Contraceptive non-use and associated factors among university students in 22 countries.

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Abstract

Background: The aim of this study was to investigate contraceptive non-use and associated factors (socio-demographics, sexual behaviour, internal assets and mental health) among undergraduate university students in 22 countries.

Methods: Using anonymous questionnaires, data was collected from 16979 undergraduate university students (mean age 20.8, SD=2.8) from 23 universities in 22 countries.

Results: Of the total sample of 16979 undergraduate university students, 7032 (41.9%) reported to have been sexually active in the past 12 months. Of those who had been sexually active, 42.6% reported never (42.7% among male and 42.6% among female students) using contraceptives in the past 12 months. In multivariate regression analysis, among both men and women, younger age, religious affiliation (Hindu; and among women only being Muslim), intrinsic religiosity, and sexually protective behaviour were associated with contraceptive non-use. Lack of internal assets (among men, low life satisfaction and lack of personal control, and among women low personal mastery) ; among women not having depressive symptoms and among men having PTSD symptoms were associated with contraceptive non-use.

Conclusion: Low contraceptive use was found and several factors identified as associated with contraceptive non-use may help guide intervention efforts.

Keywords: Birth control, practice, undergraduate students, socio-demographic factors, sexual variables, internal assets, mental health, multi-country.

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Introduction

Adolescents and young adults may experience negative health consequences from early unprotected sexual activity, such as unintended pregnancy, unsafe abortion, sexually transmitted infections (STIs), including HIV, and pregnancy-related mortality and morbidity.[1] Data from population-based surveys[2] shows low rates of current contraceptive use, among sexually active, never-married women (15-19 years old) in Africa: 31% in Nigeria (2008), 36% in Tanzania (2010), 26% in Zambia (2007), in Asia: 18% in India (2005) and 4% in the Philippines (2008), and in Latin America: 59% in Colombia (2010), and 32% in Guatemala. Likewise, among sexually active men (15-24 years) in Africa: 42% in Nigeria (2008), 42% in Tanzania (2010), and 41% in Zambia (2007), in Asia: 18% in India (2005), and in Latin America: 32% in Guatemala.[2] Among sexually active university students, the following proportions of lack or contraception non-use were found: in Botswana: Sometimes/never used contraception among male (20%) and female (26%)[3]; in China 48.7%-84% had not taken contraceptive measures during the episode of first sexual intercourse[4,5], in Lebanon: 76% of females had generally not used contraceptives (75.6%)[6], in Nigeria, only

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25% have ever used any contraceptive method[7] and 66% were currently not using contraceptives[8], in South Africa 19% had not used contraceptives at last sexual encounter[9], in Uganda 19% did not use contraception in their last sexual encounter[10]; in Ukraine, 32% and 19% did not use contraceptives at their first and most recent sexual intercourse, respectively[11] and among women in the US, 23% reported not using contraception.[12]

Globally, "Reasons for a global unmet need for contraception include: limited choice of methods; limited access to contraception, particularly among young people, poorer segments of populations, or unmarried people; fear or experience of side-effects; cultural or religious opposition; poor quality of available services; gender-based barriers."[13] Among university students factors associated with contraceptive non-use for women, men or both can be summarized as follows: 1) socio-demographic factors (younger age, lower educational level[10,14,15], being male[16], higher degree of religiosity[17,18], high price of contraceptives[14]); 2) Sexual behaviour (early sexual debut[10,16,19], not previously pregnant[20], more than one sexual partner in the past 12 months[20], internet use (sex)[21,22]; Psychosocial factors or internal assets (low locus of control, low personal initiative and assertiveness[14], lack of life satisfaction[23], and psychological distress[24,25]), and 3) other factors (fear of side effects of modern contraceptives[7], lack of exposure to healthcare worker talking about contraception[12]).

However, only limited research has been conducted on the prevalence and determinants of contraceptive use among youth in developing countries, especially among university students.[10] This study, therefore, seeks to address this gap by correlating the association between socio-demographic factors, sexual behaviour and risk, internal assets, and mental health variables with non-use of contraception among university students in 22 countries across Africa, Asia and America.

The aim of this study was to investigate contraceptive non-use and its associated factors (socio-demographics, sexual behaviour, internal assets and mental health) among undergraduate university students in 22 countries.

Methods

Sample and procedure

This cross-sectional study was part of a larger investigation on a range of health behaviours in university students, and was carried out with a network of researchers in participating countries (see Acknowledgments). The country selection was a convenient sample, with targeting a large spread of countries in developing countries across Africa, Asia and America. The anonymous, self-administered questionnaire used for data collection was developed in English, then translated and back-translated into languages (Arabic, Bahasa, Chinese, Filipino, French, Lao, Russian, Thai, Turkish) of the participating countries. Research assistants working in the participating universities asked classes of undergraduate students to complete the questionnaire at the end of a teaching class. Classes were recruited according to timetable scheduling using stratified random sampling. Informed consent was obtained from participating students, and the study was conducted in 2013. Participation rates were in most countries over 90%. Ethics approvals were obtained from all participating institutions.

Measures

Contraceptive use or prevention of unwanted pregnancy was assessed through responses to the question: 'During the past 12 months, how often did you and your partner use any method of birth control?' Six different responses/options were included, never had sexual intercourse, had sexual intercourse but not during the past 12 months, never, rarely, sometimes, most of the time or always used contraceptives. The variable was then dichotomised into 1=never used contraceptives and 0=rarely, sometimes, most of the time or always.

Pregnancy history: was assessed with the question, "Have you ever made someone pregnant/been pregnant?" Those who responded affirmatively were asked, "How old were you when you first made someone pregnant/became pregnant?"

Sexual variables. The 'number of sexual partners in the past 12 months' was determined by the response to the question: 'How many sexual partners have you had in the past 12 months?' The variable was dichotomised into 1 and 2 or more partners. Alcohol use in the context of sex was assessed for in the past three months, and participants responded to the questions, "Have you ever been diagnosed with a sexually transmitted infection?" "Have you ever been sexually abused as a child?" "How many hours do you spend online for internet sex per week?"

Internal assets. Life satisfaction was assessed with one question, "All things considered, how satisfied are you

with your life as a whole?" Response options ranged from 1= Very satisfied to 5= Very dissatisfied.[26] Three items measured personal mastery (e.g., "I can do just about anything I really set my mind to") and three items perceived constraints (e.g., "I often feel helpless in dealing with the problems of life"[27]. Cronbach's alpha for personal mastery in our sample was 0.75 and for perceived constraints 0.78.

Intrinsic religiosity (or subjective religiosity) was assessed with three items of The Duke University Religion Index (DUREL).[28] One item example is, "My religious beliefs are what really lie behind my whole approach to life." Response options ranged from 1=definitely not true to 5=definitely not true of me. Cronbach alpha for the intrinsic religiosity subscale was 0.81 for this sample.

Socio-demographic questions included age, gender, marital status, and socioeconomic background was assessed by asking survey participants to rate their family background as wealthy (within the highest 25% in their "country", in terms of wealth), quite well off (within the 50% to 75% range for their country), not very well off (within the 25% to 50% range from "country"), or quite poor (within the lowest 25% in their country, in terms of wealth).[26] Religious affiliation was assessed with the question, "What is your religious denomination?" Response options included: 1. Traditional religion, 2. Christian (Protestant, e.g. Lutheran, Anglican, etc.), 3. Christian (Catholic), 4. Hindu, 5. Moslem, 6. Buddhist, 7. No religion, 8. Other (specify).

Post-traumatic stress disorder (PTSD). A 7-item screen was used to identify PTSD symptoms in the past month.[29] Items asked whether the respondent had experienced difficulties related to a traumatic experience (e.g., "Did you begin to feel more isolated and distant from other people?"). Consistent with epidemiological evidence, participants who answered affirmatively to at least four of the questions were considered to have a positive screen for PTSD.[29] The Cronbach alpha reliability coefficient of this 7-item scale was 0.75 in this study.

Centres for Epidemiologic Studies Depression Scale (CES-D). We assessed depressive symptoms using the 10-item version of the CES-D.[30] While the CES-D 10-item survey has not been directly compared to clinical diagnosis of major depression, the sensitivity and specificity of the CES-D 20-item survey has been reported to average 80% and 70%, respectively, compared to the formal diagnostic interview.[31] Scoring is classified from 0-9 as having a mild level of depressive symptoms, 10 to 14 as moderate depressive symptoms, and 15 representing severe depressive symptoms.[32] The Cronbach alpha reliability coefficient of this 10-item scale was 0.74 in this study.

Data analysis

The data was analysed using IBM SPSS (version 20.0). Stratified analysis was conducted for male and female students. The proportion of socio-demographic factors, sexual variables, internal assets, mental health, and contraceptive use was calculated as a percentage.

Logistic regression analysis was done with STATA to calculate the crude odds ratio (OR) with 95% confidence interval (CI) to determine the associations between the potential determinants and contraception non-use. All variables which were statistically significant ($P < .05$) in bivariate analyses were included in the multivariable model. Predictor variables were entered in a single step. The country was entered as the primary sampling unit for survey analysis in STATA in order to achieve accurate CIs, given the clustered nature of the data.[26]

Results

Sample characteristics

Of the total sample of 16979 undergraduate university students (mean age 20.8, SD=2. 8) from 23 universities in 22 countries, 7032 (41.9%) reported to have been sexually active in the past 12 months; 52.1% among men and 36.2% among female students. Of those who had been sexually active in the past 12 months, 42.6% reported never (42.7% among male and 42.6% among female students), 33.0% rarely, sometimes or most of the times and 24.4% always using contraceptives in the past 12 months. A large variation of contraceptive non-use among sexually active students by country was found, from 91.3% in India and 89.1% in Indonesia to between 16-17% in Colombia and Venezuela. (see Table 1).

Table 1: Sample characteristics by country

	Total sample	Age	Sexually active (N=7032)			Contraceptive non-use			
	N	M (SD)	All (%)	Male (%)	Female (%)	N	% CI (95%)	Male %	Female %
All	16979	20.8 (2.8)	41.9	52.1	36.2	2955	42.6 (41.5-43.0)	42.7	42.6
Asia									
China	1184	19.9 (2.2)	13.8	20.7	12.9	69	50.5 (40.8-60.2)	52.2	45.9
India	800	17.9 (0.9)	14.5	15.0	13.5	105	91.3 (86.1-96.5)	92.5	88.6
Indonesia	750	18.8 (2.9)	24.8	27.3	23.7	67	89.1 (85.4-94.1)	90.5	89.4
Kyrgyzstan	837	21.3 (1.5)	44.4	77.4	19.8	133	35.8 (31.0-40.7)	34.4	40.0
Laos	806	22.3 (1.9)	34.7	48.7	27.6	171	61.1 (0.55-66.1)	48.1	72.8
Philippines	968	18.3 (1.4)	8.9	14.4	7.0	41	61.2 (49.4-72.9)	60.7	61.5
Singapore	894	21.2 (1.7)	18.6	24.9	12.0	70	42.2 (34.6-49.7)	40.2	45.3
Thailand	860	20.1 (1.3)	34.6	55.7	26.9	95	36.5 (30.7-42.4)	34.7	38.0
Turkey	800	20.6 (2.2)	26.5	40.0	13.0	128	60.4 (53.8-67.0)	58.8	65.4
Africa									
Cameroon	627	21.5 (2.5)	45.6	69.0	28.1	103	36.1 (30.6-41.7)	33.2	41.6
Ivory Coast	824	23.8 (2.7)	73.3	77.4	69.2	187	31.0 (27.3-34.7)	31.3	30.5
Madagascar	800	20.0 (1.7)	40.4	48.5	32.3	180	55.7 (50.3-61.2)	54.1	58.1
Mauritius	501	20.9 (1.2)	29.5	41.1	24.3	100	67.6 (60.0-75.1)	69.2	66.3
Namibia	503	22.3 (4.2)	68.4	69.5	67.6	115	33.4 (28.4-38.4)	30.5	34.9
Nigeria	820	22.3 (3.1)	40.0	45.4	33.6	188	57.3 (52.0-62.7)	54.5	61.9
South Africa	888	22.3 (3.6)	74.9	78.8	72.0	303	47.9 (44.0-51.7)	52.8	44.0
Tunisia	960	21.1 (1.8)	17.1	23.1	14.2	123	75.5 (68.9-82.1)	54.9	91.2
Caribbean and Latinamerica									
Barbados	580	21.1 (2.1)	72.6	74.7	69.6	183	45.4 (40.5-50.3)	49.8	39.1
Grenada	435	24.1 (6.1)	70.6	69.5	71.0	127	41.4 (35.8-46.9)	30.6	46.6
Jamaica	762	21.0 (4.7)	68.8	75.8	66.5	187	35.7 (31.0-40.7)	43.7	32.8
Colombia	816	21.1 (3.2)	85.7	90.6	88.8	115	16.8 (14.0-19.6)	18.9	14.9
Venezuela	564	20.5 (2.8)	75.5	89.6	65.7	303	16.4 (12.8-20.1)	18.3	14.6

Independent variables description among sexually active participants

Regarding age groups, 21.8% were in late adolescents, while the majority were in their twenties, 6.9% were married, and 46.3% were well-off or wealthy by economic family background. Among the different religious affiliations, Protestant religion was the most prominent (31.4%), followed by Catholics (29.2%), Muslims (13.8) and Buddhists (8.1%). Among men and women having been or made someone pregnant was 17.8% (among men: 15.5% and among women 20.1%), of which 41.2% were adolescent pregnancies. Almost a third of the sample (31.2%) had two or more sexual partners in the past 12 months, 4.6% had been sexually abused as a child, 24.1% drank alcohol in the context of sex in the past 3 months, 7.8% reported ever being diagnosed with a sexually transmitted infection (STI), and 25.9% reported internet sex. In terms of mental health, 36.6% screened positive for moderate or severe depression and 21.1% for PTSD (see Table 2).

Table 2: Socio-demographics, sexual behaviour, internal assets, mental health and contraceptive non-use by gender among sexually active participants

Variables	All	Contraceptive non-use	
		Men	Women
Socio-demographics	N (%) or M (SD)	N (%) or M (SD)	N (%) or M (SD)
Age in years			
17-19	1488 (21.8)	353 (52.6)	376 (47.8)
20-21	2343 (34.4)	461 (40.1)	489 (42.3)
22-30	2981 (43.6)	604 (39.8)	554 (38.6)
Married	483 (6.9)	54 (35.8)	121 (36.4)
Economic family background			
Wealthy	281 (4.1)	59 (37.1)	53 (46.1)
Quite well off	2924 (42.2)	604 (41.5)	602 (42.3)
Not well off	2857 (41.2)	571 (44.6)	668 (43.3)
Poor	871 (12.6)	205 (42.9)	151 (39.8)
Religious affiliation			
Traditional	295 (4.5)	65 (43.0)	66 (45.8)
Protestant	2040 (31.4)	463 (49.5)	458 (42.5)
Catholic	1895 (29.2)	260 (29.8)	257(26.0)
Hindu	198 (3.1)	93 (89.9)	66 (80.5)
Muslim	894 (13.8)	285 (49.6)	206 (65.4)
Buddhist	527 (8.1)	105 (45.9)	151 (53.7)
No/other religion	641 (9.9)	107 (31.7)	99 (34.3)
Intrinsic religiosity (range 3-15)	11.0 (3.4)	11.2 (3.3)	11.2 (3.2)
Sexual behaviour and risk			
Ever (made someone) pregnant	1216 (17.8)*	143 (27.4)	204 (29.8)
Adolescent pregnancy (<20 years)	505 (41.2)	59 (28.4)	101 (34.7)
Two or more sexual partners in the past 12 months	2049 (31.2)	381 (27.2)	149 (24.0)
History of STI	539 (7.8)	114 (44.7)	119 (41.9)
History of child sexual abuse	318 (4.6)	44 (43.1)	73 (34.4)
Alcohol use in the context of sex in the past 3 Months	1496 (24.1)	225 (24.8)	149 (25.8)
Internet sex	1448 (25.9)	387 (37.8)	162 (41.1)
Internal assets			
Life satisfaction (range 1-5)	3.2 (1.3)	3.0 (1.3)	3.1 (1.2)
Personal mastery (range 3-15)	11.8 (2.9)	11.4 (2.9)	11.4 (2.9)
Lack of personal control (range 3-15)	7.7 (3.2)	7.8 (3.1)	7.7 (3.2)
Mental health			
Depression (moderate/severe)	2587 (36.6)	525 (44.2)	544 (40.1)
PTSD	1404 (21.1)	280 (47.5)	334 (42.4)

*20.1% among women

Associations with contraceptive non-use

Multivariate regression analysis among men found that younger age, religious affiliation (being Hindu but not being a Catholic or having no or other religion), intrinsic religiosity, sexually protective behaviour (not having made someone pregnant, not having had multiple sexual partners, not having had alcohol in the context of sex, and not engaged in internet sex), lack of internal assets (low life satisfaction and lack of personal control) and poor mental health (PTSD symptoms) were associated with contraceptive non-use among sexually active male students. In multivariate regression analysis, among women, it was found that younger age, religious affiliation (being Hindu and Muslim, but notbeing a Catholic), intrinsic religiosity, sexually protective behaviour (not ever being pregnant, not having had multiple

sexual partners, not having had alcohol in the context of sex), lack of internal assets (low personal mastery) and good mental health (not having depressive symptoms) were associated with contraceptive non-use among sexually active female students (see Table 3).

Table 3: Associations with contraceptive non-use (among sexually active)

	Male		Female	
Socio-demographics	UOR (95% CI)	AOR (95% CI)	UOR (95% CI)	AOR (95% CI)
Age in years				
17-19	1.00	1.00	1.00	1.00
20-21	0.60 (0.50-0.73)***	0.64 (0.49-0.84)**	0.80 (0.67-0.96)*	0.73 (0.58-0.93)**
22-30	0.60 (0.50-0.72)***	0.69(0.53-0.89)**	0.68 (0.57-0.82)***	0.68 (0.54-0.86)***
Married (vs. single)	0.78 (0.52-1.03)	---	0.75 (0.59-0.92)*	0.89 (0.64-1.25)
Wealth				
Wealthy	1.00	---	1.00	---
Quite well off	1.20 (0.86-1.69)		0.86 (0.59-1.26)	
Not well off	1.36 (0.97-1.92)		0.89 (0.61-1.31)	
Poor	1.27 (0.88-1.87)		0.78 (0.51-1.15)	
Religious affiliation				
Traditional	1.00	1.00	1.00	1.00
Protestant	1.30 (0.92-1.84)	1.55 (0.93-2.59)	0.87 (0.62-1.24)	0.96 (0.60-1.53)
Catholic	0.56 (0.39-0.80)***	0.79 (0.47-1.31)	0.42 (0.29-0.59)***	0.57 (0.35-0.92)*
Hindu	5.59 (3.18-9.85)***	6.15 (2.94-12.88)***	4.88 (2.58-9.22)***	5.70 (2.53-12.88)***
Muslim	1.30 (0.91-1.87)	1.58 (0.94-2.67)	2.23 (1.50-3.34)***	2.40 (1.42-4.08)***
Buddhist	1.12 (0.74-1.70)	1.43 (0.80-2.58)	1.37 (0.92-2.05)	1.07 (0.61-1.89)
No/other religion	0.61 (0.41-0.91)*	0.77 (0.44-1.35)	0.62 (0.41-0.93)	0.79 (0.47-1.35)
Intrinsic religiosity				
Low	1.00	1.00	1.00	1.00
Medium	1.49 (1.27-1.74)***	1.68 (1.31-2.14)***	1.19 (1.02-1.40)*	1.38 (1.10-1.76)**
High	1.63 (1.37-1.94)***	1.76 (1.33-2.34)***	1.40 (1.18-1.66)***	1.80 (1.35-2.39)***
Sexual behaviour and risk				
never (made someone) pregnant	0.45 (0.37-0.56)***	0.60 (0.45-0.80)***	0.51 (0.42-0.61)***	0.70 (0.55-0.89)**
Two or more sexual partners in the past 12 months (base=1)	0.34 (0.30-0.40)***	0.48 (0.39-0.59)***	0.41 (0.33-0.50)***	0.60 (0.47-0.77)***
History of STI	1.12 (0.86-1.44)	---	0.98 (0.70-1.26)	---
History of child sexual Abuse	1.03 (0.69-1.53)	---	0.70 (0.52-0.93)*	0.88 (0.60-1.29)
Alcohol use in the context of sex in the past 3 months	0.41 (0.34-0.49)***	0.66 (0.52-0.83)***	0.51 (0.41-0.62)***	0.75 (0.59-0.96)*
Internet sex	0.83 (0.71-0.97)*	0.88 (0.71-1.10)	1.08 (0.87-1.35)	---
Internal assets				
Life satisfaction	0.82 (0.78-0.86)***	0.88 (0.82-0.95)***	0.94 (0.82-0.99)*	0.95 (0.88-1.03)
Personal mastery				
Low	1.00	1.00	1.00	1.00
Medium	0.78 (0.66-0.93)**	0.91 (0.71-1.16)	0.67 (0.56-0.79)***	0.70 (0.53-0.81)**
High	0.65 (0.55-0.78)***	0.78 (0.60-1.02)	0.58 (0.48-0.69)***	0.66 (0.49-0.88)**
Lack of personal control				
Low	1.00	1.00	1.00	1.00
Medium	1.35 (1.16-1.59)***	1.50 (1.20-1.88)***	1.24 (1.06-1.46)**	1.16 (0.93-1.45)
High	1.52 (1.28-1.81)***	1.31 (1.01-1.69)*	1.25 (1.06-1.48)**	1.20(0.96-1.51))
Mental health				
Depression (moderate/severe)	1.19 (0.98-1.27)	---	0.84 (0.73-0.97)*	0.82 (0.68-0.99)*
PTSD	1.27 (1.06-1.52)**	1.45 (1.12-1.87)**	1.03 (0.87-1.21)	---

*** p < 0.001, ** p < 0.01, * p < 0.05, UOR, Unadjusted Odds Ratio; AOR, Adjusted Odds Ratio; CI, Confidence Interval.

Discussion

The results of this large study among university students in 22 countries found that by the age of 21 years, over 20% of sexually active women reported to have been pregnant, yet only 57.4% of sexually active students reported using contraception. This study is a significant contribution to the literature as it presents data from a very large sample of an understudied and important population, university students. The overall rate of 42.6% contraceptive non-use among sexually active students in this sample seem comparable to studies among university students in China[4,5] and Nigeria.[6,7] A large variation of contraceptive non-use among sexually active students by country was found, from 91.3% in India and 89.1% in Indonesia to between 16-17% in Colombia and Venezuela. These country variations seem similar to those in population survey-based observations among never married 15-19 year old women and 15-24 year old men, where modern contraceptive non-use in Nigeria was among women 69% and men 58%, in India (women 82% and men 82%), in the Philippines 96% among women, and in Colombia 41% among women.[2]

The study found, in agreement with other studies[10,14,15,17,18], that younger age, a higher degree of religiosity or intrinsic religiosity and religious affiliation (Hindu and Muslim) were associated with contraception non-use. According to WHO[13], reasons for a global unmet need for contraception particularly include young people and cultural or religious opposition.[13] Regarding sexual behaviour and risk, this study found that among men and women not having made someone or ever being pregnant previously was associated with non-contraception use, which was also found in a study among South African youth.[20] It is possible that only after the first pregnancy are young men and women are educated about and subsequently offered contraceptive services.[20] Unlike in a previous study among South African youth, which found that having more than one sexual partner in the past 12 months was associated with contraception non-use[20], this study found that sexually protective behaviour (not having had multiple sexual partners and not having had alcohol in the context of sex) were associated with contraceptive non-use among sexually active students. It is possible that there is a lesser felt need for the use of contraception in a one partner sexual relationship than it is with multiple sexual partners. Interesting is the finding that alcohol use in the context of sex did not have a negative effect on contraceptive use, as other studies seem to find that alcohol use may lead to greater risk-taking behaviour including contraception non-use in casual relationships.[33]

In agreement with other studies[14,23], this study also found that lack of internal assets (among men low life satisfaction and lack of personal control, and among women low personal mastery) was associated with contraceptive non-use. This study found that among men poor mental health (PTSD symptoms) while not having depressive symptoms among women were associated with contraceptive non-use. Previous studies found that elevated levels of anxiety or depression had been associated with sexual risk-taking behaviour such as inconsistent condom use.[34,35] Other studies[24,25] found that women's psychological symptoms predicted their contraceptive non-use and use of less effective methods. We did not however assess the type of contraceptive method used. It is possible that women with poor mental health in this study would have more frequently selected less effective contraceptive methods such as condom or withdrawal and those with good mental health more effective, permanent contraceptive methods.

Study limitations

This study was only conducted in one university in each country, the results are therefore not necessarily generalisable to other parts of each country. Furthermore, only participants who were studying at a university were included, which means that those who were not in a university were excluded. Also, certain risk factors for contraceptive non-use such as the type of contraceptives used, reasons of non-use[9], contraceptive knowledge[4] and healthcare worker communication about using contraception were not included, and should be included in future studies.[12]

Conclusion

Among this university student population high contraceptive non-use was observed. Socio-demographic factors, sexually protective behaviour, lack of internal assets and mental health status were identified as risk factors for contraceptive non-use. Sexual and reproductive health policies and programmes should be designed to take these identified risk factors into account.

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