



AIRA VIRTALA

Family Planning among
University Students in Finland



ACADEMIC DISSERTATION

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the Faculty of Medicine of the University of Tampere,
for public discussion in the main auditorium of Building K,
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University of Tampere, Medical School
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1. List of original communications

This thesis is based on the following original publications.

I Virtala A, Kunttu K, Huttunen T and Virjo I (2007): Sexual intercourse and current contraceptive use among university students in Finland. *European Journal of Obstetrics & Gynecology and Reproductive Biology* (in press). Available online www.sciencedirect.com

II Virjo I and Virtala A (2003): Why do university students use hormonal emergency contraception? *The European Journal of Contraception and Reproductive Health Care* 8:139–144.

III Virtala A and Virjo I (2005): Consultations concerning contraception and induced abortions among university students –trends in Finland 1986–2003. *Contraception* 72: 372–376.

IV Virtala A, Kunttu K, Huttunen T and Virjo I (2006): Childbearing and the desire to have children among university students in Finland. *Acta Obstetrica et Gynecologica Scandinavica* 85: 312–316.

V Virtala A and Virjo I (2004): University Students Seeking Hormonal Emergency Contraception: Why do they not Want Pregnancy Now? When is it Suitable to Have Children? *Yearbook of Population Research in Finland* 40: 119–131. The Population Research Institute. The Family Federation of Finland. Vammala.

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2. Abbreviations

EC	emergency contraception
FP	family planning
FSHS	Finnish Student Health Service
IUD	intrauterine device
OC	oral contraceptive
TFR	total fertility rate
WHO	World Health Organization

3. Abstract

Family planning issues are important to university-aged students. Education is associated with sexual behaviour, childbearing and contraceptive use and studies show that educated women are more likely to postpone pregnancy.

Family planning choices of Finnish university students have been investigated using the material from the Student Health Survey 2004, from a study of emergency contraception users in the Finnish Student Health Service (FSHS) in Tampere and from the health record statistics of the FSHS.

The Student Health Survey 2004 was a postal questionnaire that included the questions concerning current sexual activity and use of contraceptives, childbearing and the desire to have children. Of university students (n=3153) 80 % were currently sexually active. Of male students, 65 % and of female students, 79 % reported currently using some contraception. The most popular method among women was hormonal contraception and among men, condoms. Only 6.8 % of male students and 7.9 % of female students had children. The vast majority (89 %) of students desired to have children in the future. Most students indicated wanting two.

Those who sought emergency contraception were questioned about the reason to use EC, why they don't want to get pregnant now and about their future plans concerning childbearing. The main reason why the respondents (n=114) needed emergency contraception was condom failure. One-third of respondents had not used any contraception. The majority of respondents planned to have children in the future at about the age of thirty years. Unfinished studies were the main reason to postpone pregnancy.

The trends in the use of family planning services between 1986 and 2005 were investigated by using the data from the health record statistics of the FSHS. During this time the number of family planning consultations (physician encounter) decreased from 358 to 189 per 1000 female students. The number of consultations concerning an official statement for induced abortions decreased from 4.2 to 2.9 per 1000 female students.

University students commonly use reliable contraceptive methods and they use EC when needed. The FSHS offers easy and inexpensive access to contraception services. The students are at the optimal age for childbearing, however they are seldom parents. The vast majority of students plan to have children in the future and they want to postpone pregnancy until after completion of studies. In order to prevent age-related unintended infertility, health care providers should counsel on age and fertility.

4. Tiivistelmä

Hyvään lisääntymisterveyteen kuuluu, että ihmiset voivat ajoittaa raskaudet haluamallaan tavalla ja voivat saada lapsia haluamansa määrän. Perhesuunnittelukysymykset ovat tärkeitä opiskeluiässä oleville ihmisille, jotka ovat optimaalisessa lastensaanti-ikässä. Aikaisempien tutkimusten perusteella on ilmeistä, että koulutuksella on yhteyttä seksuaaliseen käyttäytymiseen, lastensaamiseen ja ehkäisyvalintoihin ja että erityisesti koulutetut naiset näyttävät siirtävän raskaaksi tuloa.

Tässä tutkimuksessa yliopisto-opiskelijoiden perhesuunnittelutilannetta on tutkittu ja kuvattu käyttämällä materiaalia kolmesta eri lähteestä. Käytettävissä oli Yliopisto-opiskelijoiden terveystutkimus 2004 aineisto, jälkiehkäisyn käyttäjille tehty kysely 2000–2001 ja Ylioppilaiden terveydenhoitosäätiön (YTHS) käyntisyytilastot 1986–2005.

Tutkimuksen tarkoituksena oli selvittää yliopisto-opiskelijoiden nykyistä seksuaalista aktiivisuutta, ehkäisyn käyttöä ja jälkiehkäisyn käytön syitä. Toiseksi tarkoituksena oli tutkia YTHS:n perhesuunnittelupalvelujen käyttöä ja niissä tapahtuneita muutoksia 1986–2005. Kolmanneksi tutkittiin yliopisto-opiskelijoiden lastensaantitilannetta, lapsitoiveita ja syitä lastensaannin siirtämiseen.

Yliopisto-opiskelijoiden terveystutkimus 2004 oli postikysely YTHS:n piirissä oleville opiskelijoille. Se sisälsi mm. kysymykset yhdynnöistä, ehkäisyn käytöstä, lasten lukumäärästä ja lapsitoiveista. Kyselyyn vastanneista (n=3153) 80 % oli seksuaalisesti aktiivisia. Miehistä 65 % ja naisista 79 % käytti jotain ehkäisyä. Hormonaalinen ehkäisy oli yleisimmin käytetty menetelmä naisopiskelijoiden keskuudessa ja kondomi miehillä. Vain 6.8 %:lla miehistä ja 7.9 %:lla naisista oli lapsia. Vastaavanikäisellä väestöllä Suomessa on lapsia neljä kertaa useammin. Lähes yhdeksän kymmenestä opiskelijasta toivoi tulevaisuudessa saavansa lapsia, useimmiten toivottiin kahta lasta.

Perhesuunnittelupalvelujen käyttöä seurattiin YTHS:n käyntisyytilastojen valossa 1986–2005. Kaikki lääkärikäynnit vähenivät seuranta-aikana suhteessa opiskelijaväestöön. Samoin perhesuunnittelukäynnit lääkäreillä vähenivät 358:sta 189:ään 1000 naisopiskelijaa kohti. Aborttilausuntojen määrä väheni samanaikaisesti 4.2:sta 2.9:n tuhatta naista kohti. Lääkäriresurssien vähentyessä raskaudenehkäisykontrolleja on osin siirretty terveydenhoitajille ja/tai lääkärit ovat hoitaneet kontrollit puhelimitse. Raskaudenehkäisykäynti pysyi kuitenkin koko seuranta-ajan yleisimpänä yksittäisenä lääkärin vastaanotolla käynnin syynä ja muodosti noin 16 % kaikista naisopiskelijoiden vastaanotolla käynneistä.

Jälkiehkäisyn käyttäjien tutkimus tehtiin YTHS:n Tampereen terveydenhoitoasemalla 2000–2001 antamalla jälkiehkäisyn hakijoille kotona täytettävä kyselykaavake, jonka he (n=114) palauttivat postitse. Kysely sisälsi mm kysymyksiä jälkiehkäisyn käytön syistä. Useimmiten syy jälkiehkäisyn tarpeeseen oli kondomin rikkoutuminen. Kolmasosa ei ollut käyttänyt mitään ehkäisyä.

Avoimet kysymykset: ”Mikä on pääasiallinen syy siihen, että et nyt halua tulla raskaaksi?” ja ”Mikä olisi mielestäsi sopivin ajankohta lasten saamiseen?” tuottivat vastauksia, jotka muodostivat laajan kvalitatiivisen materiaalin, jota voitiin analysoida kollektiivisen konsensuksen menetelmällä. Tulokset antoivat syvemmän ymmärryksen opiskelijoiden tilanteesta. Vaikka vastaajat olivat jälkiehkäisyn hakijoita, heidän voidaan katsoa edustavan tyypillistä opiskelijaa. Selvä enemmistö halusi lapsia tulevaisuudessa, suurin osa noin 30 vuoden iässä ja valmistumisen jälkeen. Kesken olevat opinnot olivat tärkein syy siirtää raskautta. Muita edellytyksiä lastensaamiselle oli pysyvä, turvallinen parisuhde ja kypsyys äidiksi. Kaiken kaikkiaan opiskelijat asettivat korkeita vaatimuksia itselleen ja kumppanilleen ennen kuin uskaltautuisivat vanhemmuuteen.

Johtopäätökset:

Yliopisto-opiskelijoista 80 % oli seksuaalisesti aktiivisia ja he käyttivät useimmiten luotettavia ehkäisymenetelmiä, ja niiden pettäessä turvautuivat jälkiehkäisyyn. Tämän tutkimuksen perusteella niiden opiskelijoiden, joilla oli lapsia, seksuaalinen aktiivisuus oli vähäisempää kuin parisuhteessa ilman lapsia elävien. Pienten lasten vanhempia esim. neuvolakäynneillä kohdatessa olisi tärkeää puhua mahdollisista seksuaalielämään liittyvistä ongelmista. Samoin parisuhteeseen ja vanhemmuuteen liittyvän koulutuksen kehittäminen olisi tarpeellista ja edistäisi perheiden terveyttä.

Tutkimus toi esille myös sen, että kondomin rikkoutuminen oli hyvin yleistä ja se oli tavallisin syy jälkiehkäisyn tarpeeseen. Lisätutkimuksia tarvittaisiin kondomiongelmien syiden selvittämiseksi. Kondomin oikeaan käyttöön liittyvää neuvontaa pitäisi tehostaa muistaen samalla, että tunteet ovat usein vahvempia kuin rationaalinen ajattelu seksuaalisessa kanssakäymisessä. Opiskelijoiden keskuudessa jälkiehkäisyn käyttö oli yleisempää kuin mitä aikaisimmat tutkimukset väestön keskuudessa ovat osoittaneet. Koko väestölle suunnattua informaatiota jälkiehkäisyn käytön mahdollisuudesta tulee lisätä.

YTHS:ssä käyntisyiden koodaus ja rekisteröinti mahdollistavat perhesuunnittelupalvelujen käytön seurannan. Vastaava seuranta olisi tarpeellista myös perusterveydenhuollossa. Se mahdollistaisi väestölle tarjottavien palvelujen kehittämisen tutkitun tiedon pohjalta. YTHS:ssä raskauden ehkäisyn takia tehtäviä kontrollikäyntejä on siirretty osin lääkäreiltä terveydenhoitajille. Perhesuunnittelupalvelut on pystytty pitämään korkeatasoisina päätellen alhaisista raskauden keskeytyslukuista. Ehkäisykäynnin sisältöön liittyviä, tutkimukseen perustuvia suosituksia kuitenkin tarvitaan, jotta jatkossakin korkeatasoisia palveluja pystytään tarjoamaan. Perhesuunnittelupalvelujen järjestäminen niin, että myös miehet luontevasti voisivat tulla vastaanotolle perhesuunnittelu ja seksuaaliterveys asioissa, kaipaa tehostamista.

Yliopisto-opiskelijat ovat optimaalisessa lastensaanti-iässä, mutta heillä oli harvemmin lapsia muuhun suomalaiseen samanikäiseen väestöön verrattuna. Suuri enemmistö heistä toivoi saavansa lapsia opintojen loputtua noin 30 ikävuoden paikkeilla. Opintojen keskeneräisyys oli suurin syy lastenhankinnan siirtämiseen. Tutkimus herättää huolen siitä, ovatko yliopisto-opiskelijat riittävän tietoisia iän vaikutuksesta hedelmällisyyteen ja raskauden hyvään ennusteeseen, kun he siirtävät lastensaamista tulevaisuuteen kesken olevien opintojen takia. Yleisen ilmapiirin ja olosuhteiden tulisi olla sellaisia, että myös yliopisto-opiskelijoilla olisi aidosti mahdollisuus valita lastensaaminen optimaalisessa iässä. Jatkotutkimukset ovat tarpeen sen suhteen, kuinka hyvin opiskelijat ovat tietoisia iän vaikutuksesta hedelmällisyyteen ja raskauden kulkuun ja kuinka paljon tämä tietoisuus vaikuttaisi heidän päätöksiinsä. Rationaalisten valintojen takana on usein ambivalenttisia tunteita. Sekä kvantitatiivista että kvalitatiivista tutkimusta tarvitaan, jotta ymmärrettäisiin syvällisemmin perhesuunnitteluun liittyviä monitasoisia kysymyksiä.

5. Introduction

Sexual and reproductive health is at the centre of people's lives and well-being (Van Look P.F.A. 2002). WHO emphasizes peoples' ability to develop and grow into a sexually responsive and responsible adult in a supportive environment. The ability to have children by choice and not by chance is among the unique attributes that define us as human.

Reproductive rights imply among others, informed choice on family planning, birth and birth spacing, and attainment of desired number of children (WHO 2001). To achieve these reproductive rights the WHO/Europe reproductive health and research programme is working to increase the knowledge of individuals and couples on their rights through information and education strategies that can support reproductive health services in the Member States. One goal is to reduce induced abortions by ensuring the availability of contraceptives and widening the contraceptive options. WHO also emphasizes the active participation and responsibility of men in informed decision-making on sexual and reproductive health issues and wants to promote use of male contraceptive methods.

As early as the 1970s, WHO has made the following definition of family planning: "Family planning refers to practices that help individuals and couples to obtain certain objectives; to avoid unwanted births; to bring about wanted births; to regulate the intervals between pregnancies; to control the time at which births occur in relation to the ages of the parents; and to determine the number of the children in the family. Services that make these practices possible include education and counseling on family planning; the provision of contraceptives; the management of infertility; education about sex and parenthood; and organizationally related activities, such as genetic and marriage counseling, screening for malignancy, and adoption services" (WHO 1986). This definition provided an overall understanding of family planning and in many ways was ahead of its time (Bender 2005).

The scope of reproductive health extends across the lifespan and across several public health domains (Temmerman et al 2006). Assessing all aspects of reproductive health requires the measurement of medical, social and demographic trends within a population, in addition to assessing the quality and effectiveness of associated health care services. The timing of pregnancies is related to various social and health dimensions and health problems (Kesseli et al 2006). A long interval between the beginning of an active sexual life and the birth of the first child represents a longer time during which fertility-damaging exposures can occur, and it has a significant impact on the choice of contraceptive method.

Postponing childbirth has become increasingly common in Western countries, especially among groups with higher education (Lampic et al 2006). In Finland there has been a remarkable increase in the number of people undertaking higher education. Finland has the highest proportion of tertiary students relative to population (20-24 year olds) among EU countries (Andren 2005). There has been little specific research on students' family planning. This thesis explores the family planning situation among Finnish university students concerning the following topics: current sexual activity and contraceptive practices including emergency contraception, and the trend in the use of contraceptive services including consultations for induced abortions. Childbearing, the desire to have children, and reasons to postpone pregnancy have also been investigated.

6. Review of literature

6.1. Sexual activity

6.1.1. Sexual activity among the general population

6.1.1.1. International studies

According to the Guttmacher Institute's "Facts in Brief" sheet 77 % of women in Western countries have had intercourse by age 20, compared with 83 % in Sub-Saharan Africa and 56 % in Latin America and the Caribbean (2004).

According to the Swedish "Lifestyle, sexuality and health" study in 1996 of 18–54 year old men 66 % had had intercourse during the past week and respectively 64 % of women (Lewin B et al 2000). Of women 9 % and of men 7 % had never had intercourse in the age group 20–24.

In 1996 the St. Petersburg Gallup picked a 3500-person sample from the voting register that was representative of St. Petersburg. Of these, 2085 (61 %) were interviewed (Haavio-Mannila and Kontula 2001, 2003). Of 18–54 year olds, 73 % of men and 63 % of women had had intercourse during the past week. Of women, 10 % and of men, 6 % had never had sexual intercourse in the age group 20–24.

A survey concerning sexual behaviour was performed in Estonia in 2000 (Haavio-Mannila and Kontula 2003). Of 18–54 aged Estonian men, 66 % reported to have had sexual intercourse during the past week, and respectively 61 % of women.

According to a St. Petersburg study 2003–2004, among woman of reproductive age 61 % of female respondents aged 18–44 had had intercourse during the last week (Kesseli et al 2006).

6.1.1.2. Finnish studies

A sexual life style study has been repeated in Finland three times in 1971, 1992 and 1999 (Haavio-Mannila and Kontula 2003). In the 1971 study 92 % of all respondents had ever had sexual intercourse. Of men, 12 % and of women, 13 % in the age group 20–24 had not had sexual intercourse (Haavio-Mannila and Kontula 2001). To investigate the frequency of intercourse among 18–54-year-

old people, the question was: “ When did you last have sexual intercourse?” In 1971, 73 % of men and 72 % of women had had intercourse during the past week.

In 1992 another survey was made with almost the same method as in 1971 (Haavio-Mannila and Kontula 2001, 2003). Of respondents, 97 % had ever had sexual intercourse (Kontula and Haavio-Mannila 1993). The proportion of the 20–24-old men and women who had never had sexual intercourse was 11 % and 5 %, respectively. During the previous week, 75 % of men had had the intercourse compared to 74 % of women. In the age group 18–24, 29 % of men had no current sexual intercourse and 18 % of women. Respectively in the age group 25–29, the figures were 12 % and 8 %, and in the age group 30–34, 9 % and 8 %. In all older age groups the percentage of those who had no current sexual intercourse was greater among women than men.

The 1999 Finnish questionnaire study was administered as a mail-in survey (Haavio-Mannila and Kontula 2001, 2003). Of respondents, 70 % of men and 66 % of women reported to having had sexual intercourse during the last week. Of women, in the age group 20–24, 7 % had never had sexual intercourse, and respectively, 15 % of men.

Among men in the age group 18–34 years, the proportion of those who had had sexual intercourse during the previous week was 73 % in 1971, 68 % in 1992 and 69 % in 1999. Respectively the figures among women were 73 %, 74 % and 63 %.

Highly educated people have begun sexual intercourse later than less educated. The share of those who begin sexual intercourse before the age of 18 years has increased among Finnish population from the 1970s to the end of the 1990s (Haavio-Mannila and Kontula 2001). However the change has not been as great among more educated men (from approximately 30 % to 40 %) compared to more educated women (from approximately 11 % to 60 %).

6.1.2. Sexual activity among university students

6.1.2.1. International studies

According to a study among US college students 72 % reported ever having had sexual intercourse (Siegel et al 1999). Of respondents (n=797), 45 % were currently sexually active. There were differences in sexual behaviour across the 4 years with regard to rates of sexual intercourse and contraception choices. Experiences of past vaginal or oral intercourse increased from 53.8 % to 83.7 % when comparing the first and the fourth study year students among female respondents, the figures for male students being 49 % and 89.7 %. As well, current sexual activity increased from 37 % to 58.2 % among females and from 28.4 % to 69 % among males.

Sexual behaviour has been studied among Swedish female students visiting the students' health service (Tyden et al 2001). Almost all women (98 %; n=326) had ever had sexual intercourse.

In Albania an anonymous questionnaire study was performed in 2002 (Burazeri et al 2003). The sample was 779 undergraduate students at the University of Tirana, and 96 % of them responded. The prevalence of current/or previous sexual activity was higher among men than women (65 % vs. 34 %).

In India a questionnaire study was made in one of the medical colleges of Delhi (Aggarwal et al 2000). An anonymous questionnaire was administered to 504 medical students (90.8 % male). The response rate was 73 % and the mean age of respondents was 20.4 years. Only 43 students (11.8 %) admitted to having experienced sexual intercourse at least once. Among male students it was 12.7 %, compared to only 4.7 % of females.

6.1.2.2. Finnish studies

In 1974, a study report in the FSHS was published concerning sexual behaviour (Saari and Raitasalo 1974). According to this report 63 % of first year male students and 65 % of female students reported to having had sexual intercourse. Respectively the figures among third year university students were 73 % of male students and 83 % of female.

In a study of the first year university students in 1984 no current need of contraception was reported by 38.1 % of male students (n=3102) and 44.4 % of female students (n=4572) (Tuori and Peräsalo 1984). Probably most of them had no current sexual intercourse.

According to a postal questionnaire in 1983 among university students in Helsinki, 80 % of respondents have ever had sexual intercourse (Makkonen and Kontula 1989).

6.2. Contraceptive practices

6.2.1. Contraceptive methods

6.2.1.1. Condom

The male condom is the most commonly used form of the barrier methods, which create a physical barrier to block sperm from reaching the ovum and reduce the risk of sexually transmitted infections (Scott and Glasier 2006). The forerunner of the condom existed after the mid-1500s and in Finland the first condoms were manufactured in 1937 (Kirkkola 2004). Male condoms may be

made of latex, polyurethane, or treated animal tissue (Scott and Glasier 2006). In this thesis, condom means male condom.

6.2.1.2. IUD

The history of intrauterine contraceptive device started in 1928, when Dr Gräfenberg introduced his silver ring (Thiery 2000). The second IUD-generation was plastic devices and the third generation copper-bearing devices in 1960s. In Finland copper-releasing IUD's were introduced in 1972 (Kirkkola 2004). The mechanism of action is still unknown. The use of IUD as emergency contraception is dealt with later in the chapter on EC.

6.2.1.3. Hormonal contraceptives

6.2.1.3.1. Oral contraceptives (OCs)

The introduction of oral hormonal contraceptives in the early 1960s was the significant turning point of modern contraception and, since then, the combined oral contraceptive pill has been used by approximately 200 million women worldwide (Scott and Glasier 2006). The first combined OC pill included high doses of oestrogen and progestin and was approved by the Food and Drug Administration (FDA) for use in the USA in 1960 (The Practice Committee of Am Soc for Repr Med 2004). In the 1970s low dose ethinyl estradiol progestin combined pills and progestin-only minipills were marketed. On the Finnish market OCs were introduced in 1962, progestin-only pills in 1971, low-estrogen oral contraceptives in 1974 and tri-fasic OCs and a combination of ethinyl estradiol/desogestrel in 1981 (Kirkkola 2004). The newest combined OC in Finland (since 2002) contains drospirenone, which is the progestagen with both anti-androgenic and anti-meniralcorticoid activity (Scott and Glasier 2006). OCs act mainly by inhibiting ovulation. Progestagen-only pills (minipils) act mainly by altering cervical mucus to reduce sperm penetration and the endometrium to reduce implantation.

6.2.1.3.2. Injectable contraception

An intramuscular injection of 150 mg of medroxyprogesterone acetate (DMPA) was introduced in 1963 and protects against pregnancy for at least three months (Scott and Glasier 2006). In Finland it has been used for contraception purposes with three-month intervals since 1995 (Kirkkola 2004). Depot injections of progestagen have a strongly inhibitory effect on ovulation.

6.2.1.3.3. *Hormonal IUD*

The fourth generation IUD hormone-releasing devices were introduced in 1976 and the levonorgestrel-releasing IUD came to the market in Finland 1990 (Thiery 2000). This hormone-releasing IUD solved the menorrhagia problem, which previous IUD's created. Levonorgestrel acts on the endometrium to cause atrophy and it also alters the characteristics of the cervical mucus (Scott and Glasier 2006). The fifth generation intrauterine implant is not available in Finland.

6.2.1.3.4. *Implantable contraception*

Sub-dermal contraceptive implants deliver a continuous low dose of progestagen from polymer capsules or rods (Scott and Glasier 2006). Implantable contraceptives contained levonorgestrel in six implantable rods to be removed after five years. In Finland this mode was available 1984–1999 (Kirkkola 2004). This device was marketed in USA from 1990 to 2002, when it was withdrawn from the market due to complications associated with removal (The Practice Committee of Am Soc Repr Med 2004). A new levonorgestrel implant came to market in Finland in 1998 and the newest mode, with an applicator, in 2004. This system contains two rods 4cm in length with total dose of 150 mg levonorgestrel for three-to-five-year duration. A newer single implant system contains etonogestrel for three-year duration. A levonorgestrel implant prevents sperm transport through the female genital tract and etonogestrel causes anovulation (Scott and Glasier 2006).

6.2.1.3.5. *Patch and ring*

New delivery systems for hormonal contraception are vaginal rings and transdermal patches (Scott and Glasier 2006). The transdermal-combined estrogen/progestin contraceptive patch was approved by the FDA for use in the United States in 2002 (The Practice Committee of Am Soc Repr Med 2004). In Finland it has been in the market since 2003. The patch delivers 20 µg ethinyl estradiol and 150 µg of norelgestromin daily. The dosing is one patch weekly for three consecutive weeks, followed by a patch-free week.

A combined estrogen/progestin contraception vaginal ring was approved by the FDA for use in USA in 2001. The vaginal ring consists of a flexible ring made of ethylene vinyl acetate copolymer. It releases 15 µg ethinylestradiol and 120 µg etonogestrel daily. The ring is placed in the vagina and left there for three weeks, followed by a one-week ring-free period to allow for regular menstrual bleeding. The ring became available in Finland in 2003. The patch and ring are identical to the combined oral preparation in terms of WHO Medical Eligibility Criteria (WHO 2004).

6.2.1.4. Other contraceptive methods

Other methods of contraception are withdrawal, lactational amenorrhea, rhythm method and other natural family planning methods, female condoms, diaphragms and caps (Scott and Glasier 2006). Male and female sterilisations are irreversible forms of contraception. These other methods are rarely used among students in Finland, and that is why they are not presented in this thesis more profoundly. They are still important preventive modes in many countries as is seen in the following review of studies concerning contraceptive practices.

Hormonal emergency contraception is dealt with later in the chapter on emergency contraception.

6.2.2. Contraceptive practices among the general population

Contraceptive prevalence has increased dramatically in the last five decades (Scott and Glasier 2006). Concerning contraceptive choices, there are marked differences between countries. Age and stage of life is a major determinant of contraceptive choice.

6.2.2.1. International studies

In 1996 the Swedish National Institute of Public Health initiated and financed the interview study “Lifestyle, sexuality and health” (Lewin B et al 2000). A random sample of 5250 persons aged 18–74 was selected from the population register, the net sample being 4781. The response rate was 58.8 % and the final number of participants was 2810. The reported use of a condom during the most recent intercourse among men and women aged 18–54 was 22 %. The use of OC was 31 % among Swedish men’s partners and 29 % among women. The use of an IUD was reported by 21 % of men and 19 % of women: and respectively withdrawal was used by 10 % of men and 11 % of women. Among single respondents, aged 18-74, the use of a condom was 22 %. The contraceptive pill was the most often method used in permanent relationships.

In 1996 the St. Petersburg Gallup picked a 3500-person random sample from the voting register that was representative of St. Petersburg residents (Haavio-Mannila and Kontula 2001). Of the sample, 2085 (61 %), aged 18-54, were interviewed. During the most recent intercourse, 32 % of men and 23 % of women had used a condom. Of men, 8 % reported OC use, and of women, 13 %. The use of an IUD was 7 % among men and 18 % among women. Withdrawal was reported by 12 % of both men and women. The use of the rhythm method was reported by 14 % of men and 17 % of women. Among single respondents, the use of condoms was 33 %.

In her recently published academic dissertation, Anna-Leena Kirkkola has thoroughly analyzed the databases concerning international contraceptive practices among adults in Europe from 1990 to the end of 2000 (Kirkkola 2004).

OC, condoms and IUDs proved to be the most popular methods in most of the European countries where contraception was studied. Withdrawal and the rhythm method were used fairly widely in Italy (Oddens 1996) and in many Eastern European countries.

An Estonian survey concerning sexual behaviour was performed in 2000 (Haavio-Mannila and Kontula 2001). The market research organization Emor carried out Omnibus-type population surveys twice a month among permanent Estonian residents aged 15–74. The samples were collected using a two-stage, stratified sampling method. The survey was repeated five times and the sample size was 500 persons each time. The interviewers gave the questionnaires to the respondents, who completed and returned them to Emor. Of the selected persons (1031) 41.2 %, returned the questionnaire. Condom use during the most recent intercourse was 26 % among men and 12 % among women. OC use was 11 % among women and 13 % among men. The use of IUD was reported by 21 % of men and by 35 % of women. Withdrawal was used by 19 % of both men and women. Use of the rhythm method was reported by 8 % of men and 14 % of women. Among single respondents use of condoms was 26 %.

Contraceptive behaviour was studied in a national household survey among Greek females, ages 16–45 years, in 2001 (Tountas et al 2004). The sample of 797 was representative of the Greek female population. 6.9 % of women participating in the survey reported not being sexually active and were excluded from the analysis. The most common current contraceptive method was the condom, at the rate of 33.9 %, followed by withdrawal at 28.8 %, OC at 4.8 % and IUD at 3.6 %. Among OC-users, 40 % of them used the pill for medical reasons. Participants were also asked to report all methods they have ever used. Of all respondents, condoms had been used by 79.3 %, withdrawal 66.4 %, oral contraceptive 30.8 %, periodic abstinence 21.9 %, and IUD 10.8 %.

The United States National Centre for Health Statistics (NHCS) conducts the National Surveys of Family Growth (NSFG) that is a periodic household survey of US women (15–44 years) and investigates topics related to childbearing and reproductive health (Mosher et al 2004). Since 1973 the NSFG has been conducted six times. The report published in 2004 presented national estimates of contraceptive use and method choice based on the 1982, 1995 and 2002 NSFG. Of the sample of 7643 women interviewed in 2002, the response rate was 80 %. The leading method of contraception was oral contraceptives. The ever use of OC increased from 76 % (1982) to 82 % (2002). The second leading method was sterilization and the third, condoms. The ever use of condoms increased from 52 % in 1982 to 90 % in 2002, and withdrawal increased from 25 % to 56 %.

Of the total, 61.9 % were currently using contraception in 2002. The use of OC was 19 %, the use of female sterilization was 17 % and the use of condoms was 11 %. Other reported methods were: male sterilization 5.7 %, 3-month injectable contraception 3.3 %, IUD 1.3 % and withdrawal 2.5 %.

The proportion of women who were sexually active and not using contraception increased from 5.4 % in 1995 to 7.4 % in 2002. Of all women 10.1 % used currently more than one contraceptive method: in the age group 20–

24 the proportion of multiple/dual contraceptive users was 12.7 %, in the age group 25–29 years it was 10.8 %, and in the age group 30–34 it was 9.5 %.

Use of OCs increased markedly as education increased, from 11 % in the lowest education group to 42 % in the highest group. Condom use was especially common among teens (45 % of contraceptive users), 20–24 olds (36 % of contraceptive users), and childless women (36 %).

A representative survey among women of fertile age from St. Petersburg was conducted in 2003–2004 (Kesseli et al 2006). The selected participants were a random sample of 2501 women from a total of 90 532 women aged 18–44. The participants were primarily encouraged to visit three women's clinics to answer the questionnaire. The response rate was 67 %. The respondents reported that contraception used during the most recent act of sexual intercourse was: condom 34.9 %, withdrawal 22.6 %, nothing 22.7 %, OC 9.7 %, IUD 7.6 %, rhythm method 14.5 %, shower 11.4 %, spermicides 4.2 %, sterilization 0.4 %, EC 0.7 % and others 0.5 %. Of all respondents, 46.7 % have ever used OC.

6.2.2.2. Finnish studies

Nationally representative data on sexual issues was collected for the first time through interviews in 1971 (Sievers et al 1974). A random sample of 2354 persons was drawn from the National Population Register. The total response rate was 91.4 % (92.7 % for women and 89.2 % for men). The final sample was 744 men and 1408 women aged 18–54 years. Of all respondents, 70.7 % had ever used condoms, 55.6 % withdrawal, 37.6 % OC, 21.6 % rhythm method, 15 % foam, 4.7 % IUD, 3.9 % diaphragm, and 3.7 % douche. In the female population, aged 18–44, the current use (during the previous month) of condoms was 25 %, oral contraceptives 17 %, withdrawal 12 %, IUD 2 % and other methods 3 %. The ever use of condoms and OCs was more usual among educated people than among less educated. Concerning current use there was not such difference. Current use of withdrawal was popular among the older age group (21 %), but it was very rare among younger age groups (7 %).

In the 1990s researchers Haavio-Mannila and Kontula collected two new comparable data sets (Haavio-Mannila and Kontula 2003). In 1992 the method was dual-stage interview and it was conducted in the homes of the interviewees. The response rate of women was 77.7 % and of men, 74.2 %. Respondents were 18–74 years of age and consisted of 1146 women and 1104 men. Of those who needed contraception in the year 1992 almost 40 % of men and 29 % of women had used a condom during the most recent intercourse. The use of hormonal contraception was 25 % among men's partners and 30 % among women. The use of an IUD was 22 % among men's partners and women. Withdrawal was used by 2 % of men and 3 % of women. Several methods were used simultaneously by 6 % of men and 9 % of women. Sterilization (together with the partner) was the reason not to need any contraception for 12 % of women and 8 % of men.

The Finnish questionnaire study in 1999 was administered as a mail-in survey (Haavio-Mannila and Kontula 2001, 2003). The study focused on 18–81-

year-old Finns. The 3300-person sample was selected through random sampling from the central population register. The response rate for women was 52 % (n=872) and for men 38.4 % (n=624), however, the response rate among women aged 18–24 was 75 %. About 20 % of women aged 25–44 reported no need for contraception. In their most recent intercourse, men aged 18–54, who needed contraception (n=339), used: condoms 27 %, OC 33 %, IUD 22 %, withdrawal 7 %, several methods 2 %. Among women (n=621) respectively, the use of contraception was: condom 28 %, OC 31 %, IUD 24 %, withdrawal 6 %, several methods 4 %.

From 1992 to 1999 the use of condoms declined in all age groups among men. Among women the use of condoms was in the same level in 1992 and in 1999. Among single respondents, it was 42 % in 1992 and 41 % in 1999.

A postal questionnaire in 1994 was performed by the National Research and development Centre for Welfare and Health (Kosunen and Sihvo 1998). A random sample of 3000 women, aged 18–44, was derived from the National Population Register. The response rate was 74 %. The current use of oral contraceptives among women, who needed contraception, was 25 %, the use of condoms was 20 %, IUD 18 %, and sterilization 9 %. The use of double contraception was 5 %.

In the year 1997 a postal questionnaire was performed in Finland among population aged 18–50 years (Kirkkola et al 1999). A random sample of men (n=395) and women (n=393) was taken from the Finnish population register. The response rate for men was 45 % and for women 56 %. A total of 94 % of men and 96 % of women had sometimes used contraceptives. The most popular ever use method reported by respondents was the condom: 91 % of men and 96 % of women. OCs had been used by 87 % of men and 82 % of women. Withdrawal was used by 49 % of both men and women and ordinary IUDs by 32 % of men and women. The proportion of OC users was higher among women of high educational level compared with lower educated women.

According to studies performed 1971–1999 the condom has been the most popular birth control method, though its use decreased and OCs became more popular in 1990s (Kirkkola 2004, Kosunen et al 1999, Haavio-Mannila and Kontula 2003).

The Health 2000 survey was a health interview/examination survey carried out in Finland 2000–2001 (Aromaa and Koskinen 2002). KTL (National Public Health Institute) had the primary responsibility for the survey. The nationally representative sample included 8028 persons aged 30 or over, and 1894 young adults aged 18–29 years. In the sample of over 30 year olds, 88 % were interviewed, 80 % attended a comprehensive health examination and 5 % attended a condensed examination at home. Concerning reproductive health, the aim was to produce data for reproductive health monitoring with a wider focus than previously gathered on this topic (Koponen and Luoto 2004).

The current and ever use of three contraceptive methods (OCs, IUDs and hormone releasing IUDs) were asked from all 18–54 year olds, and other contraceptive methods only from 18–29 year olds (Kosunen et al 2004). The current use of OCs among all respondents was 18.8 %, the use of hormonal IUDs

was 8.3 % and use of normal IUDs was 9.5 %. In the age group under 25 years (n= 440), 48.2 % currently used OC, none used a hormonal IUD and 1.4 % used a normal IUD. Respective figures in the age group of 25–29 year olds were 35.6 %, 2.5 % and 5.9 %. Of 30–34 year olds 23.5 % used OC, 6.4 % used a hormonal IUD and 13 % used a normal IUD.

The ever use of methods other than OCs or IUDs were asked from those who were under 30 years. Of these, 41.5 % had ever used a condom. Double contraception was quite usual; 29 % of 20–24 years olds and 24 % of 25–29 year olds answered having used a condom together with OCs or IUDs. Of those under 30 years old who did not use OCs or IUDs (n= 396), 26 people answered to having used withdrawal, seven rhythm method, three spermicides and 16 some other method. Seven of them had used emergency contraception; five of these currently used an OC or an IUD. The current use of oral contraceptives of 18–54-year old women was almost twice as common among those women who had a high education compared with the women with a lower education (20.9 % vs. 11.8 %).

The ever use of OCs in the age group 18–24 was 79.4 %, in the age group 25–29 it was 89.5 % and respectively 90.4 % in the age group 30–34. None of respondents under 25 years old had used a hormone-releasing IUD, whereas 3.2 % in the age group 25–29 and 9.8 % in the age group 30–34 had used a hormone-releasing IUD. The figures for the use of a normal IUD were respectively 2.2 %, 11.1 % and 22.2 %. The ever use of OCs was more common among women with higher educations than those with a lower education.

The national FINRISK studies have been carried out in Finland in five-year intervals since 1972 (Luoto et al 2004). A stratified random sample of population aged 25–64 is drawn from the population registers. Women who participated in the FINRISK 1997 and 2002 studies (n= 3763 and n= 4529, respectively) constituted the sample for this reproductive health survey. In 1997 there were only a few questions concerning contraception and hormone therapies. In 2002 there was a specific reproductive health questionnaire with 51 questions. This questionnaire was sent by mail to women who were invited to a health check in a health centre. Women completed the questionnaire at home and took it with them when coming to the health check. The current use of OCs among all women was 9.7 % in 1997 and 12.3 % in 2002. In the age group 25–44 years the current use had increased from 19.0 % to 22.9 %. The ever use of OCs had increased from 62.2 % to 73.5 %. The use of hormone-releasing IUDs was 5.0 % in 1997 and 6.8 % in 2002. The ever use of hormone-releasing IUDs had increased from 8.6 % to 21.6 %.

Since 1978 The National Public Health Institute (KTL) has carried out an annual postal survey entitled “Health Behaviour and Health among the Finnish Adult Population.” A questionnaire is mailed to a random sample of Finnish adults between 15 and 64 years of age drawn from the Population Register (Helakorpi et al 2005). The median response rate has been 73 %. The question concerning the use of medicine has included OCs. Kosunen has analyzed the use of OCs in the 1990s in Finland using the material from this study 1993–97 (Kosunen et al 1999). In the age group 20–24 the proportion of current use of

OCs increased from 51.9 % to 54.7 %. In the age group 25–29 the increase was from 34.1 % to 37.2 %. Respectively the figures for 30–34 year olds were 22 % and 22.7 %, and for 40–44 year olds 22.6 % and 23.2 %.

The use of OCs during 1995-2005 according to the reports of “Health Behaviour and Health among the Finnish Adult Population” is seen in the Table 1. (www.ktl.fi/AVTK).

Table 1. The use of oral contraceptives in the past week among Finnish females (15-44 years) 1995-2005 (www.ktl.fi/AVTK)

Age	1995 (%)	2000 (%)	2002 (%)	2005 (%)
15-24	34.1	42.2	37.3	33.4
25-34	31.5	28.9	31.7	30.2
35-44	9,5	11.4	15.3	12.9

6.2.3. Contraceptive practices among university students

6.2.3.1. International studies

A cross-sectional survey was carried out among US College students over a period of 4 months during the 1994–1995 academic year (Siegel et al 1999). There were 817 students who were asked to participate, and 97 % agreed. The student sample represented 17 % of the college population. A 41-item sexual behaviour questionnaire was administered to a convenience sample (n= 797) of a college population. All study subject enrollment and questionnaire completion took place during structured, monitored meetings. The mean age of respondents was 19 years. Of them 72 % reported ever having had sexual intercourse. Currently 45 % of the sample was sexually active. For those who had ever had sex, condoms were the most common contraceptive for both past (70 %) and present sexual activity (68 %). More students reported OC use for current (37 %) compared with first-ever (10 %) sexual activity. There were differences in sexual behaviour across the 4 years with regard to rates of sexual intercourse and contraception choices. Among the first-year female students the current use of OCs was 27.3 % and among the fourth-year female students the figure was 54.3 %. Respectively among partners of male students the rates of OC use were 24.3 % and 40 %. The current condom use among the first-year female students was 67.5 %, and among the fourth-year female students, 65.2 %. Respectively among male students, figures were 80.4 % and 67.5 %.

A Swedish study was carried out in Uppsala Student Health Service in spring 1999 (Tyden et al 2001). Female university students, who visited either nurse-midwives or the gynaecologist, were asked to complete an anonymous questionnaire consisting of 37 questions concerning sexual behaviour. Their

response rate was 98 % (n=333) and the mean age of respondents was 22.9 years. Results were compared to a previous study carried out among university students in Uppsala in 1989. Questions regarding the use of contraceptives were relative to three special occasions: first intercourse, first intercourse with the latest partner, and most recent intercourse. There was a significant increase in the use of contraceptives from 1989 to 1999, especially in the use of condoms in the first coitus, where the rate of use increased from 40 % to 77 %. Three to seven percent of the women used a combination of contraceptives at these three occasions, mainly an OC together with a condom. In the most recent coitus the use of condoms had not increased; it was 24 % in 1989 and 21 % in 1999. The figures for the use of OCs were 59 % and 69 % in the most recent coitus.

6.2.3.2. Finnish studies

The use of contraception among Finnish university students was studied in 1979–80 (Tuori and Peräsalo 1984). The material was based on the first-year students (mean age 21.9) attending health check-ups in 1979–80. These students were invited by mail to a health check by personal letter that included a questionnaire. The sample was 8124 students, 83 % came to the health check with a self-report questionnaire. The question concerning contraception was: “What contraceptive methods have you/ your partner used during the last half-year?” A quarter of female students and of male students’ partners had used OCs. 44.2 % of men and 29.3 % of women reported to having used a condom. The figure for the use of an IUD was 6.7 % among men’s partners and 6.5 % among women. 8.6 % of men and 7.6 % of women reported using withdrawal or the rhythm method. 38 % of men and 45 % of women reported having no need for contraception.

Another study concerning female students’ contraception was published in 1989 (Makkonen and Kontula 1989). The material for this study was accumulated from two different studies. The first study was performed in the FSHS in the year 1973 when the first-year students were invited to a health check at the University of Helsinki (Saari and Raitasalo 1974). Of those who received the invitation, 82 % came to the health check, and they consisted of the sample of 844 students. Only one of them did not complete the questionnaire. Of respondents, 47.3 % were female (n=398) and the mean age was 21.6 years (range 18–39). The second study was performed in the year 1983 by postal questionnaire. A random sample of 968 students was drawn from the student register of Helsinki University. Of these students, 627 were female. The response rate was 68.4 % and the median age was 24.6 years (range 18–44). In the most recent intercourse the use of OCs was 27 % in 1973 and 41 % in 1983. The use of a condom had decreased from 49 % to 31 %. The use of IUDs had increased from 2 % to 12 %. In the year 1973, 14 % of female students reported using no contraception while ten years later the figure was 11 %. The use of OCs was most popular among those who had a permanent relationship. Single students

more often used condoms. The IUD was a popular method among those who had children.

The Student Health Survey 2000 was carried out among Finnish undergraduate university students, who were entitled to receive health care services provided by the FSHS, and were under 35 years of age (Kunttu and Huttunen 2001). A random sample of 5030 students, of whom 46.1 % were male, was drawn from this population. The study material was collected by means of a postal questionnaire. The response rate was 63.1 % (52.7 % for males and 72.0 % for females). The questionnaire included one item on the use of OCs and 50.9 % of female university students reported the current use of OCs.

6.2.4. Emergency contraception (EC)

6.2.4.1. EC Definition, mode of action and efficacy

Emergency contraception (EC) is any method of pregnancy prevention, which is used after unprotected or inadequately protected intercourse, and before implantation (WHO Task Force 1998, International consortium 2004, Käypä hoito -suositus 2006). The mechanisms of action of the various forms of hormonal EC have been studied in many experimental studies, but the mechanisms are not exactly understood (Grimes and Raymond 2002, Croxatto et al 2003, Käypä hoito -suositus 2006). EC probably works through multiple mechanisms that may depend on the timing of their administration in the menstrual cycle. The contraceptive effect is estimated mainly to be due to an inhibition or delay of ovulation (Swahn et al 1996, Durand et al 2001, Marions et al 2002). EC pills are ineffective after implantation; pregnancy proceeds normally and there is no evidence of teratogenicity (Rivera et al 1999). The fact that EC pills do not cause abortion is important information in regions where abortion is culturally stigmatized (Ellertson et al 2000). Despite decades of study, the exact mode of contraceptive action of copper-containing IUDs also remains unclear (Rivera et al 1999, Käypä hoito suositus 2006). According to Rivera evidence indicates that the primary mechanism of action of an IUD appears to be the prevention of fertilization. EC is not as effective as consistent and correct use of most contraceptive methods.

6.2.4.2. History of EC

The beginnings of emergency contraception date back to the 1920s, when it was demonstrated that high-dose estrogens could prevent pregnancy in mammals (Schwartz 2001). Preliminary trials were done among women by using high doses of diethylstilbestrol and ethinylestradiol. Diethylstilbestrol was excluded because of concerns about teratogenicity. The high-dose of conjugated estrogens

(15mg twice a day for 5 days) or ethinyl estradiol (2.5 mg twice a day for 5 days) became the standard of care. These regimens were associated with high rates of gastrointestinal side effects.

In the 1970s Yuzpe reduced the dosage of estrogen by adding progestin and developed a regimen using combination of oral contraceptives (ethinylestradiol 0,1 mg and levonorgestrel 0.5mg twice 12 hours apart) (Yuzpe and Lancee 1977, Thomas 2001). In the beginning there were no prepackaged medications available and providers had to use combinations of oral contraceptives to prescribe appropriate dosages (Schwartz 2001). In the 1980s a licensed product became available in UK and several other countries in Western Europe and New Zealand (Glasier 1997). A four-tablet package of a combination product came onto the market in Finland in 1986 (Tokola 2000). When started within 72 hours of unprotected intercourse this regimen was estimated to prevent about 75% of pregnancies that would have occurred without treatment (WHO Task Force 1998). Nausea and vomiting were quite usual side effects and the need for a more effective and better-tolerated method was obvious.

Levonorgestrel-only pills had been long available in parts of Eastern Europe, the Far East and many developing countries (Glasier 1997). In the 1990s the trials were done where the levonorgestrel were compared with the Yuzpe regimen (Ho and Kwan 1993, WHO Task Force 1998). The multicenter trial (a total of 1998 women participated at 21 centers worldwide) conducted by WHO was a randomized controlled trial of levonorgestrel versus the Yuzpe regimen of combined oral contraceptives for emergency contraception. Women with regular menses, not using hormonal contraception, and requesting EC received either levonorgestrel 0.75 mg repeated 12 hours later or the Yuzpe regimen. The reported result was that levonorgestrel regimen was more effective than the combined method. Pregnancy rate was 3.2 % among those who had used combined oral contraceptives and 1.1 % among those who had used levonorgestrel only. The estimated proportion of pregnancies prevented was 85 % (74–93) with the levonorgestrel regimen and 57 % (39–71) with the Yuzpe regimen. Nausea and vomiting were significantly less frequent with the levonorgestrel regimen than with the Yuzpe regimen. With either method the earlier the treatment was given, the more effective it seemed to be. A progestin-only regimen came into the market in Western European countries and the USA in the 1990s, and in Finland in the year 2000 (Toivonen 2001).

A prescription was originally required for purchase of EC from a pharmacy. Many experts had the opinion that the delivery of emergency contraception should be made available without prescription, because the need for a doctor's prescription could delay the use of EC and the waiting time for an appointment may in fact prevent women from using EC. Levonorgestrel has no absolute contraindications and therefore it can be safely used without a medical prescription and delivered over-the-counter. Progestin-only pills have been available without prescription in France since 1999, and after that, in several European countries. Since the year 2002 women over 15 years old have had possibility to get EC without prescription in Finland (Käypä hoito suositus 2006). Despite EC being easily available, there is no evidence of increased

sexual risk-taking or decreased use of regular contraception (Glasier and Baird 1998). To date, over-the-counter availability has not been seen to reduce the pregnancies or induced abortions (Sihvo et al 2003, Glasier et al 2004, Käypä hoito -suositus 2006).

6.2.4.3. Recommendation for current methods of EC

The recent WHO's and the Finnish evidence-based guidelines (Käypä hoito suositus) recommendation for emergency contraception is a single dose of 1.5mg levonorgestrel (WHO hrp 2005, Käypä hoito suositus 2006) or a copper IUD. Treatment with levonorgestrel should be initiated as soon as possible, at the latest within 72 hours after unprotected or inadequately protected intercourse (WHO Task force 1998, von Hertzen et al 2002). Another available method is a copper intrauterine device (IUD) inserted within 5 days after intercourse, and this method appears to be the most effective method of EC (Grimes and Raymond 2002, Glasier 1997).

6.2.4.4. The use of EC and reasons to use EC among the general population

6.2.4.4.1. International studies

A study of the users of EC was made in 1996 in Uppsala (Tyden et al 1998). During a four-month period, women (n=762) visiting family planning clinics to request EC filled out a questionnaire about their current need for EC. The majority of women, 96 %, completed the questionnaire, but the last, open-ended question concerning the situation behind the current need for EC, was answered by 78 %. The mean age of respondents was 19.8 years (range 13–48). The majority (80 %) were high school or university students. The vast majority were nulligravidas (83 %). One-quarter had used EC before and of these, 20 % more than once. Condom breakage was the major reason (47 % of respondents) for the current need of EC. Other reasons were unprotected intercourse (20 %), worries about pregnancy in general (18 %), coitus interruptus (12 %) and poor compliance with OCs (2 %).

A study was carried out in Örebro at the youth clinic in 1998–99 (Falk et al 2001). During a six-month period, 134 women (median age 17, range 13–27 years) visited the clinic to request EC. The questionnaire, including 27 questions, was completed together with the midwife or the gynecologist. The reasons given for the need for EC were unprotected intercourse 54 %, ruptured condom 30 %, missed pill 11 % and other reason 5 %. The present method of contraception was condoms 54 %, OCs 13 % and no contraception 33 %. Oral contraceptives had previously been used by 53 % of the women and 34 % had used EC.

In 1997–2000 the women who were enrolled in the clinical EC trial in USA (n=135, mean age 22.1) and UK (n= 2022, mean age 23.6) were asked about their contraceptive use in the past and the reason to seek EC (Blanchard et al 2002). Fifty-eight percent of UK trial participants had used EC previously compared to 18 % in the United States. Most participants reported using condoms regularly, and condom breakage was the main reason for need of EC (67 % and 56 %).

A national observational study was conducted in Spain (Lete et al 2003). The data was collected from a sample of health centres in the entire Spanish territory. The material between April and December 2002 included 4390 cases of requests for EC, and it was collected by the means of a questionnaire completed by the person prescribing the EC. The mean age of women requesting EC was 23 years and 40 % of them were students. EC had been previously used by 19.8 % of women. The main reason for the need of EC was condom failure: 68.7 % breakage and 11.8 % displacement. Only 15.4 % had not used any contraception. When the women were asked for their habitual contraception, 82.2 % referred to the use of condoms and 5.8 % to hormonal contraception.

Between July 2003 and December 2004, 508 women visiting a Family Planning Centre in Italy for EC were interviewed through the use of a questionnaire containing questions on EC use (Bastianelly et al 2005). The majority (63 %) were in the age range between 18 and 25 years. The women were well educated: 76 % had a high school diploma and 16 % were university students. The vast majority of women (83 %) reported prior use of a modern contraceptive method: 64 % condoms, 27 % combined oral contraceptives and 1.1 % IUDs. In addition, 15 % had used IUDs. The main reason for EC use was condom failure (64 %), followed by unprotected intercourse (28 %), failing to withdrawal (5 %) and forgetting one or more pills. Previous use of EC was reported by 37.7 % of respondents.

A postal-questionnaire study was conducted in mid-Sweden in 2002 (Larsson et al 2004). A questionnaire was sent to a random sample of 800 women aged 16–30 years. The response rate was 71 %. One fourth (27 %) had ever used EC, the majority had only used it once and 22 % had used it twice. Almost all women who had used EC previously, were also positive about future use, 95 % compared with 67 % among the non-users.

In Spain at an emergency department of gynecology, of a total of 95 288 consultations that were registered during the over 9 years study period, 5656 were due to EC (5.9 %) (Checa et al 2004). Reasons for requesting EC included condom rupture in 69.2 % of cases, not using contraceptive methods in 16.3 %, condom retention in 10.3 % and other in 4.2 %. Seven percent of women had used EC on more than one occasion.

6.2.4.4.2. Finnish studies

In 1994 a postal questionnaire was mailed to a national random sample of 2957 women aged 18–44 drawn from the population register (Kosunen et al 1997). A

completed questionnaire was returned by 2189 women, giving a response rate of 74 %. Four percent of all respondents had ever used EC. Of all EC users 52 % were under 25 years of age and 77 % were nulliparous. Nobody reported using EC as her only contraceptive method.

In 1997 another postal questionnaire was mailed to random sample of 18–50-year old Finnish population drawn from Finnish Population Register Centre (Virjo et al 1999). Samples were 393 women and 395 men. The response rates were 56 % for women and 45 % for men. The mean age of respondents was 34.7 years. Of all responding women and men, 12 % had themselves or together with their partners, used EC. The proportion of EC users was highest in the youngest age group 18–29, as 30 % of them reported the use of EC. The use of EC was greater among single women than married women. Of women who had delivered, 7 % were users, while among nulliparous women the figure was 26 %. Of women who had undergone an induced abortion, 21 % had used EC, while the corresponding proportion was 13 % among those with no history of induced abortion.

In September–October 2003, one year after EC pill had become prescription-free; a questionnaire study was conducted in Finland (Oksama et al 2004). A questionnaire was given to all who came to purchase EC from the Helsinki University Pharmacies (15 pharmacies spread across Finland). A total of 930 questionnaires were given out. The questionnaire was completed at home and 447 (48 %) returned it by mail. The mean age of respondents was 24 years, range 15–48, with the majority being under 25 years (65 %). Of respondents, 82 % were nulliparous and induced abortion was experienced by 17 %. The current contraceptive method was a condom in 64 % of cases, 17 % reported no contraception, 8 % used OCs and 4 % double contraception with condoms and OCs. Younger respondents reported the use of condoms more often than older. Among under 20-year-old respondents the use of condoms was 79 % and among over 30 years, 56 %. The main reason to purchase EC was unprotected intercourse (55 %). Condom failure was the reason in 37 % of cases and forgetting of OCs in 6 % of cases. 46 % of respondents had been under the influence of alcohol during the intercourse. The majority (64 %) had used EC before; one-fifth had used EC at least three times. Most users bought EC for themselves (91 %) and during the weekend (60 %).

A postal questionnaire study "Health Behaviour Among Youth Study" is performed every another year among 12–18-year-old people in Finland since 1977 (Rimpelä et al 2003). Among others there is a question concerning EC use. The use of emergency contraception has increased among adolescents (Kosunen 2004). In the year 1999 the proportion of those who have used EC among the oldest age group (median age 18.6) was 12.1 % and in 2003 the figure was 24.8 %.

The sale of emergency contraceptive pills has increased in Finland from 3200 packages in 1988 to nearly 25 000 in 1994 (Lähteenmäki et al 1995). In 2001 the sale was 45 080 packages and in 2002, when progestin-only pills were offered over-the-counter to the over 15 year olds, the sale increased 62 % to 73 245 packages (Sihvo et al 2003). The sale of the progestin-only pill was almost four

times as large as in 2001 and the sale of combined EC regimen decreased. The sale of progestin-only pill was 90 % of the total sale.

6.2.4.5. The use of EC and reasons to use EC among university students

6.2.4.5.1. International studies

In the University of Nottingham student health centre all requests for EC have been recorded on a specifically designed computer template (Porter 2001). Among other data, this recorded the reason for requesting EC. A computer search was undertaken to review all the information collected from 1994 to 1999. The number of prescriptions on EC increased from 469 in 1994 to 737 in 1999. On average 11.2 % of females between ages of 17–34 who were registered with a university health centre used emergency contraception per year. During six years there were altogether 3679 occasions when EC was used and the reason for the use was recorded. Problems with condoms were the predominant reason for requests (70.5 %). Other reasons were: no contraception used 19.4 %, forgotten pills 6.7 %, gastro-enteritis with OCs 0.9 %, and antibiotics with OCs 1.7 %, other 0.8 %.

According to a Swedish study performed among female visitors in Uppsala student health service in spring 1999, EC had been used by 21.5 % (n=71) of respondents a mean of 1.3 times in 1999 (Tyden et al 2001).

6.2.4.5.2. Finnish studies

There is no previous study on emergency contraception use among university students in Finland.

6.2.4.6. Conclusion of EC use

In Europe young, unmarried and nulliparous, well-educated women are typical users of emergency contraception (Kosunen et al 1997, Tyden et al 1998, Falk et al 2001, Blanchard et al 2002, Lete et al 2003, Oksama 2004, Bastianelly et al 2005, Käypä hoito -suositus 2006). Problems with condoms have been the main reason for requesting EC, and previous use was reported by 20–40 % of respondents in most international studies (Tyden et al 1998, Porter 2001, Blanchard et al 2002, Lete et al 2003, Checa et al 2004, Bastianelly et al 2006). In over-the-counter sales in Finland the main reason was not using any contraception and secondly, problems with condom use (Oksama et al 2004).

6.2.5. Experiences of condom failure

6.2.5.1. Experiences of condom failure among the general population

6.2.5.1.1. International studies

A study among family planning clients was conducted in New Zealand in 1991–92 (Sparrow and Lavill 1994). Clients (male and female) attending clinics were invited to participate if they were planning to use condoms over the next month. The client filled out a one-page questionnaire each time a condom was used over the next month. The number of clients recruited was 837, a response rate being 73.5 %. The final sample that used condoms as anticipated was 540 clients and provided information of 3754 occasions. Of clients 40.2 % had experienced condom failure. Problems occurred in 10.9 % of occasions.

In a study, approximately 400 condom users were given 5 condoms to use for vaginal intercourse over a 3-week period (Spruyt et al 1998). Those men who reported previous condom failure had twice as often condom failure during the study time. Condom failure was also associated with adverse condom-use behaviours and lower educational level.

Condom failure experiences were studied in USA in 2000–2001 (Crosby et al 2005). Data was drawn from a larger study of adolescents enrolled in a multisided, randomized trial, of a brief HIV prevention program. Adolescents (15–21 years of age) were recruited from primary health care clinics and through outreach activities in three US cities. Inclusion criterion was sexual activity within the past 90 days. Eligible adolescents (n=1867) were invited to participate in the study. The response rate was 76 %. Of those enrolled, 616 were male, and of those, condom users were included in the analyses. The final sample was 481 condom-using males 15–21 years of age. Adolescents were asked: “In the past 90 days, when having vaginal or oral sex, did a condom ever slip off or break?” Recent condom failure was reported by 34.1 %. Younger adolescents were less likely to report condom failure than older. Those with multiple sex partners were more likely to report failure, as well as those indicating problems obtaining condoms.

6.2.5.1.2. Finnish studies

A postal questionnaire on family planning in 2002 was carried out in Finland (Kirkkola et al 2005). A random sample of Finnish men (n=1982) and women (n=1995) aged 18–50 years was drawn from the Finnish Population Register. The response rate was 36 % for men and 58 % for women. Condoms were the current method of contraception for 25 % of men and for 17 % of women. Among both men and women, 87 % had used condoms with their partners at

some time. Of men, 37 % and of women, 34 % had had problems with condom use. Among men, 31 % of the respondents in the age group 18–24 had experienced problems, the figure being 48 % in the age group 25–29 years and 47 % in 30–34 years. Men with unsteady relationships had had more problems than those with steady partners.

6.2.5.2. Experiences of condom failure among university students

6.2.5.2.1. International studies

In 1993–94 a sample of male students was recruited for a research study concerning condoms on the campuses of two Georgia universities in the USA (Warner et al 1997). Of 105 men who responded to the advertisement, 98 % participated in a standardized interview. The mean age was 22.4 years and the mean time between first condom use and study participation was 5.6 years. Half of respondents had ever experienced condom failure, and 26.5 % reported experiencing breakage during the last year. Among those (49) who had ever had condom failure, one third (15) had not disclosed the failure to their female partner. Nine of them reported doing so multiple times. Overall, 13.2 % of condom breakage episodes were never revealed to female partners. The reasons given by men for their most recent failure to disclose breakage included unwillingness to interrupt intercourse because orgasm was approaching (n=6), an attempt to avoid responsibility for the break (n=5), and a desire to minimize the anxiety of the partner about the break (n= 4).

6.2.5.2.2. Finnish studies

There is no previous study about condom failure among university students in Finland

The studies about the use of EC also reported problems with condom use. See chapter 6.2.4.4.

6.3. The use of family planning services

6.3.1. *The use of family planning services among the general population*

6.3.1.1. *International studies*

In Spain a retrospective review of the medical records of women requesting EC at an emergency department of gynaecology was conducted (Checa et al 2004). The diagnostic code “emergency contraception” was used to retrieve the medical records of the patients included in the study. A standardized questionnaire was used for data collection. In all patients the following was registered: age, reason for the use of EC, previous use of EC and the day of the week and month of the emergency visit. The mean age of study population was 23.24 ± 5.55 years. Of a total of 95 288 consultations that were registered during the over 9 years study period, 5656 were due to EC (5.9 %). The percentage of visits in which EC was provided increased from 1.26 % in 1994 to 9.82 % in 2002. The mean daily number of visits was significantly higher in August, July and September than in other months, and was more frequent on weekends and Mondays than other weekdays.

In the USA, a study exploring the context of care and contraceptive methods, used material from a National Survey of Family Growth (NSFG) from 1995 (Boardman et al 2004). The sample was 4358 women. According to this study 36–52 % of fertile-aged sexually active women currently used OCs. The method of contraception was related to the context of care (health care setting/insurance type). Long-acting forms of contraception were used significantly more often by women with public insurance regardless of type of health care setting, whereas OC use was seen more often in privately insured women seen in clinics (52 %). IUD use was uncommon (1 %) and did not vary across any combination of insurance status and clinical setting. Privately insured women seen in private doctors’ offices were more likely to use a condom (23 %) compared both to women seen in clinics (16 %) and to publicly-insured or self-paying (18 %) women seen in private offices.

In 2002, a National Service of Family Growth (NSFG) report presented data on where women obtained family planning and medical services (Mosher 2004). During one year, 41.7 % of the total had received at least one family planning service from a medical provider. The figure for 20–24 years of age was 63.3 %, for 25–29 years of age 55.4 % and for 30–34 years of age 47 %. Of women 15–44 years of age, 56 % visited private doctors for FP or related medical services and 22 % used publicly funded clinics.

In a St. Petersburg study from 2004, women were asked about the most recent medical staff visit concerning contraception (Kesseli et al 2005). Of all respondents (n= 1147) 30 % answered that they had visited less than two years

ago. Of the total, 34.7 % had never visited medical staff because of contraception.

6.3.1.2. Finnish studies

Finland has become a leader along with the Netherlands and other Nordic countries in providing high quality sexual health services and education (Lottes and Kontula 2000). Family planning services are available in municipal health centres, in school and student health care services, maternity and family planning clinics and at private doctors' offices. According to review of social welfare and health care services in 2005 the number of visits in municipal school and student health care services were a little under 2 million in the year 2002 (Heikkilä and Roos 2004). The number has decreased since 1990, when it was over 2.5 million visits. There is no available data how often the visits concerned family planning.

A study among Finnish Health centre physicians was made in 1995 (Kirkkola 2004). The study population consisted of a randomly selected sample of 351 doctors drawn from the files of the Finnish Medical Association. Respondents were asked to define the proportion of family planning in their work as hours per month. Of the female doctors, 76 % and of the male doctors, 52 % reported to have some FP work. Of women, 7 % and of men, 28 % had not at all worked with family planning. Almost a fifth of respondents did not answer this question. The mean proportion of family planning work per month among those who did FP work was six hours: among females eight hours and three hours among males. The number of family planning consultations yearly is not recorded in public health or in private clinics. Kirkkola (2004), in her recently published academic thesis of the FP situation in Finland, concluded that there are no detailed data concerning FP work in primary health care, and development of better methods in accruing information would be necessary.

In maternity care there were almost one million visits in 2003, one-fifth of them were consultations with physicians (Sosiaali- ja terveystieteiden ministeriö 2006). Medical care before the end of the fourth pregnancy month was reported by 95 % of pregnant women.

Some of the studies where sexual behaviour has been studied also have included questions concerning the use of services. According to a population-based study in 1994, three-quarters of 18–44-year-old women have ever used some contraception, and about half of them have used health care services because of pregnancy prevention during the last year (Sihvo et al 1995, Kosunen and Rimpelä 1997). Of the respondents, 83 % had sometimes used the health services for contraception (Hemminki et al 1997). For their last visit, 55 % of women had chosen a health centre and 33 % a private unit. Those who were under 25 years old had used mainly public services, while 40 % of those over 30 years had visited private clinics. Practically all of the participating women had at least once in their lives consulted a medical doctor about contraception (Sihvo and Koponen 1998).

6.3.2. The use of family planning services among university students

6.3.2.1. International studies

In the Nottingham Student Health Centre all requests for emergency contraception have been recorded (Porter 2001). During the period 1994–1999, on average 11.2 % of female students (aged 17–34) used emergency contraception yearly.

6.3.2.2. Finnish studies

There are no previously published studies concerning use of FP services among university students in Finland.

6.4. Childbearing

6.4.1. Childbearing among the general population

6.4.1.1. International studies

6.4.1.1.1. Fertility rates

Total fertility rate is defined as the total number of children an average woman would have by the end of her reproductive life if she experienced the currently prevailing age-specific fertility rates throughout her childbearing life (WHO 2001).

Data of the fertility rates in the United States from 1960 to 2002 are derived from published reports of the US government's Centers for Disease Control and Prevention's National Center for Health Statistics (Hamilton and Ventura 2006). In 2002, the general fertility rate (age-specific fertility rate) was 64.8 births per 1000 women aged 15–44 years. The rate has declined 45 % since 1960, when it was 118. There were substantial differences in childbearing patterns by age. Rates for women, 30 years of age and over, increased between 1980 and 2002. In contrast, rates for women under 25 years of age rose considerably during the late 1980s, and then decreased sharply since 1991. From 1968 to 2002, the mean age of mothers at the birth of their first child increased by nearly four years. The total fertility rate in the USA in 2004 was 2.07 (Eurostat 2006).

During the late 20th century the fertility rate in Europe has dropped below replacement level (Council of Europe 2003). The low fertility first appeared in

Central Europe in the beginning of the 1980s, in Southern Europe at the end of the 1980s, and in Eastern Europe at the end of the 1990s (Kontula and Miettinen 2005).

Table 2. Fertility rate and women's age at first child in some of the EU25-countries (Eurostat 2006)

Country	Fertility rate, 2004	Women's age at first child, 1994	Women's age at first child, 2004
Czech Republic	1.22	22.9	26.3
Denmark	1.78	27.2	28.4
Estonia	1.40	23.4	24.6
Finland	1.80	26.9	27.8
France	1.90	27.9	28.4
Germany	1.36	27.3	28.8
Italy	1.33	27.7	28.3
Ireland	1.99	27.1	28
Netherlands	1.73	28.2	28.9
Poland	1.23	23.6	25.5
Slovakia	1.24	22.8	25.3
Slovenia	1.25	24.6	27.5
Sweden	1.75	27.1	28.6
EU25	1.50	26.8	28.2

The total fertility rate (TFR) in the EU25 was 1.50 in 2004 (see Table 2). The highest fertility rates were found in Ireland, followed by France, Finland, and Denmark. The lowest fertility rates were found in Czech Republic and Poland.

The total fertility rate in both Germanys fell from 2.5 to 1.5 from 1964 to 1974, and has been around 1.5 thereafter in western Germany (Kreyenfeld 2004). In the former DDR the TFR increased almost to two children per woman, and decreased again in the 1980s and was around 1.5 at the time of reunification. After the reunification in 1989, the TFR in eastern Germany dropped sharply to 0.8. Since 2003 birth rates have increased, but not as high as in West Germany (Stöbel-Richter et al 2005).

6.4.1.1.2. Population studies

The German Fertility and Family Survey (FFS) was performed in 1992 (Hullen 2003). The FFS is a part of international project designated to produce comparable data sets for the analysis of fertility and family dynamics in European countries. Men in western Germany became fathers for the first time at

age 30–32, while men in eastern Germany experienced fatherhood at 26–27 years of age. The higher the number of siblings in each woman's own family, the greater was the tendency to have a child of her own.

Another analysis using the data from The German Fertility and Family Survey (1992) concerning female participants was published in 2004 (Kreyenfeld 2004). The median age at childbirth was roughly 22 years in the East, and it was six years higher in West. Education had strong postponing effect for childbearing in both Germanys. In East Germany, all educational groups initiated childbearing shortly after labour market entry, and in West Germany fertility was low after labour market entry; particularly the highly educated postponed parenthood until several years after labour market entry. In the East it was usual for women to work at the same time as they started a family, whereas in the West, employment hampered the first birth transition. Childlessness was very low (8 % in the age group 35–39 years) in East and there were no differences in childlessness between highly educated and other women. In contrast, childlessness was very widespread (25 %) in the West, and there were big differences by educational groups. At the age of 35, about 40 % of the West German women with higher education were still childless.

In Sweden, the number of births declined during the 1970s and early 1980s from c. 110 000 births yearly to c. 90 000 (Odlind et al 2003). Birth rates began to increase again to a peak (ca 125 000) in 1990–92 and dropped rapidly after that below 90 000. There have been profound shifts in the age distribution among childbearing women; the proportion of those below 25 years has decreased and those above 35 years has increased. The numbers of women giving birth between 40–45 years of age increased from five per 1000 women in the early 1980s to ten per 1000 in the year 2001, and at the age of 45 or older, the respective figures increased from 0.2 to 0.5 live births per 1000 (Jacobsson et al 2004). Respectively in England and Wales, between 1991 and 2001, the figures increased from 5.1 to 8.4 (40–45 years of age) and from 0.3 to 0.5 (over 45 years of age) per 1000 women. From 1970 to 2000, live births among women aged 35 years and older in the United States increased from approximately 5 % to 13 % of all live births (Cleary-Goldman et al 2005).

The Population Policy Acceptance Study (later DIALOG) is a joint research project of 15 EU countries and was started in 2002 (Kontula and Miettinen 2005). According to this survey, fertility had decreased in all participating countries in 1990–2002. The total fertility rate (TFR) was already below replacement level in all DIALOG countries except Cyprus in the beginning of the observation period. Concerning population growth and fertility, DIALOG countries could be divided into three groups: 1) Population growth with natural increase (the Netherlands, Switzerland, Cyprus, Belgium, Finland); 2) Population growth with net migration (Austria, Germany, Italy, Slovenia); and 3) No population growth, or a decrease (the Czech Republic, Estonia, Hungary, Lithuania, Poland, and Romania).

In a St. Petersburg study performed among fertile-aged female population in 2004 (Kesseli et al 2006), most women (84 %) who had been pregnant (n=882) had had at least one delivery. Almost every fourth respondent had never been

pregnant. Of women who had been pregnant, the mean number of pregnancies was 3.3 and 69 % had experienced induced abortion.

In Germany a study was done among academic professionals (Kemkes-Grottenhaler 2003). A total of 520 questionnaires were sent to female faculty members of all academic departments of the Johannes Gutenberg University in Mainz. The response rate was 37 % (n=196) and the age of respondents varied from 24 to 61. The proportion of those who already had children was 31.6 %. The figure of childless women was 65.8 %, and 2.6 % had no children due to infertility.

6.4.1.2. Finnish studies

6.4.1.2.1. Fertility rate

In Finland the total fertility rate per women aged 15–49 was 4.68 in 1901–1910, 2.39 in 1931–40, and 3.37 in 1945–50 (Miettinen A 2004). After that it has decreased, the lowest rate being 1.62, in 1971–75. For the last ten years it has been at approximately the same level of 1.75 until the year 2003. That year a slight increase occurred and then in 2004 the TFR was 1.8 (Statistics Finland: Population 2005).

The age-specific fertility rate decreased markedly in the early 1970s in all age groups (Miettinen A 2004). Since then the age-specific fertility rate has decreased in the youngest age groups and increased in older age groups. The age-specific fertility rate per 1000 women increased in the age group 30–34 from 67.5 in 1976-80 to 106.9 in 2003. It also increased in the age group 35–39 from 26.4 to 49.4, in the age group 40–44 from 6.0 to 10.8 and in the age group 45–49 from 0.3 to 0.5.

Table 3. Parturients and deliveries in Finland 1987, 2000, 2002, 2004 (Stakes statistics 2005)

	1987	2000	2002	2004
Parturients, deliveries	59397	55854	54698	56878
Median age of all	28.9	29.9	29.9	30
Median age of primiparas	26.5	27.6	27.7	27.7
Age less than 20	3.2 %	2.9 %	3.3 %	2.9 %
Age over 35	13.3 %	18.4 %	19.2 %	19.4 %

The median age of the Finnish first-time mothers has increased by five years during four decades, from 23.25 in 1961–65 to 27.8 in the year 2005 (Miettinen 2004, Stakes Statistics 2005).

When observing parturients among women over 35 years old for the year 2004, among women 35-39 years old, 8899 had given birth and of these, 14.6 %

were first-time mothers. Among women 40-44 years old, 2041 had given birth and of these, 10.6 % were first-time mothers. And finally among women over 45 years old, 104 had given birth and of these 2.9 % were first-time mothers. (Stakes statistics 2005).

6.4.1.2.2. Population statistics and studies

In the year 2004 according to population statistics, among the population aged 25–69 years, 67.8 % of Finnish men and 76.7 % of women had children (Statistics Finland 2004). In the age group 25–29 the proportion of those men, who had children, was 23.9 % and of women, 37.3 %. Respectively, in the age group 30–34, 49.3 % of men and 64.2 % of women had children. In the age group 40–44 the figures were 72.3 % and 82 %, and in the age group 65–69 the figures were 82.3 % and 85.6 %.

In the same year, the proportion of men in the age group 55–59 who had no children was highest (23.4 %) among those with low education. Men with highest education were seldom childless (11.2 %). The situation was different among women aged 55–59. The proportion of childless women was 25.1 % among higher educated women, and 14.4 % among lower educated women.

A registry study using the data from the Finnish and Estonian medical birth registries for years 1992 to 1996 was performed by Stakes to describe the differences in childbearing (Gissler et al 2000). In 1992 the birth rates were 51 per 1000 women aged 15–49 in Finland and 48 in Estonia, respectively. The birth rate declined in Estonia by 26 % and in Finland by 6 % over the four-year study period. Compared with Finnish mothers, Estonian mothers were younger and they had fewer multiple births, less prenatal care and fewer interventions during pregnancy and delivery.

In Health 2000 study, 25.6 % of women less than 30 years old had given birth, and the median number of births was 0.4. In the age group 30–44, respectively, 79.7 % had given birth and the median number of children was 1.7 (Koponen et al 2004). The proportion of those women who had at least one birth, was lowest among highly educated women (OR 0,52, 95 % LV 0.41–0,66). The proportion of birth givers was 85.7 % among lower educated women and 63.2 % among women with a high education. The figures for median number of births were 2.4 and 1.4, respectively. The figure for experience of involuntary childlessness (had tried to become pregnant during one year without success) was 14.4 % among women (n=4389) and 7.9 % for men (n=3733). Higher educated women and men had experienced childlessness more often than those with basic education.

The Finnish Family Barometer 2002 was a population-based study, done as a part of a study performed in 12 different European countries (Population Policy Acceptance Study) (Paajanen 2002). The Finnish study was conducted by the Population Research Institute of The Family Federation of Finland. A random sample of 7000 men and women aged 18–69 years was drawn from the Finnish population register. The questionnaire was sent by mail and the response rate

was 55.7 %, with a final sample of 3821 persons who completed the questionnaire. The Finnish Family Barometer-study 2002 included those who were 18–45 years old and the response rate among them was 52.2 % (n= 1996). Of these respondents, 40 % were men and 60 %, women. The median age was 32.2 years. 66 % of female respondents and 35 % of male respondents had children.

The FINRISK study of 2002 also included questions that concerned pregnancies and pregnancy complications (Luoto et al 2004). Of respondents, 80 % had been pregnant and 74.3 % had delivered at least once. The mean age at the first birth was 24.8 years. Among the age group 25–34, women had had 1.71 births, and among all participants (women aged 25–64 years, n=3621) the birth rate was 2.17. Difficulties to become pregnant were reported by 16 % of respondents. Of those who had had infertility treatments 61 % had become pregnant and 57.1 % had given birth.

A population-based study was done in Northern Finland to assess intergenerational mother-daughter patterns of reproduction (Pouta et al 2005). This mother-child study consisted of 12 055 pregnant women, who delivered in 1966. They represented 96 % of all births in the region of Oulu and Lapland. The mothers responded to a questionnaire in mid-gestation. In 1997–98, the 31-year-old daughters from those pregnancies were sent a questionnaire. The total number of girls born alive was 5889. At the age of 31 most of them (5731) were alive and could be traced. A postal questionnaire was sent to 5688 of them and 80 % responded. Reproduction was compared between all mother-daughter pairs (n= 4523) and separately for the pairs (n=489) of similar age (mothers 30–32). The daughters had had fewer deliveries overall than their mothers. In 1966 all mothers had had at least one delivery. At the age of 31 years, 76 % of daughters had been pregnant at least once and 66 % had had at least one delivery. The probability of a daughter to be multiparous was slightly higher if her mother was multiparous at the time of her daughters' birth than if she was not. Five percent of mothers and 51 % of daughters had a higher education. There was a clear inverse association between educational level and parity both among mothers and daughters. If a mother had a low education level, the probability to have five or more deliveries was three-fold. Of the highly educated daughters, 39 % were nulliparous compared to only 26 % of the women with a lower education.

6.4.2. Childbearing among university students

6.4.2.1. International studies

According to a Swedish study of the visitors in Student Health Service in 1999 in Uppsala (n= 333), three women had children (Tyden et al 2001).

A postal study was performed at the University of Uppsala in spring semester, 2004 (Lampic et al 2006). Six hundred randomly selected students

(300 women, 300 men) were invited to participate. The number of eligible students was 1783 women and 1367 men with a mean age of 24.4 (women) and 23.8 (men). The total response frequency was 67 %. The final sample consisted of 222 women and 179 men. The mean age of respondents was 24 years. Among participants 9 % of women and 5 % of men had children. During the study, one woman and two of the men's partners were pregnant.

6.4.2.2. Finnish studies

A study among all university students in Finland in 1965 reported that 11–13 % of students had children (Kalaja 1967).

According to a study among Helsinki University female students (n=505) in 1983, 100 female students had children. Thus almost 20 % of female students had children. Those who had children were over 24 years old, and one quarter of them were over 30 years old (Makkonen and Kontula 1989).

A study among Finnish university students who were over 30 years old (“adult students”) was performed in 1996 (Moore 2000). The number of undergraduate students was 19 237 and the number of postgraduate students was 10 227. According to this study, 31 % of undergraduate male students and 38 % of undergraduate female students in the age group 30–34, had children. The corresponding figure was 43 % among both male and female postgraduate students. Among the general population in the same age group 49 % of men and 68 % of women had children.

According to the Student Health Survey 2000, 7.7% of university students had children (Kunttu and Huttunen 2001).

The Student Survey 2003 was conducted among the undergraduate students of Finnish Universities and Polytechnics Institutes (AMK) (Berndtson 2004). The sample consisted of 4780 students. The data was collected through the Internet and respondents were contacted by e-mail. The response rate was 48 % among university students and 39 % among polytechnic students. Of university students, 7 % had children compared to 8.4 % of polytechnics students.

6.4.3. Desire and intentions to have children among the general population

6.4.3.1. International studies

In the St. Petersburg study, the mean ideal number of children in the respondents' own family was 2.0 (Kesseli et al 2006). Of all respondents (n=1147), 0.3 % did not want to have children, 21.8 % wanted one child, 58.4 % wanted two children and 19.5 % wanted three or more children. Out of all women in the study, 18 % had experienced some difficulties in getting pregnant.

The reasons most often mentioned behind the respondents' desire to have children were, "I want to look after the child and love it" (62.8 %), "I enjoy watching the child growing and developing" (53.4 %), "I want to experience being a mother" (48.2 %) and "children motivate me to live and work" (41.3 %). Among the women aged 25–34, the most often mentioned reasons behind a respondent's reluctance or uncertainty with respect to having children was "too small apartment" (38.5 %) and "the society does not support families with children enough" (32.3 %). Other often mentioned reasons were; not enough means or time or no guarantee of permanent work. 19.2 % reported that one reason is that "I am not married or cohabiting and do not have any suitable father for a child."

Among the youngest women (18–24) the most often mentioned reason was "not enough means to have children". Work or study was given as a reason in 17 % of the cases in the age group 18–24 and in 17.7 % of the cases in the age group 25–34.

In a study among academic professionals regarding the motivation to have children, four subgroups were differentiated among respondents (Kemkes-Grottenhaler 2003). Those with no desire to have children were 14.2 % of the total (their age range was 27–52 years); those postponing having children were 71.6 % (age 24–45 years); 11 % had not made up their mind yet (age 27–39 years); and 3.2 % were past their reproductive years (age 50–61 years). The main reason to postpone pregnancy was socioeconomic factors (ongoing qualification process, insufficient funds) in 67 % of cases. Self-realization was stated as a motive by 23.2 % and 18.7 % specified that they were without a potential partner to raise a child. The majority of women indicated the desire to have their first child by the age of 38 (with a maximum age of 48) and the ideal number of children to be two to three children.

In Great Britain the General Household Survey (GHS) has collected, since 1979, the birth intentions of women (Smallwood and Jefferies 2003). Data from the 21 surveys in England and Wales from 1979 to 2001 showed that over that period there has been a fall in women's intended numbers of births. The latest data from the 1998, 2000 and 2001 surveys showed that the average number of children desired was around two. Approximately 20 % of women aged 36–38 were childless in the latest surveys, but only 15 % of this age group was intending to remain childless. In recent years younger women have seemed to postpone childbearing. Before 1994 well over 50 % of women aged 21–23 reported that they would have a birth within five years. By the latest surveys this has fallen to below 40 %.

A representative survey of the German population was carried out in 1999 in Leipzig by the market research institute USUMA Berlin, including, among others, various questions concerning the issues of the desire for children (Stöbel-Richter et al 2005). The University of Leipzig collected the data from a total of 1580 persons, with equal proportions of men and women, and comprising 747 East Germans and 833 West Germans. The mean age was 34.8 years, with a range from 14 to 50 years. The Leipzig questionnaire on motives for having a child (LKM) consisted of 20 items questioning individual motives in favour of,

or against, the realization of the wish for a child. Of all respondents, 59 % had children. When asked about the ideal number of children, 53 % of the total stated the wish of having two children. Of respondents, 9.5 % considered it ideal to have no children.

Only 38 % of those who regarded having two children as ideal actually had two children. About one-third of all persons who wished to have more than one child had been able to realize that wish at the time of the survey. The ideal age for having the first child was at the age of 25–29 years as stated by 38 % of childless respondents. Another 38 % wanted the first child between the ages 30–35 years. With increasing age, the ideal age for the first gravidity also increased. Men articulated higher ages than women. Participants from East Germany desired their first child at an earlier age compared to West Germans. Childless participants aged 31–40 years articulated the strongest wish for a child. Overall, emotional aspects ('desire for emotional stabilization') were rated as the strongest motives in favour of having a child. Personal as well as financial limitations were perceived as significant obstacles, especially by men in the West.

6.4.3.2. Finnish studies

In the Finnish Family Barometer 2002, of childless respondents under 30 years of age, 67 % wanted to have children, 29 % did not know and 4 % did not plan to have children (Paajanen 2002). Among the respondents aged 36–40 years who had no children, 16 % intended to have children and 35 % did not know if they wanted children or not. A great majority of students planned to have children in the future and of those who had university degrees, only a few did not plan to have children. Among mid-level employees there were many who did not plan to have children.

Among respondents less than 30 years of age who planned to have children in the future, the most often mentioned reason to postpone pregnancy was the wish to complete their own or partner's studies first (61 %). The second most often mentioned reason was financial uncertainty and thirdly, "the lack of baby fever".

Among those under 30 years old who were not sure if they planned to have children, the most often mentioned reasons behind their uncertainty were the lack of permanent relationship (45 %) and uncertainty about financial situation or work (44 %). Other often-mentioned reasons were: "I / my spouse are not mature enough to have responsibility for a child"; "I am too worried about the future of children"; "society does not support families with children sufficiently"; or "our apartment is too small".

The ideal number of children was 2.4 among female respondents and 2.5 among male respondents. The ideal age to have the first child was 25.4 years for women and 27.4 years for men.

6.4.4. Desire and intentions to have children among university students

6.4.4.1. International studies

According to a Swedish study of the visitors in Student Health Service in 1999 in Uppsala (n= 333), almost all, 95.8 %, wanted to have children in the future, at a mean age of 29.5 years (Tyden et al 2001).

According to another study in Sweden in 2004 almost all of childless students, 96 % of women and 97 % of men, planned to have children in the future (Lampic et al 2006). A majority (83 % women and 86 % men) preferred to have between two and three children. Men most often wished for two children only, while women's responses were equally distributed between wishes for two, two to three, and three children. Women wanted to have their first child at a significant lower age (mean=28), compared to men (mean=30). Women also wanted to be younger when they had their last child in comparison to men's preferences. About half of women and men wanted to have their last child between ages 35 and 39 years, and 12 % of women and 27 % of men wanted to have their last child at over 40 years of age.

According to this Swedish study important circumstances for the decision to become a parent were living in a stable relationship, sharing responsibility with a partner and feeling sufficiently mature, with over 90 % reporting that these conditions were important or very important for their decision-making. A good economy was regarded as important to 75 % of women and 57 % of men. 72 % of women and 70 % of men said an important criteria was, "That I have completed my studies". "That my work can be combined with having children" was important for 71 % of women and 57 % of men.

Data in the north-eastern US were collected concerning future expectations and aspirations of college freshmen and seniors attending a private university (Chait et al 2003). As part of this larger study, 333 women and 333 men in their final year of university were contacted by mail during the spring semester 2000. The students who were contacted were a representative sample of the undergraduate population. The response rate was 48.7 %. Seniors reported that they planned to have two to three children when they were between ages 26–30.

6.4.4.2. Finnish studies

There are no studies available concerning desires to have children among Finnish University students.

6.5. Induced abortions

6.5.1. *Induced abortions among the general population*

6.5.1.1. *International studies*

According to health statistics in the US, the abortion rate has declined fairly steadily since 1980 (Hamilton and Ventura 2006). In 2000 there were 21.3 induced abortions per 1000 women aged 15–44 years, down from 27.4 in 1990.

Abortion rates in Western Europe are much lower than in Eastern Europe. The lowest rates are in Netherlands and Belgium, approximately 6.5 per 1000 women at 15–45 years (The Alan Guttmacher Institute 2004). Germany and Switzerland have abortion rates below 10, and in other Western countries, Canada and the USA rates vary from 10–23 per 1000 women in reproductive age. In Eastern European countries the highest rate is in Romania (78), the lowest rate in Croatia, Czech Republic and Slovak Republic (below 20).

In the former Soviet Union, as well as in the present independent states of the former Soviet Union, hospitals, out-patient clinics and other health facilities have been obliged by law to report all childbirths and induced abortions to the national health authorities (Mogilevkina et al 1996). Official statistical data from Latvia, Estonia, Lithuania, Russia and Ukraine on induced abortions and birth rates were collected to analyze trends between 1970 and 1994. Official data were not always available for a specific period. Abortion rates per 1000 fertile women have decreased in all these countries since 1970: In Russia from 136.8 to 90.8 (1992), in Ukraine from 91.2 to 82.6 (1990), in Estonia from 118.9 to 69.6 (1993), in Latvia from 104.5 to 57.2 (1993), and in Lithuania from 54.9 to 53.9 (1989).

In 1990 the number of induced abortions far exceeded the number of live births in the independent states of the former Soviet Union, where as in Sweden, and in other Western countries, the number of abortions was less than one-third of the number of live births. For example, the number of induced abortions per 100 live births was 155.1 in Ukraine, and 30.2 in Sweden.

In a St. Petersburg study in 1996, of men aged 18–74, 45 % reported that the female partner had had an abortion, and 54 % of women reported they had experienced an abortion (Haavio-Mannila and Kontula 2003). In Estonia in the year 2000 the figures were, respectively, 37 % and 62 %. In Sweden in the year 1996 of women 23 % reported to have experienced an abortion. In a St. Petersburg study in 2004, of respondents, 69 % had experienced induced abortion (Kesseli et al 2006).

According to a registry study comparing Finland and Estonia, the rate of induced abortions declined in both countries from 1992 to 1996 (Gissler et al 2000). The decline was 34 % in Estonia and 6 % in Finland. The rate in 1996

was still high in Estonia; 46 per 1000 women aged 15–49, and in Finland the respective figure was 8.

In England and Wales in 2004, the abortion rate was 17.8 per 1000 resident women aged 15–44 (www.dh.gov.uk/publichealthstatistics). The rate peaked at 15.5 in 1990 but remained at just below 15 until 1995; it then rose to 17 in 1998. From 1999 to 2002 the rate remained level at just over 17. The rate then rose again in 2003 and 2004. The rate for 2004 was the highest ever recorded at 31.9 per 1000 women aged 18–24. 32 % of women undergoing abortions in 2004 had one or more previous abortions. The proportion has risen from about 27 % since 1994.

In all Nordic countries the mandatory registration of induced abortion is performed at the hospital department at which the abortion is performed (Knudsen et al 2003). In the year 1985, the induced abortion rate per 1000 women at fertile age (15–49 years) was 15.6 in Denmark, 11.7 in Iceland, 14.7 in Norway and 15.6 in Sweden. In 2000, the figures were: Denmark 12.5, Norway 13.7 and Sweden 15.6. In the year 1999, the figure in Iceland was 13.4.

6.5.1.2. Finnish statistics and studies

According to statistics, annual mean number of induced abortions has decreased in Finland from the 1970s to the 1990s. In the last ten years there has been a slight increase in the abortion figures even though figures are low internationally. In the years 1971–75, the annual mean number was 22 105. For the period 1986–90 it was 12 791, and in 1991–95 it was 10 611 (Miettinen A 2004).

The induced abortion figures have been at their lowest in 1994–1995, when the abortion figure was under 8 per 1000 women at 15–49 years of age. In the year 2004 the number for induced abortions was 11 091, which is 9.4 per 1000 women (Stakes statistics 2005). The number of induced abortions increased three percent from the previous year. The greatest increase (9.5 %) was among 20–24-year olds and among 25–29-year olds (4.7 %). In the age group of 15–19 year olds the figure was 11 in 1995 and in 2004 it was 15.7. Respectively in the age group of 20–24 year olds the figures were 14.5 and 18.4.

In a population study in 1971, only 9 % of female respondents reported to have experienced induced abortion (Sievers et al 1974). According to corresponding population studies in 1992 and 1999, the figures were 23 % and 17 % (Haavio-Mannila and Kontula 2003). In the year 1992, the same question was also asked of men who reported that 11 % of their partners had had an abortion.

A population-based postal survey in 1994 reported that 15 % (n=320) of female respondents, aged 18–44, had experienced at least one abortion (Sihvo et al 1998).

According to the Health 2000 study, of all female participants, 13.4 % had experienced induced abortion. Among those less than 30 years of age, the figure

was 8.9 % (Koponen et al 2004). Those who had higher education had had the least induced abortions.

In the FINRISK study in 2002 the figure for experienced induced abortions among women aged 25–34 years who have been pregnant was 25.2 %, and 22.8 % for all participants (Luoto et al 2004).

6.5.2. Induced abortions among university students

6.5.2.1. International studies

A study was performed among the visitors in Uppsala University Student Health in 1999 (Tyden et al 2001). The proportion of those who had experienced induced abortions was 5.5 %. Ten years earlier 11 % of respondents in the comparable study had had a legal abortion.

According to another study among Uppsala University students performed in 2004, an abortion or miscarriage had been experienced by 5 % of women and 7 % of men's partners (Lampic et al 2006).

6.5.2.2. Finnish studies

No study concerning induced abortions among Finnish university students is available.

6.6. Some characteristics of Finnish university students

6.6.1. Number and age-profile of university students in Finland

The Finnish University institution has changed dramatically in the 1900's (Moore 2000). New universities have been established in all parts of Finland since the 1950s, and there are now 20 universities in Finland. The number of university students has increased remarkably during five decades (Table 4).

Table 4. Number of Finnish university students by year

Year	Number of students
1951 *	14 091
1965 *	39 907
1975 **	75 765
1985 **	92 230
1995 **	133 359
2005 **	176 061

* Kalaja 1967

**Statistics Finland; education 2006.

The Finnish Student Union conducted a study of all university students in Finland in 1965 (Kalaja 1967). The number of university students was 39 907, of which the proportion of female students was 50.6 %. In 2005 the figure was 176 061, of which 53.7 % were women and 14 % were postgraduate students (Statistics Finland: Education 2006). During the same period, the age profile of students has radically changed. In the year 1965 the average age of university students was 22.5 years, and 18.6 % were over 26 years of age (Kalaja 1967). From 1967 to the 1990s, the proportion of those less than 25 years of age has decreased from 70 % to 40 % (Moore 2004). The number of undergraduate students, over 30 years old, has increased from 17.3 % in the year 1985 to 25.6 % in 2001.

The time that Finnish University students take to complete their studies has been rather long (Statistics: education 2006). The mean time for higher university degree (master degree) has been about six years during previous ten years. Architecture degrees have taken the longest time (about 10 years) and the fields that take the shortest time to achieve a degree in are theatre, dance and artist science (4–5 years).

The age profile in Finland has varied widely with regard to different fields of study and different universities (Moore 2004). Students who studied natural sciences, technical science, or medicine were seldom over 30 years old. The highest proportion of those who were over 30 years old was in the fields of health sciences, theology and social sciences. Of older adult students there are more women than men, which was also the situation internationally. The oldest students were in the University of Tampere, where 43 % of them were over 30 years of age.

Finnish students' age profile was quite high compared to many European countries (Eurostudent 2000). The mean age of Finnish students was almost 26 years, whereas in France it was 22.4 and in Belgium, 21.5. The proportion of those over 30 years was highest in Great Britain and Nordic countries (Andren 2005).

“Student research 2000” stated that the Finnish students are a considerably heterogeneous group of people (Lempinen and Tiilikainen 2001). Students

differed in the time they spent at studies and work, and these differences arose from differences in students' age, family status, program of study and how long they had studied. The students' age differences were one significant phenomenon that defined Finnish students' heterogeneity as a group (Euro Student 2000, Lempinen and Tiilikainen 2001). The special character of Finnish university has been that students have had an unlimited time to study. The new university law from 2005 regulates the studying time to 5–7 years and applies to those who begin studies anytime after autumn 2005.

It is typical in Finland that studies also commence at a later stage, after a gap between leaving school and entering higher education (Lempinen and Tiilikainen 2001). One group is those who complete another university degree (Moore 2004). In the year 1996, of those who were over 30 years old, 14 % were studying for another degree. Some began to study in adult age, after having had work career or, possibly, after family formation. Of new students in 2001, 13 % were over 30 years of age (n=2801). The proportion of those who began studies over 25 years old was 25 % (n=5257) in the year 2003 (Statistics Finland: Education 2004). In the year 2005 approximately 21 000 new students (57 % female) began to study in Finnish universities.

International studies have become a normal part of university studies (Lempinen and Tiilikainen 2001). In 2000, 17.3 % of Finnish University students had studied abroad. The youngest students were most eager to plan studies abroad. Of those less than 20 years old, 38 % had actively planned international studies, 19 % in the age group 20–24 years of age, 8 % in the age group 25–29, and 2 % of those over 30 years of age. Respectively, the proportion among those who were single and without children was 21 %. Of students who were married and had children, only 3 % planned studies abroad.

6.6.2. Financial circumstances of Finnish university students

University students have access to financial educational assistance from the state in the form of grants and loans (Euro Student 2000). Since the beginning of the 1970s the universal state assistance system for students has been available in Finland as well as in other Nordic countries (Kurri 2006, Nissinen 2006).

The study grant/housing supplement was the primary income source for students without a family in 2003 (Berndtson 2004). Grant-based assistance, at least for students who complete their studies properly, can also be found in Austria, Belgium, Ireland and Italy (Euro Student 2000). In Finland and the Netherlands, the proportion of grants is high. Germany awards educational assistance on a half loan and half grant basis. Of Finnish university students, 73 % had taken a study grant and 13 % had taken a study loan in the year 2000. Three years later only 10 % had taken out student loan in October 2003 (Berndtson 2004).

According to Euro Student 2000, state assistance is the major income source for students in two of the eight surveyed countries: in Finland and the Netherlands state assistance averages out at a contribution of 48 % and 42 %

respectively to the monthly monetary income of students. In Flanders, Italy and Germany, parents provide the largest share (from 59 % to 41 %) of resources with which students cover their living expenses. In Ireland, Austria and France, personal earnings form the major supporting pillar with a share between 40 % and 51 %.

Combining work and studies has always been typical for Finnish university students (Lempinen and Tiilikainen 2001, Berndtson 2004). One problem in Finland has been that students do not wish to take loans and instead choose to work and only attend university part-time (Lempinen and Tiilikainen 2001). According to education statistics, 44.7% of university students were full-time students in 2003 (www.stat.fi/education). Most have financed their costs by working during summer holidays or by part-time work during study terms.

According to the University Student Health Survey 2004 during the recent year almost 40% had had a full-time job longer than three months, 19 % had worked full time over six months and ten percent reported to have worked part-time over 9 months (Kunttu and Huttunen 2005). The numbers of full-time and part-time working students have slightly decreased since 2000 (Kunttu and Huttunen 2001). Of respondents, 63.9 % in 2004 (72.4 % in 2000) reported that the reason for working was to balance their financial situation. Half of students stated that the available funds covered the living costs excellently or well and only 8 % reported that their financial situation was bad (8.9 % in 2000).

In the 1970s and 1980s there were special benefits for students who had children, but in 1994 a law change eliminated this grant without any explanations (Nissinen 2006).

6.7. The Finnish Student Health Service

The Finnish Student Health Service (FSHS) has, since 1954, provided the primary health care services for all university students in 16 cities in Finland. The FSHS also provides high quality family planning services for all university students in Finland. The FSHS is financed by the Social Insurance Institution, the students, student unions, the university cities and the State of Finland. The students pay a yearly health care fee of 35 € as part of the obligatory membership fee of Student Unions. In addition to this health care subscription, specialist doctors charge patients small fees for consultations and treatment. Consultations with a general practitioner or nurse, X-ray examinations, laboratory tests, health check-ups and initial mental health counseling periods (1–5 initial sessions) are free of charge. The services are easily accessible and practically all university students use them.

7. Aims of the study

The purpose of this study was to investigate the family planning situation of Finnish university students. The specific aims of the study were:

1. To investigate the current sexual activity and use of contraceptives among university students in Finland (I).
2. To investigate the reasons for using emergency contraception among Finnish university students (II).
3. To investigate the use of family planning services and trends in that use for the years 1986–2005 (III)
4. To investigate the childbearing and the desire to have children among Finnish university students (IV).
5. To investigate the reasons why students wanted to postpone pregnancy (V).

8. Material and methods

8.1. Student Health Survey 2004: a national survey among Finnish university students (I, IV)

The data was derived from a national health survey among Finnish university students in 2004 (Kunttu and Huttunen 2005). The survey was carried out among Finnish university students, who are entitled to receive health care services provided by the FSHS. The study population comprised 101 805 Finnish undergraduate university students less than 35 years of age. A random sample of 5030 students of whom 45.7 % were male was drawn from this population. The study material was collected by means of a postal questionnaire, with three repeat mailings.

Altogether 3153 students answered the questionnaire, of which 1132 were men and 2021 were women, giving a response rate of 62.7 % (49.2 % for males and 74.0 % for females). The mean age of respondents was 24.5 years. Approximately two-thirds of the total were 22–29 years old. The respondents were a good representation of the study population with respect to gender, age, university city and field of study. The anonymous 20-page questionnaire included questions concerning students' health, health behaviour, study and living circumstances (appendix 1). There were altogether 112 questions leading to 277 variables, including questions specifically related to students' sexual activity and the use of contraception. Students' relationships were investigated by a structured question of students' living arrangements.

Concerning sexual activity and the use of contraception, the following questions with structured answers were asked of both men and women (I).

- How often do you currently have sexual intercourse?
- Which contraceptive method do you currently use?
- Have you ever had problems with condom use?

Women were also asked whether they had undergone an induced abortion, and if they had ever used emergency contraception and, if so, how many times.

There were two questions concerning childbearing (IV); "How many children do you have?" and "How many children would you like to have?" The resulting figures were analyzed by gender, age group, study year and field of study. The students with children were compared with the childless students with regard to economic situation, employment, completed study weeks and opinions on university studies.

8.1.1. Statistical methods (I, IV)

Data were presented with frequency distributions, cross-tabulations and descriptive statistics. The chi-square test was used to investigate statistically significant differences. Categorical variables were tested by the Cochran-Mantel-Haenzel test stratified by age group in order to control the potentially confounding effect of age. Continuous numerical variables were compared using t-tests. Frequencies for women and men were presented and tested separately.

8.2. Study of the users of emergency contraception at the FSHS Tampere health station (II,V)

From 1 September 2000 to 31 December 2001 all university students who requested emergency contraception at the FSHS health stations in Tampere received an envelope containing a cover letter, a questionnaire and a prepaid response envelope. Both physicians and public health nurses were instructed to give the envelope to all students who consulted for EC. Questionnaires were answered anonymously.

The questionnaire (appendix 2) contained items concerning the act of intercourse leading to the need for EC use (II), contraception information sources and future plans concerning contraception and childbearing. Both structured and open questions were included. There were three questions concerning childbearing and intentions to have children (V). Respondents were asked whether they planned to have children/ more children in the future. The response alternatives were: Yes/no/ I cannot say. Two open questions were: “What is your main reason for not wishing to become pregnant now?” and “What do you think is the best time to have children?” The respondents answered freely to these two questions. All answers were entered into the computer, and they created a large amount of qualitative material.

By the end of January 2002, 114 questionnaires had been returned, giving the response rate of 67 %. In the data file of the FSHS, it emerged that during the study period, the total number of visits for EC was 252, made by 217 students. Thus the respondents constituted 53 % of all EC seekers. The mean age of respondents was 23.4 years and 76 % of respondents were 20–26 years old. The university study year varied from the first to the tenth. The majority of respondents were single and most were living in a permanent relationship.

8.2.1. Statistical method (II)

To analyze the reasons for EC request, the statistical methods used were frequencies and frequency ratios.

8.2.2. “A collective consensus method” (V)

To analyze the content of the free answers to the two open questions concerning pregnancy and childbearing plans, the method used was “a collective consensus method” This method was originally developed and used for the analysis of students’ written accounts of problem-based learning tutorial sessions (Virtanen et al 1999).

The analysis consisted of the following stages:

1. Preliminary reading and categorization (both researchers individually) to find typical categories of answers.
2. Consensus discussion of categories (together).
3. Analysis of the texts (individually).
4. Consensus discussion of the citations (together).
5. Description of the categories. The titles of categories were derived from one main citation.

Some answers were very short and clearly belonged to only one category. Some free answers were so long and richly explicative that they produced material for several categories. The number of citations in each category gave a compact summary of the free answers.

8.3. Study of consultations concerning contraception and induced abortions in the Finnish Student Health Service (III)

The data were drawn from health record statistics of the FSHS. Reasons for physician encounters in the years 1986–1996 were coded by doctors according to the International Classification of Diseases 9th revision (ICD-9), which was adapted for FSHS use. All 16 FSHS health stations collected data. Physicians registered the diagnostic code in the paper records, and secretaries transferred codes to computer data files. Since 1998, electronic patient records have been available and diagnostic codes have been registered using the International Classification of Primary Care (ICPC-1).

Since 1995 the statistics data were collected according to calendar year, and before that, in 1986–1994, according to academic year. No reliable data on EC use was available from 1986 to 1996. The figures for consultations concerning EC for the period 1997–2003 were from contacts with both nurses and doctors.

The figures regarding the number of students represented the number of students who had paid the obligatory yearly fee for the FSHS. The number of female students was calculated from the relative proportion of women among all Finnish University students.

8.3.1. Statistical method

The statistical methods used were frequencies and frequency ratios.

9. Results

9.1. Sexual activity among university students (I)

In the Student Health Survey 2004, sexual activity was evaluated by asking the current frequency of sexual intercourse. Of the 1124 male student respondents, 79.7 % (n=896) and of the 2012 female student respondents, 81.1 % (n=1631) were currently having sexual intercourse. Almost half of students had sexual intercourse once a week or more often. Current sexual activity seemed to be approximately at the same level among female and male students by age. The greatest difference was in the youngest age group (under 22), where 72 % of female and 61 % of male students were currently practicing sexual intercourse (35 % of men and 46 % of women having sexual intercourse once or more a week).

One-fifth of all student respondents had no current sexual intercourse (18.9 % of female and 20.3 % of men). The proportion of single men having sexual intercourse currently was 67 %, and of single women, 69 %. Of single men, 29 % had sexual intercourse once a week or more often and 33 % of single women. The most sexually active were those men and women living with a partner, with 73 % of men and 71 % of women having intercourse once or more a week. Sexual activity decreased in families with children, as 49 % of fathers and 52 % of mothers had intercourse once or more a week.

9.2. Contraceptive use among university students (I)

In the Student Health Survey 2004 there was one question concerning the use of contraceptive method. It was not intended that those who possibly used OC for medical reasons answer to this question, because another question asked if they used medicine on a doctor's prescription, including OC for medical reasons.

Of the 1102 male student respondents, 65 % (n=716), and of the 1995 female student respondents, 79 % (n=1576) reported currently using some contraception. The most frequently used method among women was hormonal contraception, with 50.5 % of them using this mode. Of men, 17.4 % reported the use of hormonal contraception. The second most popular method among women was condoms, with 31 % reported to using them. Among men the most frequently used method was the condom (48 %).

The use of any contraception was highest among women living with partner (87 %). Of single men, 68 %, and of single women, 76 % reported to using some mode of contraception. The use of the IUD was highest among women who had given birth (16 %). A greater proportion of single men than single women reported using condoms (58 % vs. 36 %)

Of male students, 2 %, and of female students, 5.3 % reported currently using both condom and hormonal contraception.

Of female students who had sexual intercourse once a week or more often, 90 % used some mode of contraception and 67 % used hormonal contraception. The figures for men were 65 % and 30 %. Among those having sexual intercourse less than once a week, 67 % of men and 48 % of women used a condom. Of those female students who reported currently having no sexual intercourse, 32 % reported to use some contraception; 14 % used hormonal contraception and 20 % used condoms, and respectively, of male students not currently having sexual intercourse, 40 % reported using condoms.

9.2.1. Emergency contraception (I,II)

9.2.1.1. The extent of the use of emergency contraception (I, II)

In the Student Health Survey 2004 female students were asked if they ever had used emergency contraception (I). Over one-third (39.6 %) of female students had used EC some time. EC had been used once by 22 %, twice by 12.3 % and three or more times by 5.3 % of female respondents.

The study among EC users was performed in 2000-2001. EC was requested 222 times during 16 months among a total of 10 133 female students. This means that 1.6 % of all female students sought EC from FSHS in Tampere during one year.

9.2.1.2. Reasons to use emergency contraception (II)

The majority (67 %) of respondents had used some contraception during the intercourse after which they requested EC. Two of the respondents were using OCs, but had forgotten to take a pill. All others (n=74) had used a condom. The most often mentioned reason for the use of EC was condom breakage (66 % of EC seekers who had used a condom). Condom had slipped off of 26 % of condom users.

One-third (n= 38) of respondents had not used any contraception in the intercourse leading to the need of EC. They were asked to describe in essay-form the reasons for their non-use. There were many explanations; 'too passionate to be able to think of contraception or desire too great' was mentioned most often (n=14). 'No condoms available' was mentioned 13 times.

In the questionnaire there was also the possibility for free comments. Over one-third (43) of respondents had written free comments in the questionnaire. There were comments concerning the use of EC in general. *“Accidents occur easily and that is why it is good that emergency contraception is available.” “ I do not think that emergency contraception is good or desirable contraception. However I think that it is occasionally acceptable, extreme alternative.”*

Many comments included relief and gratitude for personnel. *“I would like to thank the nurse in the FSHS for very relevant and understanding service. I was first afraid to come, but successfully my fear was unnecessary: the attitude of the nurse was just as it should be.”*

“The FSHS has been very supporting & informing concerning all sexual issues; pills, uncomfortable Chlamydia and now concerning emergency contraception. THANK YOU!”

Some gave positive feedback that this item is studied, and that the attitude in the questionnaire and among personnel was neutral, not condemning.

9.3. Condom failure (I, II)

“Have you had problems with the use of condom?” was the question in the Student Health Survey 2004. Of all respondents, 80 % had sometimes used condom and 23 % of all respondents had had some problems; most often the condom had broken (Table 5). In the youngest age group (less than 22 years) 28 % had not used a condom at all. Female students in the age group 22–24 years reported about condom failure most often and male students in the youngest age group, the least.

Of those male students who had ever used a condom, 28 % (n=260) had had problems with condom use, whereas the figure for female students was 32 % (n=495).

The experiences of condom failure were analyzed regarding the use of EC and experiences of induced abortion. Of those who had had problems with condom use, 71% had used EC (see Table 6).

Table 5. Experiences with the use of condoms among Finnish university students in 2004 by gender (it was possible to choose several alternatives) (I).

Experiences with the use of condom	Men	Women	All
	n=1120	n=1988	n=3108
	%	%	%
No use	17.2	22.1	20.4
No problems	61.1	54.0	56.6
Condom has slipped away	6.8	7.2	7.0
Condom has broken	11.5	16.1	14.4
Some other problem	8.4	6.5	7.2

Table 6. Experiences with the use of condoms among Finnish university female students in 2004 by experiences of the use of EC and induced abortion (I).

Experiences with the use of condoms	n	EC	Induced abortion
		%	%
No use	439	19.8	4.3
No problems	1047	33.6	3.5
Any problems	495	70.7	6.9

In the study of EC users 43 % of all respondents (n=114) had experienced condom failure (II). A problem with the condom was noticed by the male partner (49 % of condom users) or by both partners (47 %). Only three female respondents noticed the problem alone.

9.4. Trends in the use of family planning services in the FSHS 1986–2005 (III)

9.4.1. Trends in consultations concerning contraception in FSHS in 1986–2005

The long-term registration of coded data has created a baseline to evaluate the use of family planning health services. The number of Finnish university students, who were entitled to use the FSHS services, increased from 89 654 in 1986 to 144 488 in 2005. The proportion of female students increased from 50 % to 53.7 %.

The numbers of all physician consultations and consultations concerning contraception increased to a peak in the beginning of 1990s. The number of family planning consultations was 20 431 in 1991–92, and decreased thereafter to 14 638 in 2005. In the FSHS, contraception has been the most common single

reason for physician consultation during all documented years. The proportion of such contacts was 12 % of all consultations in 2005. The majority of consultations have concerned OC. In the years 1986–87, there were 358 contraception consultations per 1000 female students and the corresponding figure for 2005 was 189.

Since the year 2000 it has been possible to evaluate the physician encounter contacts by gender in the FSHS data (Table 7). The proportional number of all physician consultations and consultations concerning family planning per students has decreased continually. The proportion of FP consultations per all female consultations has been 16–17 % in 2000–2005.

Table 7. Number of all Finnish university students, who are entitled to receive health care services provided by the FSHS, number of female students, percentage of female students, number of all physician consultations, number of female consultations, number of consultations for family planning, and proportion of FP consultations of all female consultations in 2000–2005 in the FSHS.

Year	2000	2001	2002	2003	2004	2005
All students	124772	130089	134157	138544	141424	144488
Female students	66378	69467	71774	74120	75520	77590
Female students (%) *	53.2%	53.4%	53.5%	53.5%	53.4%	53.7
All consultations	134530	131140	127134	126889	126321	123334
Female consultations	99398	97195	93541	94056	93270	91489
FP consultations	16807	15632	15708	16129	15528	14638
FP consultations of all female consultations	16.9%	16.1%	16.8%	17.1%	16.6%	16.0%

* Statistics of education 2006. www.stat.fi

9.4.2. Trends in consultations concerning emergency contraception during 1997–2003

The data concerning consultations for emergency contraception was available for 1997–2003. The number of EC consultations with physicians and nurses was 844 in 1997 and increased to 1370 in 2001. Since May 2002, EC pills have been available without prescription, and the numbers of consultations dropped remarkably. According to FSHS data concerning consultations for EC in 2000, 2.1 % of all female students sought EC from the FSHS.

9.4.3. Trends in consultations concerning induced abortions during 1986–2005

The numbers of the consultations for induced abortions are drawn from the statistics of the coded data of physician encounters in the FSHS in 1986–2005.

The number of consultations concerning an official statement for induced abortions was lowest (173) in the year 2002 and highest (248) in 1990–91. In 1986 there were 4.2 consultations concerning induced abortions per 1000 female students and in 2005 the corresponding figure was 2.9.

Consultation numbers for induced abortion in the FSHS were compared to the Finnish population statistics for actual performed abortion figures among three groups of similar ages. The figures for Finnish university students were markedly lower than those in the population in general. For example in 2002, the number of consultations for induced abortions per 1000 female students was 2.5 while in the general population the abortion rate in the age group 20–24 years was 16, in the age group 25–29 it was 12 and in the age group 30–34 it was 10 per 1000 women (Stakes statistics 2002).

9.5. Childbearing and the desire to have children among Finnish university students (IV, V)

9.5.1. Childbearing among Finnish university students (IV, V)

9.5.1.1. Childbearing and living conditions according to the Student Health Survey 2004 (IV)

Two-thirds of the respondents (n=3153) were 22–29 years old. One-fifth of the total was under 22 years and the proportion of 30–34 years of age was 10 %. Students' living arrangements were investigated by a structured question. Almost half of students lived alone, 4.3 % with their parents and 42 % had their own family living together with a partner or a partner and children.

Among respondents there were 76 male and 158 female students who had children. This means that 6.8 % of men had a child/ children and 7.9 % of women. Most commonly, students had one child. The proportion of students with children increased for each university study year and as age increased. Of men, 31.2 %, and of women, 33.3 % had children in the oldest age group (30–34 years).

9.5.1.2. Characteristics of students with children compared to childless students (IV)

The students with children were compared with the childless students with regard to field of study, economic situation, employment, opinions on university studies and completed study weeks.

Female students who studied education, psychology, sport and health sciences were most likely to have children. Among men there were no differences according to field of study.

Fathers were more likely to assess their available funds as covering their costs "well" or "excellently" compared to childless male students. Female students were equally satisfied with their available funds whether they had children or not.

All fathers had worked during the last year, respective to the proportion of the male students without children where the rate was a little lower. One-fourth of fathers and a third of mothers were full-time students. Comparable figures for childless students concerning full-time studies were 72 % for men and 76 % for women. Childless female students had worked more often than mothers during the preceding year (91.5% vs. 71%).

Mean completed study weeks were examined by age group and study years. Parents were compared with those who had no children. There were no statistically significant differences, nor were there statistically significant differences in the self-evaluated study workload.

9.5.1.3. Childbearing among emergency contraception users (V)

In a study among EC users in Tampere health station a question was asked about existing children and childbearing plans. Five (4.4 %) of respondents had children. The mean age of all respondents was 23.5 years. The partner in the intercourse leading to the need for EC was a permanent one in 65 % of cases.

9.5.2. Desire to have children among Finnish university students (II, IV)

9.5.2.1. Desire to have children according to the Student Health Survey 2004 (IV)

The vast majority (88.6 %) of students desired to have children and 12.6 % of men and 10.7 % of women did not wish to have children. The four women who already had children, and did not wish to have more were excluded from the analysis. The average number of desired children was 2.2. In the oldest age group (30-34 years) 82.5 % of female students and 87.9 % of male students desired to have children.

Almost half of respondents desired to have two children. Three or more children were desired by 36.4 % of students. Women more often wanted three or more children compared to men (38.6 % vs. 33 %).

9.5.2.2. *Desire to have children among emergency contraception users (V)*

All 114 respondents answered the question concerning the desire to have children. The majority (78 %) wanted to have children in the future. Of all respondents 4 % did not plan to have children and the rest (18 %) could not say. There was no statistically significant difference concerning marital status or relationship to sexual partner in the intercourse leading to seeking EC. Nor did these groups differ in age or with respect to the use of contraception in that intercourse.

9.5.2.3. *Reasons to postpone childbearing among emergency contraception users (V)*

Open answers to the question; “*What is the main reason for not wishing to become pregnant now?*” were received from 112 (of 114) respondents. The answers made up a vast body of qualitative material, which was analyzed by collective consensus method. This produced eight categories. Answers comprised sometimes a few words, sometimes many sentences. One answer may produce material to many categories.

Category 1. “*I wish to complete my studies first.*” Most citations (56) were included in this first category.

Category 2. “*I do not have a steady relationship with my partner.*” This notable category (47) included citations, which expressed that the relationship to the partner in one way or another was not satisfying. Many stated that the relationship was temporary or of short duration. There were also a few citations with very big demands for the quality of relationship.

Category 3. “*Immature to be a mother.*” One-third of respondents (28) experienced characteristics of themselves as obstacles of having a child. The important message in the citations of this category was that the students were afraid of taking responsibility of the child. This category included those two respondents, who questioned having a child at all.

Category 4. “*I want to enjoy my youth.*” (22 citations) The students referred to their own interest and their wish to live their own life without taking care of others. The citations in this category included the fear that their own life somehow ends, if they have a child. “*My own life is still not ready.*” Some respondents thought that to have a child would harm the relationship with their partner.

Category 5. “*A miserable economical situation.*” (14 citations)

Category 6. “*I am too young.*” (13 citations)

Category 7. *"I don't want to become a single mother at this age."* (6 citations).

Category 8. *"My life situation is not suitable."* This category included those miscellaneous citations (23) where different, separate reasons were expressed to be the main reason for not wanting to have a child just now.

9.5.2.4. *Best time for childbearing among emergency contraception users (V)*

111 respondents of the total 114 had answered the open question; "What do you think is the best time to have children?" The analysis of the answers by collective consensus method produced six categories.

Category 1. *"About 30 years of age."* In this category 46 students estimated the best age by mentioning a certain age, and 17 students answered after how many years they assess they are ready to become pregnant. Even if the respondent was older, the best time was in the future. There was no mention about that age could be an obstacle to have a child. One respondent answered 'most important is that one feels to be an adult, for one it is 30 years, for another the best time is at the age of 50 years, for myself about 30 years'. One of the respondents estimated the best time to be at the age of 35–40 years.

Category 2. *"When I have graduated."* This category was nearly as large (57) as the first category.

Category 3. *"When one is living in a safe, permanent relationship."* A permanent relationship was for many respondents (39) a self-evident condition before one could plan to have a child.

Category 4. *"When one has got a permanent job."* This category included 31 citations referring to "a job" or a "permanent job".

Category 5. *"When one wants to have them."* These citations (20) referred to the desire, wish and feeling to have a child.

Category 6. *"When the economical situation is well established."* This smallest category (11) contained citations with direct reference to economical situation. When respondents mentioned income or secure financial situation, it was not the only criteria for the best time to have children.

9.5.3. *Experiences of induced abortion among university students (IV, V)*

An induced abortion had been experienced by 4.5 % of female students according to the Student Health Survey 2004. Of the female students with children, 7.6 % had experienced an induced abortion compared to 4.2 % of those who had no children (IV). Among the respondents in the study of EC users, three (2.6 %) had experienced induced abortion (V).

10. Discussion

10.1. Methodological aspects

10.1.1. Student Health Survey 2004

The material used to investigate students' contraceptive use, sexual activity and childbearing was obtained from the Student Health Survey 2004 study. The respondents were a good representation of the study population with respect to gender, age, university city and field of study. The response rate among female students was good and the study results can be seen to be well-representative of the situation of the female university student population in Finland. The response rate among male students was lower and the results concerning men should be generalized with caution. However, the response rate among men was at the same level, or even a little better than in many previous Finnish studies concerning sexual issues (Haavio-Mannila and Kontula 2001, 2003, Kirkkola et al 1999).

The different studies evaluating sexual behaviour and contraceptive use have contained a wide range of varied questions. This makes it difficult to compare the results of these studies. The present study was a part of larger health survey of university students, and it was not possible to use several questions concerning sexual activity and contraception use. For example, when asking the current frequency of sexual intercourse and the current use of contraception to evaluate sexual behaviour, "current" was not defined with regards to time period and respondents could have been interpreted current time period in different ways. The answer "never" to the question "How often do you currently have sexual intercourse?" does not exclude sexual experiences in the past. The question concerning problems with condom use indirectly gave information of past sexual intercourse.

The same questions were asked of both men and women, and the question "Which mode of contraception do you use currently?" may have caused misunderstanding among men. The reported rate of use of hormonal contraception among men is likely to be lower than the real rate. The figure for the use of the condom is assumed to be more reliable for men and women. It is possible however, that similar misunderstanding may occur regarding women and condom use. To be more clear the question should have been: "Which mode of contraception do you/your partner use?" Another weakness in the questionnaire was that it did not take into account a homosexual partnership or

subjects who were currently pregnant. We did not ask the reason why some respondents did not use any contraceptive methods.

Data were presented with frequency distributions and cross-tabulations. It was decided not to use multivariate analysis, because it would give little new information. The tables describing contraceptive use or current sexual behaviour by age, gender, and living conditions provided a more holistic view of the situation of university students. Reporting results by age groups was useful because the age range was so wide. Consequently, the results are comparable with other studies and will be better understood by clinicians.

10.1.2. Study of emergency contraceptive users at the FSHS Tampere health station

A study of those who were requesting EC was performed while physicians and nurses were engaged in their daily routine work. Of all EC users 78 % received the survey; and of these, 67 % were returned. Thus, the respondents were 53 % of all EC users. Their age distribution did not differ from that of all EC clients. The questionnaire included both structured and open questions, and this provided the opportunity for quantitative and qualitative analysis. The questionnaires were very carefully completed as could be seen in answers to all open questions concerning the non-use of primary contraception, childbearing plans or in free comments.

To ask about childbearing plans in the future is not common when the consultation concerns emergency contraception use. The respondents' written answers thoughtfully described their feelings and life situation at the time when they had to decide to use EC to avoid the possibility of pregnancy. The collective consensus method was well suited to analyze this qualitative material. Categorisation and number of answers in each category gave a compact summary of the open answers. It is to be noted that answers could contain many sentences and thus gave material for several categories though they were not appropriate for use as variables in further analysis.

10.1.3. The trend in the use of FSHS services

The long-term registration of coded data from the FSHS afforded a good basis for evaluating the use of health services of Finnish university students in the years 1986–2005. The FSHS data are collected in daily clinical practice. There may be some inaccuracy in the collection process. In the beginning, when data were collected from paper patient records, a doctor might forget to mark the diagnosis and the secretary responsible for entering it in the data files might have made some mistakes. The contraception codes were very clear and presumably mistakes in them were rare. From the beginning of the year 2000, the accuracy of figures has been better, as the electronic patient record asks for the diagnosis code if one forgets to register it. Of course, there may still be some mistakes in

coding. However, when studying the trends the possible small inaccuracies of numbers have not greatly altered results.

10.2. Sexual activity (I)

The present study showed that the current sexual activity has increased among the youngest female university students but not among youngest men over a 25-year period when comparing the situation to the previous study among first-year university students in 1979. Greater sexual activity among female students could be expected because The National School Health Promotion Study (1996/97–2002/03) has shown that among the second-year secondary school students (mean age 17.8 years) the proportion of pupils who have ever had sexual intercourse has been greater among girls (51–56 %) than boys (38–43 %) (Kosunen 2004).

In the present study there was not a question about the first experience of sexual intercourse. From previous studies it has been confirmed that highly educated people begin sexual intercourse later than less educated (e.g. Haavio-Mannila and Kontula 2001, Häggström-Nordin et al 2002). The share of those who begin sexual intercourse before the age of 18 years has increased among Finnish population from the 1970s to the end of the 1990s, and the change has been much greater among more educated women (from 11 % to 60 %) than among more educated men (from 30 % to 40 %) (Haavio-Mannila and Kontula 2001).

Approximately one-fifth of all student respondents were not currently having sexual intercourse (V). The share of sexually active population was at the same level as in most developed countries. According to the Alan Guttmacher institute (2004), almost four out of five women in developed countries have had intercourse by age 20. The current frequency of sexual intercourse was somewhat lower among university students when compared to the general population studies in Finland, Sweden, Estonia and St. Petersburg (Haavio-Mannila and Kontula 2001). In the age group of 18–34 years about two-thirds had had sexual intercourse during the previous week, whereas in our study less than half of students had sexual intercourse once or more in a week.

The results of studies from different countries reflect the social and cultural factors that have an impact on sexual behaviour. On the other hand these factors also influence how people report sexual experiences, and thus the results cannot be compared as such. According to a study among Swedish university students, almost all women had ever had sexual intercourse, and approximately four of five respondents in studies performed in US colleges (Tyden et al 2001, Siegel et al 1999). Sexual activity among university students has been studied in Albania (Burazeri et al 2003), where men were more active than women and in India, where the reported sexual experiences were very scarce among both men and women (Aggarwal et al 2000). In Nordic countries safe and effective contraception and a permissive attitude towards sexuality has liberated women's

sexuality, while in India's social environment there is an Indian ethical value system that discourages the initiation of sexual activity at a younger age (Aggarwal et al 2000).

Sexual activity was highest among students with a partner and decreased when students had children (I). There are many studies where this has been previously stated, and parenthood, especially first time parents' relationships, has found to be a strain on sexual relations after childbirth (Willen H 1994, von Sydow 1999, Barret al 2000, Ahlborg and Strandmark 2001). Statistics of separations (including divorces) in Sweden showed that the largest group of separations comprises parents of preschool children, with the highest number occurring when the first child is 18 months old (Ahlborg and Strandmark 2001). This is a public health problem and a challenge to everyone working in primary health care. It appears that health care professionals talk about contraception after childbirth, but rarely about sexual life and intercourse (Barret et al 2000). Ahlborg (2001), in her qualitative phenomenological method interview study of first time parents, was concerned especially about fathers and concluded that by having an open attitude which permits and encourages discussions about sexuality and relationships, public health professionals can help parents keep their sexual relationship healthy.

In our study concerning emergency contraception there were answers indicating that respondents were afraid that parenthood would risk their relationship; "Both of us think, that it does not pay off to 'risk' our relationship by having a child"(V). These thoughts have to be taken seriously. Parenthood education that provides basic communication and conflict solving methods would promote family health. Furthermore, if this kind of support for families is available for example in maternity health care, it may encourage young adults to dare to have children.

10.3. Contraception (I)

The questions concerning contraceptive use varied in different studies made in Europe and in Finland. Because there were not standard questions, comparisons with different studies and trends over time are difficult to do. The way different studies reported the results also varies. Rates of the use of some contraception might have included all respondent population or only sexually active respondents. For example, in some studies the share was taken from the general population, which was partly beyond reproductive age. In the USA the National Surveys of Family Growth (NSFG) have collected comparable data during 20 years. In Finland, contraceptive use has not been followed among the adult population as systematically and with comparable questionnaires as it has among adolescents (Kosunen 2006).

The REPROSTAT project in the European Union (EU) has worked to develop a set of indicators for monitoring and describing reproductive health in the EU (Temmerman et al 2006). The proposal of the REPROSTAT project

includes 18 core indicators. The core indicator 7 is contraceptive prevalence that is defined as the percentage of women of reproductive age (15–49 years) who are using (or whose partner is using) a contraceptive method at a particular point in time. The main data will be population-based surveys using standard questions. When this proposed project is carried out, it will be easier to compare the prevalence of contraceptive use.

The results of the present study provide contraceptive prevalence among Finnish university students. University students were currently using reliable contraceptive methods, as half of women used hormonal contraceptives, and one-third used condoms (I). The use of an IUD was reported by less than one per cent of women and other methods by one per cent. The use of oral contraceptives had doubled among the youngest female students during 25 years, when the results of this study were compared to a study that was performed in 1979/80 among first year students (Tuori and Peräsalo 1984). The increase in OC use had occurred already in the beginning of 1980, as a study indicated in 1983 (Makkonen and Kontula 1989). As of 2000, the use of oral contraceptives was at the same level as now (Kunttu and Huttunen 2001). The current use of oral contraceptives has also doubled among the general population from 17 % to 31 % in the time period 1971–1999 (Haavio-Mannila and Kontula 2001). In the early 2000s, studies (Health 2000 and FINRISK study) have indicated that approximately one-fifth of women currently used OCs (Kosunen et al 2004, Luoto et al 2004).

It was interesting to compare the results of the Health survey 2000 figures to this study of university students because results were available by comparable age groups. For Health 2000, the current use of OC among women in the age group under 25 years was 48.2 % (present study 54.8 %). The figure for the age group 25–29 was 35.6 % (present study 46.8 %), and 23.5 % (present study 34.8 %) for the age group 30–34. Thus the prevalence of the use of oral contraceptives was approximately 10 % higher among female university students than in the general female population. This is in accordance with the Health 2000 study where the current contraceptive use was twice as high among women with high education compared to women with lower education (Kosunen et al 2004). Also, the ever use of OC is higher among highly educated women (Kirkkola et al 1999, Haavio-Mannila and Kontula 2001, Luoto et al 2004, Mosher 2004).

The current condom use had not increased from the end of the 1970s among university students, despite the increase in sexual activity (I). The share of current condom users among university female students was approximately 10 % lower than among women in the Health 2000 survey (Kosunen et al 2004). Another population-based study reported much lower figures for current use of condoms (25 % of men and 17 % of women) (Kirkkola et al 2005) and studies in the 1990s showed decreasing figures of condom use in the population at large (Haavio-Mannila and Kontula 2003). In the present study the reported use of double contraception was rare, 2–5 %. In most previous studies it has been reported to be at the level of 5–10 % (Kosunen 1998, Haavio-Mannila and Kontula 2001, Tyden et al 2001, Mosher 2004). Only in the latest Health 2000

study was the reported use of double contraception much higher: 24–29 %, among women in the age groups 20-24 and 25–29 (Kosunen et al 2004).

Female students especially seemed to prefer hormonal contraceptives even when living single or having intercourse less than once a week. In the present study, 14 % of female students reported the current use of OC without having any current sexual intercourse. Do they have occasional relationships and do they want to be sure about pregnancy prevention in that case? If it is assumed that in these cases there is often occasional sexual intercourse, the risk for sexually transmitted diseases is obvious.

It also may be interpreted that hormonal contraception has been used as a “life-style medicine” (Gilbert et al 2000). A lifestyle drug is one used for ‘non-health’ problems or for problems that lie at the margins of health and wellbeing. Some women are attracted by the regularity of the pill and request it even though they do not need it for contraception (Aubeny 2006). OC use has given women a way to control their periods, and there are studies that state that many women want to reduce the frequency of their periods (Andrist et al 2004, Aubeny 2006). Some authors recommend that health providers need to discuss the option of ‘no-periods’ contraceptive use (Andrist et al 2004). Because currently available pills are developed for 21/7-dosing regimen, there have been cases of irregular bleeding if the pills have been taken uninterruptedly for longer time periods (Aubeny 2006).

This desire for ‘no-periods’ use of contraceptives among some women is understandable and in line with the modern society’s demand that all people should be effective all the time and take part in the society’s activities. Young and educated women who want to achieve a lot in life, and want to control their lives, may be eager to use contraceptives as this kind of life-style medicine. Should we as health care professionals go along with these requests or even actively recommend to healthy women the option of extended use of contraceptives for other than therapeutic reasons (such as treatment of dysmenorrhea, menorrhagia, endometriosis)? While initial studies on the extended use of contraceptives show their harmlessness, there are no studies where long-term health effects, side effects, future fertility and cost have been evaluated. This should be done before physicians can recommend contraceptive use in this way. Evidence-based guidelines for contraceptive use are necessary.

The use of reliable contraceptive methods showed that university students did not want to have children during study years, and they were successful in avoiding unwanted pregnancy, which was also confirmed by the low figures of induced abortions and high ever use of emergency contraception.

10.4. The use and reasons to use emergency contraception (I, II)

Despite reliable contraceptive methods which students most often use, and an easy access to contraception services in the FSHS, emergency contraception is

needed because “accidents easily occur” as one of respondents in the study of EC users expressed. Female university students belong to the population who are typical users of emergency contraception. Many studies have shown that the majority of EC users are young, unmarried, nulliparous and well-educated women (Kosunen et al 1997, Tyden et al 1998, Falk et al 2001, Lete et al 2003, Blanchard et al 2002, Bastianelly et al 2005, Oksama et al 2004, Käypä hoito suositus 2006). Thus it was not surprising that according to the Student Health Survey 2004 the ever use of emergency contraception among female university students was at higher level (39.6 %) than previous Finnish studies among the general population have indicated: 4 % (Kosunen et al 1997), 12 % (Virjo et al 1999), 24.8 % (Kosunen 2004). In many international studies performed in the early 2000s, the figure for ever use has been 20–40 % (Lete et al 2003, Larsson et al 2004, Bastianelly et al 2005). In this present study, and in most above-mentioned studies, the majority of respondents had used EC only once.

The study concerning users of EC was performed in Tampere FSHS station (II). The fairly low figure of those requesting emergency contraception during the study period could be explained by the fact that the FSHS stations are closed on weekends, when EC is presumably needed most often. According to Spanish and Finnish studies, the number of visits concerning EC has been more frequent on weekends and Mondays than other days of the week (Checa et al 2004, Oksama et al 2004).

Most students in the present study had tried to take care of contraception and thus EC seemed to have been used only in emergency situations and not to supplement regular contraception. This attitude was also expressed in free comments. The main reason for requiring EC was condom failure, while poor compliance with OC use was very rarely mentioned to be the reason. These results were in line with many other studies (Tyden et al 1998, Porter 2001, Blanchard et al 2002, Lete et al 2003, Checa et al 2004 Bastianelly et al 2005). Porter suspected that condom failure is not the real reason; it is only seen as a valid reason for request when in fact no contraception had been used (Porter 2001). The present study does not give any basis for those kinds of suspicions. On the contrary, the students seemed to have completed the questionnaire very honestly; this was also seen in their free comments. Even personnel confirmed that students discussed the situation openly when requesting emergency contraception. It is likely that the high figures of condom failure are true, and that is why the availability of EC is enormously important.

One-third of respondents in the present study did not use any contraception in the intercourse leading to the need of EC. When comparing those who have used contraception with those who have not used any, there were no statistically significant differences between the groups concerning various variables.

One may wonder why female students, who are well acquainted with contraception and in general control their behaviour, have not used any contraception. From the answers, it is obvious that emotions have been stronger than rational thinking. It is self-evident that emotions and a satisfying relationship are important in sexual issues, and contraception may reduce the romantic aspect around the sexual encounter. This is important to keep in mind

when health care professionals give advice in contraceptive use, or when human beings assess their sexual behaviour.

10.5. Condom failure (I)

While the current use of condoms was fairly low, almost 80 % of students had ever used condom and one-quarter of all respondents had had problems with condom use. Condom failure was more common in a Finnish population-based study, where almost half of men had experienced condom failure in the age group 25–29 (Kirkkola et al 2005). Other comparable studies (other than EC studies) where the condom failure rate has been reported were few and they were conducted among family planning clients (Sparrow and Lavill 1994, Spruyt et al 1998).

Experiences of condom failure seem to be usual in real life. In clinical trials the latex condoms have rarely broken (Boldsen et al 1992, Walsh et al 2004). As discussed above, condom failure is the most often mentioned reason to use EC. The condom failure rates were astonishingly similar in most of above-mentioned EC studies. However there is a little discussion about the reasons for condom failure. Is the quality of condoms poor or is the reason imperfect use? Could experiences of condom failure even be used as a rationale for non-use of condoms as Spruyt considers (1998)? According to the available studies (Sparrow and Lavill 1994, Spruyt et al 1998, Crosby et al 2005), it is not possible to know if the reason for condom failure has been incorrect use. In any case, advice on condom use even among university students is still necessary to maximize condom effectiveness.

10.6. Trends in the use of family planning services (III)

In the FSHS since the 1980s, the use of health services has been possible to follow through health record statistics. This is unique in Finland because, until now, primary health care centres have not had any systematic way to collect information concerning the reasons of physician encounter (Rintanen 2004, Kirkkola 2004). In the FSHS, the reasons for physician encounter have been coded and registered to computer data files. The method is based on routine daily registration. The data collecting system includes two different databases: first the number of contacts with different health care personnel groups and secondly the reasons (diagnosis of disease or symptom code) of consultations. So it is possible to compare these two systems. Also the health personnel have the possibility to follow the figures and react if figures produce discrepancies with everyday reality.

The available data created a good baseline for evaluating the use of health services of Finnish university students during a 20-year period. In the beginning

the figures concerning contacts increased until the year 1992–1993. The turning point was in the middle of the 1990's, when Finland experienced the deep economic depression, and the FSHS had no possibility to employ more doctors. After that the figures of all physician consultations and FP contacts per students have been continually decreasing. The FP work is a significant part of physicians work in the FSHS, as three-quarters of all contacts are made by female students and 16 % of all female consultations concern family planning.

The number of female students has increased by 34 000 during twenty years and simultaneously, the need for FP services. To maintain good access to contraception services was possible only by altering the distribution of the tasks among physicians and nurses, and flexibly changing daily staff routines. In the beginning, students visited a doctor once a year to get the prescription for oral contraceptives. Since the end of the 1990s, students see a doctor to get their first prescription and then visit a nurse for every other FP check-up; a doctor renews a prescription by telephone contact or by referring to the nurse's notes in the health record. Another considerable change is that since the year 1998, the duration of one physician consultation is 20 minutes instead of 15 minutes. These changes have decreased face-to-face contacts with doctors.

Contraception services require substantial resources in the FSHS as in other health care organizations. According to the Health 2000 survey, nine of ten 25–34-year-old respondents had used oral contraception sometimes in their life (Kosunen et al 2004). The way we arrange contraception services has big consequences for the health care system and for people. There are no general evidence-based guidelines how these services should be arranged, and what an appropriate control system for a contraception visit should include. The low number of induced abortions and the free comments in the study of EC users indicate that the FSHS has succeeded in offering high-quality FP services for university students in a situation where there is a shortage of resources. The nurses are evidently well-educated in Finland and can take care of family planning check ups. In the present study, EC users in their free comments gave positive responses to nurses and doctors for their understanding and non-judgemental attitude. Recently there has been discussion about the possibility of allowing nurses to write prescriptions in Finland as in Sweden, where midwives have written prescriptions on oral contraceptives since the 1970s. In any case, the easy and inexpensive access to clinics and well-educated health care personnel are enormously important when FP services are offered.

10.7. Childbearing (IV, V)

The university students were rarely parents and parenthood among university students was now more rare than forty years ago or even 20 years ago (Kalaja 1967, Makkonen and Kontula 1989). This is in line with declining fertility rates and increasing age of mothers at the birth of their first child among the general population. However, in Finland fertility rate is still at quite a high level

compared to other European countries. Surprisingly, the difference concerning childbearing among university students and the Finnish population of the same age group was large (7.9 % among female students in present study vs. 35 % for the Finnish female population at large, and 6.8 % vs. 25 % among men, respectively). The female population at large had children roughly four times more often than female university students. Even among the oldest female university students (30–35 years) the childbearing was half of that among population at the same age group. The proportion of student parents was approximately the same in Moore's 'adult student' study (Moore 2004). A low number of children was also found among Swedish University students (Lampic et al 2006). Motherhood among the students who requested EC was still rarer (V). The lower median age of respondents may explain the lower figure. The low childbearing figures in present studies (IV, V) confirm the notion that highly educated women are more likely to postpone childbearing to a later age than women with low education (Kreyenfeld 2004, Koponen et al 2004, Pouta et al 2005, Kontula and Miettinen 2005).

Contrary to what is presumed, parenthood did not seem to have negatively affected students' satisfaction with their financial situation (IV). A student survey from 2003 stated that students with children seemed to find that making their livelihood was more often difficult than others (Berndtson 2004). One explanation is that in the present study students clearly have increased their income by working, as all of the fathers and even two-thirds of mothers reported working during the previous year. This was in accordance with another earlier study where students with children had median income (and costs) almost twice as high as other students (Lempinen and Tiilikainen 2001). In general, students flexibly combine the study grant/housing supplement with earnings from work and with financial assistance from parents to provide subsistence security (Berndtson 2004). For students with children this is far more difficult; they had more difficulties to combine work and studies (Lempinen and Tiilikainen 2001) and they have to struggle with complicated aid benefits for students and families (Nissinen 2006). Students with children are borderline cases in both contexts and financial insecurity is created by the jungle of forms, bureaucracy and having to combine different sources of aid.

On the other hand, student surveys have revealed that the absolute income level has not been decisive for satisfaction with financial situation or that a small income level alone does not explain the feelings of inadequate subsistence (Euro Student 2000, Berndtson 2004). This is supported by the present study of EC users, where the reason for not wanting to become pregnant was seldom financial circumstances alone (V).

Having children did not decrease the mean completed study weeks among students. This indicates that the parents have a high motivation to complete studies as was also concluded by Lempinen in the Student research 2000 (2001).

10.8. Desire to have children (IV, V)

The vast majority of students desired to have children in the future (IV, V). This confirmed the finding of the Finnish Family Barometer 2002, where a majority of students and almost all of those who had an academic degree planned to have children (Paajanen 2002). The recent Swedish studies also supported this result (Tyden et al 2001, Lampic et al 2006). In the present study, the majority reported that the ideal number of children is two to three children, as is the case in most other studies (Paajanen 2002, Kemkes-Grottenhaler 2003, Smallwood et al 2003, Stöbel-Richter et al 2005, Kesseli et al 2006, Lampic et al 2006). In reality most people do not have as many children as they have intended (Paajanen 2002, Stöbel-Richter 2005).

The strong desire to have children emphasizes that students will not reject parenthood, and that they have a high appreciation for the value of family. This is in line with Oinonen's conclusions in her sociological thesis, where she has researched Finnish and Spanish families (2004). "The family is one of the most important traditions we have and the value of partnership, family and parenthood has by no means diminished among young people, even though family formation is no longer the most important qualifier for adulthood."

Those who do not plan to have children are the minority among students as in the general population. The intentions to have children may also change during the life span. Voluntary childlessness can be a transitory life phase related, for instance, to the process of establishing a career. Only a few actively make the decision to forgo children, while the majority only wants to postpone childbearing (Willen 1994, Paajanen 2002, Kemkes-Grottenhaler 2003, Stöbel-Richter 2005).

The answers to the open questions: "Why do you not want to become pregnant now?" and "When is it suitable time to have children?" gave a large amount of qualitative material. The analysis of the material with collective consensus method gave a deeper understanding on the family planning situation of university students. Even if the material was small and the respondents were EC users, the answers were descriptive of the reality of Finnish university students.

The most suitable time to have children was at the age of 30 years among majority of EC users (II). The reported ideal age was lower in the Family Barometer 2002 and in a Swedish study (Paajanen 2002, Lampic et al 2006). With increasing age, the ideal age for first gravidity increased similar to the findings of a German study (Stöbel-Richter 2005). The median age of first birth mothers in Finland is two years older than their ideal (Stakes statistics 2005). When students plan to have children in their thirties, the real time of first pregnancy is assumedly higher. Postponing childbirth until an older age entails risks of involuntary childlessness and health risks related to pregnancy and obstetric outcomes (Cleary-Goldman et al 2005, Lampic et al 2006, Leader 2006, Virtala and Kunttu 2006).

When fertility awareness was surveyed among Swedish university students, participants markedly overestimated women's fecundity (Lampic et al 2006). About a third of men estimated that women's fecundity decreases first after the age of 45 years. In the present study there was no direct question about the knowledge of fertility. From the open answers it is only possible to make some assumptions. One respondent in the present study said that a suitable time to have a child at the age of 50 years could be good for somebody. In general in the present study, students did not question their biological ability to have children in the future, when the other circumstances are suitable. In none of answers was any mention about the possibility that age could be an obstacle to when they think is the best time to become parent. An explanation may be the young age of respondents. However the oldest respondents were 30–34 years old.

In a sociological pro gradu study, where students (university or polytechnics) aged 23–29 years were group interviewed, the researcher stated that biological clock referred more to the pressure of the culture among one's equals than to biology (Ketokivi 2002). When all others begin to have children, then the biological clock ticks. This kind of interpretations possibly indicates ignorance of the biological facts.

10.9. Reasons to postpone pregnancy (V)

The casual nature of the relationship was often mentioned as the obstacle to become mother in the study of EC users (V). To have a permanent relationship is important and most often, a self-evident precondition for childbearing. However it was not enough. The respondents expressed demand for higher standards and expectations towards themselves, the potential father and for the relationship. In a Swedish study among university students, sharing responsibility with the partner and feeling sufficiently mature seemed to be even more important conditions than completion of studies for a deciding to become a parent (Lampic et al 2006). Kaisa Ketokivi (2002), in her pro gradu study about family formation in the culture of extended youth, considers that behind the extended youth there is the desire not only to live the life of a youth free of responsibilities, but also to provide a family life that is best for the child. This new ideal family value was also seen in the present study. Students want to be sure that they can offer the best possible circumstances for a child before they want to have children.

In the present study the desire for a free life did not emerge greatly; only one-fifth of students referred to the loss of personal freedom in relation to parenthood. Salmela-Aro et al (2000) describe the complexity of the transition to the parenthood by a sequential change in various demands, challenges and role patterns. For example, the early stages of transition to motherhood put strong emphasis on demands related to pregnancy, birth, and the child's health.

In the present study of EC users, respondents appeared to be very responsible, somehow serious women (V). Possibly what is reflected here is that the students were regretting their behaviour and overestimated their

responsibility. Maybe here is also emerging a new norm to behave. Because of gained access to an effective method of birth-control and the option to decide whether to accept or avoid pregnancies, to become pregnant appears as a failure. "Accidents easily occur", but for a modern woman this is not allowed. If one does not plan and control life in every moment, then one has failed.

In the study of EC users, emotions and financial situation were mentioned surprisingly rarely when students calculated the suitable time to have children (V). In general the desire to have a child has been strongly based on emotional motives; 'I want to experience being a mother' or 'the feeling of a real home' or 'baby fever' (Paajanen 2002, Stöbel-Richter et al 2005, Kesseli et al 2006). In this "emergency situation" students had to make the decision of childbearing. The time was limited; there was no time for expression of feelings. They had good rational reasons to seek EC, because they had not intended to become pregnant from the intercourse which led to this situation. Biologically they were in the optimal age to become pregnant. They were aware of their desire to have children some day in the future and they had to behave against this desire to achieve other competing goals, which they had: 'I have to complete my studies first'.

The ambivalence which exists when individuals have to make major decisions concerning childbearing became concrete in their situation (V). Willen (1994) in her psychological thesis considers that nowadays more people experience the anxiety and doubts related to having to choose between having children or not, with whom and when, than before, when children arrived as a natural consequence of sexual intercourse. Bender (2005) considers ambivalence and questions an intentional pregnancy. When women have ambivalent feelings about an unintended pregnancy, the women who decide to deliver cannot be classified as intentional and those who plan to abort unintentional. This ambivalence of emotions is also present when people make contraceptive choices.

'Unfinished studies' was the main reason to postpone pregnancy to the future when analyzing the answers of respondents in the study of EC users (II). This confirmed the result in the Finnish Family Barometer 2002 among childless respondents under 30 years old (Paajanen 2002). It was not a surprise that unfinished studies were the reason to postpone pregnancy. An old Finnish proverb prescribes the still prevailing culture "Ensin tupa ja takka, sitten vasta akka" (First house and fireplace, then it is time to get married). Also, according to life course theories, life is divided to different transitions from one age-related developmental task to another (Salmela-Aro et al 2000). Katariina Salmela-Aro cites Havighurst and writes: "One period of human life during which people are faced with a variety of age-graded developmental tasks, normative demands, and role transitions is young adulthood. The developmental transitions faced during this period of life include finishing education, getting started in an occupation, selecting a partner, and starting a family." According to these theories, solving age-related developmental tasks is the basis for satisfying adulthood. University students are generally supposed to live in the stage of young adulthood.

Among university students there are, of course, those whose education and careers fit into the theories. However, there are also those whose life course is more complex. Education and work extends beyond each other and the idea of life-long education is self-evident (Lempinen and Tiilikainen 2001). The events of life do not follow each other in age-related order as in earlier times and there are a variety of individual life courses. Adulthood in the traditional meaning has also been questioned, and nowadays all people seem to seek their identity through their lives (Antikainen 2001).

In this extended youth culture it is well founded to ask whether unfinished studies are really the reason to postpone childbearing or “Which career first?” as obstetrician Susan Bewley asks in her article in *British Medical Journal* (2005). Even if almost all age-related cultural and normative life events have changed, the biology of human beings has not changed. Age is the single most important determinant of male and female fertility and the most secure age for childbearing remains between the ages twenty and thirty-five (Bewley et al 2005, Leader 2006).

Advanced maternal age, defined as age 35 years and older, has impact on fecundity and can present many health problems for mother and child, including obstetric outcomes. A slight but significant decrease occurs in women’s fecundity after 30 years and a marked decrease after the age of 35 years (Cecos et al 1982). The probability of the intended pregnancy to succeed is 80 % in the age of 25 years, 35 % in the age of 40 years and only 5 % in the age of 45 years (Halttunen 2005). Many population-based studies have shown that increasing maternal age is associated with adverse pregnancy outcomes such as miscarriage, chromosomal abnormalities, congenital anomalies, gestational diabetes, placenta previa and caesarean delivery. Increased risk for abruption, preterm delivery, low birth weight, and perinatal mortality has been noted in women aged 40 years and older (Cleary-Goldman et al 2005).

In a Swedish study, intrauterine fetal death and neonatal death increased with age. There were also an increase in intercurrent illnesses and pregnancy complications with increasing age, but this did not entirely explain the observed increase in perinatal mortality with age (Jacobson et al 2004). According to a Danish study the risk of a spontaneous abortion was 8.9 % in women aged 20–24 years and 74.7 % in those aged 45 years or older. High maternal age was a significant risk factor for spontaneous abortion irrespective of the number of previous miscarriages, parity, or calendar period (Nybo Andersen et al 2000).

The results of the present study arouse the same worry as Canadian Professor Arthur Leader recently wrote in his article (2006): “Among women of reproductive age, having children and careers often collide. As many men and women pursue careers, many have doubts as to when and whether they want to have children. At issue is combining childrearing with educational-professional development and accepting the loss of personal freedom that comes with building a family. These men and women are falsely reassured by popular beliefs that steroid contraception delays reproductive aging and that advances in new reproductive technologies can compensate for the age-related decline in fertility.

As a result, women and their partners postpone childbearing without fully understanding the possible consequences.”

Efforts have been made in Finland for reconciliation of occupational career and family. There are many factors promoting childbearing in Finland for those women who already are employed: maternity leave of 9 months, home care supported by the social welfare system and the legal right for either parent to have shorter working hours (Pouta et al 2005). Somehow students with children have been forgotten. The Social and family policy system does not support students equally and in fact motivates students to defer pregnancy (Vikat 2002). In the 1970s and 1980s students with children had special financial benefits, which they do not have any more (Nissinen 2006).

In population studies it has not been possible to find out long-lasting causal interrelationships between social benefits and fertility (Gissler 2003). Values, demography and policies are in complex interrelationship with one another, and there is no direct causal relationship between low fertility and family policy (Kontula and Miettinen 2005). Kontula also considers that the current policy discourse and public debate about demographic issues largely concern population ageing and immigration, but rarely address below-replacement fertility. Individual freedom and choice are highly valued and many scholars and politicians seem not to believe that they have possibilities to influence reproductive behaviour in a positive sense.

Even if financial concerns are not the most important obstacle, equal financial possibilities could in their part create an encouraging atmosphere in the society for university students to choose childbearing at the optimal age. As the present study shows, students also plan to have children even if they carry out their professional aims and use resources such as reliable methods of contraception among others, to control their lives. The prevention of infertility is important (Anttila 2002, Bewley et al 2005). Counseling about age and fertility is needed so that students can make informed decisions regarding the timing of childbearing. While understanding the complexity of childbearing decisions, the task of health care personnel is to remind students of the age-related biological facts. The whole life span of students has to be kept in mind when providers give family planning services for university students.

11. Summary

The aim of this study was to describe the family planning situation of Finnish university students.

The more detailed aims were to study:

1. The current sexual activity and the prevalence of contraceptive use
2. The reasons for the need of emergency contraception (EC)
3. The trends in the use of family planning services in the years 1986–2005.
4. Childbearing and the desire to have children
5. The reasons to postpone pregnancy

The material for the study is from the following three different data sources:

1. The Student Health Survey 2004 was a postal questionnaire carried out among Finnish undergraduate University Students (under 35 years old) who are entitled to health care services provided by the FSHS. The response rate was 62.7 %. The respondents (n=3153) were representative of the study population for all background variables, and the mean age was 24.5 years. Sexual activity was evaluated by asking about current sexual intercourse and current use of contraceptives. Childbearing was evaluated by asking the current number of children and the desired number of children

2. Each student who requested emergency contraception in the FSHS centre in Tampere was given a self-report questionnaire. The questionnaire included structured questions concerning EC use and the desire to have children in the future, and open questions concerning future plans of childbearing. The response rate was 67 % (114 completed questionnaires returned by mail). The answers produced material for quantitative and qualitative analysis.

3. The health record statistics of the FSHS in 1986 – 2005.

Results:

The Student Health Survey 2004 showed that 80 % of the university students were currently sexually active. The prevalence of contraceptive use was 65 % among male students and 79 % among female students. The most popular method was hormonal contraception among female students and condom among male students. Only 6.8 % of male students and 7.9 % of female students had children. The general population of the same age group was four times more likely to have children than university students. The vast majority of students (89 %) desired to have children in the future. The mean ideal number of children was 2.2.

In the study of EC users, the main reason why students needed emergency contraception was condom failure. One-third of EC users had not used any contraception.

The open answers to the questions: “Why do you not to want to become pregnant now?” and “When is it a suitable time to have children?” gave a large amount of qualitative material. The analysis of the material using the collective consensus method gave a deeper understanding of the family planning situation of university students. Even if the material was small and the respondents were those who were requesting EC, the answers generally described the reality of Finnish university students. Unfinished studies were the main reason to postpone pregnancy. In addition to completed studies, other conditions important for having children were having a permanent, safe relationship and being “mature enough to be a mother”. The majority of respondents wanted to have children in their thirties when their studies are over.

The trends in the use of family planning services during the period of 1986–2005 were investigated by using the data from the health record statistics of the FSHS. The number of family planning consultations (physician encounter) decreased from 358 to 189 per 1000 female students. The number of consultations concerning an official statement for induced abortions decreased from 4.2 to 2.9 per 1000 female students.

12. Conclusions

Four of five Finnish university students were sexually active and they were responsible contraceptive users. Sexual activity decreased among those students who had children. Public health professionals should have an open attitude and encourage discussions about sexuality and relationships to help parents have a satisfying sexual life after childbirth. Also, parenthood and relationship education that provides basic communication and conflict solving methods would promote family health.

This study indicated that condom failure was common among university students, but did not give answers for why condoms break so often. More research is needed. Advice on condom use is necessary while understanding that emotions are often stronger than rational thinking in sexual behavior. When primary contraception failed, university students used emergency contraception. The ever use of EC was at a higher level than previous studies have indicated to be among the general population. Information about EC use should be increased among population in general.

The FSHS statistics created a baseline to evaluate the reasons for physician encounters among the university student population. The low rate of induced abortions showed that the FSHS has succeeded in guaranteeing contraception services despite the decreased number of physician consultations. This was possible by changing the tasks among physicians and nurses.

There are no evidence-based guidelines how family planning services should be arranged, and what an appropriate control system for a contraception visit should include. These guidelines are needed to maintain quality of care, especially now when demand for primary care services has increased, and the supply of physicians is constrained. The coding of the reasons for primary health care encounters would also be necessary, and would create the basis for further research on a population level.

Finnish university students were rarely parents, even if they were at the optimal age for childbearing. The vast majority of them desired to have children in their thirties. This study arouses the worry about how much students are aware about the relationship between age and fertility when they postpone pregnancy because of unfinished studies. Counseling about age and fertility is needed so that students can make informed decisions regarding the timing of childbearing. More research is needed to know how aware students now are about the age-related facts, and how much this information would influence their decision about childbearing. Both quantitative and qualitative research is needed to gain a more profound understanding of the multifaceted issues concerning family planning and childbearing.

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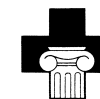
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15. Appendices

15.1. Appendix 1: Questionnaire for the Student Health Survey 2004 (in Finnish)

15.2. Appendix 2: Questionnaire for the study of the emergency contraception users (in Finnish)



Yliopisto-opiskelijoiden terveystutkimus 2004

Hyvä opiskelija

Ylioppilaiden terveydenhoitosäätiö (YTHS) vastaa yliopisto-opiskelijoiden terveydenhuollosta Suomessa. Voidakseen kehittää terveydenhoitopalvelujaan YTHS tarvitsee ajankohtaista tietoa terveyden kannalta tärkeitä asioista.

Kyselylomakkeessa on perinteisiä terveyden ja terveystyötytymisen kysymyksiä, mutta siinä kartoitetaan myös muita elämän alueita, jotka kokemuksemme mukaan liittyvät läheisesti opiskelijan terveyteen ja jaksamiseen. Opiskelua ja opiskeluolosuhteita koskevat kysymykset ovat tärkeitä myös yliopistoille ja opiskelijajärjestöille. Tutkimus koskee myös sivutoimisesti opiskelevia tai tämän lukuvuoden aikana valmistuneita.

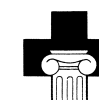
Tämä tutkimus on toinen valtakunnallinen selvitys; ensimmäinen tehtiin vuonna 2000. Aiemman tutkimuksen tulokset ovat olleet arvokkaita toteutettaessa valtakunnallista opiskelijoiden hyvinvointihanke Kehrää, jossa YTHS:n, yliopistojen ja opiskelijoiden yhteistyöllä on lähdetty etsimään ratkaisuja moniin opiskelijoiden hyvinvoinnin ongelmiin.

Tämä kysely tuo kehittämishankkeisiimme arvokasta uutta tietoa. Tutkimuksen onnistumiseksi on ensiarvoisen tärkeää, että osallistut kyselyyn.

Kaikki antamasi tiedot ovat luottamuksellisia ja tulevat vain tutkijoiden käyttöön. Tutkimustulokset käsitellään tilastollisina kokonaisuuksina; yksittäistä vastaajaa ei niistä voi tunnistaa.

Toivomme, että palautat lomakkeen täytettynä mahdollisimman pian Ylioppilaiden terveydenhoitosäätiölle oheisessa kirjekuoressa, vastaanottaja maksaa postimaksun. Tutkimusta koskeviin tiedusteluihin vastaa LT Kristina Kunttu, puh. (02) 2747 200, sp. kristina.kunttu@yths.fi.

Yhteistyöstä kiittäen



Ylioppilaiden terveydenhoitosäätiö

Vastaajakilpailu:

*Kyselyyn **16.2.2004 mennessä** vastanneiden kesken arvotaan 50 kappaletta viiden elokuvan sarjalippua.*

Jos haluat osallistua arvontaan, täytä oheinen lipuke ja laita se vastauslomakkeen mukana palautuskuoreen.

Palkinnot toimitetaan suoraan voittajille.

ERITYISTEEMA / Lisäkysymyksiä seksuaaliterveydestä**105. Kuinka usein olet nykyisin sukupuoliyhdyntässä?**

- 0 en koskaan
- 1 harvemmin kuin kerran viikossa
- 2 kerran viikossa tai useammin

107. Oletko sairastanut klamydia-sukupuolitaudin

- 0 en
- 1 kyllä

Kysymyksiä naisille**106. Onko Sinulla ollut ongelmia kondomin käytössä? (Tarvittaessa voit ympyröidä useitakin kohtia)**

- 0 en ole käyttänyt kondomia
- 1 ei ole ollut ongelmia
- 2 kondomi on luiskahtanut pois päältä
- 3 kondomi on mennyt rikki
- 4 jokin muu ongelma

108. Oletko koskaan käyttänyt jälkikiäisyä?

- 0 en
- 1 kyllä |_|_| kertaa

109. Onko Sinulle tehty raskauden keskeytystä?

- 0 ei
- 1 kyllä

TAUSTATIEDOT**110. Ikä _____ vuotta****111. Opiskelupaikkakunta**

- | | | |
|---------------|----------------|---------------|
| 1 Espoo | 7 Kouvola | 13 Rovaniemi |
| 2 Helsinki | 8 Kuopio | 14 Savonlinna |
| 3 Hämeenlinna | 9 Lappeenranta | 15 Tampere |
| 4 Joensuu | 10 Oulu | 16 Turku |
| 5 Jyväskylä | 11 Pori | 17 Vaasa |
| 6 Kajaani | 12 Rauma | 18 Muu |

112. Koulutusala

- | | |
|--------------------------------------|--------------------------------|
| 1 Eläinlääketieteellinen koulutusala | 11 Maatalous-metsätieteellinen |
| 2 Farmasian | 12 Musiikin |
| 3 Hammaslääketieteellinen | 13 Oikeustieteellinen |
| 4 Humanistinen | 14 Psykologian |
| 5 Kasvatustieteellinen | 15 Taideteollinen |
| 6 Kauppatieteellinen | 16 Teatterin ja tanssin |
| 7 Kuvataideala | 17 Teknillistieteellinen |
| 8 Liikuntatieteellinen | 18 Teologinen |
| 9 Luonnontieteellinen | 19 Terveystieteiden |
| 10 Lääketieteellinen | 20 Yhteiskuntatieteellinen |

Vastausohjeet:

Ympyröi Sinun vastaustasi parhaiten kuvaavan vaihtoehdon numero tai kirjoita kysytty tieto sitä varten varattuun tilaan.

Ympyröi kunkin vaihtoehdon kohdalla vain yksi numero, ellei toisin ole mainittu.

Vastauksiin toivotaan tietoa siitä, miten yleensä toimit, ellei kysymyksessä toisin ole mainittu.

Lue ennen vastaamistasi koko kysymys.

KIITÄMME KYSELYYN VASTAAMISESTA!

99. Kun viimeksi käytit YTHS:n palveluja, millaiseksi koit saamasi palvelun?

	täysin samaa mieltä	jokseenkin samaa mieltä	hiukan eri mieltä	täysin eri mieltä
Sain selvyuden minua huolestuttaneisiin asioihin	1	2	3	4
Minua kuultiin ja tunsin tulevani ymmärretyksi	1	2	3	4

100. Mitä terveydenhuollon palveluja toivoisit voivasi korvata sähköpostilla tai muulla verkkopalvelulla?

- 0 en mitään
 1 kyllä, seuraavia:
 1 ajanvaraus / peruutus
 2 laboratoriovastausten saaminen
 3 reseptin uusiminen
 4 muuta, mitä _____

101. Oletko tutustunut YTHS:n www-sivuihin internetissä?

- 0 en
 1 kyllä

104. Haluaisitko apua, esim. yksilöllistä neuvontaa, ryhmäkokoontumisia, kursseja, luentoja tms. seuraavissa asioissa:
 (Vastaa kaikkiin kohtiin.)

	en	en osaa sanoa	kyllä
allergia-asioissa, ihon hoidossa	0	1	2
tupakoinnin lopettamisessa	0	1	2
alkoholinkäytön hallinnassa	0	1	2
painonhallinnassa	0	1	2
syömisongelmassa	0	1	2
ravitsemusasioissa	0	1	2
liikuntaan liittyvissä asioissa	0	1	2
ergonomia-asioissa	0	1	2
jännittämisingelmissä	0	1	2
ihmissuhde- tai itsetuntoasioissa	0	1	2
stressinhallinnassa	0	1	2
opiskelun ongelmissa tai opiskelutekniikassa	0	1	2
muissa ongelmissa	0	1	2

102. Oletko käyttänyt YTHS:n neuvotus verkkopalveluita (esim. kysy lääkäriltä -palvelu, verkkoneuvontapalvelu)?

- 0 en
 1 kyllä _____ kertaa

103. Oletko ollut sähköpostitse yhteydessä YTHS:n Sinua hoitaneeseen terveydenhuollon työntekijään (lääkäri, terveydenhoitaja, psykologi tms.)?

- 0 en
 1 kyllä _____ kertaa

TERVEYDENTILA

1. Onko lääkäri, hammaslääkäri tai psykologi todennut Sinulla jonkin pysyvän, pitkäkestoisen tai usein toistuvan sairauden, vian tai vamman, joka on oireillut tai vaatinut hoitoa viimeksi kuluneen vuoden (12 kk) aikana?

(Vastaa kaikkiin kohtiin.)

	ei	kyllä
1. Diabetes	0	1
2. Kilpirauhassairaus	0	1
3. Verenpainetauti, kohonnut verenpaine	0	1
4. Sydämen rytmihäiriö tai muu sydänsairaus	0	1
5. Nivelreuma, selkärankareuma	0	1
6. Muu tuki- ja liikuntaelinten sairaus	0	1
7. Astma tai muu keuhkosairaus	0	1
8. Allerginen nuha tai silmätulehdus	0	1
9. Atooppinen ihottuma	0	1
10. Muu ihosairaus, hankala akne	0	1
11. Laktoosi-intoleranssi	0	1
12. Muu mahan tai suoliston sairaus	0	1
13. Toistuva virtsatietulehdus, munuaissairaus	0	1
14. Miesten sukuelinten sairaus	0	1
15. Gynekologinen sairaus	0	1
16. Näkövika (silmälasit)	0	1
17. Silmänsairaus	0	1
18. Korva-, nenä-, kurkkusairaus	0	1
19. Hammaskaries (reikä hampaassa)	0	1
20. Tulehtunut viisaudenhammas	0	1
21. Muu suun tai hampaiden sairaus (purentaelinten, suun limakalvojen tai kiinnityskudoksen sairaus)	0	1
22. Migreeni	0	1
23. Epilepsia, muu neurologinen sairaus	0	1
24. Syömishäiriö (anorexia, bulimia, ahmiminen)	0	1
25. Ahdistuneisuushäiriö (paniikkihäiriö, sosiaalisten tilanteiden pelko tms.)	0	1
26. Masennus (depressio)	0	1
27. Muu mielenterveyden häiriö	0	1
28. Muu, mikä?	0	1

2. Millainen on terveydentilasi omasta mielestäsi?

- 1 hyvä
- 2 melko hyvä
- 3 keskitasoinen
- 4 melko huono
- 5 huono

3. Minkä seuraavista koet suurimmaksi uhaksi omalle terveydellesi?

- 1 ympäristöuhot
- 2 omassa käyttäytymisessä mahdollisesti olevat epäterveelliset tavat
- 3 väkivalta tai onnettomuus
- 4 henkinen stressi
- 5 perinnölliset tekijät
- 6 muu, mikä? _____
- 7 en osaa sanoa

4. Käytätkö nykyisin lääkärin määräämiä lääkkeitä? (Tarvittaessa voit ympyröidä useitakin kohtia. Ei E-pillereitä muuta kuin sairauden hoitona.)

- 0 en käytä mitään
- 1 säännöllinen lääkitys sairauteen
- 2 käytän tarvittaessa otettavaa lääkettä
- 3 käytän voiteita säännöllisesti tai tarvittaessa

5. Käytätkö nykyisin ilman reseptiä saatavia lääkkeitä?

- 0 en käytä tai käytän hyvin harvoin
- 1 kerran tai pari kuukaudessa
- 2 viikoittain
- 3 päivittäin tai lähes päivittäin

6. Käytätkö nykyisin rohdosvalmisteita (vitamiineja, kivennäisaineita tai muita lääkkeenomaisia tuotteita) tai ns. luontaistuotteita?

- 0 en käytä
- 1 käytän satunnaisesti
- 2 käytän säännöllisesti tai usein

7. Mitä ehkäisymenetelmää käytät nykyisin? (Tarvittaessa voit ympyröidä useitakin kohtia.)

- 0 en mitään
- 1 hormonaalinen ehkäisy (e-pilleri, -laastari, -rengas tai kapseli)
- 2 kierukka
- 3 kondomi
- 4 muu

8. Pituutesi _____ cm

9. Painosi _____ kg

10. Mitä mieltä olet painostasi? Oletko mielestäsi

- 1 paljon alipainoinen
- 2 jonkin verran alipainoinen
- 3 sopivan painoinen
- 4 jonkin verran ylipainoinen
- 5 paljon ylipainoinen

11. Onko suhtautumisesi ruokaan normaali?

- 0 ei
- 1 kyllä
- 2 en osaa sanoa

12. Oletko jossakin elämäsi vaiheessa laihduttanut voimakkaasti?

- 0 en
- 1 kyllä, laihduttaminen oli suunniteltu ja hallittu toimenpide
- 2 kyllä, laihduttaminen muuttui hallitsemattomaksi

13. Kuinka monta tuntia nuket vuorokaudessa?

_____ tuntia

14. Nukutko mielestäsi tarpeeksi?

- 1 kyllä, lähes aina
- 2 kyllä usein
- 3 harvoin tai tuskin koskaan
- 4 en osaa sanoa

TERVEYSPALVELUT

96. Oletko käyttänyt seuraavia palveluja viimeksi kuluneen vuoden (12 kk) aikana? (Vastaa kaikkiin kohtiin.)

		en	kerran	2-5 kertaa	yli 5 kertaa
TERVEYDEN- HOITAJA	Ylioppilaiden terveydenhoitosäätiö	0	1	2	3
	Muu palvelun tarjoaja	0	1	2	3
FYSIOTERAPEUTTI	Ylioppilaiden terveydenhoitosäätiö	0	1	2	3
	Muu palvelun tarjoaja	0	1	2	3
YLEISLÄÄKÄRI	Ylioppilaiden terveydenhoitosäätiö	0	1	2	3
	Muu palvelun tarjoaja	0	1	2	3
ERIKOISLÄÄKÄRI	Ylioppilaiden terveydenhoitosäätiö	0	1	2	3
	Muu palvelun tarjoaja	0	1	2	3
HAMMASHUOLTAJA	Ylioppilaiden terveydenhoitosäätiö	0	1	2	3
	Muu palvelun tarjoaja	0	1	2	3
HAMMASLÄÄKÄRI	Ylioppilaiden terveydenhoitosäätiö	0	1	2	3
	Muu palvelun tarjoaja	0	1	2	3
ERIKOIS- HAMMASLÄÄKÄRI	Ylioppilaiden terveydenhoitosäätiö	0	1	2	3
	Muu palvelun tarjoaja	0	1	2	3
PSYKOLOGI	Ylioppilaiden terveydenhoitosäätiö	0	1	2	3
	Muu palvelun tarjoaja	0	1	2	3
PSYKIATRI	Ylioppilaiden terveydenhoitosäätiö	0	1	2	3
	Muu palvelun tarjoaja	0	1	2	3

97. Syy muiden kuin YTHS:n palvelujen käyttöön. (Tarvittaessa voit ympyröidä useitakin kohtia.)

- 0 en ole käyttänyt muita kuin YTHS:n palveluja
- 1 en ole kuulunut koko vuotta YTHS:n piiriin
- 2 olen ollut töissä / armeijassa / raskaana
- 3 olen saanut lähetteen muualle
- 4 minulla on entuudestaan hoitosuhde muualla
- 5 olen tarvinnut apua paikkakunnalla, jossa ei ole YTHS:n palveluja
- 6 olen tarvinnut apua päivystysaikaan
- 7 YTHS ei tarjoa tarvitsemaani palvelua tai en saa sitä enää
- 8 en ole päässyt tarpeeksi nopeasti YTHS:ään hoitoon
- 9 en ole ollut tyytyväinen YTHS:n palveluihin
- 10 muu syy, mikä? _____

98. Oletko osallistunut / aiotko osallistua YTHS:n ensimmäisen vuoden opiskelijoille suuntaamaan terveystarkastukseen tai suun ja hampaiden tutkimukseen?

- 0 en kumpaankaan
- 1 kyllä molempiin
- 2 kyllä, vain terveystarkastukseen
- 3 kyllä, vain suun ja hampaiden tutkimukseen
- 4 en tiedä vielä osallistunko / en muista osallistuinko

TYÖSSÄKÄYNTI JA TOIMEENTULO

93. Oletko ollut viimeksi kuluneen vuoden (12 kk) aikana ansiotyössä?

(Merkitse 0, jos ei yhtään)

		Liittyikö työ opiskelualaasi?	
Kokopäivätyö (30 tuntia viikossa tai yli)	yhteensä _ _ kuukautta, josta lukuvuoden aikana _ _ kuukautta	kyllä	ei
Säännöllinen osapäivä- tai osa-aikatyö (alle 30 tuntia viikossa)	noin _ _ tuntia viikossa yhteensä _ _ kuukautta, josta lukuvuoden aikana _ _ kuukautta	kyllä	ei
Keikkatöitä lukuvuoden aikana (lyhyitä, alle 1 kk työjaksoja epäsäännöllisesti)	0 ei lainkaan 1 satunnaisesti 2 usein	kyllä	ei

94. Arvioi taloudellista tilannettasi viimeisen vuoden (12 kk) aikana

	ei	kyllä	en osaa sanoa
Minun oli käytävä töissä toimeentuloni takaamiseksi	0	1	2
Sain vanhemmiltani tai sukulaisiltani taloudellista tukea rahana, tavarana tms.	0	1	2
Asumismenoni veivät yli puolet käytössäni olleista varoista	0	1	2

95. Miten käytettävissäsi olevat rahat riittivät?

- 1 erittäin hyvin
- 2 tulin hyvin toimeen
- 3 tulin toimeen, kun elin säästävaisesti
- 4 toimeentuloni oli erittäin niukka ja epävarma

15. Onko Sinulla esiintynyt seuraavia oireita viimeisen kuukauden (30 pv) aikana?

(Vastaa kaikkiin kohtiin.)

	ei lainkaan	satunnaisesti	viikoittain	päivittäin tai lähes
1. päänsärkyä	0	1	2	3
2. huimausta	0	1	2	3
3. väsymystä tai voimattomuutta	0	1	2	3
4. yläselän tai niskan vaivoja	0	1	2	3
5. alaselän vaivoja	0	1	2	3
6. raajojen tai nivelten kiputiloja	0	1	2	3
7. vatsakipuja, närästystä	0	1	2	3
8. pahoinvointia tai oksennuksia	0	1	2	3
9. ilmavaivoja tai turvotusta	0	1	2	3
10. ummetusta tai ripulia	0	1	2	3
11. ahmimista	0	1	2	3
12. sydämen tykytystä, epäsäännöllisiä lyöntejä	0	1	2	3
13. iho-ongelmia	0	1	2	3
14. ääniongelmia	0	1	2	3
15. nuhaa tai tukkoisuutta	0	1	2	3
16. kurkkuvaivoja (kipua, limaa)	0	1	2	3
17. pitkittynyttä yskää tai hengenahdistusta	0	1	2	3
18. ienverenvuotoa tai ienvaivoja	0	1	2	3
19. hammasvaivoja (viiltoa, särkyä)	0	1	2	3
20. vaivaa viisaudenhampaista	0	1	2	3
21. purentavaivoja	0	1	2	3
22. nukahtamisvaikeuksia tai heräilyä yöllä	0	1	2	3
23. keskittymisvaikeuksia	0	1	2	3
24. jännittyneisyyttä tai hermostuneisuutta	0	1	2	3
25. masentuneisuutta tai alakuloisuutta	0	1	2	3
26. ahdistuneisuutta	0	1	2	3
27. muuta, mitä?	0	1	2	3

16. Onko Sinulla esiintynyt viimeisen puolen vuoden (6 kk) aikana

(Tarvittaessa voit ympyröidä useitakin kohtia.)

Naisten vaivoja?

- 0 ei
- 1 kuukautiskipuja, joihin tarvitsen lääkkeitä
- 2 kuukautisvuotohäiriöitä
- 3 normaalista poikkeavaa valkovuotoa
- 4 yhdyntäkipuja
- 5 muuta, mitä? _____

Miesten vaivoja?

- 0 ei
- 1 esinahan ongelmia
- 2 vuotoa tai kivelyä virtsaputkessa
- 3 erektiohäiriöitä
- 1 ollut aina
- 2 usein
- 3 satunnaisesti
- 4 liian nopeata siemensyöksyä (< 2 min)
- 5 eturauhasen vaivoja
- 6 muuta, mitä? _____

17. Oletko viime aikoina pystynyt keskittymään tehtäviisi?

- 1 paremmin kuin tavallisesti
- 2 yhtä hyvin kuin tavallisesti
- 3 huonommin kuin tavallisesti
- 4 paljon huonommin kuin tavallisesti

18. Oletko viime aikoina valvonut paljon huolien takia?

- 1 en ollenkaan
- 2 en enempää kuin tavallisesti
- 3 jonkin verran enemmän kuin tavallisesti
- 4 paljon enemmän kuin tavallisesti

19. Onko Sinusta viime aikoina tuntunut siltä, että Sinusta on hyötyä asioiden hoidossa?

- 1 enemmän kuin tavallisesti
- 2 yhtä paljon kuin tavallisesti
- 3 jonkin verran vähemmän kuin tavallisesti
- 4 paljon vähemmän kuin tavallisesti

20. Oletko viime aikoina tuntenut pystyväsi tekemään päätöksiä?

- 1 paremmin kuin tavallisesti
- 2 yhtä hyvin kuin tavallisesti
- 3 huonommin kuin tavallisesti
- 4 paljon huonommin kuin tavallisesti

21. Oletko viime aikoina tuntenut olevasi jatkuvasti yllirasittunut?

- 1 en ollenkaan
- 2 en enempää kuin tavallisesti
- 3 jonkin verran enemmän kuin tavallisesti
- 4 paljon enemmän kuin tavallisesti

22. Onko Sinusta viime aikoina tuntunut ettet voisi selviytyä vaikeuksistasi?

- 1 ei ollenkaan
- 2 ei enempää kuin tavallisesti
- 3 jonkin verran enemmän kuin tavallisesti
- 4 paljon enemmän kuin tavallisesti

23. Oletko viime aikoina kyennyt nauttimaan tavallisista päivittäisistä toimitasi?

- 1 enemmän kuin tavallisesti
- 2 yhtä paljon kuin tavallisesti
- 3 vähemmän kuin tavallisesti
- 4 paljon vähemmän kuin tavallisesti

24. Oletko viime aikoina kyennyt kohtaamaan vaikeuksia?

- 1 paremmin kuin tavallisesti
- 2 yhtä hyvin kuin tavallisesti
- 3 huonommin kuin tavallisesti
- 4 paljon huonommin kuin tavallisesti

25. Oletko viime aikoina tuntenut itsesi onnettomaksi ja masentuneeksi?

- 1 en ollenkaan
- 2 en enempää kuin tavallisesti
- 3 jonkin verran enemmän kuin tavallisesti
- 4 paljon enemmän kuin tavallisesti

26. Oletko viime aikoina menettänyt itseluottamustasi?

- 1 en ollenkaan
- 2 en enempää kuin tavallisesti
- 3 jonkin verran enemmän kuin tavallisesti
- 4 paljon enemmän kuin tavallisesti

27. Oletko viime aikoina tuntenut itsesi arvottomaksi?

- 1 en ollenkaan
- 2 en enempää kuin tavallisesti
- 3 jonkin verran enemmän kuin tavallisesti
- 4 paljon enemmän kuin tavallisesti

28. Oletko viime aikoina tuntenut itsesi kaiken kaikkiaan kohtalaisen onnelliseksi?

- 1 enemmän kuin tavallisesti
- 2 yhtä paljon kuin tavallisesti
- 3 vähemmän kuin tavallisesti
- 4 paljon vähemmän kuin tavallisesti

85. Montako lasta Sinulla on?

|__| lasta

86. Montako lasta haluaisit?

|__| lasta

87. Kuinka usein olet yhdessä ystäväsi tai ystäväsi kanssa vapaa-aikanasi?

- 0 harvemmin kuin kerran kuukaudessa
- 1 1-3 kertaa kuukaudessa
- 2 noin kerran viikossa
- 3 2-3 kertaa viikossa
- 4 lähes joka päivä

88. Koetko olevasi yksinäinen?

- 0 en
- 1 kyllä, ajoittain
- 2 kyllä, usein

89. Koetko kuuluvasi johonkin, mihin tahansa, opiskeluun liittyvään ryhmään (esim. vuosikurssiin, laitokselle, graduryhmään, ainejärjestöön tms.)

- 0 en
- 1 kyllä
- 2 en osaa sanoa

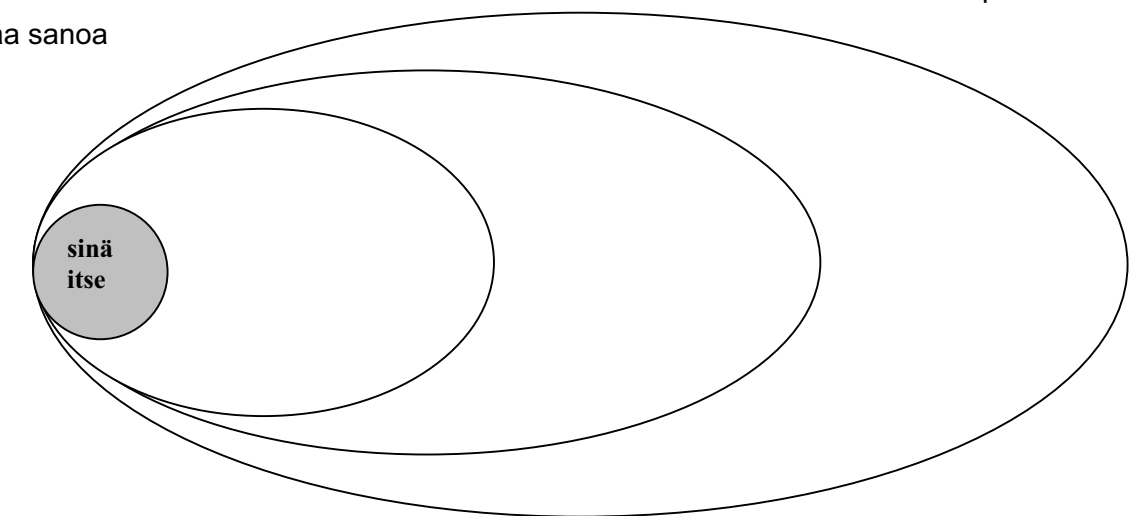
90. Voitko halutessasi keskustella jonkun läheisesi kanssa avoimesti asioistasi ja ongelmistasi?

- 0 en koskaan
- 1 hyvin harvoin
- 2 joskus tai joistakin asioista
- 3 usein
- 4 aina tai useimmiten

91. Miten usein olet viimeisen vuoden (12 kk) aikana osallistunut jonkin yhdistyksen tai seuran toimintaan (esim. liikuntaseura, soittokunta, tieteellinen tai uskonnollinen yhdistys, ainejärjestön tai yo-kunnan toiminta, partio tms. toiminta)?

- 0 hyvin harvoin tai en lainkaan
- 1 muutaman kerran vuodessa
- 2 1 – 3 kertaa kuukaudessa
- 3 kerran viikossa tai useammin

92. Ihmisen lähipiirillä on merkitystä hänen terveydelleen ja sille, kuinka hän selviää stressitilanteista. Lähipiiriin voi kuulua vain muutama ihminen tai hyvinkin monta. Seuraavalla kuviolla kartoitetaan Sinun lähipiiriäsi



Vastausohjeet:

Kirjoita sisimpään soikioon Sinulle kaikkein läheisimpien ihmisten nimikirjaimet; niiden joita ilman on vaikea kuvitella tulevansa toimeen. Kirjoita keskimmäiseen soikioon niiden nimikirjaimet, jotka ovat Sinulle hyvin tärkeitä, mutta eivät yhtä läheisiä kuin edellä mainitut. Kirjoita uloimpaan soikioon niiden nimikirjaimet, jotka eivät ole yhtä läheisiä kuin edelliset, mutta jotka kuuluvat lähipiiriisi ja joiden kanssa olet säännöllisesti tekemisissä.

80. Millaiseksi olet kokenut opiskeluun liittyvän työmäärän tämän lukuvuoden aikana?

- 1 jatkuvasti liian suuri
- 2 melko usein liian suuri
- 3 sopiva
- 4 melko usein liian vähäinen
- 5 jatkuvasti liian vähäinen

81. Onko oppilaitoksesi taholta opintoihisi saamasi ohjaus ja neuvonta viimeksi kuluneen vuoden (12 kk) aikana ollut ?

- 0 täysin riittämätöntä
- 1 jonkin verran vajavaista
- 2 kohtuullista tai vaihtelevaa
- 3 hyvää
- 4 erittäin hyvää

82. Kuinka usein opiskelusi aikana olet tarvitessasi saanut apua, tukea tai neuvoja opiskeluun liittyvissä asioissa seuraavilta tahoilta?

	en ole hakenut apua	aina tai useimmiten	usein	satunnaisesti	harvoin tai en koskaan
opettajat (professorit, assistentit, lehtorit ym.)	0	1	2	3	4
opinto-ohjaajat, -neuvojat ym.	0	1	2	3	4
opiskelijatutorit	0	1	2	3	4
opiskelutoverit tai ystävät	0	1	2	3	4
perhe tai muut sukulaiset	0	1	2	3	4

83. Onko sinulla vaikeuksia seuraavissa asioissa?

	ei lainkaan	melko vähän	melko paljon	erittäin paljon
opetuksen seuraaminen luennoilla	0	1	2	3
työskentely ryhmissä	0	1	2	3
itselle sopivien opiskelutapojen löytäminen	0	1	2	3
omatoimisuutta vaativien tehtävien aloittaminen tai valmiiksi saattaminen	0	1	2	3
tentteihin lukeminen	0	1	2	3
kirjoittamista vaativien tehtävien tekeminen	0	1	2	3
opiskeluun liittyvien muiden tehtävien tekeminen	0	1	2	3
opintojen suunnitteleminen	0	1	2	3
kanssakäyminen opettajien kanssa	0	1	2	3

IHMISUHTEET

84. Mikä on perhemuotosi?

- 1 asun yksin omassa taloudessani (tai soluasunnossa)
- 2 asun yhteistaloudessa
- 3 asun kaksin puolisoni kanssa
- 4 asun puolison ja lapsen/lasten kanssa
- 5 asun yksin lapsen/lasten kanssa
- 6 asun vanhempien luona
- 7 muu, mikä? _____

29. Minkälaisiksi omalla kohdallasi arvioit seuraavat asiat tällä hetkellä?

Vastausohjeet:

- 2	- 1	0	+ 1	+ 2	?
asia on minulle TODELLA ONGELMA, joka ratkaisevasti vaikeuttaa elämäni nykyään	asia on minulle SELVÄSTI ONGELMA, mutta ei vaivaa aina ja/tai ei kovin voimakkaasti	ei ole ollut aihetta kiinnittää erityistä huomiota	olen yleensä KOKENUT MYÖNTEISENÄ	merkitsee minulle todella TYYDYTYSTÄ ANTAVAA ASIAA	vaikea sanoa

otteen saaminen opiskelusta	- 2	- 1	0	+ 1	+ 2	?
esiintyminen, kuten esitelmän pito	- 2	- 1	0	+ 1	+ 2	?
kontaktin luominen opiskelutovereihin ja yleensä ihmisiin	- 2	- 1	0	+ 1	+ 2	?
kontakti vastakkaiseen sukupuoleen	- 2	- 1	0	+ 1	+ 2	?
seksuaalisuuteni	- 2	- 1	0	+ 1	+ 2	?
suhde vanhempiini	- 2	- 1	0	+ 1	+ 2	?
tulevaisuuden suunnitteleminen	- 2	- 1	0	+ 1	+ 2	?
omat voimat ja kyvyt	- 2	- 1	0	+ 1	+ 2	?
mielialani yleensä	- 2	- 1	0	+ 1	+ 2	?

TERVEYSKÄYTTÄYTYMINEN

Hampaiden hoito

30. Miten usein harjaat hampaasi?

- 0 harvemmin kuin kerran päivässä
- 1 kerran päivässä
- 2 useammin kuin kerran päivässä

32. Käytätkö hammaslankaa?

- 0 en ollenkaan
- 1 silloin tällöin
- 2 päivittäin

31. Käytätkö hammastahnaa?

- 0 harvemmin kuin kerran päivässä
- 1 kerran päivässä
- 2 useammin kuin kerran päivässä

33. Käytätkö ksylitolipurukumia tai muita ksylitolilla makeutettuja tuotteita?

- 0 en käytä
- 1 käytän silloin tällöin
- 2 käytän kerran päivässä
- 3 käytän vähintään kaksi kertaa päivässä

Liikunta

34. Kuinka usein harrastat vapaa-ajan kuntoliikuntaa vähintään ½ tuntia kerrallaan niin, että ainakin lievästi hengästyt ja hikoilet (esim. lenkkeilyä, pyöräilyä, voimistelua, uintia, pallopelejä)?

- 0 en lainkaan tai hyvin harvoin
- 1 1 – 3 kertaa kuukaudessa
- 2 noin kerran viikossa
- 3 2 – 3 kertaa viikossa
- 4 4 – 6 kertaa viikossa
- 5 päivittäin

35. Jos harrastat edellisen kysymyksen kuntoliikuntaa, kuinka monta tuntia viikossa?

Viikossa yhteensä noin |__|__| tuntia

36. Kuinka monta minuuttia kävelet tai pyöräilet päivittäin hyötyliikuntana (edestakaiset matkat oppilaitokseen, harrastuksiin, töihin ym.) ?

- 0 alle 15 minuuttia päivässä
- 1 15 – 30 minuuttia päivässä
- 2 30 – 60 minuuttia päivässä
- 3 yli tunnin päivässä

Viikossa yhteensä noin |__|__| tuntia

37. Kuinka usein harrastat kevyttä liikuntaa vähintään ½ tuntia kerrallaan tai liikut muun harrastuksen yhteydessä (esim. kävely, luonnossa kulkeminen, tanssiminen, koiran ulkoiluttaminen, kotityöt) ?

- 0 enintään 3 kertaa kuukaudessa
- 1 1 – 2 kertaa viikossa
- 2 3 – 4 kertaa viikossa
- 3 päivittäin tai lähes päivittäin

38. Kenen järjestämään liikuntatoimintaan osallistut?

(Tarvittaessa voit ympyröidä useitakin vaihtoehtoja.)

- 0 en harrasta liikuntaa
- 1 omatoimisesti yksin
- 2 omatoimisesti ystävän kanssa tai kaveriporukassa
- 3 yliopiston tai ylioppilaskunnan järjestämä liikunta
- 4 ainejärjestön tms. liikuntatoiminta
- 5 urheiluseura (muu kuin yliopiston)
- 6 muu järjestö, mikä _____
- 7 kaupalliset liikuntapalvelut
- 8 kunnalliset liikuntapalvelut

39. Mitkä ovat liikunnan harrastamisesi syyt? (Ympyröi kaksi tärkeintä)

- 0 en harrasta liikuntaa
- 1 oma ilo, mielenvirkistys
- 2 "jotta näyttäisi hyvältä"
- 3 kunnon tai terveyden ylläpito tai sairauden hoito
- 4 halu olla yksin
- 5 kavereiden tapaaminen
- 6 arjesta irtautuminen, paineiden purkaminen
- 7 muu syy, mikä? _____

40. Oletko käyttänyt tai käytkö nykyisin urheilusuorituksia, liikuntaa tai voimaa parantavia aineita?

	en kos- kaan	käyttänyt aikai- semmin	käytän nykyisin
Sallittuja aineita, esim. proteiini- valmisteita	0	1	2
Kiellettyjä doping- aineita	0	1	2

Tupakka ja nuuska

71. Tupakoitko nykyisin?

- 0 en lainkaan
- 1 kyllä, harvemmin kuin kerran viikossa
- 2 kyllä, viikoittain, mutta en päivittäin
- 3 kyllä, päivittäin

72. Käytkö nuuskaa ("biittiä", mälliä, purutupakkaa)?

- 0 en käytä lainkaan
- 1 käytän satunnaisesti
- 2 käytän säännöllisesti
- 3 olen käyttänyt, mutta lopettanut

73. Miten tärkeänä pidät, että lainsäädännöllä säädellään seuraavia asioita?

	ei lainkaan tärkeänä	vain vähän tärkeänä	melko tärkeänä	erittäin tärkeänä
tupakointia julkisissa tiloissa	1	2	3	4
kannabiksen käyttöä	1	2	3	4
huumeongelman nuoren pakkohoitoa	1	2	3	4
alkoholin myyntiä vähittäiskaupoissa	1	2	3	4
alkoholin nauttimista julkisilla paikoilla	1	2	3	4
ravinnon lisäaineita	1	2	3	4
pyöräilykypärän ja heijastimen käyttöä	1	2	3	4

OPISKELU

74. Montako lukuvuotta olet ollut kirjoilla läsnäolevana opiskelijana nykyiseen opiskeluusi liittyen? (Mukaan lukien kuluva lukuvuosi)

|__|__| lukuvuotta

77. Minä vuonna arvioit valmistuvasi? Jos opiskelet useampaa alaa, niin minä vuonna arvioit suorittavasi ensimmäisen tutkinnon?

- 0 vuonna 20|__|__|
- 1 olen valmistunut tänä lukuvuonna

75. Kuinka monta opintoviikkoa olet suorittanut 31.1.2004 mennessä nykyiseen opiskeluusi liittyen?

|__|__| opintoviikkoa

78. Omiin tavoitteisiisi verrattuna, onko opintomenestyksesi ollut

- 1 odotettua parempi
- 2 odotusten mukainen
- 3 odotettua huonompi

76. Opiskeletko mielestäsi

- 1 päätoimisesti
- 2 sivutoimisesti
- 3 muulla tavoin, miten _____

79. Koetko olevasi oikealla opiskelualalla?

- 0 en
- 1 kyllä
- 2 en osaa sanoa

Huumeet

64. Oletko kokeillut tai käyttänyt jotakin huumetta, lääkkeitä tai lääkkeitä + alkoholia yhdessä päihtyäksesi?

- 0 en koskaan
1 kyllä, mitä ?

	Olen käyttänyt		
	yhteensä 1- 4 kertaa	yhteensä 5 kertaa tai enemmän	ainakin kerran viimeksi kuluneen ½ vuoden aikana
kannabis (hasis, marihuana)	1	2	3
tinneri, liima tms.	1	2	3
lääkkeitä ja alkoholia yhdessä	1	2	3
lääkkeitä päihtyäksesi	1	2	3
ekstaasi	1	2	3
subutex tai temgesic	1	2	3
heroiini, kokaiini, amfetamiini, LSD, gamma tms.	1	2	3

Tapaturmat ja liikenneturvallisuus

65. Onko Sinulle viimeisen vuoden aikana sattunut jokin tapaturma, johon olet tarvinnut lääkärin hoitoa?

- 0 ei
1 kyllä, missä? (Tarvittaessa voit ympyröidä useitakin kohtia.)

- 1 liikenteessä moottoriajoneuvolla
2 liikenteessä jalan tai polkupyörällä
3 työssä (ei työmatkalla)
4 opiskelun piirissä, minkälainen

- 5 kotona tai pihapiirissä
6 kunto- tai kilpaurheilussa
7 muussa vapaa-ajan vietossa
8 muu tapaturma

66. Käytätkö kontaktilajeissa tai joukkuepeleissä hammassuojaa?

- 0 en harrasta tällaisia lajeja
1 en käytä koskaan
2 käytän joskus
3 käytän aina

67. Käytätkö turvavyötä ajaessasi tai matkustaessasi autossa?

- 0 en koskaan
1 joskus
2 yleensä aina

68. Käytätkö heijastinta liikkeessasi pimeään aikaan ulkona?

- 0 en koskaan
1 joskus
2 yleensä aina

69. Käytätkö kypärää pyöräillessäsi?

- 0 en koskaan
1 joskus
2 yleensä aina
3 en pyöräile koskaan

70. Käytätkö polkupyörää kulku- tai harrastusvälineenä?

- 0 en juuri koskaan
1 silloin tällöin lämpimänä aikana
2 useimmiten kevät-, kesä- ja syyskauteina
3 lähes ympäri vuoden

Ravinto

41. Millaisia aterioita nautit tavallisesti arkipäivisin ?

(Kullekin syömiskerralle valitaan vain yksi vaihtoehto)

	ei mitään	pelkkä juoma	kylmä ateria (leipä, salaatti, pulla, jogurtti, murot yms.)	lämmin valmistettu ateria (liha-, kala-, kasvisruoat, puurot yms.)
aamiaisaika	0	1	2	3
lounasaika	0	1	2	3
päivällisaika	0	1	2	3

42. Noudatko jotakin erityisruokavaliota?

- 0 en
1 kyllä, todetun sairauden, allergian tai ylipainon vuoksi
2 kyllä, muista syistä

43. Ajatteletko ruokaa hankkiessasi sen terveellisyyttä?

- 0 en koskaan tai hyvin harvoin
1 silloin tällöin
2 usein

44. Missä useimmiten syöt pääateriasi?

- 1 opiskelija- tai työpaikkaruokalassa
2 omalla asunnollani
3 vanhempien luona
4 muussa yleisessä ruokapaikassa
5 muualla

45. Kuinka usein lisäät ruokaasi suolaa pöydässä?

- 0 en juuri koskaan
1 kerran viikossa tai harvemmin
2 muutaman kerran viikossa
3 jokseenkin joka päivä

Muista! Valitse vain yksi vaihtoehto, ellei kysymyksen ohjeessa toisin ole mainittu.

46. Kuinka monta lasillista (1 lasillinen = 2dl) maitoa tai piimää käytät tavallisesti päivässä? Ota huomioon myös murojen, myslin, puuron tai kaakaon kanssa käyttämäsi maito. (Merkitse 0, jos et käytä lainkaan.)

___|___| lasillista

47. Montako leipäviipaletta syöt tavallisesti päivittäin?

(Merkitse 0, jos et syö lainkaan. Vastaa kaikkiin kohtiin)

tummaa leipää (ruis-, näkkileipä ym.)

___|___| viipaletta

seka-, hiiva-, graham- tai kauraleipää

___|___| viipaletta

ranskanleipää, patonkia

___|___| viipaletta

48. Mitä rasvaa käytät enimmäkseen leivällä?

- 0 en mitään
1 kevytlevitettä, jossa on alle 65 % rasvaa (esim. Kevyempi Flora tai Keiju, Kevyt Linja, Voilevi 40)
2 levitettä, jossa on 70-80 % rasvaa (esim. Flora, Becel, Keiju)
3 voita
4 muita vähärasvaisia valmisteita (tuore- tai sulatejuustot tms.)
5 jotakin muuta

49. Kuinka usein viimeksi kuluneen viikon (7 pv) aikana söit seuraavia?

(Vastaa jokaiseen kohtaan.)

	en kertaakaan	1-2 päivänä	3-5 päivänä	noin kerran päivässä	2 kertaa päivässä	3 kertaa päivässä tai useammin
hedelmiä tai marjoja	0	1	2	3	4	5
tuoreita kasviksia	0	1	2	3	4	5
kypsennettyjä kasviksia (ei perunaa)	0	1	2	3	4	5
puuroa, mysliä, muroja	0	1	2	3	4	5
jogurttia tai viiliä (1,5-2 dl annoksia)	0	1	2	3	4	5
jäätelöä	0	1	2	3	4	5
makeisia, suklaata	0	1	2	3	4	5
sokeroituja juomia	0	1	2	3	4	5
makeita leivonnaisia	0	1	2	3	4	5
ranskanperunoita	0	1	2	3	4	5
perunalastuja tms.	0	1	2	3	4	5
juustoa	0	1	2	3	4	5
pizzaa	0	1	2	3	4	5

Alkoholi

50. Tuntuuko Sinusta siltä, että joudut tovereidesi vaikutuksesta käyttämään enemmän alkoholia kuin oikeastaan itse haluaisit?

- 1 ei
- 2 silloin tällöin
- 3 usein

51. Jos olet juhlassa tai illanvietoissa, joissa tarjoillaan alkoholia, onko myös alkoholiton vaihtoehto tarjolla?

- 1 yleensä aina
- 2 silloin tällöin
- 3 ei juuri koskaan

52. Jos joku seurueestasi valitsee alkoholittoman vaihtoehdon, herättääkö tämä huomiota muissa?

- 1 ei yleensä
- 2 silloin tällöin
- 3 lähes aina

Yksi alkoholiannos =

pullo (=33 cl), keskiolut, siideri, long drink lasillinen (=12 cl), mieto viini lasillinen (=8 cl), väkevä viini lasillinen (=4 cl), väkevä alkoholi

53. Montako lasillista tai pullollista juot seuraavia alkoholijuomia keskimäärin viikon aikana?

(Ellet juo yhtään, merkitse 0. Vastaa joka kohtaan.)

III olutta |_|_|_| pullollista
 IV A-olutta |_|_|_| pullollista
 siideriä |_|_|_| pullollista
 long drink -juomia |_|_|_| pullollista
 viiniä |_|_|_| lasillista
 väkevää alkoholia |_|_|_| lasillista

54. Kuinka usein käytät alkoholia?

- 0 en koskaan (*jos et ole koskaan käyttänyt alkoholia, voit siirtyä suoraan kysymykseen 64*)
- 1 kuukausittain tai harvemmin
- 2a 2 – 3 kertaa kuukaudessa
- 2b kerran viikossa
- 3 2 – 3 kertaa viikossa
- 4 neljä kertaa viikossa tai useammin

55. Kun käytät alkoholia, montako annosta tavallisimmin otat päivässä?

- 0 1 - 2 annosta
- 1 3 - 4 annosta
- 2 5 - 6 annosta
- 3 7 - 9 annosta
- 4 10 annosta tai enemmän

56. Kuinka usein juot kerrallaan vähintään kuusi annosta?

- 0 en koskaan
- 1 harvemmin kuin kuukausittain
- 2 kuukausittain
- 3 viikoittain
- 4 lähes päivittäin

57. Kuinka usein viimeisen vuoden aikana et ole aloitettuasi pystynyt lopettamaan juomistasi?

- 0 pystyn aina lopettamaan
- 1 harvemmin kuin kuukausittain
- 2 kuukausittain
- 3 viikoittain
- 4 lähes päivittäin

58. Kuinka usein viimeisen vuoden aikana et juomisesi takia ole pystynyt tekemään, mitä olet aikonut?

- 0 juominen ei koskaan estä suunnitelmiani
- 1 harvemmin kuin kuukausittain
- 2 kuukausittain
- 3 viikoittain
- 4 lähes päivittäin

59. Kuinka usein viimeisen vuoden aikana olet tarvinnut krapularyypyjä?

- 0 en koskaan
- 1 harvemmin kuin kuukausittain
- 2 kuukausittain
- 3 viikoittain
- 4 lähes päivittäin

60. Kuinka usein viimeisen vuoden aikana olet tuntenut syyllisyyttä tai katumusta juomisen jälkeen?

- 0 en koskaan
- 1 harvemmin kuin kuukausittain
- 2 kuukausittain
- 3 viikoittain
- 4 lähes päivittäin

61. Kuinka usein viimeisen vuoden aikana et juomisesi takia ole muistanut edellisen illan tapahtumia?

- 0 muistan aina, mitä tapahtui
- 1 harvemmin kuin kuukausittain
- 2 kuukausittain
- 3 viikoittain
- 4 lähes päivittäin

62. Oletko juomisellasi aiheuttanut tapaturmia itsellesi tai seuralaisellesi?

- 0 en
- 2 kyllä, mutten vuoden sisällä
- 4 kyllä, vuoden sisällä

63. Onko sukulainen, ystävä, lääkäri tai joku muu henkilö ollut huolissaan juomisestasi tai ehdottanut, että vähentäisit tai lopettaisit juomisesi?

- 0 ei
- 2 kyllä, muttei vuoden sisällä
- 4 kyllä, vuoden sisällä



YLIOPPILAIEN TERVEYDENHOITOSÄÄTIÖ

TAMPEREEN TERVEYDENHOITOASEMA

Hyvä opiskelija,

YTHS:n tavoitteena on tukea opiskelijaa hänen elämäntilanteessaan. Raskauden ehkäisy on monelle tärkeä ja pyrimme siihen, että raskauden ehkäisyneuvonta ja ehkäisypalvelut ovat opiskelijoille helposti saataville. Tätä työtä haluamme edelleen kehittää.

Selvittääksemme jälkiehkäisyyn käyttöön liittyviä seikkoja, pyydämme Sinua täyttämään oheisen lomakkeen mieluiten viikon kuluessa. Vastauksesi voit palauttaa oheisessa, postimerkillä varustetussa kirjekuoressa.

Kysely on ehdottoman luottamuksellinen. Henkilötunnusta ei kysytä. Vastauksia ei siis voida yhdistää tiettyyn henkilöön eikä niitä myöskään voida yhdistää mihinkään rekisteritiedostoihin. Kunnioitamme vastaajan anonymiteettiä myös siten, että niistä henkilöistä, joille lomake on annettu, ei pidetä kirjaa. Emme tule lähettämään muistutuskyselyitä. Tuloksia julkaistaan vain sellaisessa muodossa, että yksittäistä vastaajaa ei voi tunnistaa. Vastauksesi on meille todella tärkeä.

Kiitos yhteistyöstä!

Ystävällisin terveisin

Aira Virtala
LL, ylilääkäri
YTHS
Tampereen terveydenhoitoasema

Irma Virjo
LT, professori
Tampereen yliopisto
Lääketieteen laitos

KYSELYLOMAKE JÄLKIEHKÄISYN KÄYTTÄJÄLLE

*Vastausohje: rengasta oikean vastausvaihtoehdon numero
tai kirjoita vastaus varattuun tilaan.*

Käyttikö jotain ehkäisyä siinä yhdynnässä, jonka jälkeen nyt arvioit tarvitsevasi jälkiehkäisyä?

- 1 ei
- 2 kyllä, mitä _____

Jos käyttit kondomia, niin miksi haet jälkiehkäisyä?

- 1 kondomi meni rikki
 - 2 kondomi luiskahti pois päältä
 - 3 jokin muu syy, mikä _____
-

Kumpi huomasi ongelman kondomin käytössä?

- 1 sinä
- 2 partnerisi
- 3 molemmat

Jos ette käyttäneet ehkäisyä, niin mikä oli syynä?

Keskustelitko partnerisi kanssa jälkiehkäisyn tarpeesta?

- 1 ei
- 2 kyllä

Kumpi ehdotti jälkiehkäisyn käyttöä?

- 1 sinä
- 2 partnerisi

Oliko jälkiehkäisyn tarpeeseen johtaneessa yhdynnässä partnerisi:

- 1 vakituinen poikaystävä
- 2 avomies
- 3 aviomies
- 4 tuttava
- 5 aikaisemmin tuntematon henkilö
- 6 joku muu, kuka? _____

Oletko aikaisemmin käyttänyt jälkiehkäisyä? 1 en
2 kyllä, montako kertaa? _____

Jos kondomi menee rikki yhdynnässä ja halutaan välttyä ei-toivotulta raskaudelta, niin minkä ajan kuluessa arvelet, että naisen tulee ottaa jälkiehkäisypillerit? _____ tuntia

Miten paljon raskauden ehkäisyyn liittyvää tietoa olet saanut seuraavilta?

Vastausohje: Vedä pystysuora viiva janalle siihen kohtaan, joka vastaa mielipidettäsi.

Vastausesimerkki. Jos olet sitä mieltä, että olet saanut työkaveriltasi melko paljon ehkäisyyn liittyvää tietoa, se tulisi merkitä asteikolle näin:

	Ei lainkaan	Hyvin paljon
Työkaveri	_____	_____
Isä	_____	_____
Äiti	_____	_____
Veli	_____	_____
Sisko	_____	_____
Ystävä (poika/mies)	_____	_____
Ystävä (tyttö/nainen)	_____	_____
Puoliso/partneri	_____	_____
Lääkäri	_____	_____
Koulun terveydenhoitaja	_____	_____
Opettaja koulussa	_____	_____
YTHS:n lääkäri	_____	_____
YTHS:n terveydenhoitaja	_____	_____
Kirjallisuus	_____	_____
Miestenlehdet	_____	_____
Naistenlehdet	_____	_____
Sanomalehdet	_____	_____
Internet yleensä	_____	_____
YTHS:n nettisivut	_____	_____
Televisio	_____	_____
Radio	_____	_____

Keneltä / miltä taholta olet saanut tietoa jälkiehkäisystä? (voit luetella useitakin)

Oletko koskaan käyttänyt seuraavia raskauden ehkäisymenetelmiä?

Vastausohje: rengasta käyttämäsi/käyttämiesi menetelmien numero

- | | | |
|---|--------------------------------------|---|
| 1. biologiset menetelmät
eli ns. varmat päivät | 6. ehkäisyvaaho | 11. Norplant® (ihonalainen
ehkäisykapseli) |
| 2. Persona® | 7. ehkäisytabletit | 12. yhdynnän jälkeinen
kierukka |
| 3. keskeytetty yhdyntä | 8. hormonikierukka | 13. miehen sterilisaatio |
| 4. kondomi | 9. muu kierukka | 14. naisen sterilisaatio |
| 5. pessaari | 10. DepoProvera®
(hormoni-ruiske) | 15. en ole käyttänyt mitään
menetelmää |

Mitkä ovat mielestäsi kolme parasta ehkäisymenetelmää?

1. _____
2. _____
3. _____

Mitä raskauden ehkäisymenetelmää olet suunnitellut käyttäväsi tämän jälkeen?

Taustatietoja

Ikäsi: _____ v

Monesko opiskeluvuosi menossa? _____

- Siviilisääty: 1 Naimaton
2 Naimisissa
3 Avoliitossa
4 Eronnut
5 Leski

- Uskonto: 1 Luterilainen
2 Ortodoksi
3 Roomalaiskatolinen
4 Jokin muu uskonnollinen yhteisö
5 Ateisti
6 En osaa sanoa
7 Minulla ei ole uskontoa

Vaikuttaako uskonto raskauden ehkäisyä koskeviin päätöksiisi? 1 ei
2 kyllä

Seuraavat kysymykset koskevat raskauksia ja synnytyksiä:

Oletko ollut raskaana? 1 en
2 kyllä

Ikäsi ensimmäisen raskauden alkaessa _____ v

Oletko synnyttänyt? 1 en
2 kyllä, montako kertaa? _____

Onko Sinulla ollut kohdunulkoisia raskauksia? 1 ei
2 kyllä, montako? _____

Onko Sinulla ollut itsestään tapahtuneita keskenmenoja? 1 ei
2 kyllä, montako? _____

Onko Sinulle tehty raskauden keskeytyksiä? 1 ei
2 kyllä, montako? _____

Lastesi lukumäärä _____

Onko suunnitelmissasi joskus saada lapsia / saada vielä lisää lapsia? 1 ei
2 kyllä
3 en osaa sanoa

Mikä olisi mielestäsi sopivin ajankohta lasten saamiseen?

Mikä on pääasiallinen syy siihen, että et nyt halua tulla raskaaksi?

Muita kommentteja:

Kiitos vastauksestasi!

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Sexual intercourse and current contraceptive use among university students in Finland

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Abstract

Objective: To ascertain the current frequency of sexual intercourse, the current use of contraceptives, the ever use of emergency contraception, and the ever experience of condom failure among Finnish university students.

Study design: The study population consisted of Finnish undergraduate university students (19–34 years of age) in 2004. The randomly selected sample comprised 5030 subjects. The data were collected by postal questionnaire, the response rate being 62.7%. Data were presented with frequency distributions and cross-tabulations. Chi-square test was used. Frequencies for women and men were presented and tested separately.

Results: A total of 80% of students were currently practicing sexual intercourse. Approximately half of the female students currently used hormonal contraception and one-third used a condom. Almost half of the men currently used a condom. The simultaneous use of condom and hormonal contraception was rare. Condom failure was common. The ever use of emergency contraception appeared to be associated with condom failure.

Conclusion: Of Finnish university students 80% were sexually active and hormonal contraceptives were the most popular method of contraception among female students. The use of the condom should be practiced more often for prevention of sexually transmitted diseases.

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Keywords: Sexual intercourse; Contraception; Emergency contraception; Condom failure; Students

1. Introduction

The trend during the past decades in Western Countries has been to postpone the birth of a first child to a later age, especially among highly educated women [1,2]. In Finland the median age at first birth was 27.8 years in the year 2004 [3]. The need for contraception among university-aged students in Finland is obvious, since university students are at the age of active sexual life and they wish to postpone pregnancy until completion of studies [4]. The age of

undergraduate university students in Finland is relatively high, with more than half are over 25-year old [5]. This is generally higher than in other parts of Europe [6].

The use of contraception among Finnish university students was studied for the first time in 1979–1980 [7]. Among first-year students (mean age 21.9) attending health check-ups, 38% of men and 45% of women reported having no need for contraception. About half of the men and one third of the women reported having used a condom occasionally or consistently during the previous 6 months. A quarter of female students and of male students' partners had used oral contraceptives.

Finnish university students' health and health related issues were researched in the year 2000 [8]. The questionnaire included one item on the use of oral

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contraceptives and 51% of female university students reported current use of oral contraceptives. A study about users of emergency contraception was made in Tampere University in 2000–2001 [9]. Two-thirds of respondents had experienced condom failure and consequently had needed emergency contraception.

University students have a health care organization of their own; the Finnish Student Health Service (FSHS) which has existed since 1954 and provides primary health care services, including contraception services, for all university students in 16 cities in Finland. The FSHS is financed by the Social Insurance Institution, the students and student unions, the university cities and the State of Finland. Students pay a yearly health care fee of € 35 as part of the student unions' obligatory membership fee. In addition to this health care subscription patients are charged small fees for consultations and treatment by specialist doctors. Consultations with a general practitioner or nurse, X-ray examinations and laboratory tests, health check-ups and initial mental health counseling periods (1–5 first sessions) are free of charge. The services are easily accessible and practically all university students use them.

It has been possible to evaluate the use of family planning services in the FSHS through the long-term registration of coded data on the reasons for physician encounter [10]. Contraception has been the most common single reason for physician consultation in the FSHS during the last 20 years. The proportion of contraception contacts has been about 12% of all physician consultations. The majority of these consultations have concerned oral contraceptives. The number of consultations concerning induced abortions has been low and it decreased from 4 to 3 per 1000 female students in 1986–2003.

The Finnish University Student Health Survey was made in 2004 [11]. According to this survey 7.5% of students (age 19–35) had children and 88.6% of them desired to have children in the future. Of men 4.6% and of women 7% had experienced sexually transmitted Chlamydia. The number of induced abortions among female university students was low, with 4.5% of them having undergone induced abortion. Childbearing and the desire to have children has been described in more detail elsewhere [12].

The objective here was to report Finnish university students' current frequency of sexual intercourse, the current use of contraceptives, ever use of emergency contraception (EC) and experiences of condom failure (ever). Another objective was to study how current frequency of sexual intercourse was connected with the current use of contraceptives, and to explore these responses by gender, age and relationships.

2. Material and methods

The data was derived from a national health survey among Finnish university students 2004 [11]. The anon-

ymous 20 page questionnaire included questions concerning students' health, health behavior, study, and living circumstances. There were altogether 112 questions leading to 277 variables, including questions specifically related to students' sexual activity and the use of contraception.

The survey was carried out among Finnish university students, who are entitled to receive health care services provided by the FSHS. The study population comprised 101,805 Finnish undergraduate university students less than 35 years of age. A random sample of 5030 students, of whom 45.7% were male, was drawn from this population. The study material was collected by means of a postal questionnaire, with three repeat mailings. The study was approved by the medical ethics committee of the Hospital District of Southwest Finland, and the students gave informed consent to participate by answering the questionnaire. The response rate was 62.7% (49.2% for males and 74.0% for females). The mean age of respondents was 24.5 years. Approximately two thirds of the totals were 22–29-year old (Table 1). The respondents were a good representation of the study population with respect to gender, age, University City and field of study.

Students' relationships were investigated by a structured question of students' living arrangements with the following possible answers:

1. single in own household or in student halls of residence,
2. collective housing,
3. living together with partner,
4. living together with partner and children,
5. living alone with child,
6. living with parents,
7. other.

The alternatives 1, 2, 6 and 7 were categorized together as being single.

Concerning sexual activity and the use of contraception the following questions were asked of both men and women:

How often do you currently have sexual intercourse? There were three answers from which to choose: never; less than once a week; once a week or more often.

Which contraceptive method do you currently use? There was an instruction that one could choose more than one answer if needed. The possible answers were:

Table 1
The Finnish university students' health survey 2004, respondents by age group and gender

Age group	Men		Women	
	n	%	n	%
Under 22	192	17.0	479	23.7
22–24	407	36.0	683	33.8
25–29	419	37.0	664	32.9
30–34	114	10.1	195	9.6
All	1132	100.0	2021	100.0

Table 2
Current frequency of sexual intercourse among Finnish university students in 2004 by age group and gender

Age group (years)	Gender	Number of respondents	Frequency of sexual intercourse		
			Never (%)	Less than once a week (%)	Once or more in a week (%)
Under 22	Men	189	39.2	25.4	35.4
	Women	479	28	26.1	45.9
22–24	Men	406	20.7	31.3	48.0
	Women	678	17.1	30.7	52.2
25–29	Men	416	13	35.8	51.2
	Women	661	15.1	38.6	46.3
30–34	Men	113	14.2	49.6	36.3
	Women	194	16	41.2	42.8
All	Men	1124	20.3	33.8	45.9
	Women	2012	18.9	33.2	47.9
All		3136	19.4	33.4	47.2

Nothing; hormonal contraception (oral contraceptive, subdermal implant, transdermal contraceptive patch, intra-vaginal ring); intrauterine device (IUD); condom; other.

Have you ever had problems with condom use?

I have not used a condom; I have had no problems; the condom has slipped out of place; the condom has broken; some other problem. Again there was an instruction that one could choose several alternatives if needed.

Women were also asked if they had ever used emergency contraception and if so, how many times.

Not all respondents answered every question, which is why the numbers (*N*) vary in the tables.

Statistical methods: Data were presented with frequency distributions and cross-tabulations. Chi-square test was used to investigate statistically significant differences. Frequencies for women and men were presented and tested separately.

3. Results

3.1. Current frequency of sexual intercourse

Approximately 80% of respondents were currently practicing sexual intercourse (Table 2). The proportion of

those who had intercourse once or more a week was highest in the age groups 22–24 and 25–29 years. Concerning current sexual activity there were no clear differences between men and women. The greatest difference was in the youngest age group, where 72% of female and 61% of male students were currently practicing sexual intercourse.

Replies concerning sexual intercourse were also analysed according to relationships. Over two thirds of those living single had sexual intercourse (Table 3). The most sexually active were those men and women living with a partner, with over 70% of them having intercourse once or more a week. Sexual activity was lower than this in families with children. About 50% of students with children had intercourse once or more a week.

3.2. The current use of contraception

One third of men and one fifth of women reported currently using no contraception (Table 4).

The most frequently used method among women was hormonal contraception, with over half of them using this mode. The second most popular method was the condom. Among men the most frequently used method was the condom with almost half of men reporting using them.

Table 3
Current frequency of sexual intercourse among Finnish students in 2004 by gender and relationships

Relationships	Gender	Number of respondents	Frequency of sexual intercourse		
			Never (%)	More seldom than once a week (%)	Once a week or more (%)
Single	Men	665	33.8	36.8	29.3
	Women	1144	31	35.8	33.1
With partner	Men	384	0.5	26.0	73.4
	Women	703	2.0	26.7	71.3
With partner and children	Men	71	1.4	49.3	49.3
	Women	140	2.1	45.7	52.1
Single parent	Men	0	0.0	0.0	0.0
	Women	15	40	26.7	33.3
All	Men	1120	20.3	33.8	45.9
	Women	2002	18.9	33.2	47.9
All		3122	19.6	33.5	46.9

Table 4
Current use of contraception among Finnish university students in 2004 by age group and gender

Age group (years)	Gender	Number of respondents	Method of contraception				
			None (%)	Hormonal contraception (%)	IUD (%)	Condom (%)	Other (%)
Under 22	Men	189	36	17.5	0.5	48.2	1.1
	Women	477	22.9	53.3	0.8	30.6	0.2
22–24	Men	395	28.9	20.5	0.0	51.1	1.5
	Women	677	16	56.4	0.9	32.2	1.0
25–29	Men	410	39.0	16.6	0.7	43.4	2.2
	Women	663	23.7	46.8	2.7	30.2	1.4
30–34	Men	108	39.8	9.3	3.7	47.2	1.9
	Women	177	28.1	34.8	5.6	32.0	2.3
All	Men	1102	34.9	17.4	0.7	47.4	1.7
	Women	1995	21.3	50.5	1.9	31.1	1.0

Table 5
Current use of contraception among Finnish university students in 2004 by gender and relationships

Relationships	Gender	Number of respondents	Method of contraception				
			Any contraception (%)	Hormonal contraception (%)	IUD (%)	Condom (%)	Other (%)
Single	Men	654	67.7	9.3	0.2	58.3	1.7
	Women	1143	75.6	46.3	0.3	36.1	0.8
Living with partner	Men	378	64	33.3	0.5	32.0	1.6
	Women	703	86.8	63.9	1.0	24.2	1.1
Living with partner and children	Men	71	47.9	7.0	7.0	31.0	2.8
	Women	140	67.1	20.0	17.9	27.9	2.1
Single parent	Men	0	0.0	0.0	0.0	0.0	0.0
	Women	15	60.0	20.0	13.3	20.0	6.7
All	Men	1103	65.2	17.4	0.7	47.5	1.7
	Women	2001	78.8	50.4	1.9	31.2	1.0

The use of any contraception was highest among women living with partner (86.8%) (Table 5). Two thirds of single men and three-quarters of single women used some mode of contraception. The rate of hormonal contraception was highest among women living with a partner, and condom use was highest among single men. The use of the IUD was highest among women who had given birth. A greater proportion of single men than single women reported using condoms (58% versus 36%).

Of male students, 2% and of female students, 5.3% reported currently using both condom and hormonal contraception.

Of female students who had sexual intercourse once a week or more often, 90% used some form of contraception and 67% used hormonal contraception (Table 6). The figures for men were 65% and one-third. Among those having sexual intercourse less than once a week, 67% of men and 48% of women used a condom. Of those female students

Table 6
Current use of contraception among Finnish university students in 2004 by the current frequency of sexual intercourse and by gender

Coital frequency	Gender	Number of respondents	Method of contraception				
			Any contraception (%)	Hormonal contraception (%)	IUD (%)	Condom (%)	Other (%)
Never	Men	224	42.9	0.4	0.0	40.2	2.7
	Women	377	31.8	13.8	0.5	19.6	0.8
Less than once a week	Men	375	78.1	11.2	1.1	66.7	1.9
	Women	667	88	47.2	1.3	48.1	0.4
Once a week or more often	Men	502	65.1	29.5	0.8	36.1	1.2
	Women	961	90.5	66.7	2.8	24.1	1.6

Table 7
Experiences with the use of condom among Finnish university students in 2004 by gender and age group

Age group (years)	Gender	Number of respondents	Experiences of condom use		
			No use (%)	No problems (%)	Some problems (%)
Under 22	Men	188	27.7	55.3	17.0
	Women	472	28.2	47.2	24.6
22–24	Men	405	14.6	62	23.4
	Women	669	19.6	51.9	28.6
25–29	Men	415	14.9	59.3	25.8
	Women	658	20.5	56.5	22.9
30–34	Men	112	17.9	62.5	19.6
	Women	189	21.7	58.2	20.1
All	Men	1120	17.2	59.9	22.9
	Women	1988	22.1	52.9	24.9
All		3108	19.6	56.4	23.9

who reported currently having no sexual intercourse, 14% used hormonal contraception, and respectively, male students not currently having sexual intercourse, 40% reported using condoms.

3.3. Experiences with the use of condoms

In the youngest age group 28% had not used a condom at all (Table 7). The greatest proportion of those who had experienced condom failure was observed among female students in the age group 22–24 years. Altogether approximately one-quarter of respondents had problems.

Of female students, 16.1% reported the breakage of condom, respective to 11.5% of male students.

The rate of slippage of condom was 6.8% for men and 7.2% for women. In the category of other problem there were 8.4% of men and 6.5% of women.

Of those male students who had ever used a condom ($N = 927$) 28% had had problems with condom use, whereas the figure was 32% for female students ($N = 1548$).

Of female students almost 40% had ever used emergency contraception (EC) (Table 8). The proportion of those who had used EC many times was small.

Of female students who had experienced condom failure ($N = 495$) 70.7% had used EC. Of those who had not had problems with condom use ($N = 1047$) 33.6% had used EC. The corresponding proportion among those who had not used a condom at all was 19.8% ($N = 439$).

Table 8
Use of emergency contraception (EC) among Finnish female university students ($N = 2007$) in 2004

Frequency of the use of EC	%
No	60.4
Once	22.0
Twice	12.3
Three times	3.6
Four times	0.9
Five times or more	0.8
	100

4. Comment

As the rate of response to our study among female students was good the study results can be seen to be well-representative of the situation of the female university student population in Finland. The response rate among male students left something to be desired and here the results should be generalized with caution.

When asking the current frequency of sexual intercourse and the current use of contraception to evaluate sexual behavior, “current” was not defined with regards to time period and respondents could have been interpreted current time period in different ways. In general, Finnish people understand that “currently” means period of several weeks. The answer “never” to the question “How often do you currently have sexual intercourse?” does not exclude sexual experiences in the past. The question concerning problems with condom use indirectly gave information of past sexual intercourses. Generally sexual activity is, of course, a broader matter than the frequency of sexual intercourse.

The same questions were asked of both men and women, and the question “Which mode of contraception do you use currently?” may have caused misunderstanding among men. Some answered the question taking into account their partner’s use of hormonal contraception or IUD, and some possibly did not. In Finland there is no male hormonal contraception available and it is likely that the reported rate of use of hormonal contraception among men is lower than the real rate. The figure for the use of the condom is supposed to be more reliable for men and women. It is possible however, that similar misunderstanding may occur regarding women and condom use. To be more clear the question should have been: which mode of contraception you/your partner use? Another weakness in the questionnaire was that it did not take into account a homosexual partnership or subjects who were currently pregnant. We did not ask the reason why some respondents did not use any contraceptive methods.

Because the age range of university students was wide, it was meaningful to analyze sexual behavior by age groups. This study indicates that sexual activity has increased over a 25-year period among the youngest female student group. In 1979 almost half of female first-year students had no current need for contraception [7], and in our study 72% of female students (under 22 years) were currently engaging in sexual intercourse and 77% of them used some mode of contraception. This reflects the situation in Nordic countries, where safe and effective contraception and a permissive attitude towards sexuality has liberated women's sexuality [13]. Among the youngest male student group the current sexual activity seemed to be at the same level as in 1979: about 62%. However, in the youngest age group 72.3% of men had ever used condom and hence were sexually experienced. This same phenomenon has also been found in an exploratory study from the USA, where 77% of students were sexually experienced, and over half of them had no sexual activity in the 30 days preceding the survey [14]. In another study of sexual practices among undergraduate students (majority under 22-year old) in Albania, male students were more active than female, as 65% of male and 34% of female students reported having current or past sexual intercourse [15]. Cultural and social factors may influence how respondents report sexual experiences. In India talking about sex is taboo, and a study of Indian medical college students (majority under 23-year old) indicated that only 11.8% of them reported having experienced intercourse [16].

According to the Finnish University Student Health Survey students were seldom parents [12]. Among those few who had children sexual activity seemed to be lower compared with couples without children. Other studies have also confirmed that after childbirth the frequency of sexual intercourse decreases, and parenting may be a strain on the sexual relationship [17–19].

The use of hormonal contraception has doubled among female students during two and half decades [7], and it was somewhat more widespread than in the Finnish population in general [2]. This is in line with other studies which report that women of higher educational level are more likely to use oral contraceptives than women with lower education [20,21]. Finnish population surveys have shown that oral contraceptive use has decreased in recent years from 47% to 35.7% in the period 1994–2000 [2,21]. According to a study from Israel 80% of female health centre patients (mean age 29.9) had used OC's before trying to conceive [22]. The respondents were patients and this may explain the greater rate of hormonal contraception use than in our study.

Astonishingly, 14% of female students who had no current sexual intercourse used hormonal contraceptives for pregnancy prevention. Those who possibly used OC for medical reasons, were not included in this number, because another question asked if they used medicine on doctor's prescription, including OC for medical reasons. Many female students seem to prefer continuance of OC even if

they have no current sexual intercourse. They may appreciate a regular menstrual cycle and other benefits which OC's confer. Nonetheless OC's have adverse health outcomes [23]. Should we as health care professionals recommend continuing OC's even when there is no need for pregnancy prevention? Of course, if students have occasional sexual relationships the use of contraception is desirable to prevent unintended pregnancy. However, hormonal contraception does not prevent sexually transmitted diseases.

Of those men who reported having no current sexual intercourse almost half reported current use of condoms. The only way to understand this is that men reported the contraception they used when they have had intercourse in the past or that they plan to use in the future.

The current use of condoms had not increased among university students. In relation to the increase in sexual activity, we assumed the current use of condoms would be greater. From the question regarding problems involved in condom use, it emerged, however, that almost 80% of female students had used a condom at least once. Another study, from the USA, has also established that consistent use of condoms among undergraduate students is rare [14]. The proportion of current condom users and specifically simultaneous use of condom with other methods among the general Finnish female population (under 25 years) has been more common than in our study [21]. In this study double contraception with OC's and condoms was rare. This is a troubling finding due to the risk of sexually transmitted diseases that exists.

Single students and students who had intercourse less than once a week used the condom most often. One may assume that the number of unsteady relationships in these student groups is substantial. Other studies have likewise shown that occasional partnerships increase the rate of condom use to a certain extent [24].

Condom failure was not quite as common as it has been in the population at large. A population-based (18–50-year old) survey in Finland in 2002 indicated that 37% of men and 35% of women had had a failure with condom use on some occasion [25]. Problems with condom use were somewhat more usual in New Zealand among family planning clients, where 40% of respondents (72% under 30 years) had experienced condom failure [26].

Condom failure was more common among younger age groups of female students than among older. This may reflect the insufficiency of sexual education in Finnish schools in the 1990s during the economic depression, when these students were of school age [27]. Another possible explanation is that partnerships are probably more often unsteady in younger age groups. Previous research has indicated that men with unsteady relationships had had more problems than those with steady partners in terms of the failure rate during the last month [25].

The rate of the use of EC was particularly high among those female students who had experienced condom failure.

This finding is in agreement with previously published reports from Spain, Finland and Italy [28,9,29].

The use of EC was a slightly more wide spread among university students than previous studies from Finland have indicated. Of Finnish adolescents 29% had used EC in 2003 [30]. According to one population-based study 12% of childbearing age women had at some time used EC [31]. The wide use of EC in this study indicates that university students are well aware of EC, and are highly motivated to postpone pregnancy.

5. Conclusion

Sexual activity was high among Finnish undergraduate university students, as 80% of them were currently practicing sexual intercourse. Activity was highest among those students living with a partner, and the activity decreased when students had children. Half of female students currently used hormonal contraception and 31% used the condom. Almost half of male students used the latter. Simultaneous use of condom and hormonal contraception was rare. Use of the condom should be practiced more often to prevent sexually transmitted diseases.

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Why do university students use hormonal emergency contraception?

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ABSTRACT **Objectives** To establish why university students in Finland, who have easy access to well-affordable health services, still use hormonal emergency contraception.

Method All students who sought emergency contraception in the Tampere Student Health Station during the period from 1 September 2000 to 31 December 2001 received a questionnaire on their use of it. Of the total, 114 (67%) were returned.

Results Two-thirds of respondents experienced condom failure, and the remainder used no contraception. In open answers, respondents gave many explanations as to why they had used no contraception, e.g. having been over-passionate or drunk.

Conclusion Finnish students use emergency contraception, but to no great extent. Our results indicate that service providers should pay attention to sexual health in the full sense but not omit to give detailed advice on condom use during counselling.

KEY WORDS Contraceptive behavior, Hormonal emergency contraception, Family planning, University students, Finland

INTRODUCTION

Emergency postcoital contraception has been defined as use of a drug or device to prevent pregnancy after intercourse and before implantation¹. Several methods have proved to be safe and effective. Emergency contraception significantly reduces the risk of an unwanted pregnancy^{1,2}. In 1995, a group of experts issued a consensus statement on emergency contraception³. They recommended that the facility be made available to all women who seek it, provided no contraindications are present. Potential users should be given information and education on emergency contraception before they need it.

In Finland, hormonal emergency contraception came onto the market in 1986. In 1994, among a random sample of Finnish women aged 18–44 years, 4% answered that they had used emergency

contraception⁴. According to another Finnish study carried out in 1997, 14% of women aged 18–50 years had used it at some time⁵. Younger and single women were more frequently emergency contraception users than older or married women.

In Finland, emergency hormonal contraception has been available in the Yuzpe format, ethinylestradiol 100 µg and levonorgestrel 0.5 mg repeated within 12 h, at the latest within 72 h after unprotected intercourse^{6,7}. Another possibility is to use levonorgestrel alone: a tablet containing 750 µg to be taken twice 12 h apart, at the latest within 72 h after unprotected intercourse. An extensive international study performed in 1998 showed that both emergency contraception pills are more effective in preventing pregnancy the sooner they are taken after unprotected

intercourse, levonorgestrel alone being the more effective mode². This tablet came on to the market in Finland during 2001. A prescription was originally required for the purchase of emergency contraception from a pharmacy, but drug officials have more recently changed the regulations and, since May 2002, a woman aged at least 15 years can obtain tablets containing levonorgestrel alone without a prescription.

The Finnish Student Health Service (FSHS) provides health services to all university students in Finland. Students pay a yearly obligatory health-care fee of €31.62, as part of the membership fee of the Student Unions, where they can visit a general practitioner or public health nurse without charge.

In 2000, FSHS Tampere served 21 087 students at the University of Tampere and at the Tampere University of Technology, 10 133 females and 10 954 males. The most common single reason for consultation was contraception. As a rule, students take good care of contraception, widely used methods being oral contraceptives and condoms. Free condoms are available for students when they visit FSHS stations, and FSHS health-care providers distribute condoms to students in university campus areas in conjunction with various health campaigns. Students buy and pay for contraceptive drugs themselves – also emergency contraception – in the pharmacy. According to one survey, 51% of female Finnish students used oral contraceptives in 2000⁸. This notwithstanding, emergency contraception is also used. In 2000, there were 200 consultations for this purpose in the Tampere FSHS.

The FSHS in Tampere offers students easily accessible services, that also provide contraception. The aim of the present study was to assess the extent to which emergency contraception is used and why university students use it.

MATERIAL AND METHODS

All students who sought emergency contraception at FSHS health stations in Tampere received, at the end of their visit, an envelope containing a covering letter, a questionnaire and a prepaid response envelope. The response was addressed to one of the authors at the University. Both physicians and public health nurses were instructed to give the envelope to all students who consulted for emergency contraception during

the period from 1 September 2000 to 31 December 2001. As the recipients were not registered, they could not be sent reminders. Questionnaires were answered anonymously. All questionnaires returned by the end of January 2002 were included in this study.

The questionnaires contained items concerning the intercourse leading to the need for emergency contraception, contraception information sources and future plans concerning contraception and pregnancies. There were both structured and open questions.

Two hundred envelopes were prepared for the study. Of these, the physicians and public health nurses delivered 169. By the end of January 2002, 114 had been returned, giving a response rate of 67%.

In the data file of the FSHS, reasons for encounter are coded according to the International Classification of Primary Care. Thus, it was possible to determine the total number of visits for emergency contraception.

RESULTS

The extent of use

Altogether, 217 students were found to have made 252 visits for emergency contraception during the study period. Some visited both a nurse and a doctor. Five women used emergency contraception twice during the study period. Thus, 48 students did not receive the envelope, including a few students who did not wish to take it. Thus, of all emergency contraception seekers, 78% received the envelope, and of these 67% were returned. The respondents constituted 53% of all emergency contraception seekers during the study period.

Emergency contraception was sought 222 times during 16 months among a total of 10 133 female students. This means that 1.6% of all female students sought emergency contraception from FSHS in Tampere during 1 year.

Respondents

The age of the respondents varied between 19 and 34 years; the mean age was 23.4 years. Three-quarters (76%) of respondents were 20–26 years old (Table 1). The year of study varied from the first to the tenth. The majority of the respondents were single. Five students had children.

Among all 217 emergency contraception seekers, age varied from 19 to 45 years, the mean age being 24.7 years. Five women were 40 years or older. The distributions of ages among respondents and among all emergency contraception seekers were compared. There was no statistically significant difference ($p = 0.136$).

Reasons for requirement

The majority of respondents ($n = 76$; 67%) reported having used contraception during the intercourse after which they sought emergency contraception. All but two had used a condom, the two exceptions having been on oral contraceptives and having forgotten to take a pill, noticing this only after intercourse.

Table 1 Characteristics of respondents ($n = 114$) seeking emergency contraception at Finnish Student Health Service stations in Tampere, Finland in 2000–2001

Characteristic	<i>n</i>
<i>Age (years)</i>	
19–20	19
21–22	38
23–24	19
25–26	18
≥ 27	20
<i>Year of university studies</i>	
1–2	48
3–4	32
5–6	23
≥ 7	11
<i>Marital status</i>	
Single	92
Co-habiting	18
Married	3
Divorced	1
<i>Number of children</i>	
1	2
2	3
<i>Experienced induced abortion</i>	
Yes	3
No	108
No answer	3

We enquired why the respondent needed emergency contraception if a condom had been used; 49 respondents – 66% of condom users and 43% of all respondents – stated that the condom had broken. The condom had slipped off in 19 cases (26% of condom users). Seven respondents gave other reasons, e.g. ‘just to be sure’, ‘semen escaped from the condom’.

There were 38 (33%) respondents who had not used any contraception during the intercourse after which they needed emergency contraception. They were asked to describe freely the reasons for their non-use. Usually there were many explanations, ‘too passionate to be able to think of contraception’ being mentioned most often (Table 2). Sporadic explanations mentioned previous condom failure, or too much haste, or that the partner did not want to use any contraception. One respondent thought it was the partner’s task to take care of contraception. One said that there was no reason, another wanted to let things go their way, because she was tired of analyzing everything, and one respondent reported that her reason was deliberate refusal to consider.

Those who had not used any contraception were compared with those who had used contraception. There was no difference between the groups concerning age, study year, marital status, partner in the intercourse leading to the need of emergency contraception or discussing the need of emergency contraception with the partner.

Table 2 ‘Why did you not use any contraception?’ Reasons mentioned by emergency contraception seekers at Finnish Student Health Service stations in Tampere, Finland in 2000–2001

Reason	<i>n</i>
Passion/desire too great	14
No condoms available	13
Stupidity, irresponsibility, thoughtlessness	9
Forgot to take/further use of/not yet OCs	7
I was drunk	7
Tried to interrupt the intercourse	5
Condom use uncomfortable/unsafe/male partner does not want to use	4
First time	2
‘Safe days’	2

OCs, oral contraceptives

Communication with partner

The partner in the intercourse leading to the requirement for emergency contraception had been a permanent one in 65% of cases: boyfriend in 49%, live-in boyfriend in 13% and husband in 3%. Of the others, 16% knew the partner previously, but 14% stated that the partner was a previously unknown person. In the remaining cases, the partner was variously described, e.g. an earlier boyfriend.

A problem with the condom was noticed by the male partner (49% of condom users) or by both partners (47%). Only three respondents replied that they alone had noticed the problem.

We asked whether the respondent had discussed the need for emergency contraception together with her partner. The majority (87%) had done so. Usually, the respondent herself had suggested resorting to emergency contraception (50%); the partner has made the suggestion in 19% of cases and in 25% of cases the decision to use emergency contraception was arrived at by both partners. The remainder (6%) did not answer this question.

Why not get pregnant?

We also asked the respondents why they did not wish to become pregnant now. Almost all (97%) gave their reasons in an open answer, the most common reasons being unfinished studies, the casual nature of the relationship and too young an age.

DISCUSSION

The study material was gathered over a relatively long period. The physicians and nurses involved were engaged in routine daily work, and it is not surprising that they sometimes forgot to give the questionnaire to an emergency contraception client. The respondents constituted 53% of all emergency contraception seekers during the study period. The age distribution of respondents did not differ from that of all emergency contraception clients. The results of this study have been presented to the staff of the FSHS health station in Tampere and discussed. The staff were of the opinion that the situation which the results describe was well recognized by them and that nothing essential was missing.

We have no data for comparison, but would estimate that 1.6% of all female students seeking emergency contraception during a year is a relatively low figure. This is, of course, a minimum estimate. Students can use other health services available in the community, but most probably do so only rarely, since they have easy and cheap access to FSHS. They are also aware of the time within which emergency contraception is needed after unprotected intercourse. Emergency contraception seems to be used only in emergency situations, not to supplement regular contraception. Students, in general, are well acquainted with contraception and have easy access to FSHS health stations to arrange the matter beforehand. Half of them use oral contraceptives⁸. This may explain the fairly low emergency contraception-seeking rate among young and presumably sexually active students.

The majority of respondents in this study had tried to take care of contraception. They had used a condom and this had failed. The respondents had no reason to tell lies 'to save face' and cover non-use of condoms. According to the personnel, students discussed the situation openly when seeking emergency contraception. In open answers, many respondents mentioned that it was a positive experience to meet a professional who was not quick to condemn them or moralize.

The most usual reason for emergency contraception requirement was condom failure, as in some earlier studies^{9,10}. The question arises as to whether the quality of condoms is poor or whether students are unable to use them correctly? On the basis of the present study results, we cannot say how often condoms fail. According to a Danish study of nearly 2000 intercourses among volunteer established couples, the condoms ruptured or slipped out of place during actual intercourse in 1.3% of cases¹¹. A study in New Zealand revealed that problems with the condom occurred in 10.9% of 3754 occasions when family planning clients used the device¹². A US study reported that half of male students had experienced breakage of a condom¹³, and Spruyt and associates found that lower educational attainment is associated with condom failure and that a history of condom failure predicted future failure¹⁴.

We should not assume that the perhaps well-educated partners of university students are able to use

a condom correctly. There would appear to be a need for more detailed instruction in careful condom use. At least, women seeking emergency contraception should be given detailed advice about this. Since the change in the availability of emergency contraception, emergency contraception tablets can be purchased from a pharmacy without prescription, and no counselling on condom use is available. Nonetheless, many of those who experience condom failure consult medical advice because of the fear of sexually transmitted diseases (STD) and can thus receive counselling.

In the above-mentioned study among US male students, almost one-third had failed to disclose the condom breakage to the female sexual partner¹³. Reasons for non-disclosure included that they did not want to cause their partner anxiety. In the present study, in the majority of cases, the male partner alone or both partners together had noticed the problem with the condom. It is vitally important that men are also aware of the possibility of emergency contraception. Most respondents in the present study had discussed the need for emergency contraception together with their partner. This may indicate that sexual issues are less of a taboo in Finland.

The one-third of respondents who had not used any contraception constitute an interesting group. They sought to explain their behavior in a variety of ways. Most had been too passionate or had had no condom available. Afterwards, they had judged themselves to be stupid for not taking precautions. Some said that, in the actual situation, they just wanted to let things

happen. From the answers, it is obvious that all of them knew how to use contraception; however, they still did not do so. Was the intercourse so unexpected? All of the respondents were of the age when it is natural to feel attracted to the opposite sex and become pregnant. Their emotions seem to have been stronger than their rational thinking. This is very important to realize both for us as professionals and for students themselves. Sexual health involves more than simply taking care of contraception and preventing STD; the emotions and a satisfying relationship with another human being are an equally important part of it. The respondents were well-educated, responsible adults and their non-use of contraception cannot be dismissed as childishness or ignorance.

In conclusion, Finnish university students use emergency contraception, but to no notable extent. The majority of emergency contraception seekers reported condom failure. One-third had not used any contraception and regretted it afterwards. Our results indicate that service providers should pay attention to sexual health in all its aspects during counselling, but not omit to give more detailed advice on condom use.

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Original research article

Consultations concerning contraception and induced abortions among university students — trends in Finland 1986–2003

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Abstract

The Finnish Student Health Service (FSHS) provides primary health care services to university students in Finland. The material for this study was drawn from the statistics of the FSHS. From 1986 to 2003, the number of students increased by 50%, while physician consultations did not, indeed to the contrary. The numbers of family planning consultations fell from 358 to 217 per 1000 female students. The induced abortion rates among university students are very low compared with the population in general and decreased from 4 to 3 per 1000 female students. Students are responsible, and because they want to postpone pregnancy after studies, they use contraceptives effectively. The FSHS has succeeded in guaranteeing contraception services and in preventing unwanted pregnancies and minimizing the need for induced abortions among university students while at the same time decreasing physician consultations. This was possible by changing the distribution of tasks among physicians and nurses, and by adding telephone contacts instead of face-to-face consultations with physicians.

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Keywords: Contraception; Induced abortions; Family planning; University students; Finland

1. Introduction

Reproductive health care is defined as the constellation of methods, techniques and services which contribute to reproductive health and well-being by preventing and solving reproductive health problems [1]. According to the WHO, family planning includes not only prevention of unplanned pregnancies but also promotion of wanted pregnancies, e.g., with the help of infertility services [2]. Modern contraceptive methods and legal induced abortions have made it possible for women in Western countries to control childbearing more effectively and, specifically, to postpone pregnancy to a more suitable time.

During the last 30 years, Finland has successfully reduced the number of unintended pregnancies and induced abortions. Sexual activity among Finnish people has not been less than elsewhere in Europe [3]. The reason for the low abortion rates can be seen to lie in the effective organization of family planning services and the extensive

use of contraceptive methods. According to one Finnish population study, over 90% of men and women have ever used condoms and over 80% have ever used oral contraceptives (OCs) [4]. The University Students' Survey revealed that 51% of female Finnish students currently used OCs in 2000 [5]. In case of failure of primary contraception, university students are well aware of and can use emergency contraception (EC) [6]. In Finland, hormonal EC came into the market in 1986. Prescription by a doctor was needed to obtain EC until May 2002.

The first Finnish abortion law dates from the year 1950. It was revised in 1970 to accept social grounds as a sufficient reason for an abortion, if two doctors provided permission. Currently, most induced abortions are permitted on social grounds [3]. The doctor in a primary health center completes an official statement for abortion when referring a patient to a hospital for an abortion. The law requires the social grounds to be defined in detail. Past and future intended contraceptive use also has to be discussed.

The Primary Health Care Act (1972) requires every municipality to take responsibility for the provision of primary health care services to its citizens [7]. According to this law, these services can be provided for university

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Table 1

Number of all Finnish university students, number of female university students and their proportion among all students, number of all consultations in the FSHS, number of consultations for family planning (FP) and proportion of FP consultations among all consultations by academic year 1986–1995 and by calendar year 1996–2003

Year	1986–1987	1987–1988	1988–1989	1989–1990	1990–1991	1991–1992	1992–1993	1993–1994	1994–1995 ^a	1996	1997	1998	1999	2000	2001	2002	2003
Students (<i>n</i>)	89654	89801	95201	97362	101364	103517	105514	107473	110045	113296	115538	117944	121115	124772	130089	134157	138544
Female students (<i>n</i>)	44879	46248	49885	51115	53622	54967	56133	57176	58874	60500	61466	62628	64498	66851	69918	71686	74086
Share of female students (%)	50	52	52	52	53	53	53	53	53	53	53	53	53	54	54	53	53
Consultations (<i>n</i>)	132458	139238	143423	147593	154767	164153	170047	167961	222886	158391	157493	153646	141613	135052	131384	127203	125968
FP consultations (<i>n</i>)	16048	16128	16666	20131	19898	20431	19070	18666	25465	17392	17833	6570 ^b	14062	16951	15719	15723	16060
FP consultation of all consultations (%)	12.1	11.6	11.6	13.6	12.9	12.4	11.2	11.1	11.4	11.0	11.3	4.3	9.9	12.6	12.0	12.4	12.7

^a 1.9.1994–31.12.1995.

^b Portion of information is missing.

Table 2

Finnish female students' consultations with physician and/or nurse at the FSHS for EC and number of EC consultations per 1000 female students by calendar year 1997–2003

Year	1997	1998	1999	2000	2001	2002	2003
Female students (<i>n</i>)	61466	62628	64498	66851	69918	71686	74086
EC consultations with physicians and nurses (<i>n</i>)	844	1114	1384	1406	1370	613	60
EC consultations per 1000 female students (<i>n</i>)	1.4	1.8	2.1	2.1	2.0	0.9	0.1

Table 3

Finnish female students' consultations with a physician at the FSHS for induced abortion and the number of these consultations per 1000 female students by academic year 1986–1995 and by calendar year 1996–2003

Year	1986–1987	1987–1988	1988–1989	1989–1990	1990–1991	1991–1992	1992–1993	1993–1994	1994–1995 ^a	1996	1997	1998	1999	2000	2001	2002	2003
Female students (<i>n</i>)	44879	46248	49885	51115	53622	54967	56133	57176	58874	60500	61466	62628	64498	66851	69918	71686	74086
Consultations for induced abortions (<i>n</i>)	188	204	240	211	248	195	247	210	296	209	219	217	192	206	219	179	205
Number of consultations for induced abortion per 1000 female students (<i>n</i>)	4.2	4.4	4.8	4.1	4.6	3.5	4.4	3.7		3.5	3.6	3.5	3.0	3.1	3.1	2.5	2.8

^a 1.9.94–31.12.95.

students in some other way; the reference being to the Finnish Student Health Service (FSHS), which was created in 1954 to ensure health care for all students regardless of socioeconomic and municipal background. This health care service for university students is unique in the world and provides primary health care services for all university students in 16 cities in Finland. The FSHS is financed by the Social Insurance Institution, students and student unions, the university cities and the state. The services are easily accessible and practically all university students use them. Students pay an obligatory, yearly health care fee of 31.62 euros, as a part of their membership fee for the student unions. This health care fee represents less than one consultation with a private doctor or three consultations in a municipal health center. In a FSHS consultation with a general practitioner or nurse, X-ray examinations and laboratory tests, health and dental check-ups, and the first mental health counseling period (one to five sessions) are free of charge. Small fees (3.5–6 euros) are charged for consultations and treatment with specialist doctors, dentists and psychotherapists. Students must pay for medicines from the pharmacy including contraceptive drugs.

The aim of this study was to describe trends in consultations concerning contraception and induced abortions among Finnish university students in the period 1986–2003 and to compare induced abortion figures with figures among the Finnish population in general.

2. Material and methods

The data concerning university students were drawn from health records statistics of the FSHS and comparable figures are from Finnish population statistics.

Reasons for physician encounter in the years 1986–1996 were coded by doctors according to the *International Classification of Diseases, 9th revision* [8], which was adapted for FSHS use. In Section XVIII, where there are other reasons for use of services, the following codes were used: V251, IUD; V252, an official statement for sterilization; V253, other contraception; V255, OC pill; V256, hormonal subdermal capsule. Code V257 for EC was used from 1990 onwards. V251–V253 and V255–V257 are counted together as contraception consultations. Code V254 was for an official statement for induced abortion. All 16 FSHS health stations collected data. Physicians registered the diagnostic code in the paper records, and secretaries transferred codes to computer data files.

Since 1998, electronic patient records have been in use and diagnostic codes have been registered using the *International Classification of Primary Care (ICPC-1)* [9]. The codes used are as follows: W10, EC; W11, OC pills; W12, IUD; W13, an official statement for sterilization; W14, others (e.g., subdermal capsule). W10–W14 are counted together as contraception consultations. Code W62.1 is for an official statement for induced abortion.

Until the year 1995, the statistics data were collected according to the academic year from the first of September to the end of August and, thereafter, according to the calendar year. We have no reliable data on EC from 1986 to 1996. The figures for consultations concerning EC 1997–2003 are from contacts with both nurses and doctors.

The figures regarding the number of students represent the number of students who have paid the obligatory fee for the FSHS during one year. The number of female students is calculated from the relative proportion of women among all Finnish university students.

The statistical methods used were frequencies and frequency ratios.

3. Results

The number of Finnish university students entitled to use FSHS was for the first time over 100 000 in the academic year 1990–1991 (Table 1). The proportion of female students increased from 50% to 53%.

The numbers of all consultations and contraception consultations were highest in 1991–1992 (Table 1). The high number of consultations in the year 1994–1995 is explained by the change from academic to calendar year, thus comprising the totals for one and a half years. Another exceptional year was 1998, when the electronic patient records were assembled; information is missing, and, therefore, the figures are lower than the true figures.

In the FSHS, contraception has been the most common single reason for physician consultation during all documented years, the proportion of such contacts being between 9.9% and 13.6% (Table 1). The majority of consultations have concerned OCs. The use of IUD has been at the same level, about 1000 consultations yearly, while under 500 have involved subdermal hormone capsule insertion. In the year 1986–1987, there were 358 contraception consultations per 1000 female students, the corresponding figure for 2003 was 217 (Fig. 1).

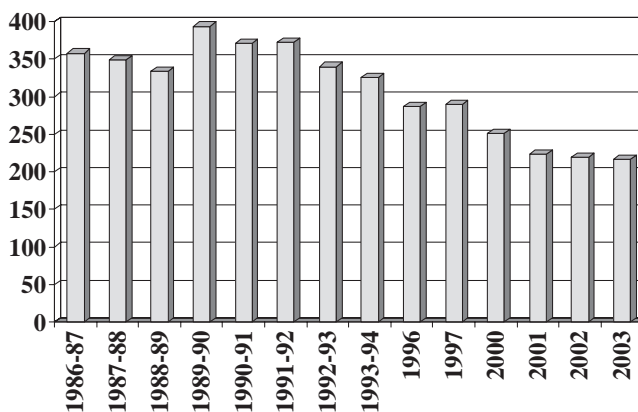


Fig. 1. Number of consultations for family planning per 1000 female students by academic year 1986–1995 and by calendar year 1996–2003.

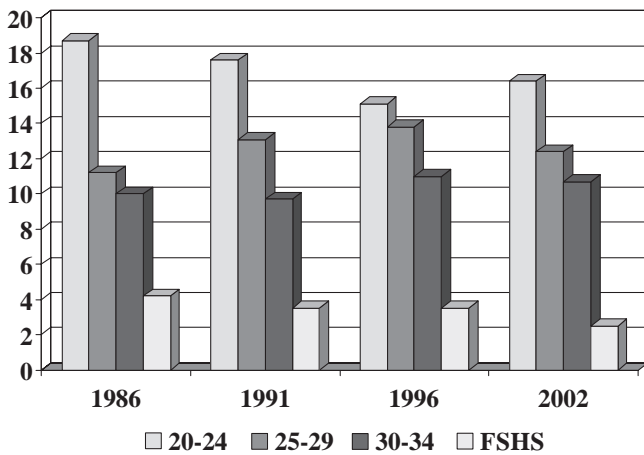


Fig. 2. Number of induced abortions per 1000 women in three age groups in the population at large and number of consultations for induced abortion at the FSHS per 1000 female students in 1986, 1991, 1996 and 2002.

According to FSHS data concerning consultations for EC in 2000, 2.1% of all female students sought EC from the FSHS. From May 2002, EC pills have been available without prescription, as is reflected in these statistical figures (Table 2).

The number of consultations concerning an official statement for induced abortions was lowest (173) in the year 2002 and highest (248) in 1990–1991. In 1986 there were 4.2 consultations for induced abortions per 1000 female students, and in 2003 the corresponding figure was 2.8 (Table 3).

Consultation numbers according to official statements for induced abortion in the FSHS were compared to the Finnish population statistics for actual performed induced abortion figures among three groups of similar ages. The figures for Finnish university students are markedly lower than those in the population in general (Fig. 2).

4. Discussion

The long-term registration of coded data from the FSHS affords an exceptionally good basis for evaluating the use of health services of Finnish university students in the years 1986–2003. This is unique in the field of primary health care in Finland, since the primary health care centers have not maintained systematic registration of reasons for the use of services. FSHS data have been collected in daily clinical practice. There may be some inaccuracy in the collection process. In the beginning, when data were collected from paper patient records, a doctor might forget to mark the diagnosis and there is a possibility of data entry mistakes. The contraception codes were very clear, and, presumably, mistakes in them were rare. In the years 1998 and 1999 when the new computer system was assembled, the data were collected partly from paper records and partly from electronic patient records; there were transfer mistakes. Hence, some data are missing. From the beginning of the

year 2000, the accuracy of the figures has been better, as the electronic patient record asks for the diagnosis code, if one forgets to register it.

The number of university students entitled to use FSHS services has increased by 50% during the last 17 years. The proportion of female students has slightly increased. The number of physician consultations, including consultations concerning contraception, has not increased. On the contrary, consultation contacts of physicians per 1000 female students have decreased by over 50% during this follow-up period. This does not, however, mean that the use of contraceptives among university students has decreased. We do not know the fertility rate of students, but we may assume it to be low, because only 8% of female students aged 19–34 years had children in 2000 [5]. Compared with the Finnish population of corresponding age, 38% of women had children in the year 2000 [10]. According to a study of the use of EC, the most important reason to use EC was unfinished studies. Almost all of these students planned to become pregnant some day in the future [11]. According to other surveys, unfinished studies also seemed to be an important reason for postponing pregnancy [12,13]. Finnish university students have a strong motivation to practice contraception to postpone pregnancy until after studies. They are also responsible and they take full advantage of the FSHS contraception services, which are easily accessible to all university students. When the economic depression in the 1990s led to the situation where the FSHS could not employ more doctors, the distribution of the tasks among family planning physicians and nurses had to be altered. We have succeeded in guaranteeing access to contraception services by flexibly changing daily staff routines. Until the beginning of the 1990s, students visited a doctor every time they needed an OC prescription, and doctors wrote the prescription for 12 months. Since the end of the 1990s, students see a doctor to get their first prescription of OC for 12–18 months from a doctor. After that initial consultation, they visit a nurse for family planning check-ups; a doctor renews OC prescriptions by telephone contact or by referring to nurses' notes in the health record. The physician consultations concerning OCs have thus decreased from yearly visit to one visit in 2–3 years. Another considerable change, which has further decreased contacts with physicians, is that since the year 1998 the duration of physician consultation has been 20 min instead of 15 min.

The low number of consultations concerning the issue of official statements for induced abortions, which decreased further from four to three consultations per 1000 female students, is a minimum estimate. When comparing the numbers of official statements for induced abortions in the FSHS and the numbers for abortions performed in hospitals [14], there is, of course, some inaccuracy. We do not know exactly how many students seek an official statement from other health care providers, most probably at a very low rate, since they have easy and inexpensive access to the FSHS, for which they have already paid an obligatory fee.

However, the figures are so minimal we may conclude that the abortion rate among Finnish university students is markedly lower than in the general population in Finland. Recently, Glasier et al. [15] concluded that advance provision of EC did not reduce abortion figures in Scotland. In our study, explanations for the decreased numbers of induced abortions could be the strong motivation of students to postpone pregnancy by effectively practicing primary contraception and the positive attitudes of the staff in providing contraception services and recommending EC in the case of failure of primary contraception. There have, thus, been no barriers to providing these services to students as there have been in some US college health centers [16].

The figures in this study report the trends of the use of contraception services and service resources in the FSHS. During the follow-up period 1986–2003, the encounters for family planning with physicians decreased. Even so, it was possible for students to maintain good access to contraception services and to prevent unwanted pregnancies and thereby minimize the need for induced abortions. All the staff in the FSHS are very familiar with health care of university students and are well informed about contraception services, and the students have a strong motivation to practice contraception effectively.

This study suggests that there are two prerequisites for success in preventing unintended pregnancies. Firstly, there must be easy and inexpensive access to clinics with well-educated health care personnel, who are engaged in providing contraception services. Secondly, people must be responsible enough to take advantage of available services.

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ORIGINAL ARTICLE

Childbearing and the desire to have children among university students in Finland

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Abstract

Background. The fertility rate in Europe is low and there is concern over the low birth rate in relation to the aging population. The age of childbearing women has increased and infertility is a growing problem. Highly educated women in Finland suffer from childlessness more often than less educated women. The aim of this study was to establish Finnish university students' actual and desired number of children, and compare the economic and educational situations of students with and without children. **Methods.** The study population consisted of Finnish undergraduate students under 35 years of age. The randomly selected sample was 5,030 subjects. The data were collected by postal questionnaire, the response rate being 62.7%. Frequency distributions, cross-tabulations, and descriptive statistics were used. Categorical variables were tested by the Cochran-Mantel-Haenzel test. **Results.** 7.5% of students had children. Almost 90% desired to have children. Parenthood did not correlate negatively with satisfaction with financial situation or completed studies. **Conclusion.** University students are seldom parents, though they are at the ideal age for childbearing and the majority desire to have children. The risk of unintended childlessness exists, when pregnancies are postponed because of unfinished studies.

Key words: Childbearing, desire to have children, fertility, parenthood, students

Introduction

Population studies have shown a negative correlation between wealth and reproductive success (1). Declining fertility at a time of improving standards of living presents a serious challenge in an evolutionary view of human life history and behavior. The fertility rate in Europe is low (2) and there is concern over the low birth rate in relation to the aging population (3). The Finnish fertility rate, 1.7, is higher than in other European and Nordic countries, except Iceland, where the rate is over the theoretical replacement level, 2.5 (4). The average desired number of children in Finland is around 2.4, which is clearly higher than the actual fertility rate (5).

In Western countries, modern contraceptive methods and legal induced abortions have greatly influenced the sexual practices and social lives of women, in making it possible for them to control child-

bearing effectively and especially to postpone pregnancy to a more suitable time (6). The age of women at childbearing has increased in Sweden (7) and Finland (8). Previous surveys have confirmed that high education among women delays motherhood, and the proportion of childless women in Finland is clearly greater among women with higher education (9).

A study of the use of emergency contraception (EC) among university students revealed that students were determined to postpone pregnancy until they had completed their studies, though most planned to become pregnant some day in the future (10). Other surveys also indicate that unfinished studies constitute an important reason for deferral of childbearing (5) and for induced abortions (11).

The age of Finnish university students has increased during the last 40 years. In the year 1965 the median age of students was 22.5 years (12). Now

less than half of undergraduates are less than 25 years old (13). The age of university students has also increased in other European countries and in the USA. In a comparison of university student ages in Europe the average was highest in Finland (14).

The Finnish Student Health Service (FSHS) has existed since 1954 and provides primary health care services for all university students in 16 cities in Finland. The services are easily accessible and practically all university students use them. A national health survey among Finnish university students in 2000 revealed that 8% of female students aged 19–34 had children (15). In the corresponding age group in the Finnish population 38.8% of women had children (16). A new survey was made among students in 2004, the questionnaire including special items related to students' childbearing and desires to have children. This present study is a part of the Finnish University Student Health Survey 2004 (17).

The aim here was to report Finnish university students' family situation, the number of students with children, their desire to have children, and the number of induced abortions. A further objective was to compare students who had children to those without with respect to financial situation, employment, completed studies, and field of study.

Material and methods

The survey was carried out among Finnish university students, who are entitled to receive health care services provided by the FSHS. The study population comprised 101,805 subjects, consisting of Finnish undergraduate university students under 35 years of age. A random sample of 5,030 students, of whom 45.7% were male, was drawn from this population. The study material was collected by means of a postal questionnaire, with three repeat mailings. The study was approved by the medical ethics committee of the Hospital District of Southwest Finland, and subjects gave informed consent to participate by answering the questionnaire. The

Table I. The Finnish University Students' Health Survey 2004, respondents by age group and gender

Age group	Men		Women		All	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Under 22	192	17.0	479	23.7	671	21.3
22–24	407	36.0	683	33.8	1090	34.6
25–29	419	37.0	664	32.9	1083	34.3
30–34	114	10.1	195	9.6	309	9.8
All	1132	100.0	2021	100.0	3153	100.0

response rate was 62.7% (49.2% for males and 74.0% for females). Two thirds of the total were 22–29 years old (Table I). The respondents well represented the study population with respect to gender, age, university city, and field of study (17).

Students' living arrangements were investigated by a structured question (Table II). The questionnaire asked students the actual number of children they had and the desired number of children. The resulting figures were analyzed by gender, age group, study year, and field of study. Women were also asked whether they had undergone an induced abortion.

The students with children were compared with the childless students with regard to economic situation, employment, opinions on university studies, and completed study weeks by asking the following questions:

- Do your available funds cover your living costs? (excellently/well/getting along by saving/not sufficiently)
- Have you worked during the last year? (Yes/no)
- Do you intend to study full-time? (full-time/part-time/other)
- Do you feel you are studying in the right field?
- How would you evaluate your study workload during the last academic year? (too high/appropriate/too little)
- How many study weeks have you completed altogether in your current field of study?

Statistical methods

Data were presented with frequency distributions, cross-tabulations, and descriptive statistics. Categorical variables were tested by the Cochran-Mantel-Haenzel test stratified by age group in order to control the potentially confounding effect of age.

Table II. Finnish university students' living arrangements in 2004 by gender

Living arrangement	Men	Women	All
	<i>n</i> = 1126 %	<i>n</i> = 2009 %	<i>n</i> = 3135 %
Single in own household or in student halls of residence	46.1	45.1	45.5
Collective housing	7.0	6.5	6.7
Living together with partner	34.3	35.1	34.8
Living together with partner and children	6.3	7.0	6.7
Living alone with child	0.0	0.7	0.5
Living with parents	5.3	3.7	4.3
Other	1.0	1.8	1.5

Continuous numerical variables were compared using *t*-tests. Women and men were tested separately.

Results

About half of the participants lived alone or together with their parents (Table II); 42% had their own family living together with partner or partner and children.

The percentage of childless students was 93.2% for males and 92.1% for females (Table III). The proportion of students with children increased for each year of the study. The percentage of male students with children was 1.2% in the first year, 4.7% in the 2–4th year, 7.5% in the 4–7th year, and 21% in the 8th year ($p < 0.001$). During the same study years female students with children were 5.6%, 6.9%, 7.6%, and 21% ($p < 0.001$).

With regard to field of study, female students who studied education, psychology, sport and health sciences were most likely to have children (13.6%). The second group most likely to have children comprised students in the humanities (9.8%) and medicine (8.8%). Female students who more rarely had children were those who studied law, arts, or economics ($p < 0.001$). The differences among men were not statistically significant.

Of female students, 4.5% had experienced an induced abortion: 3.1% of the female students under 22 years, 3.7% 22–24 years old, 5.6% 25–29 years old, and 6.7% in the age group 30–34 years; 7.6% of the female students with children had experienced an induced abortion compared to 4.2% of those who had no children. This was not a statistically significant difference, $p = 0.285$.

The majority (88.6%) of students desired to have children (Table IV); 12.6% of men and 10.9% of

women did not wish to have children. The four women who already had children and did not wish to have more were excluded from the analysis. The average number of desired children was 2.2. In the oldest age group 82.5% of female students and 87.9% of male students desired to have children.

Fathers were more likely to assess their available funds as covering their costs “well” or “excellently” compared to childless male students, $p = 0.013$ (Table V). Female students were equally satisfied with their available funds whether they had children or not.

All male students who had children had worked during the last year (Table VI). A minority of fathers and mothers were full-time students. Childless female students had worked more often than mothers during the preceding year.

Mean completed study weeks were examined by age group and study years. Parents were compared with those who had no children. There were no statistically significant differences, nor were there statistically significant differences in the self-evaluated study workload.

Discussion

As the response rate among female students was good, the study results can be seen to represent the situation of the female university student population in Finland well. The response rate of male students left something to be desired, and thus the results concerning male students should be generalized with caution.

Our study revealed that Finnish university students are rarely parents, 6.8% of men being fathers and 7.9% of female students mothers. The corresponding proportion for the Finnish population at large is 35.2% mothers and 25% fathers (18). The

Table III. The number of Finnish university students' children in 2004 by age group and gender

Age group years	Gender	Number of respondents	Number of children		
			Zero %	One %	Two or more %
<22	Men	190	98.9	1.1	0
	Women	470	99.6	0.4	0
22–24	Men	403	98.5	1.0	0.5
	Women	677	97.9	1.9	0.2
25–29	Men	416	92.1	6.5	1.4
	Women	657	88.3	8.1	3.7
30–34	Men	112	68.8	16.1	15.2
	Women	195	66.7	11.3	22.0
All	Men	1121	93.2	4.5	2.3
	Women	1999	92.1	4.5	3.4
Altogether		3120	92.5	4.5	3

Table IV. The desired number of children among Finnish university students in 2004 by age group and gender

Age group years	Gender	Number of respondents	Desired number of children			
			Zero %	One %	Two %	≥ Three %
<22	Men	184	12.5	3.3	50.5	33.7
	Women	461	10	3.9	42.7	43.4
22–24	Men	390	12.1	4.4	51.0	32.5
	Women	657	10.5	4.4	47.6	37.5
25–29	Men	397	13.4	4.8	50.9	30.9
	Women	641	9.5	6.4	45.4	38.7
30–34	Men	107	12.1	0.9	56.1	30.9
	Women	177	17.5	6.8	43.5	32.2
All	Men	1078	12.6	4.0	51.4	33.0
	Women	1940	10.9	5.2	45.3	38.6
Altogether		3014	11.4	4.7	47.5	36.4

share of parents among university students has decreased markedly from the year 1965, when 13% of students had children (12). Even in the older age group (30–34 years) the number of parents was half of that compared with the Finnish population in general (mothers 33.3% versus 64.5% and fathers 31.2% versus 49.4%) (18). The majority of students, however, desired to have children in the future.

The induced abortion rate in our study was low in comparison to the figure for the Finnish female population of the same age. A questionnaire survey of the Finnish population revealed that 25.2% of females in the age group 25–34 years had experienced an abortion (3).

One explanation for the small proportions of children and induced abortions among university students is that students practice contraception effectively (19). Half of female university students currently use oral contraceptives (15), and they use EC in situations where primary contraception fails (20).

The majority reporting the wish to have children in the future may reflect a high regard for family life. The same has been noted in a study of the personal values of Finnish junior physicians (21).

Parenthood did not seem to correlate negatively with students' satisfaction with their financial situation, as one might assume, or possibly the economy has been initially good and students have dared to have children. Fathers seemed to take on the main financial responsibility by working more than male students without children, whereas many mothers had chosen not to work, as the female students without children. The situation may reflect gender socialization among students. The same traditional gender roles were also seen in a study of Finnish physicians, where female physicians reported having worked part-time because of family more often than males (22). Parenthood among students had also evidently not negatively affected the number of completed study weeks, which was unexpected. This indicates a high motivation to complete studies.

The number of university students in Finland has increased from ca. 40,000 to ca. 170,000 during the last four decades (13). Over half of the students are women. Despite the increased numbers and the increased age of students, the prevailing cultural attitude is "no children during study years". Reproductive decisions are complex and cultural influence on them is strong (1). Finnish social and family policy also motivates students to defer pregnancy (23). To remain childless is seldom a conscious and unalterable decision; it more often is a result of many successive decisions not to have a child just now (5). The most secure age for childbearing is 20–35 years. (24). Are unfinished studies such an important reason for postponing pregnancy that female students must face the increased health risks of a child and mother, or fertility problems at a later age?

Health care providers should counsel on age and fertility, and encourage students to discuss such issues with their partners. This could afford them a better possibility to make informed decisions

Table V. How the available funds cover the living costs of Finnish students in 2004 by gender and having children

	Men Children		Women Children	
	No <i>n</i> = 1041 %	Yes <i>n</i> = 76 %	No <i>n</i> = 1823 %	Yes <i>n</i> = 158 %
How funds cover costs				
Excellently	18.7	23.6	14.6	14.6
Well	34.3	48.7	32.7	33.5
By saving	38.9	22.4	44.7	44.9
Poor	8.1	5.3	8.0	7.0

Table VI. Financial situation, employment and studies of Finnish university students in 2004 by gender and having children and the statistical significance of difference between the childless and those with children.

	Men			Women		
	Children		<i>p</i>	Children		<i>p</i>
	No <i>n</i> = 1038–42 %	Yes <i>n</i> = 73–76 %		No <i>n</i> = 1828–32 %	Yes <i>n</i> = 157–8 %	
Employment	87.8	100	0.011	91.5	71	<0.001
Studying full time	72.1	24.7	0.003	75.8	35.4	<0.001
Satisfied with field of studies	71	82.9	0.031	65.5	71.5	ns

regarding the timing of childbearing. It would also be desirable if both partners were encouraged to participate in family planning consultations.

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University Students Seeking Hormonal Emergency Contraception: Why Do They not Want Pregnancy Now? When is it Suitable to Have Children?

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Abstract

University students who sought hormonal emergency contraception (EC) in the Tampere Student Health Station during the period 1.9.2000–31.12.2001 received a questionnaire on their use of it. Of the total, 114 responded (67%). The aim of this study was to ascertain why the respondents did not want to get pregnant now and when it would be suitable for them to get children. Free answers to these questions were analysed using a collective consensus method. The main reasons for not wanting pregnancy now were unfinished studies and the non-steady character of the relationship. Almost all planned to become pregnant some day in the future when their life situation was appropriate, usually at the age of about 30 years.

Key words: family planning, contraceptive behaviour, hormonal emergency contraception, postponing pregnancy, university students, Finland

Introduction

According to the Finnish Student Health Survey eight percent of female students aged 19–34 years had children (Kunttu and Huttunen 2001). The respective proportion for the Finnish population at large was 38% in the year 2000 (Statistics Finland, Population Statistics). Students seem to postpone pregnancy. Family planning is thus for students in their life situation a matter of immediate concern.

The Finnish Student Health Service (FSHS) provides for all university students in Finland. The organisation has health stations in 16 cities. It is financed by the Social Insurance Institution, the students and student unions, the university cities and the State of Finland. Students pay a yearly obligatory health care fee of 31.62 EUR as a

part of the Student Unions membership fee, whereafter they can visit e.g. a general practitioner or a public health nurse without charge.

The most common single reason for consultation in The FSHS is contraception. E.g. in the Tampere station in 2000 these consultations comprised some 13% of all physician consultations. According to one Health Survey 51% of female Finnish students used oral contraceptives in 2000 (Kunttu and Huttunen 2001). This notwithstanding, hormonal emergency contraception (EC) is also used. In Finland hormonal EC came onto the market in 1986. To use EC a woman needed a prescription from a physician until May 2002, since then a woman 15 years or older can obtain EC from a pharmacy without prescription.

Finnish University students' use of hormonal emergency contraception was studied at the Finnish Student Health Service in Tampere 2000–2001 (Virjo and Virtala 2003). EC was sought from the FSHS 222 times during 16 months among a total of 10,133 female students. This means that 1.6% of all female students sought emergency contraception during one year. This is of course a minimum estimate. Students can use other health services available in the community, but most probably do so on a very low scale, since they have easy and cheap access to the FSHS. They are also well aware of the time within which the EC pills need to be taken.

Two thirds of respondents reported having used contraception during the intercourse after which they sought emergency contraception. Condom failure was the most usual reason for the need of EC. One third of respondents had not used any contraception. In open answers respondents gave many explanations as to why they had used no contraception, e.g. having been over-passionate or drunk (Virjo and Virtala 2003).

EC has been studied from many points of view, as Ellertson and associates (2000) have shown in their extensive review article. There are studies on the extent of use and on the service delivery. Women's knowledge of EC and the available information sources have also been studied. There are also studies concerning attitudes and fears of side-effects. Providers' knowledge and attitudes have also been mapped out. We are not aware of studies concerned with EC users' plans concerning pregnancy and child rearing.

After an unprotected intercourse women are in a situation where they have to decide whether they want to have a baby now or later. In EC women have at their disposal a safe and effective means of preventing pregnancy if they so wish (Task Force on Postovulatory Methods of Fertility Regulation 1998). The aim of this study was to analyse the reasons for postponing pregnancy given by EC seekers at Finnish Student Health Service in Tampere 2000–2001.

Material and methods

All students who sought EC at Finnish Student Health Service's health stations in Tampere, received at the end of the visit an envelope containing a covering letter, a questionnaire and a prepaid response envelope. The response letter was addressed to one of the authors at the University. Both physicians and public health nurses were expected to give this envelope to all EC seekers who consulted during the period from 1.9. 2000 to 31.12. 2001. As these subjects were not registered, we could not send any reminders. They answered the questionnaires anonymously. All questionnaires returned by the end of January 2002 were taken for analysis.

Two hundred envelopes were prepared for the study. Of these the physicians and public health nurses delivered 169. By the end of January 2002 114 had been returned, giving a response rate of 67%. From the files of the Finnish Student Health Service health stations in Tampere 217 persons were found to have made altogether 252 visits for EC during the study period. Some visited both a nurse and a doctor. Five women used EC twice during the study period. Thus 48 persons did not receive the envelope, including a few students who declined to accept it. In most cases the personnel probably forgot to give the envelope.

The questionnaires contained questions concerning the intercourse that had led to the need for EC, contraception information sources and future plans concerning contraception and pregnancies. Both structured and open questions were included.

There were three questions concerning reproductive plans. Respondents were asked whether they planned to have children / more children in the future. The response alternatives were: yes/no/I cannot say. Two open questions: "What is your main reason for not wishing to get pregnant now?" and "What do you think is the best time to have children?" The respondents answered freely to these questions, some in a few words, some with a fuller explanation comprising many sentences. All answers were written as such into the computer, and they formed a large qualitative material. This was analysed using "a collective consensus method" originally developed for the analysis of students' written accounts of problem-based learning tutorial sessions (Virtanen et al. 1999).

The analysis comprised the following stages:

1. Preliminary reading and categorisation. Both authors read the material several times individually to get an impression of the most common or most interesting features of the answers. The task was to find typical categories of answers.
2. Consensus discussion of categories. The authors discussed together the categories proposed and agreed on the categories for future analysis.

3. Analysis of the texts. The authors read the answers individually again to find direct excerpts referring to the categories agreed on at stage 2.
4. Consensus discussion of the citations. The authors discussed all citations found and agreed to which category they belonged.
5. Description of the categories. The authors worked first individually to find citations to describe each category. Finally these citations were decided in a joint discussion.

Some answers were very short and clearly belonged to only one category. Some free answers were so long and richly explicative that they produced material for several categories.

Respondents

The age of the respondents varied between 19–34 years, 76% of respondents being 20–26 years old. The study year varied from the first to the tenth. Marital status: 81% of respondents were single, 16% were cohabiting, three (2.6%) were married and one (0.9%) was divorced. Five of the respondents had children. Three respondents mentioned having experienced one induced abortion.

The partner in the intercourse leading to the need for EC had been a permanent one in 65% of cases: boyfriend in 49%, live-in boyfriend in 13% and husband in 3%. Of the remainder 16% knew the partner previously, but 14% stated that the partner was a previously unknown person. In the remaining cases the partner was variously described as e.g. a former boyfriend.

Results

The distribution of answers to the question: “Do you plan to have children?” was: 78% answered yes, 4% no and the rest (18%) could not say. These three respondent groups were compared. There was no statistically significant difference concerning marital status or partner in the intercourse leading to seeking EC. Nor did the groups differ in respect of use of contraception in that intercourse. The mean age of all respondents was 23.5 years. The mean age of those who planned to have children some time in the future was 23.3 years. The corresponding ages for those who did not plan to have children or who could not say were 24.8 years and 24.0 years. The differences were not statistically significant.

The analysis of open answers to the question “What is your main reason for not wishing to get pregnant now?” yielded eight categories (Table 1).

Table 1. “What is your main reason for not wanting to get pregnant now?” Categorisation of EC seekers’ answers (n=112 out of a total of 114 respondents) at the Finnish Student Health Service stations in Tampere, Finland in 2000–2001, and the number of citations in each category.

Category	Number of citations
“I wish to complete my studies first”	56
“I do not have a steady relationship with my partner”	47
“Immature to be a mother”	28
“ <u>I want to enjoy my youth</u> ”	22
“A miserable economic situation”	14
“I am too young”	13
“I don’t want to become a single mother at this age”	6
Miscellaneous reasons: “My life situation is not suitable for that”	23

Category 1 “*I wish to complete my studies first*”

The majority of answers represented this standpoint. It was expressed in many different ways. “*The studies must be finished*”. Some were just at the beginning of studies. “*I have just started my studies in the field of my choice. I would not want to interrupt my studies immediately*”. Some had plans for student exchange in the near future. “*I will soon be leaving on a student exchange*”. Even if the studies were near completion, the respondents did not think that they could get pregnant. “*The studies are near the end*”.

Category 2 “*I do not have a steady relationship with my partner*”

This category was conspicuous, the second largest. All citations here referred to the uncertain quality of the relationship. Most expressed the fact that the relationship was impermanent. The relationship could be temporary, “*the partner was a previously unknown person*” or “*one night’s affair*”. Some students regarded their relationship as too short, “*we have known each other only two-three months and I don’t know him well enough*”. There were also a few citations, which evinced considerable demands regarding a relationship. Even if the relationship was steady or had

lasted a long time, it was not secure enough to have a child. *"Even if I answered that my partner is a permanent boyfriend, I am not so sure of my own feelings that I would like to bind myself definitively. That is the main reason". "We have been going together only less than one year". "I don't know if I want to have a child with my present boyfriend. I would like to be married, then one can get pregnant"*.

Category 3 *"Immature to be a mother."*

The citations in this category expressed the feeling *"not ready to be a mother"*. The important message in this category was also that the students were afraid of taking responsibility for a child *"Such a responsibility is not my business at this moment. I am not ready yet, really"*. The students noted that they did not possess the qualities a mother should have. In addition *"I would like to be more wise and more balanced"* or *"I could not take care of a child, I would not be a good mother at this stage in my life"* or *"I have never regarded myself as a mother-type, that is to say, motherhood will not succeed, I feel it is too demanding and too responsible"*.

There were also those who questioned the idea of getting a child at all. *"I am not sure if I want children at all"* or more directly *"I don't want children"*.

Category 4 *"I want to enjoy my youth."*

In this category self-interest and self-indulgence were predominant. Some of the citations could also be seen in the further somewhat larger *"immature category"*, but here the students referred more directly to their own interest and their wish to live their own life without taking care of others. Somehow they were more positive concerning themselves. *"I want to take an interest in different nice things like travel"*. *"A lot left to see and experience!"*.

Life was so full of the respondent's own activities that *"There is no place for a child at this moment in my life, there are hobbies, and, simply, I don't want a child now"*. *"We are both busy"*.

The citations in this category included the fear that life will somehow end if they get pregnant. *"My own life is still not ready."* *"There is no single reason why I would want to get pregnant now, there is no place for a baby in my life now"*.

Some respondents thought that to get a child would harm the relationship with a partner. *"Both of us think that it will not pay off to "risk" our relationship by having a child"*. A child would also take time, which is time away from the relationship *"I would like to be married because of a man, not for the sake of a child. I would like to have time to live together with a man before potential child/children"*.

Category 5. "A miserable economic situation".

This category, which included citations with a direct reference to money or poor economic situation, was not very large. There were citations like "No money and so on" or "Economic situation really bad" or "I would not be able to afford to feed a child". Only a few mentioned studenthood in connection with the lack of money. "The students' economic situation is not good enough". "The reason is money. Two students are not able to support life for a child, at least not as well as one would hope".

Category 6. "I am too young".

Citations in this category refer to young age as an obstacle to being a mother. "I am a child myself". "I am not an adult". "I am not old enough to take responsibility".

Category 7. "I don't want to become a single mother at this age".

The unfavorable status of a single mother was mentioned in some citations. "It is not tempting to be a single mother." or "Life is hard for a single mother. "

Category 8. Miscellaneous reasons. "My life situation is not suitable."

In this category we gathered citations where different separate factors were expressed as preventing getting pregnant now. Some already had small children at home. "There are two babies with diapers at home." Some students were seriously ill, they had depression or cancer. Disease and death of relatives were also mentioned. There were miscellaneous remarks on attitude-related matters in some citations. "My partner does not want to have children" or "I don't want children with this person" or "I don't like children". "Children originate in love-making, there were no emotions in this case, only physical performance".

Table 2. "What do you think is the best time to get children?" Categorisation of EC seekers' answers (n=111 out of a total of 114 respondents) at the Finnish Student Health Service stations in Tampere, Finland in 2000–2001, and the number of citations in each category.

Category	Number of citations
"At about 30 years of age"	63
"When I have graduated"	57
"When one is living in a safe, permanent relationship"	39
"When I have got a permanent job"	31
"When one wants to have them"	20
"When the economic situation is well established"	11

The analysis of open answers to the question “What do you think is the best time to get children?” yielded six categories (Table 2).

Category 1 “*About 30 years of age*”.

In this category 46 students estimated the best age by mentioning a certain age, and 17 answered after how many years they assessed they would be ready to get pregnant. The age was then calculated from their actual age.

In about half of the citations here the best age was estimated to be around 30 years. Fifteen respondents assessed the best age to be under 30 years; only two of them specified 20–25 years. Fourteen thought the best age to be over 30 years, two of them over 35 years. Obviously even if the respondent was older, the best time was in the future.

Category 2 “*When I have graduated*”.

This category was almost as large as the first. Respondents here thought that the correct time for children was when studies were over or at least almost finished. This was expressed in many different ways. “*When we have graduated from university*”. “*Some later time, after graduation*”. “*Studies over*”. “*When one has got a degree*”. “*When studies are near the end would be an ideal time*”.

Category 3. “*When one is living in a safe, permanent relationship*”.

A permanent relationship was for many respondents a self-evident condition before one could consider having a child. There were citations like “*The requirement is a stable relationship, of course*” and “*The most important criterion is a permanent relationship. When/if such exists at some time, I can think of getting children*”. Some respondents felt it important that “*both want to have a child*”. Many citations expressed the view that both parties should take responsibility for a child “*I want to be sure that the father of a child participates in taking care and bringing up the child. That means he would be a husband or otherwise a steady partner*”. Many respondents regarded a permanent relationship as more important than studies. “*Most important is that the relationship with the father of the child feels good, sure and permanent, then it does not matter if some studies are left*”.

Category 4 “*When one has got a permanent job.*”

This category included references to “a job” or a “permanent job”. Some felt that the time for children comes “*when a career is in good start*” or “*After working for some years would be ideal*”. Furthermore “*Both have worked for some time in the field of their choice*”.

Category 5. *"When one wants to have them"*.

These citations referred to the wish and feelings to have a child. *"When both parents of a child feel ready for parenthood and binding with each other"*. *"When one is ready for responsibility"*. Only one respondent questioned the prevailing assumption that it is possible to plan everything in life. *"It is not possible to make so detailed plans. Maybe, when one is familiar enough with oneself and the partner. By this I mean that you need not seek a divorce for the most strange reasons."* There was only one reference to happiness. *"The best time is when one is happily married"*. For some respondents there was no good time for children at all. *"It depends on a person. Never for me as I see it now"* or *"I don't want children"*.

Category 6. *"When the economic situation is well established"*.

This smallest category contained citations with direct reference to the economic situation. *"Steady income"*. *"When one is able to take care of children economically"*. When respondents mentioned income or a secure money situation, it was not the only criterion for the good time to get children. Together with references to the economic situation they most often also stated other important things. *"When I have finished my studies, got a job, am married and we have bought/ built the house of our own"*. Some of them expressed the notion that "everything" should be perfect. *"When there is a man, a house and a job and an otherwise secure life"*.

Discussion

The data for this study were gathered during a fairly long period. The physicians and nurses involved were engaged in their usual daily work, and it is not surprising that they sometimes forgot to give the questionnaire to an EC client. The response rate was 67%, but the respondents constituted 53% of all EC seekers during the study period. To what extent do they represent the whole group? Their age distribution did not differ from that of all EC clients. The results concerning use and non-use of contraception in the intercourse, which led to the need for EC, have been presented to the staff of the FSHS health station in Tampere and discussed together. The staff were of the opinion that they very well recognised the situation the results describe, and that nothing essential was missing.

Future plans for getting children are usually not discussed when the consultation concerns the need for EC. We assume that these results describe well the thoughts of students who had to make the decision to use EC because they faced a real possibility of pregnancy. The collective consensus method is well suited for analysing this qualitative material. The categories and number of answers in each of them give a

compact summary of the answer spectrum. The categories are however not precise like quantitative data, and many answers contained material which belonged to several categories. Thus the categories are not appropriate for use as variables in further analysis.

In the present study the majority of respondents (78%) wanted to have children at some better time. In the Finnish Family Barometer 2002 respondents representing the population were asked whether they planned to have children in the future (Paajanen 2002). Among women aged 18–30 years and having no children 67% answered yes, 4% answered no, and 29% did not know. The proportion of those who planned to have children was clearly smaller than in the present study.

Five of the respondents here had children (4.4%). This is less than the general average for students in Finland. In the Student Health Survey 2000, where Finnish undergraduate students aged 19–35 years comprised the target group, eight percent had children (Kunttu and Huttunen 2001).

In the present study the most frequently mentioned reason for not wanting pregnancy now was “unfinished studies”. “When I have graduated” was the second prominent expression to describe the suitable time to get children. Similar results were obtained in the Finnish Family Barometer 2002, where three out of five respondents under 30 years gave the same reason for postponing pregnancy (Paajanen 2002).

The casual nature of the relationship was easy to understand as a reason why students did not want to get pregnant. Some seemed to set very high demands for a partnership. We may ask, how long a relationship is long enough if a period of almost one year is too short. The students were very responsible and took studies and partnership and motherhood seriously. They placed very high demands on themselves. From some citations we may conclude that students underestimated their capability to be a mother. In any case they expressed uncertainty and were afraid of responsibility. Many citations included a very idealistic picture of a mother and they felt they could not fulfil the standard they had set for themselves.

The citations where selfishness and self-indulgence could be seen as the reason for postponing childbearing were not very numerous in this study. It was also somehow encouraging to read citations where one could appreciate the eagerness to live a young person’s happy and free life. These respondents accepted themselves as they were. At the same time having a child struck them as something, which takes away the joy of life. This is natural and easy to understand at a very young age, but these students were no longer all so young.

Financial circumstances were seldom directly mentioned as a main reason for not getting pregnant. This differed from the findings in the Finnish Family Barometer 2002, where almost half of respondents answered that the uncertainty of the economic situation was the reason to postpone pregnancy (Paajanen 2002). Of course we can take it for granted that being a student implies a poorer economical status and many other citations e.g. referring to single motherhood were indirectly expressions of an uncertain economic situation.

Majority of respondents in the present study reckoned the best time for themselves to get children to be around 30 years age. In the Finnish Family Barometer the ideal age for a woman to have her first child was enquired on a general level. The mean ideal age was 25.5 years according to the opinion of women aged 24–29 years (Paajanen 2002). In Finland the mean age of women at the first birth was 27.7 years in the year 2002 (Stakes). The age of the respondents in the present study will probably be higher at their first delivery.

Almost as often as suitable age, respondents stated that the good time for parenthood is after finishing studies. In the University of Tampere the students began their studies at 21 years of age (median) and completed them at the age of 29 years in 2002 (<http://www.uta.fi/tilastot>). Two out of three students in the University of Tampere in 2001 were working during the study terms. Almost all of them stated that working had delayed their studies. The reason for working was economic. They have to finance their studies and life in general (Palokangas 2002). According to the present findings students seem not to want to risk their studies by getting pregnant.

A further requirement for a suitable time to get children was to live in a secure, permanent relationship. How can this be guaranteed? Starting a working career and having a permanent job is not easy in these years of short-term employment.

In the Finnish Family Barometer 2002 one important reason for postponing pregnancy among under 30-year-old people was the absence of “baby fever” (Paajanen 2002). None of the respondents in this study mentioned this word when they assessed the suitable time to get children, nor the absence of it as the reason for postponing pregnancy. Other expressions of wishes that could be interpreted as baby fever were also rare. This is somewhat astonishing and interesting. Possibly what is reflected here is the effect of the “emergency situation” in which these students found themselves. Because the majority of respondents, almost all, wanted to have children at some suitable time in the future, they had to give rational reasons for their use of postcoital contraception in this actual situation, and thus there was no place for feelings.

Neither money nor a sound financial situation was the most important criterion when students assessed the best time to get a child. When it was mentioned it was mentioned together with other more important criteria.

Altogether the future plans of students who sought emergency contraception revealed very responsible persons, who took a serious attitude to their studies, who wanted to have a life in good control and wanted to guarantee everything before they would come pregnant. These students lived their adolescent years in the 1990s, when the economic recession was predominating. Could this have some connection with the need to be sure of everything?

Whence comes the myth that during studies one should not build a family and get children? Perhaps we may hear a paternal or maternal voice "studies must be finished". On the other hand the present Prime Minister Matti Vanhanen's Government (2003) also states in its programme that study times will be shortened at universities. It is the Government's aim to ensure that all citizens can participate fully in working life, contribute to longer working careers, facilitate the coordination of family life and work, promote equality and make work more attractive. The Prime Minister has recently in various speeches expressed concern over the small number of children in Finnish families. He says that our society needs more children. University students might see these goals as contradictory, especially in that Finnish social and family policies motivate getting children after graduating, e.g. the parenthood allowance depends on income (Vikat 2000; Paajanen 2002).

This study material, while small and very selected, gives a true picture of the life of students. Emergency contraception is the point where the childbearing decision has to be made. The biological age of these students was ideal for pregnancy and the majority of them wanted to have children in the future. In their actual life situation they had many good rational reasons for postponing pregnancy. The use of emergency contraception gave them a real possibility to do so, and even for the future child the possibility to be born wanted. On the other hand, postponing pregnancy now could be one step in the direction of remaining childless, that is, against the wishes of most of the respondents in the long term. "To remain childless is seldom a conscious and unalterable decision, it is more often a result of many successive decisions not to get a child just now" (Paajanen 2002). Postponement of childbearing is one important reason for infertility problems, and it is a fact that a woman's biological fertility decreases rapidly after 30 years of age (Anttila 2002).

In addition to providing good and easily accessible contraception services, the Finnish Student Health Service sees as one of its tasks the prevention of infertility by finding and treating Chlamydia and other infections in an early phase. In consultation contacts with students concerning contraception it would be desirable also to

discuss and give information on fertility and possible fertility problems at a later age (Anttila 2002). Education and working career are possible for a woman even at an older age, but getting a child is not. Even students should have reproduction rights and genuine chances to choose to have children at the age when it is most suitable psychologically and physiologically. This, if anything, is part of good sexual health.

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