

Discussion

The results have revealed one of the highest prevalence of adolescents' contraceptive use in Thailand. Over two-thirds of the sexually active participants had used some form of contraception, most commonly condom, during the most recent sexual intercourse preceding the survey. This implies that, contrary to previous evidence [12, 18], more adolescents are currently embracing the practice of safe sex. One possible explanation for this development is that the current era of technological advancement has made access to the Internet increasingly easy, which might have improved adolescents' *health-related media literacy* to competently seek quality and adequate sexual knowledge to inform their sexual decisions [20].

Condoms were the most commonly preferred method of contraception for this age group. This is consistent with the previous bodies of evidence that emphasized condom use as the most prevalent contraceptive method among adolescents [18, 21], followed by emergency pills and withdrawal methods [22]. Though the present study did not examine what influences adolescents' choice of contraceptives, it has been suggested, however, that the condom preference emanates from the teenagers' concerns of perceived side effects of other methods [23, 24].

Furthermore, several factors were identified as the key determinants of contraceptives use in our study sample. Male adolescents were substantially more likely to use contraceptives than their female counterparts. Coincidentally, several other multicountry studies in Asia and Africa have reported a similar trend [25–27]. This could be because gender inequality related to sexual behaviors is deeply rooted in Thai society and is fueled by the traditional Thai culture that seemingly accepts these behaviors from males and frowns at them from the female adolescents [28]. These double standards easily influence unmarried female adolescents to not access the available contraceptive services for fear of being smeared or labeled as promiscuous [29]. This could give the male adolescent all the advantages, leading to a gendered imbalance of power in making sexual decisions. Consequently, adolescent girls give up their rights to contraceptive negotiations during these decisions and other mutually important ones. To neutralize the undesirable impacts of this social discrimination, adolescent girls must be adequately empowered with the knowledge that they, too, have as much, if not more, rights to contraceptives and sexual decision-making as their male counterparts. Another reason could be attributed to easy accessibility to male condoms than female condoms because the latter has long been withdrawn from the Thai market, so one of the few places adolescent girls can easily access condoms is the digital market.

Additionally, second-year adolescents appeared more likely to use contraceptives than first-year adolescents. To get a clear understanding of this phenomenon, we analyzed the age difference and found that second-year students were significantly older than students in the first year. Therefore, this age difference may imply higher knowledge among second-year students, as opined by prior studies [30, 31], which could positively influence making healthy sexual decisions such as using contraceptives during intercourse.

Moreover, adolescents who regularly communicate with their parents regarding sexual matters were substantially better able to use contraceptives. This agrees with recent findings that highlighted parental sexual communication to promote adolescent healthy sexual decision-making [32]. However, Thai parents rarely communicate with their children regarding sex [28], perhaps the conservative nature of Thai society makes them shy away from such a fundamental responsibility. While parent–adolescent communication regarding sexuality is critical to attaining and maintaining healthy adolescence, less than 20% of parents discuss sexual matters with their adolescent children and the timing of the discussion is usually late and often teaches only abstinence rather than protective strategies [33].

Surprisingly, adolescents who used contraceptives at their first sexual activity were more likely to use them during the most recent intercourse. Fortunately, three-quarters of the sexually experienced participants of our study reported using a contraceptive at the first sexual debut, contrasting preceding evidence that reported only a fourth of adolescents used a condom at their first sexual experience [34]. However, condom use at the most recent premarital sexual experience among adolescent girls 15–18 years ranges from only 18% in South Asia, 35% in sub-Saharan Africa, 46% in Latin America and the Caribbean and 68% in Eastern and Southern Europe [35]. Interestingly, adolescents were less likely to use contraceptives when having sex with their boy/girlfriend compared to having intercourse with a sex worker or a casual partner. This might not be unconnected to the belief among Thai youths that having unprotected sex with a boy/girlfriend installs and strengthens partner's trust and confidence [36]. On the flip side, the high tendencies in contraceptive use with a sex worker or casual partner might be connected to adolescents' perceived susceptibility and severity to HIV/STDs.

Expectedly, sexual activities in which one or both partners drink alcohol were less likely to be protected. This is understandably plausible because adolescents might overlook or deliberately refuse to use protection when they are under the influence of alcohol. Besides, alcohol has previously been implicated to negate youths' tendencies to use contraceptives [36, 37]. Surprisingly, both high- and middle-income status was associated with a decreased tendency to use contraceptives. This contradicts a study of Ghanaian young women that reported increased use of contraceptives among high- and middle-income working women as compared to their nonworking counterparts [38]. However, the participants of the current study might have been more reluctant to use contraceptives, perhaps because they were presumably under no financial constraints to cater for a baby or afford abortion services, should their partner get pregnant.

Additionally, contraceptive use was less likely among adolescents of extended or other types of family background than those from a nuclear family. These findings corroborate the evidence in a Malaysian study that suggested that adolescents from a nuclear family background are more likely to use contraceptives than adolescents from an extended family background [32]. Contrary to expectations, contraceptive use was less prevalent among residents of the subdistrict municipality area than residents of the subdistrict administrative organization area. This was unexpected because the national campaign for contraceptive use in Thailand has been predominant in the cities; therefore, it was expected that contraceptive use might be prominent among urban than rural residents. This may partly be accredited to the fact that the sexual health services in the cities are usually not adolescent-friendly due to poor patient privacy and inappropriate judgmental attitudes toward adolescents [29], which might not be the case in remote or less crowded service centers of the rural areas.

Conclusion

Modern contraceptives use among unmarried school-going adolescents is very crucial to maintain a stable balance between their sexual and reproductive health and academic

productivity. This study has unearthed one of the highest prevalence and determinants of contraceptive use among unmarried adolescents. On the one hand, gender, academic year, parent–adolescent sexual communication, sexual partner and contraceptive use at first sexual initiation were risk factors for contraceptive use and, on the other hand, residential area, family type, income and sexual partner who drinks were preventive factors.

The key take-home lessons from this study were that parents and guardians should break up barriers to scale up efforts to communicate with their children about sexuality early enough, and the focus should be on both abstinence and preventive strategies. Secondly, health authorities, policymakers and other relevant stakeholders should create a friendly and enabling environment that both encourages and empowers female adolescents to confidently access and use contraceptive services; they should also be educated on contraceptive negotiation and sexual decision-making skills. Subsequently, sexually active adolescents could be motivated to use contraceptives and those who are currently inactive could be mentally prepared to practice safe sex when they eventually become sexually active in the future. Well-designed intervention studies involving health authorities, policymakers and other relevant stakeholders are needed to tailor educational programs toward parents regarding effective and timely communication with their children about sexuality.

Conflict of Interest: None

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