ความรู้และทัศนคติต่อการตรวจสุขภาพก่อนตั้งครรภ์ของนักศึกษา สาขาวิทยาศาสตร์สุขภาพ มหาวิทยาลัยแห่งหนึ่ง ประเทศเวียดนาม

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บทคัดย่อ

การวิจัยเชิงบรรยายครั้งนี้มีวัตถุประสงค์เพื่อศึกษาความรู้และทัศนคติต่อการตรวจสุขภาพก่อนตั้งครรภ์ และผลของปัจจัยด้านเพศ สาขาวิชาที่ศึกษา การมีประวัติโรคทางพันธุกรรมในครอบครัว ที่มีต่อความรู้และทัศนคติต่อการตรวจสุขภาพก่อนตั้งครรภ์ของนักศึกษาสาขาวิทยาศาสตร์สุขภาพ ในมหาวิทยาลัยแห่งหนึ่ง ประเทศเวียดนาม กลุ่มตัวอย่างเป็นนักศึกษาจากสาขาวิทยาศาสตร์สุขภาพ คือคณะพยาบาลศาสตร์และคณะเทคนิคการแพทย์ รวมจำนวน 200 คน เลือกกลุ่มตัวอย่างโดยการสุ่มอย่างง่ายจากทั้งสองคณะวิชา เก็บข้อมูลโดยใช้แบบสอบถามซึ่งประกอบด้วยแบบสอบถามเกี่ยวกับข้อมูลส่วนบุคคล แบบวัดความรู้เกี่ยวกับการตรวจสุขภาพก่อนตั้งครรภ์ และแบบวัดทัศนคติต่อการตรวจสุขภาพก่อนตั้งครรภ์ วิเคราะห์ข้อมูลด้วยสถิติพรรณนา การทดสอบทีแบบอิสระและการทดสอบแบบแมนวิทนีย์ยู ผลการวิจัยพบว่า นักศึกษากลุ่มตัวอย่างมีความรู้เกี่ยวกับการตรวจสุขภาพก่อนตั้งครรภ์ในระดับดี โดยมีคะแนนเฉลี่ยความรู้เท่ากับ 13.09 (*ส่วนเบี่ยงเบนมาตรฐาน* = 1.83) มีทัศนคติด้านบวกต่อการตรวจสุขภาพก่อนตั้งครรภ์ โดยมีคะแนนเฉลี่ยเท่ากับ 4.10 (*ส่วนเบี่ยงเบนมาตรฐาน* = 0.51) นักศึกษาพยาบาลมีคะแนนเฉลี่ยความรู้เกี่ยวกับการตรวจสุขภาพก่อนตั้งครรภ์สูงกว่านักศึกษาเทคนิคการแพทย์ (t = 1.15, p < .05) แต่มีคะแนนเฉลี่ยทัศนคติต่อการตรวจสุขภาพก่อนตั้งครรภ์น้อยกว่านักศึกษาเทคนิคการแพทย์ (t = -3.44, p <.01) และพบว่านักศึกษาชายมีคะแนนเฉลี่ยทัศนคติต่อการตรวจสุขภาพก่อนตั้งครรภ์สูงกว่านักศึกษาหญิง (t = 3.86, p <.01) ผลการศึกษาให้ข้อเสนอแนะว่าควรส่งเสริมความรู้และทัศนคติเกี่ยวกับการตรวจสุขภาพก่อนตั้งครรภ์แก่นักศึกษา นอกจากนี้ควรมีนโยบายเกี่ยวกับมีคลินิกบริการสุขภาพก่อนตั้งครรภ์

คำสำคัญ : การตรวจสุขภาพก่อนตั้งครรภ์ นักศึกษา ความรู้ ทัศนคติ เวียดนาม

Introduction

A healthy baby and a healthy mother are valued hopes and dreams of families in all cultures. However, genetic diseases affect 5% of the world's children [1]. In Vietnam this rate is about 4% among children[2]. Moreover, chronic diseases and unhealthy behaviors are also widely reported by women of reproductive age and pregnant women; for example, 9.3% are diabetic, and 11.4% smoked during pregnancy[3]. Genetic and chronic diseases and poor health behavior increase adverse pregnancy outcomes and are significant causes of morbidity and mortality: 287,000 women die in the world annually during childbirth, 3.1 million newborn babies die in the first month of life, and 4.9 million babies are born prematurely[4]. Such undesirable

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health outcomes are significant burdens, not only for the family, but also for society; more specifically, on healthcare systems in terms of resources, supply of healthcare providers, technology, and treatment costs. For example, in Thailand, the direct cost of managing one patient living with a genetic disease such as thalassemia is 1.3 to 6.6 million Baht[5], or US$ 36,000-183,000. In Vietnam, too, treatment for severe thalassemia is costly and contributes to overcrowding in hospitals[2]. One reason why progress in improving pregnancy outcomes has slowed is that preventive efforts – pre-pregnancy interventions to detect, manage, modify, and control maternal behaviors, health conditions, and risk factors contributing to adverse maternal and infant outcomes -- has failed[6]. These interventions, then, need to be redesigned to lower preconception risks. This is known as preconception care (PCC). For women of reproductive age, PCC's benefits include counseling on appropriate health behaviors to optimize pregnancy outcomes and reduce maternal mortality. PCC is also a factor in detecting genetic disorders and is an essential step in the prevention and control of hereditary disease[7].

Based on the benefits of PCC, WHO (2013) advocated that changes in public policy and health care financing, particularly health coverage and benefits, are essential. However, in some countries there is no national PCC policy, nor do standard tools exist for the delivery of preconception care[6]. In Vietnam there is no clear PCC policy. In fact, overall, examinations, diagnosis, and management are limited in the Vietnamese health system, especially regarding the dissemination and utilization of preventive methods such as PCC[8].

Improving students' knowledge of and attitude towards PCC is emphasized as a long-term strategy for risk reduction and health promotion to promote optimal health of the mother before pregnancy[7]. The Vietnamese government has indicated its willingness to consider, as soon as possible, policies to improve the quality of reproductive health education for young adults. This would increase knowledge of and positive attitudes about reproductive health, including PCC to optimize future pregnancy outcomes[2]. One would hope that students of reproductive age have abilities for using the scientific method, for abstract thinking, and for logical reasoning. They deserve opportunities to identify and prevent health risks. In particular, health professional students, as future health care providers, should be able to provide health services related to preconception care to future parents. However, previous studies of knowledge and attitude towards preconception care during reproductive age, especially among students, are limited[8,9,10]. This is particularly true of Vietnam. Therefore, examining about knowledge of and attitude towards PCC should be conducted among students in Vietnam. The results should help develop interventions to encourage young adults, especially students, to use appropriate PCC services at the right time, thus increasing positive maternal and child health outcomes in the future.

This study aimed to describe knowledge of and attitude towards PCC, and to examine the effects of gender, major, and family history of hereditary diseases on knowledge of and attitude towards PCC among health professional students in a university in Vietnam.

Methodology

This descriptive cross-sectional study was carried out at Hai Duong Medical Technical University, Vietnam.

Sample: The participants in this study were senior students in health professional programs at Hai Duong Medical Technical University, Vietnam. The sample size in this study was determined using G*power version 3.1.9.2[11]. Proportionate stratified random sampling was used to recruit 200 health professional students from lists of the names of students in two health professional programs: nursing and medical technology. Health professional students who had already participated in a reliability pilot study were excluded. The sample size for each major was calculated to get a proportionate number of students from each major. In each major, the researcher assigned a code number to each student and kept the one and only master list, guaranteeing confidentiality. The researcher wrote the numbers on slips of papers, put them in a box and mixed them well. The researcher then drew one number at a time until the desired sample size was reached. One hundred students from each major were selected.

Instruments: The data were collected by three self-administered questionnaires. The original questionnaires, developed by the researchers in English, were translated into Vietnamese via an accepted back-translation technique. The translation procedure was performed by three experts who were bilingual translators, fluent in English and Vietnamese, and familiar with the domains of maternal health and childbirth.

The Personal Information questionnaire contained eight items asking about personal characteristics of students: major (nursing, medical technology), gender, family history of hereditary diseases, personal history of hereditary diseases, smoking, partner, method of birth control, and plans to get married.

The Knowledge about Preconception Questionnaire was developed by the researchers based on CDC[7] and WHO[12] guidelines on PCC. Its 16 items assess health professional students' knowledge regarding the importance of PCC, the most suitable time to receive PCC, and the importance of receiving the various components of PCC such as examination, investigation, vaccinations, and counseling. Based on the study by Al-Azeem, Elsayed, El-Sherbiny, and Ahmed[9], one point was given for each correct answer, and no points for an incorrect answer or "do not know." The total scores thus can range from 0-16. The overall knowledge score was calculated on the number of questions answered correctly: more than 75% (13-16 points) was considered good knowledge, 60-75% (10- 12 points) was considered fair knowledge, and less than 60% (0-9 points) was considered little knowledge. The content validity index for this questionnaire was .97 and the Kuder-Richardson 20 reliability was .72.

The Attitude towards Preconception Questionnaire was developed by the researchers based on reviewed literature[9, 10, 13]. It included nine questions about student attitudes towards the need for PCC for males and females of reproductive age; level of agreement that PCC should be legitimated by health insurance, law or policy; attitude toward making preconception screening an obligatory pre-pregnancy procedure, and; willingness to give PCC advice to friends. Responses were scored using a 5-point Likert Scale with options ranging from strongly agree (5) to strongly disagree (1). Higher scores indicated positive attitudes towards PCC, and lower scores indicated negative attitudes. The mean scores were trichotomized and calculated as follows: With the highest mean score being 5

and lowest mean score being 1, the difference divided by the desired number of categories yields an interval of 1.33 [(5-1)/ 3 = 1.33]. The resulting range of mean scores was interpreted as follows: negative (1.00 - 2.33), neutral (2.34 - 3.67), and positive (3.68 - 5.00) levels of attitude towards PCC. The content validity index for this questionnaire was .9 and the Cronbach's alpha reliability coefficient was .85.

Ethical considerations: This study was approved by Ethic Committee of Graduate Studies of the Faculty of Nursing, Burapha University, Thailand. Permission for data collection was received from the Director of Hai Duong Medical Technical University. Participants were informed of the study purpose, goals and procedures, as well as their rights, and written informed consent was obtained from each participant.

Data collection procedures: Data were collected by the first author, who had contacted the academic leaders of each of the two majors to explain the objectives of the study and ask for their approval and cooperation in data collection. At the end of classes, the researcher met students whom were randomly selected in their classroom, explained the objectives of study, and invited them to participate, obtaining a consent form from each participant who was willing to participate. Participating students then completed the questionnaires, which took about twenty minutes. Data were checked for completeness, then entered into a data file for analysis.

Data analysis: The data were analyzed with descriptive statistics, independent t-test and Mann-Whitney U test. The significance level was set at $p<0.05$.

Results

This study sample was 200 participants, 50% majoring in nursing and 50% in medical technology. The majority were female (63.5 %). Family history of hereditary disease was reported by only 3%, and none reported a personal hereditary disease. Nine of ten (91.5%) were non-smokers. Nearly half of respondents (45.0%) reported having a girlfriend or boyfriend. Three-quarters (76%) did not use any method of birth control. The sample was evenly split between those who did and did not plan to marry soon after graduation.

The mean score for students' PCC knowledge was 13.09 (*SD* = 1.83) of a possible 16 points, just into the "good knowledge" range. Two-thirds of the participants (66%) had a good level of PCC knowledge. It is noteworthy that only 38.5% correctly answered the item that "receiving preconception care services do not have any effects on the fetus", and only 49.5% of respondents correctly answered the item that "health investigation in preconception care is only fertility tests for male and female". (Tables 1, 2)

The possible scores of attitude towards PCC were ranged from 1.00 to 5.00, with higher mean score indicating more positive attitudes towards PCC. Table 3 shows that the mean score of attitude towards PCC was high (*M* = 4.10; *SD* = .51); students had strongly positive attitudes towards PCC. Moreover, Table 3 shows that the mean score of attitude towards PCC was at a high level (3.68 and above) for every item except item #9, which had a moderate level mean score (*M* = 3.27; *SD* = 1.20). (Table 3.)

Independent *t*-tests were used to compare mean scores of knowledge of and attitude towards PCC between majors and genders, and the Mann-Whitney U test was used to compare

knowledge of and attitude towards PCC between attributes of family hereditary disease history. Table 4 shows that the two different majors had significantly different mean scores for PCC knowledge (p = .03) and PCC attitude (p < .01). Nursing students more knowledgeable about PCC than were medical technology students, whereas medical technology students had more positive PCC attitudes than did nursing students. Comparing males and females, no significant PCC knowledge difference was found (p = .25), but male students had more positive PCC attitudes than did female students (p <.01). There were no significant PCC knowledge or attitude differences between students with and without a family history of hereditary disease.

Discussion

PCC Knowledge

In the current study, the overall mean score of students' PCC knowledge was at a "good" level (*Mean* = 13.09, *SD* = 1.83). This might be because they are final-year health professional students, many of whom are about to launch their careers as health care providers. They had finished or covered almost all subjects in their study program, and they had PCC knowledge from studying reproductive health. It could thus be inferred that health education improved the students' PCC knowledge. These results are similar to those of studies of PCC knowledge conducted using students at an Arab University. In these studies PCC knowledge was high after students received a health education intervention session[9,10]. In contrast, lack of knowledge was reported by Sobhy et al[14] and Inandi et al[15] in their studies involving Turkish (47.4 %) nursing students' knowledge of genetic counseling and Egyptian (45.3 %) students' reproductive health knowledge.

Moreover, in this study half (49.5%) the participants planned to get married soon after graduation. Perhaps their PCC knowledge was "good" because when people are planning to get married, they also are planning to have a baby; thus they will find PCC information relevant and related to the health of the mother and baby.

PCC Attitude

The mean score of students' attitude towards PCC was 4.10 (out of 5.00), indicating a high positive attitude. Again, participants were last-year students in health profession programs of study and intend to become health care providers in the future. Thus they understood the importance and benefits of PCC. These results are similar to those found among nursing students in an Alexandria university, where 65.5% of subjects had a positive attitude towards preconception counseling[16]. Another study, exploring the PCC attitude of students in the Health Sciences College in Abha, Kingdom of Saudi Arabia found that 70% of respondents were accepting of PCC services[17]. Similar results have been reported by Al-Kindi et al[13].

Effects of major, gender, and family history of hereditary diseases on PCC knowledge and attitudes.

Students in the two different majors had different levels of PCC knowledge. Although both nursing and medical technology students had "good" knowledge, nursing students were more knowledge about PCC than were medical technology students. While all of them are final-year health professional students, and have finished all courses, including reproductive health, nursing majors earn more credits in reproductive health than do medical technology majors.

PCC attitude among medical technology students was more positive than among nursing students. This could be because medical technology

students work with diagnostic and analytical equipment, including analyzers and microscopes, or collect samples directly from patients. This working environment may relate to reproductive health, yielding a PCC attitude among medical technology students that was more positive than among nursing students. This would agree with Farahat et al[10], who found that 74 % of their student subjects believed PCC to be useful (86% of practical students and 66.6% of theoretical students). The results of this study revealed that practical students had more positive PCC attitudes than did theoretical students.

Females exhibited a more favorable PCC attitude than did males. Males and females, due to the different formation of their brains, perceive the world differently and hence attach different interpretations and values to the same events and objects. These differences influence not only the way the genders think, but also the way they behave. Similarly, work by Al-Azeem at al[9] revealed that more positive attitudes among female students might be attributed to the emotional and behavioral variation between males and females. Females are of course very sensitive to any issue related to their reproductive health. As future mothers who hope, as does every mother, to have healthy babies, they wish to experience pregnancy and childbirth with the fewest possible complications. However, the current findings showed that although both genders had positive PCC attitudes, males were more positive than females. At this university, at least, nearly all medical technology students are male. This may have some bearing on the findings.

This study found no significant difference between genders regarding PCC knowledge. This explained that male and female students were not different knowledge toward PCC because both of them were also taught by the same program with equal number of credit of reproductive health subject. This is similar to what has been reported by Al–Azeem et al[9]. Moreover, all participants in this study are the same level of education (final years).

Family history of hereditary disease is a factor that should be considered, especially in countries with high genetic disease rates. Logically, individuals with a family history of hereditary diseases would be accepting of and actively seek out preconception care. However, the current study showed no significant differences in PCC knowledge and attitudes between those with and without a family history of hereditary disease. This result mirrors findings of Al-Kindi, Al-Rujaibi, & Al-Kindi[13], who reported no significant association between PCC attitudes and family history of hereditary disease, even though family history of hereditary disease was reported by 36% of their sample. Another study indicated that most of students had good general knowledge concerning PCC and hereditary diseases, but had inadequate knowledge of the national preconception screening program[19].

Limitation and recommendation

This study was conducted to examine knowledge and attitude towards PCC among university students. However, the participants were recruited only from two specified majors in one University, and all are in the final year of their health profession program. Therefore, the result may not be generalizable to Vietnamese students in other majors or universities. PCC studies should continue to be conducted among health professions students, but also among students with different majors. Finally, university students don't reflect the

total population of reproductive age, so “reproductive age” men and women should be recruited in future PCC studies.

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Table 1 PCC knowledge overall (N = 200)

	Range		Mean	SD	Frequency	Percent (%)
	Possible	Actual				
Knowledge about PCC	0-16	3-16	13.09	1.83		
Good					132	66.00
Fair					63	31.50
Low					5	2.50

Table 2 PCC knowledge by item (*N* = 200)

No.	Statements	Correct Answer	
		Frequency	Percent %
1.	The checking of health conditions/disease is important for a couple before having a baby.	193	96.50
2.	Preconception care can promote the health and well-being of the woman and her partner.	193	96.50
3.	Preconception care should involve both male and female as soon as possible before pregnancy.	190	95.00
4.	Preconception care can identify biomedical, behavioral, and social risks to pregnancy outcomes through prevention and management.	190	95.00
5.	Having blood screenings for HIV infection and Hepatitis B before conception are important to prevent transmission of diseases to the offspring	187	93.50
6.	Receiving special medical care and advice will improve chances of a healthy pregnancy.	186	93.00
7.	Preconception care services include not only health screening but also vaccinations and health counseling.	184	92.00
8.	The health examination before conception aims to reduce the incidence of genetic diseases.	183	91.50
9.	Many important vaccines should be given to women before conception.	182	91.00
10.	Preconception care can detect genetic disorders as well as other diseases.	173	86.50
11.	If a man and woman are healthy, they do not need to receive preconception care.	161	80.50
12.	The most suitable time to receive health screening for a mother is after getting pregnant.	148	74.00

No.	Statements	Correct Answer	
		Frequency	Percent %
13.	Women with chronic diseases (such as diabetes) should receive preconception counseling.	143	71.00
14.	Women should be taken a multi-vitamin with 0.4 mg (400 mcg) of folic acid daily one month before pregnancy to prevent birth defects.	128	64.00
15.	Health investigation in preconception care is only fertility tests for male and female.	99	49.50
16.	Receiving preconception care services do not have any effects on the fetus	77	38.50

Table 3 PCC Attitudes (N = 200)

No	Item	M	SD	Interpretation
1.	Preconception care services are necessary for both male and female.	4.52	.57	Positive
2.	Preconception care services will help to improve pregnancy outcomes.	4.49	.65	Positive
3.	Health screening should be an obligatory procedure before pregnancy.	4.31	.73	Positive
4.	I will advise close friends and others to receive preconception care.	4.19	1.02	Positive
5.	Preconception screening and care services should be covered by health insurance.	4.13	.88	Positive
6.	Preconception counseling is useful for both males and females of reproductive age.	4.09	1.10	Positive
7.	Preconception screening should be carried out to ensure that the mother-to-be is healthy.	3.98	1.11	Positive
8.	Health policy should emphasize the use of folic acid during the reproductive years.	3.98	1.09	Positive
9.	All women who in their reproductive years should be vaccinated for rubella before conception.	3.27	1.20	Neutral
	Overall PCC attitude	**4.10**	**0.51**	**Positive**

Table 4 PCC knowledge and attitude by major, gender, and family history of hereditary disease (N = 200)

Variables		n	Knowledge about PCC M (SD)	p	Attitude toward PCC M (SD)	p
Major	Nursing	100	13.37 (1.37)	.03	35.85 (4.57)	<.01
	Medical Technology	100	12.81 (2.16)		38.00 (4.28)	
Gender	Male	73	12.89 (1.98)	.25	38.51 (4.03)	< .01
	Female	127	13.20 (1.73)		36.02 (4.53)	
Family history of hereditary disease	Yes	6	13.17 (1.17)	.95	33.67 (4.03)	.09
	No	194	13.08 (1.84)		37.03 (4.53)	

Knowledge and Attitude towards Preconception Care among Health Professional Students in a Vietnamese University

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Abstract

This descriptive cross-sectional study aims to describe knowledge and attitudes towards preconception care (PCC) and to examine the impact of gender, major, and family history of hereditary diseases on PCC knowledge and attitudes among health professional students in a university in Vietnam. A random sample of 200 senior students in nursing and medical technology was selected to participate in the study. Data were collected via self-report questionnaires including Personal Questionnaire, Knowledge About PCC Questionnaire, and Attitude Towards PCC Questionnaire. Descriptive statistics, independent t-test and Mann-Whitney U test were used to analyze the data. The results indicated that the health professional students had good knowledge of PCC, with a mean score of 13.09 (*SD* = 1.83, possible range = 0-16). Attitudes toward PCC were highly positive, with an average score of 4.10 (*SD* = 0.51, possible range = 1-5). Nursing students had better knowledge about PCC than did medical technology students (t = 1.15, $p < .05$). However, medical technology students' attitude towards PCC was more positive higher than nursing students' (t = -3.44, $p <.01$). In addition, male students had more positive attitude than female students towards PCC (t = 3.86, $p <.01$). The results of this study provide information regarding knowledge and attitude towards PCC among reproductive young adults such as university students. Health care providers should begin to target not only health professional students but also those in other related majors, and further incorporate PCC information into health care professionals' training and education. Health policy in Vietnam should highlight the importance of preconception clinics.

Keywords: preconception care, students, knowledge, attitude, vietnam

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