

UNIVERSITY OF TROMSØ

# **A review of sexual health web sites for adolescents in Norway**

A study comparing Norwegian websites about sexual health and sexuality

Med-3940, 5th year assignment

Ellen Poppe Skipenes, MK-09

Supervisors:

Nils Kolstrup,

Dr. Med., Resarcher UiT, advisor NST

[nils.Kolstrup@telemed.no](mailto:nils.Kolstrup@telemed.no)

and

Elia Gabarron

Researcher NST, psychologist, PhD candidate

NST

[Elia.Gabarron@telemed.no](mailto:Elia.Gabarron@telemed.no)

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## Abstract

The last one and a half decade there has been a significant increase in the use of Internet for health purposes. This also applies to youth and young adults. Sexually transmitted infections (STI's) are more common in youth and young adults, than in any other age group. To reduce the incidence and prevent new cases of STI's, more focus has been put on the information adolescents can get from the Internet.

In this study, I have compared five websites for youth in Norway, to investigate the features of the websites and to evaluate the quality of the information on the sites. I also wanted to see how well known the sites were among youth, aged from 16 to 27, and how many of them had visited the websites. This was carried out by conducting a survey among youth in one high school, and in the University of Tromsø. The comparison of the websites was executed by studying the structure and contents of the five websites.

The results showed that the information about sexuality and sexual health given in all of the websites is of good quality. Three of the websites have good Question and Answer-services (Q&A). However, one website referred to two of the other sites for questions about sexual health. The layouts of the websites vary enough to reach an extensive age group, where all can find something that suits them. Only one site had good descriptive and illustrative photos, and two of the websites lacked interactivity. One of the sites was difficult to find by a general keyword search. Some of the sites with good information, pictures, services and features were not well known among the youth in the target group.

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## Background

From the mid-nineties until 2008, there was a substantial increase in the occurrence of *Chlamydia trachomatis* in Norway(1). This has been a topic for discussion among professionals working with youth and health, and several measures have been tried to reduce the incidence of sexually transmitted infections.

Interventions like websites, folders, education and free condoms have been more frequently used in the last two decades. The most recent statistics from the Norwegian Institute of Public health show a slight decrease, or stabilization, in the previously increasing incidence of *C. trachomatis*. This decrease has been registered since 2009. There was a decrease in the incidence of *C. trachomatis* from 2011 to 2012 in almost all the age groups, also in the two youngest groups.(1)

Websites and Internet play a more important role than ever in youth's everyday life. In 2013, 93% of all households in Norway had a computer, and 94% had Internet connection, compared to 82% and 78% in 2007(2). As information from the Internet is increasingly easy to access, it is reasonable to think that a big part of the information youth and young adults receive, come from sources on the web.

An article presenting the use of Internet for health purposes, found that the use increased from 19% in 2000 to 67% in 2007, and it was estimated that 84% would use Internet for health purposes in 2010. 40% of the users also reported having felt inspired to change health behavior. (3) This indicates that many people may benefit from finding good sources of information on the Internet, and in this case, that youth can benefit from good sources of information about sexual health. One other research article published in 2007, shows that 71% of youth who use Internet, use it for health purposes. The age group was 15-29 years (4). Thus a significant amount of health information that youth acquire, comes from the Internet.

A small number of studies have been made to assess the use and effect of websites for youth. The field of interest in my study has been websites conveying information about sexuality and sexual health. A qualitative research studying 27 focus groups, concluded that there were challenges for youth in finding relevant, high quality

information about sexual health. Protection of the users' privacy was another of the challenges. Other issues were the youths' lack of critical appraisal skills about information(5). Another article from USA, found that a significant amount of sexual health information for youth were available online, but all the websites had deficiencies in educational content, as well as in usability, authority and interactivity. (6)

The youth themselves believed that influence from websites can enhance opportunities for low-threshold service provision (7). They were positive to the fact that Internet makes information easily accessible, and also gives more privacy.

I have not found any previous reviews of Norwegian websites for adolescents about sexual health.

In this study, I wanted to look at the different websites for youth in Norway, and compare them on the basis of content, features, services, interactivity and layout. In addition I wanted to find out how many of the youths and young adults actually know and use the websites.

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## Materials and Methods

Data for this study was obtained from websites directed at youth on the subject of sexuality and sexual health. The sites were picked out by making a simple search on Google, with the words «seksualitet» and «ungdom». This search gave 179000 hits, and I chose to study only the 60 first hits, because I wanted to have focus on the first listings found by youth searching for information. I also saw, that after the first 20 hits, many of the listings came from the same source. Out of the 60 first hits, I selected websites with the following inclusion criteria:

- The site is targeted specifically at youth in Norway
  - The website is in the Norwegian language, and the site must specify that it is directed at youth
- The website's main purpose is to give information about sexuality and sexual health, and not only about one theme (e.g. sexual orientation, drugs, condoms)
- The site is not directed at youth only as a subsection of a website targeted at adults, the entire website must be directed at youth in an obvious way (in a description or in the name)
- The site is neutral, regarding religious beliefs and ethnicity.
  - The information must not be based on religious beliefs, or adapted to certain ethnicities.

This left me with the following five websites:

- [www.klara-klok.no](http://www.klara-klok.no)
- [www.suss.no](http://www.suss.no)
- [www.sexogsamfunn.no](http://www.sexogsamfunn.no)
- [www.ung.no/sexogsamliv](http://www.ung.no/sexogsamliv)
- [www.sjekkdeg.no](http://www.sjekkdeg.no)

Other Internet pages that turned up during my research period, which potentially could match the inclusion criteria, were checked out to assure that websites of interest had not been missed. The last one of the five websites listed above, was found by following links in pages from the mentioned search.

The websites were analyzed by looking at 25 different aspects or features:

- Age group
- Questions and answers (Q&A)
- Phone service
- SMS-service

- E-mail service
- Search service
- Quiz
- Discussion
- Movies
- Photos
- Interactivity
- User account
- Funding
- Budget
- Users/statistics
- Starting year
- Promotion of website
- Languages
- Linking to social media
- Credibility and content
- Free condoms
- Anonymity
- Private/public funding
- Aim
- Other services

These were aspects that I thought might be interesting when comparing the websites. The results of the analysis were put into a table. The table is added in the appendix. A few of the aspects could not be found by just using the websites, like budget and starting year. In these cases I got information by contacting the directors/editors of the sites by mail. A nurse on the health clinic for youth in Tromsø (Tvibit), has contributed with information. I have also been observing the work in the office of one of the websites (SUSS).

### Questionnaire

To know if the Norwegian youth know about the existence of these five websites, and if they had ever used any of them, I distributed a short, anonymous questionnaire in one high school (Kongsbakken videregående skole, Tromsø), and in a few faculties at the University of Tromsø; Theory, Pharmacy and Mathematics and Science. The questionnaire asked which of the mentioned sites the participants had heard about (Hvilke av disse Internettsidene for ungdom har du hørt om?), and which of the sites the youth and adolescents had visited (Hvilke av disse nettsidene har du besøkt?). The questions could be answered by multiple choice. In addition there were open spaces that gave the responders a possibility to write other answers. Valid questionnaires were only those where at least one of the two main questions were answered. Answers where gender or age were not written, were not included in the calculations of percentage of males or females, or average age.

Before distributing the questionnaire, I contacted the Regional Committee for Medical and Health Research Ethics (REK). They assessed my survey, and concluded that no further approval from them was needed.

The findings from the survey were calculated using Excel. Statistical significance was calculated for difference in knowledge of websites between males and females, and between high school and university students, by using Chi Square tests.

### The working process

I started working with my project in my third year of study (2011-2012). My first external supervisor and I considered the theme of the assignment for a long time, until the end of 2012. At that time, I found my main supervisor, and finished the work of my project description. From the autumn of 2012 to spring of 2013, I searched for information and articles written about the theme, which at that point was different to the assignment I ended up writing about. At the outset, I was supposed to do a pilot project on how general practitioners could cooperate with websites for youth. During March and April of 2013, my first external supervisor quit my project without telling me. I therefore had to give up on the assignment I had planned. By September 2013, my main supervisor had helped me to find a new assignment, with a new external supervisor. For my research not to be in vain, we decided to make a study of websites for youth, about sexual health and sexuality. The new project description was prepared during the autumn of 2013.

From September 2013 until February 2014, I focused on research. I used PubMed to find relevant articles and studies, I used the Norwegian Directorate of Health's website to study the directorate's reports, and I worked with finding the websites that I was going to compare in my project. I also accepted that I would have to write my project in English, as my external supervisor comes from Spain. I read other 5th year assignments, and learned how to use EndNote. A lot of time was used to acquire and assess details about the different websites, and finding all the relevant information that I needed to compare the websites. This work was a continuous process from February to May 2014. During this period, I also started to write my dissertation. From mid-March, I planned the survey, and discussed the approval of my study with the regional ethical committee. The survey was completed during week 14 and 15, followed by interpreting the results from the survey, and at the same time putting together my dissertation. I was able to start with the Discussion by mid-April, when most of the results were ready. The month of May was used for correction and layout. During March, April and May, my supervisors gave me advice on what to do next, and where to focus.



As I had to change project, the allocation of time did not go quite as planned. I had to do most of my research from October 2013 to March 2014. I did not get started with the writing until March 2014, when I started to comprehend what the dissertation would consist of. I soon found out that the research took more time than I thought, and also the proofreading and finishing. However, the first draft was finished before planned, and the assignment was finished according to the original plan.

## Results

### Website features

#### 1. [www.klara-klok.no](http://www.klara-klok.no)



Picture 1. Screenshot of front page of Klara Klok

Klara Klok is a website that was established in 2000. It had four and a half million visitors in 2012, and is one of the biggest websites for youth in Norway (8). The aim is to distribute information about health to the group of interest (age 10-25 years), and to contribute to improve the availability of health information. The website is funded by the Norwegian Directorate of Health, and Nordland County council.

The main service of this website, is the Question and Answer section. In addition, it has a discussion feature, and a search function. It is the only website of those reviewed that has a «panic-button», which allows the viewer to quickly «escape» the website to a Google search on music, if someone interrupts at an unfavorable time. Klara Klok is also the only website that can be read in the Sami language, and the only site which does *not* have any linking to social media-sites. (9)

The information on Klara Klok is written by different health workers; nurses, physiotherapists, nutritionists, midwives, doctors and psychologists, among others. A requirement for all professionals in the expert panel is that they have to be in contact with youth or young adults in their daily work. Klara Klok also cooperates with other national services, like RUSTelefonen (the «drug phone») and Røyketelefonen (the «smoking phone»)

## 2. [www.sexogsamfunn.no](http://www.sexogsamfunn.no)



Picture 2. Screenshot of front page of Sex og Samfunn

The organization that runs Sex og Samfunn (Sex and Society), was founded in 1971, and is the oldest of the organizations in this field. The website was launched in 2000, and developed its current form in 2009-2010. The aim of this website is to prevent STI's, unplanned pregnancies and abortions, and to give information about symptoms and testing for STI's. The website presents a fundamentally positive view of sexuality, and works to reduce taboos and stigma around this theme. Sex og Samfunn also defends the right to self-determined contraception, sexuality, abortion and pregnancy. It is funded by the Norwegian Directorate of Health, and the municipality of Oslo. (10)

Sex og Samfunn differs from the other websites in this review, as it runs a clinic in Oslo, where youth can get consultations. The clinic offers STI-testing and pregnancy tests. In 2013, the clinic had 19648 patients (11). Sex og Samfunn has a phone-service for booking of appointments, and an e-mail-service. The website has articles divided into the following themes; sex, body, contraception, pregnancy, diseases, in addition to a section for professionals. It has a search service, and illustrative photos on every page.

Sex og Samfunn is run by nurses with specialties, for example in midwifery, psychology and sexology. There are also doctors working there, both with and without specialties. The contents of Sex og Samfunn's website are mostly written by the specialized nurses, with contributions from the other professional groups. A doctor is hired as Medical Director, and is responsible for keeping all the information up to date.

### 3. [www.Ung.no/sexogsamliv](http://www.Ung.no/sexogsamliv)



Picture 3. Screenshot of front page of [www.ung.no/sexogsamliv](http://www.ung.no/sexogsamliv).

The website [www.Ung.no](http://www.Ung.no) was started in 2003, and has half a million visitors each month. Ung.no is based on the United Nation's convention about children's rights,

more specifically §13.1 — «...freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of the child's choice.» (12), and §17 — «State Parties ... shall ensure that the child has access to information and material from a diversity of national and international sources, especially those aimed at the promotion of his or her social, spiritual and moral well-being and physical and mental health» (12). The website emphasizes that it is «public, anonymous and quality assured». It is funded by the Norwegian Directorate of Children, Youth and Family Affairs. (13)

Ung.no is a diverse website, with several subsections. One of these subsections is «sex og samliv» («sex and relations»). The target group is youth from 13 to 20 years. The website has features like Q&A, quizzes, and a search service. It has the possibility of linking to social media. In addition, there are short surveys on the website, and the site gives room for discussion and commenting. This website actually refers to two other websites on their page, and informs that: «questions about health, body and sexuality can be sent to Klara Klok and SUSS». Ung.no has more focus on non-medical issues, such as questions about moral matters, feelings, and how to purchase contraception. Ung.no also has a lot of other information concerning youth.

The content on Ung.no is provided by professionals of different specialties, and people from the Directorate of Children, Youth and Family Affairs. It also has quality criteria for contents and links.

#### 4. [www.suss.no](http://www.suss.no)



Picture 4. Screenshot of front page of SUSS

SUSS stands for Senter for Ungdomshelse, Samliv og Seksualitet (Center for Adolescent health, relations and sexuality). The organization was initiated in 1987, and started as a phone service. The aim is to reduce pregnancy and abortions among adolescents, reduce STI-transmission and offer health care. SUSS is supported by the state. SUSS had approximately 15,200 inquiries and 25,000 unique users on the website in 2013 (14). The website developed its current form in 2013.

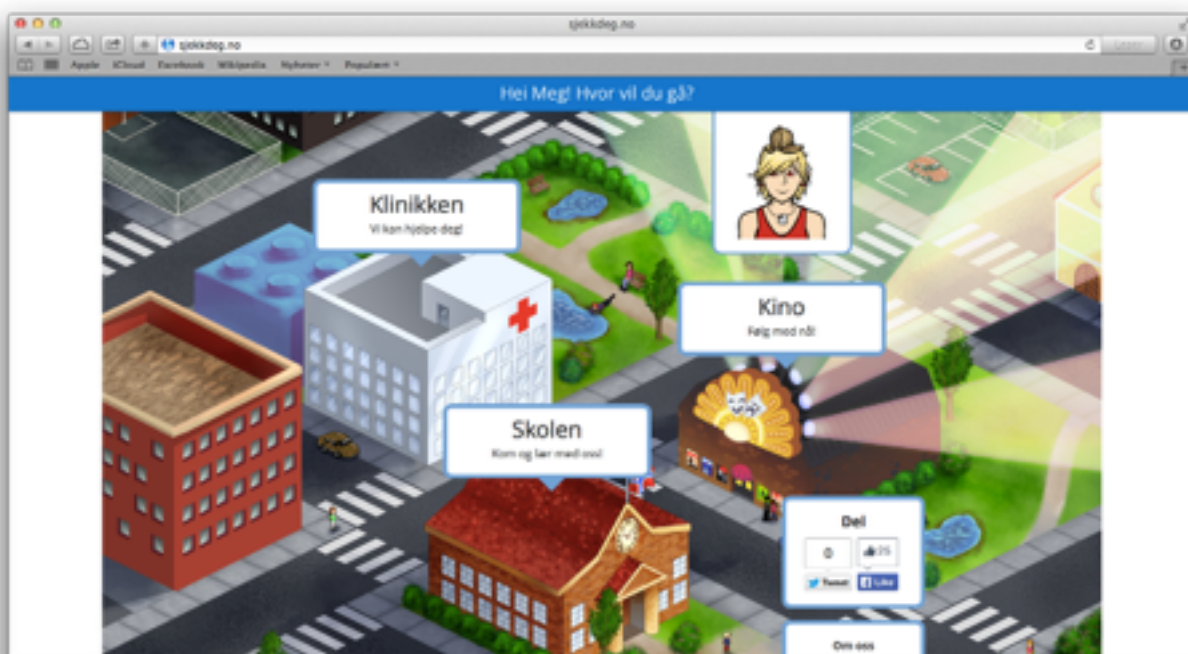
This site is primarily a Q&A site, where people can establish their own account, and submit questions through a secured e-mail service. Answers are sent to the users' own account, and the questions are not accessible for other users of SUSS. The questions and answers are saved in the user's personal journal. This journal allows for users to ask follow-up questions, and keep track of their history. Questions can also be asked by SMS or phone. Users submitting questions through SMS, get the answers sent directly to their mobile phone.

The SUSS website has a feature called «question of the week». A theme is picked out by the editors of the Internet page, and visitors can read four questions and answers that are typical for this theme. In addition, the website has a section that is

not yet completed, with short articles about health and sexuality. SUSS also runs a Q&A-program on the radio (NRK P3), about sexuality, adolescent health and sexual health. The website has a link to Facebook.

The people answering questions at SUSS are doctors, psychologists, medical and psychology students. All written answers are co-signed by one of the doctors if a student is answering, and all the work is coded for further reporting, internal evaluation and quality assurance.

## 5. [www.sjekkdeg.no](http://www.sjekkdeg.no)



Picture 5. Screenshot of main page of Sjekkdeg

«Sjekkdeg» («check yourself»)’s name refers to the importance of checking yourself for sexually transmitted diseases. The page was recently launched. Sjekkdeg’s aim is to point out normal variations in bodily anatomy and sexuality, create awareness about sexual behaviours, and inform about how to avoid unwanted pregnancies. In addition, it provides information about STI’s, both prevention, symptoms and testing. The website is funded by Helse Nord RHF, and is created by the Norwegian Centre for Integrated Care and Telemedicine, a section at the University Hospital of North Norway. (15)

Sjekkdeg is not a typical website. First, the layout is different from most Internet sites. When accessing the website, the visitors are asked to create an *avatar*, a fantasy figure to represent themselves. After creating the avatar, the visitors enter a site that looks like a virtual city. Here you can navigate around with your avatar. The features of the website are the cinema where videos are shown, the school, where you can learn, and the clinic, where there is more information about symptoms and treatment of sexually transmitted infections. In the clinic, the visitor can also check his or her own symptoms, by answering questions with multiple-choice answers. An individual answer is generated based on the multiple-choice answers given by the user. The aim of the generated answers is to help the user to go forth with the problem if needed. This service is anonymous, and also gives a link to where the visitor can find the nearest youth clinic or doctor's office.

The information given about body, sexuality and youth is unique among the reviewed websites. The site shows real photos of male and female anatomy, to give a realistic impression and not contribute to misapprehensions of what the body should look like. The website has quizzes, frequently asked questions (FAQ), and linking to social media.

A specialist in skin diseases and venereology is responsible for the medical contents on the website. The site is written with contributions from other specialists as well.

*This table was used to assess information from the different websites.*

Web sites	klaraklok.no	suss.no	sexogsamfunn.no	sjekkdeg.no	Ung.no/ sexogsamliv
Aspects					
Age group	10-25 (30)	14-24	16-25	12+	13-20
Q&A	Y	Y	N	N (FAQ)	Y (about health - and sexuality: refers to other sites)
Phone service	N	Y	Y	N	N
SMS-service	N	Y	N	N	N



Web sites	klaraklok.no	suss.no	sexogsamfunn.no	sjekkdeg.no	Ung.no/ sexogsamliv
Aspects					
E-mail service	N	Y	Y	N (Y)	N
Search service	Y	N	Y	N	Y
Quiz	N	N	N	Y	Y
Discussion	Y	N	N	N	Y
Movies	N	N	N	Y	N
Real photos	N	N	N (a few)	Y	N
Interactivity	Y (discussion, Q&A)	Y (Q&A)	N	Y. Avatar-/ game function, quiz, movies, virtual health clinic	Y, quiz, discussion, Q&A.
User account	N	Y	N	Y	N
Funding	HelseDir., Nordland fylkeskommune	Støtte fra statsbudsjett	HelseDir, Oslo kommune	HelseNord RHF	run by Barne-, ungdoms- og familiedirektoratet
Budget	10 232 856 (2013)	ca 5 000 000 25 000 for the website	9 298 843 (2012)	Ca 2 500 000	Ca 2 500 000
Users/ statistics	Y (link) 4,504,124 visitors in (2012)	Y (link) 18,198 inq. (2011), 1 mill hits, 25000 unique users, 2400 e-mails (2013)	Y/N (link) 19648 consultations in 2013	N	500 000 visitors each month (the entire site).
Starting year	2000/2002	1987(organization) / 2000 (ca)	1971(organization)/ 2009-2010	Launched in the end of 2012, officially in January of 2013	2003
Languages	Norwegian, sami	Norwegian	Norwegian	Norwegian	Norwegian

Web sites	klaraklok.no	suss.no	sexogsamfunn.no	sjekkdeg.no	Ung.no/ sexogsamliv
Aspects					
Linking to social media	N	Y, facebook	Y, facebook, twitter	Y, facebook, twitter	Y, facebook, twitter
Mission	To distribute good health information to the group of interest, and contribute to increased availability of health information	Reduce pregnancy and abortions in adolescents, reduce STI-transmission , give helsehjelp	Prevent STI's, unplanned pregnancies and abortions, give information	Point out normal variations, create awareness about sexual acts, inform about avoiding unwanted pregnancies, info about STI's - testing and prevention	FN's convention about childrens rights. §13 - right to get information, and §17 - that the state will give children access to information( ...)
Content and credibility	By professionals in different professions	psychologist - and medical students, doctors and psychologists	nurses with special education, for example in midwifery, psychology and sexology. Doctors, with and without any special education. The contents on the site is mostly written by the special nurses, with contributions from the other professional groups. A doctor is also hired as a medically responsible, and works with keeping all the information up to date.	Doctor, specialist in skin and venereology	Help from Klara Klok and SUSS, and directorate for children, youth and family affairs. Have quality criteria for content and links
Free condoms	N	N	Y	N	N
Promoting	Brochures, posters at helsestasjon and schools, other arrangements, newspaper, Tvibit	Radio,	Education of 10th graders, brochures, Tvibit (link)	Tvibit	Brochures, Tvibit

Web sites	klaraklok.no	suss.no	sexogsamfunn.no	sjekkdeg.no	Ung.no/ sexogsamliv
Aspects					
Other services	Panick-button	Personal journal	Consulting, STI-tests, preg.tests	E-mail automatically generated answers to symptom description	A lot of other topics, the health and sexuality part is only a small part of the site content
Private / public	Public	Public	Public	HelseNord RHF	Public
Anonymus	Y	Y	Y/N	Y	Y

## Questionnaire

During week 14 and 15 in 2014, a questionnaire was distributed in one high school (Kongsbakken videregående skole, Tromsø), and in three faculties at the University of Tromsø. The three faculties were faculty of theory, pharmacy and mathematics and science. 52 answers were collected in the high school, and 52 in the university. The ages ranged from 16 to 27, with an average age of 20. 55.8% were girls, and 43.4% were boys.

The results of the 104 questionnaires are presented in tables 1-5, and in diagram 1 and 2. 19 participants (18.3%) had never heard about any of the websites, and 46 (44.2%) had never visited any of the sites. The website that was best known was Klara Klok. The second best known was Ung.no/sexogsamliv, and SUSS was number three. Sjekkedeg came fourth, and Sex og Samfunn was the least known. An equal number of the participants had visited Sjekkedeg and Sex og Samfunn (2.9%).

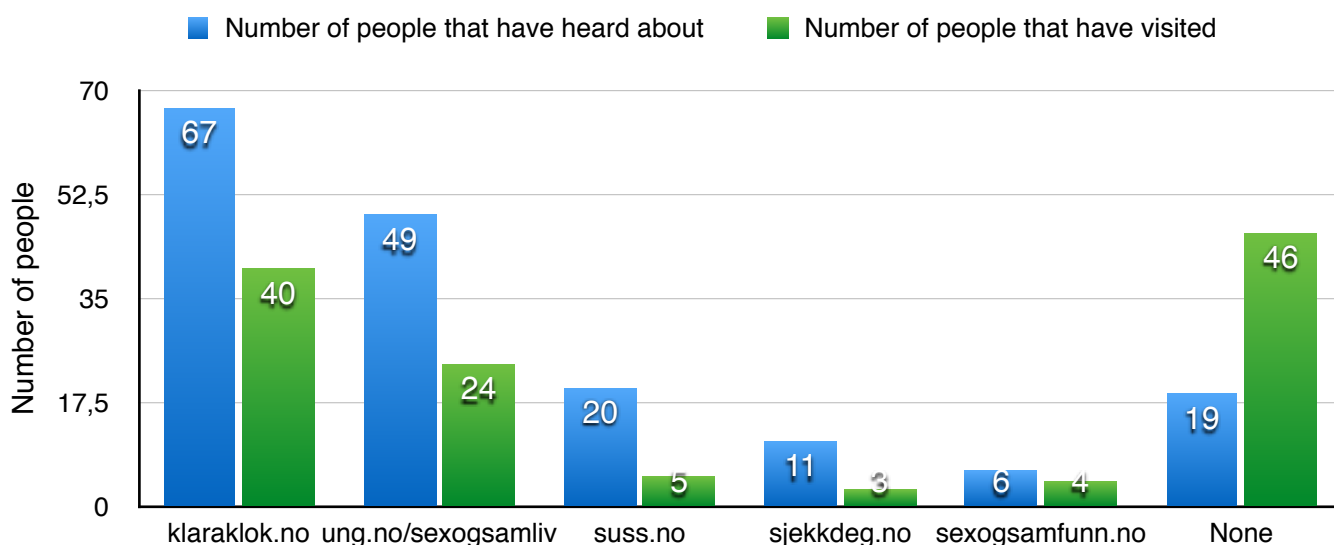


Diagram 1. Shows the number of participants with knowledge of the websites

Ranking average ages of people that had *heard of* the websites, the highest average age was for the SUSS, with 20,7 years. The website with the lowest average age was sjekkedeg.no, with 17,9 years. The average age of those who had *visited* the websites, was highest for SUSS here as well, with 22,8 years, and lowest for Sex og Samfunn, with 17,3 years as the average age. This is shown in table 1.

Web site ->	Klara Klok	ung.no/ sexogsamliv	SUSS	Sjekkdeg	Sex og Samfunn	None
<b>Number heard about</b>	67	49	20	11	6	19
Average age	20	19,2	20,7	17,9	19,7	19
Percentage of participants	64,4 %	47,1 %	19,2 %	10,6 %	5,8 %	18,3 %
% of female participants	67,2 %	44,8 %	24,1 %	10,3 %	5,2 %	17,2 %
% of male participants	62,2 %	51,1 %	13,3 %	11,1 %	6,7 %	20,0 %
<b>Number visited</b>	40	24	5	3	3	46
Average age	20,6	18,5	22,8	18,7	17,3	19,7
Percentage of participants	38,5 %	23,1 %	4,8 %	2,9 %	2,9 %	44,2 %
% of female participants	39,7 %	22,4 %	5,2 %	3,4 %	3,4 %	44,8 %
% of male participants	37,8 %	24,4 %	4,4 %	2,2 %	2,2 %	44,4 %
(n = 104)						

Table 1 Shows the number, mean age and percentage of male and female who know / have visited the different websites.

There are more registered boys (20%) than girls (17%) who have not heard about any websites. However, three of the websites (Ung.no, Sjekkdeg and Sex og Samfunn), are known by a higher percentage of the male participants. The biggest dissimilarity in knowledge between males and females for a site, is for SUSS. 24.1% of the female participants have heard about SUSS, but only 13.3% of the male participants. Although the numbers are different, the statistic calculations using Chi Square does not show any significant difference. This shown in diagram 2 and table 2.

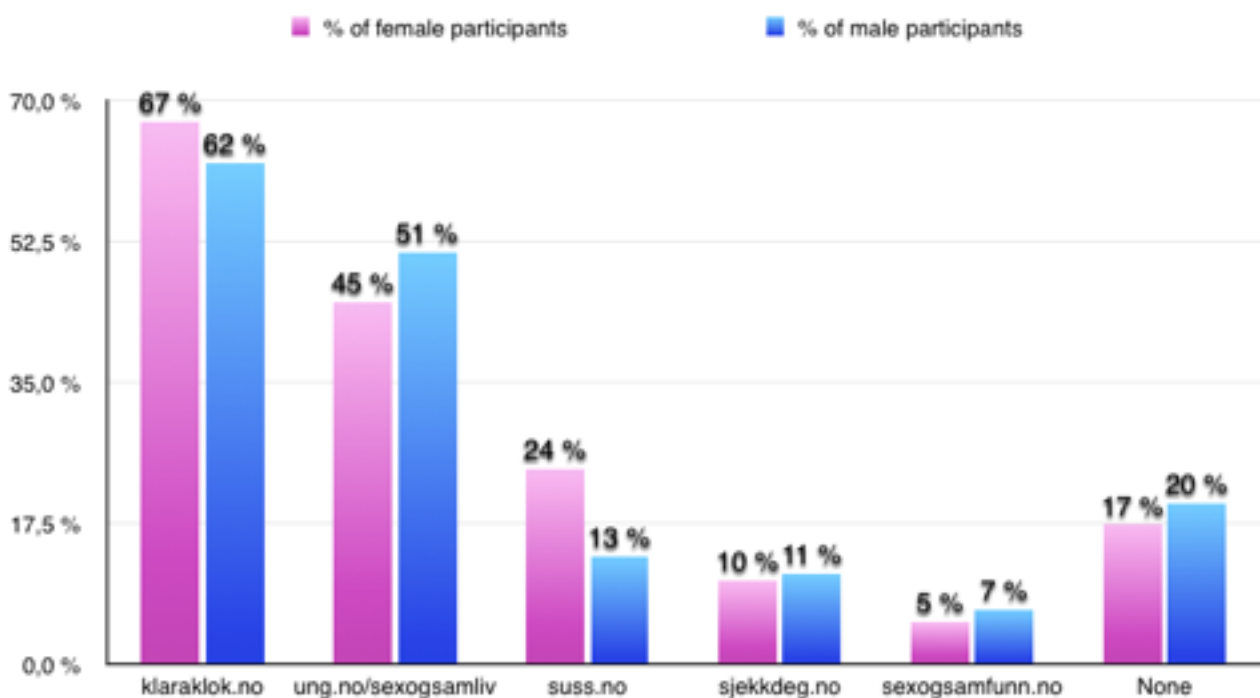


Diagram 2. Shows the difference in knowledge of the websites among female and male participants

The percentage of male and female who have *visited* the websites, does not differ much. 44.8% of the girls and 44.4% of the boys have not visited any websites. The biggest difference between girls and boys is for Ung.no. 24.4% of the boys have visited the site, and 22.4% of the girls. In other words, no statistical differences on a 5% level.

<b><math>H_0</math></b>		
Equally many male as female participants have heard of at least one website	P = 0,720	$H_0$ is not rejected
Equally many male as female participants have visited at least one website	P = 0,969	$H_0$ is not rejected
There are no difference in the websites boys have heard of, compared to the websites girls have heard of	P = 0,760	$H_0$ is not rejected
There are no difference in the websites boys have visited, compared to the websites girls have visited	P = 0,988	$H_0$ is not rejected

*Table 2 shows the calculated degree of significance*

## University and high school dissimilarities

To see if there were differences in the results between the high school and the university, the participants were divided into two groups. The results are as shown in Table 2 and 3. The average age for participants in high school was 17, and 22 in the university. The main points are outlined below.

The number of participants who had not *heard of* any websites, was higher for the youth in high school (25%), than for those in the university (11.5%). Sjøkkdeg, Ung.no and Sex og Samfunn was better known among students in high school, than for students in the university. SUSS and Klara Klok was better known among students in the university. This is shown in table 3. The significance was calculated using Chi Square tests. None of these differences were significant on a 5% level, as shown in table 5.

Web site -> Heard about	Klara Klok	ung.no/ sexogsamliv	SUSS	Sjøkkdeg	Sex og Samfunn	None
Number heard about, High School (HS)	29	28	8	8	4	13
Number heard about, University (UIT)	38	21	12	3	2	6
Percentage of HS participants	55,8 %	53,8 %	15,4 %	15,4 %	7,7 %	25,0 %
Percentage of UIT participants	73,1 %	40,4 %	23,1 %	5,8 %	3,8 %	11,5 %
% of female HS participants	54,8 %	45,2 %	19,4 %	12,9 %	9,7 %	29,0 %
% of female UIT participants	81,5 %	44,4 %	29,6 %	7,4 %	0,0 %	3,7 %
% of male HS participants	57,1 %	66,7 %	9,5 %	19,0 %	4,8 %	19,0 %
% of male UIT participants	66,7 %	37,5 %	16,7 %	4,2 %	8,3 %	16,7 %
<i>n</i> (UIT) = 52 <i>n</i> (HS) = 52						

Table 3 shows the number and percentage of males and females who have **heard about** the websites, divided into two groups with participants from the High School (HS), and from the university (UIT).

Among students in high school, Ung.no was more *visited* than Klara Klok, and Sex og Samfunn was more *visited* than both Sjøkkdeg and SUSS. In the group of students in the university, none had visited Sex og Samfunn. None of the *male* participants in university had visited Sjøkkdeg. This is shown in table 4. The difference between HS and UiT regarding visited websites was found significant on a 5% level when using a Chi Square test, as shown in table 5. This calculation of

significance is not accurate, as six of the expected values are  $< 5$ . A Fisher test would have given a better calculation.

Web site -> Visited	Klara Klok	ung.no/ sexogsamliv	SUSS	Sjekkdeg	Sex og Samfunn	None
Number visited, High School (HS)	13	17	1	2	3	24
Number visited, University (UIT)	27	7	4	1	0	22
Percentage of HS participants	25,0 %	32,7 %	1,9 %	3,8 %	5,8 %	46,2 %
Percentage of UIT participants	51,9 %	13,5 %	7,7 %	1,9 %	0,0 %	42,3 %
% of female HS participants	19,4 %	25,8 %	3,2 %	3,2 %	6,5 %	54,8 %
% of female UIT participants	63,0 %	18,5 %	7,4 %	3,7 %	0,0 %	33,3 %
% of male HS participants	33,3 %	42,9 %	0,0 %	4,8 %	4,8 %	33,3 %
% of male UIT participants	41,7 %	8,3 %	8,3 %	0,0 %	0,0 %	50,0 %
<i>n</i> (UIT) = 52 <i>n</i> (HS) = 52						

Table 4 shows the number and percentage of males and females who have **visited** the websites, divided into two groups with participants from the High School (HS), and from the university (UIT).

$H_0$		
Equally many students in high school as students in university have heard of at least one website	P = 0,076	$H_0$ is not rejected
Equally many students in high school as students in university have visited at least one website	P = 0,693	$H_0$ is not rejected
There are no difference in the websites student in High School know of, compared to students in University	P = 0,204	$H_0$ is not rejected
There are no difference in the websites student in High School have visited, compared to students in University	P = 0,0070	$H_0$ is not rejected, due to E values $< 5$ .

Table 5 shows the calculated degree of significance



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## Discussion

The results showed that websites for youth in Norway about sexual health and sexuality are generally very good regarding information, quality assurance, and services like Q&A. 81.7% of participants in the survey knew about at least one of the websites, and 55.8% had visited at least one of the websites. No statistical differences were found between males and females, and between high school and university students.

The information on the sites does not vary much in quality or content. A report on health services for youth from the Norwegian Directorate of Health, concludes that the public websites targeted at youth are quality assured and have good information (16). The assessment made in this review agrees to the Directorate of Health's conclusion. The themes on the sites can vary a lot, from focusing mainly on STI's, to information about feelings, psychological issues, drugs and economy. The Directorate of Health's report states that websites which are run and financed by the state are characterized by being general in information, and deal with many topics. This is very obvious on Ung.no. In the same report, interviews show that generality and having many topics is a positive feature. Findings suggest that such pages contribute to easier access to validated information for youth. This corresponds quite well with the results of the questionnaires in this report, which show that Ung.no is known by 47% of the people asked, and used by 23%. Ung.no has, in addition to information about sexuality and sexual health, information about 81 other topics, e.g.; alcohol, moving away from home, drivers license, sports, homework assistance, bullying, racism, education and scholarships. This may attract more viewers than only those looking for information about sexuality and sexual health.

One feature that varies between the websites, is the use of pictures. Klara Klok has no pictures or illustrations, only questions and answers. SUSS barely has any photos, while Sex og Samfunn and Ung.no/sexogsamliv have more, but their function is mainly to illustrate and decorate articles, not to give information. Sjøkkdeg, on the other hand, has more photos. The photos are both used as decoration and illustration, but mostly as informative pictures to give examples and describe what the articles explain. Sjøkkdeg also has, as previously mentioned, real, «unpolished»

photos of male and female anatomy. This may give a more factual approach to how the body usually looks, and of biological variation. «Polished» photos of perfect bodies might make the youth think such bodies are normal, and compare their own body to the photos they see. Reduced self-esteem may be a result of this, and the feeling of being inadequate. It is therefore surprising that only one of the websites has focus on this.

*Interactive* is defined as allowing or relating to continuous two-way transfer of information between a user and the central point of a communication system, such as a computer or television (17). A lot of websites strive to be more interactive, and it is common opinion that interactivity is a positive feature for a web page. Examples of interactive features are quizzes, the possibility to ask questions, discussion, or finding and watching movies. Sjekkdæg has two other forms for interactivity which have already been mentioned; the making of an avatar, and the virtual clinic. A study on attitudes of young people with diabetes to an Internet based virtual clinic, showed that 95% were positive to a clinic like this. Factors like easy accessible up-to-date information, the opportunity to ask an expert, good graphics, easy navigation and interactivity were reasons for the positive attitude. A 24-hour access and anonymity were also positive aspects of a virtual clinic (18). This result can most likely be applied to a virtual clinic not only for diabetes, but also for sexual health, and all of these factors will be useful for adolescents with questions about sexual health and sexuality. The other websites have varying degrees of interactive features. Sjekkdæg, with seven interactive features, has far more than any of the other websites. Ung.no has three and Klara Klok has two. The other two have only one interactive feature (Q&A).

The questionnaire shows that as many as 81,7% had heard about one or more of the mentioned websites, and 55% had used at least one of them. Compared to a study on one specific website about sexual health for adolescents in Western Australia, two of the websites (Klara Klok and Ung.no) are more visited than the one in Australia. An estimated 5% of Western Australian residents had visited the website in 2010. Sjekkdæg, SUSS and Sex og Samfunn were not as much visited as the Australian website. The website in Australia had relevant information, but needed to improve its

promotion to reach a bigger audience (19). It is likely that this also accounts for Sjekkedeg, SUSS and Sex og Samfunn.

Klara Klok was the best known of the five websites. In my opinion, there may be a number of reasons for this.

First of all, Klara Klok answers any question the youth may have, and within a week. SUSS also answers questions, and advertise with answering within 24 hours. The fact that they advertise with answering within a given time, may make them more popular. A study in USA examining teens' digital device ownership, online activities, and usage/frequency of communication modalities, found that 50% would be likely or very likely to use a text messaging service. Teens with a current STI were even more likely to report that they would be likely or very likely to use a text messaging service to have questions about sexual health information answered (20). This is offered by both Klara Klok and SUSS. The difference between the two, is that on Klara Klok, you can also find answers to the 450 000 questions which have been asked previously by other people. At SUSS, you can only find a small selection of questions. This means, that if the youth do not want to ask any question themselves, they have a much bigger chance of finding answers to their questions at Klara Klok, which also have an advanced search service. Ung.no has a good Q&A-service, but links to SUSS and Klara Klok for health related questions. Sex og Samfunn and Sjekkedeg has no service which answers personal questions, and it may be more difficult to find specific information.

One explanation for the variation in how well the websites are known, may be advertising of the sites. The health center for youth in Tromsø advertises for Klara Klok and Ung.no, and this may explain why so many of the youth had heard of these two websites. On the other hand, the health center advertises for Sjekkedeg as well, and has a link to Sex og Samfunn, but these two sites were much less known than Klara Klok and Ung.no. It has not been investigated whether all of the sites are mentioned to the visitors at the health center, or if some are mentioned more often than the others. If the advertising from the health center varies for the different websites, this may contribute to the variance in knowledge of the websites. Three of the websites have links to one or more of the other websites in the project. If youth know about at least one site, the linking to other websites could give the users

acquaintance to more sites with the same theme. 57 of the participants knew of more than one site, and 28 people knew about only one site. This may give the impression that when knowing about one, the youth get to know more sites by following links on the first website.

A report from the Norwegian Directorate of Health shows that youth use the most common search engines, like Google, to find information. They do not use much critical appraisal skills, and it is therefore important that sites with good and high quality information appear first in these searches (16). Sjekkedeg was very hard to find by using a search engine. It was only found through other links, and I guess that may be the reason why this was one of the websites less known among youth. All the four other websites appeared in the eight first hits in my search.

The websites vary slightly in the age of their target group. Klara Klok and Sjekkedeg have wide age groups, from 10 to 30 years, and 12 years and above. Ung.no's target group is 13-20 years, and Sex og Samfunn's is 16-25. SUSS's target age is from 14-24, and SUSS's annual report shows that the mean age of the users is 19 for females, and 21 for males (21). The average age we found in the questionnaire, was 22,8 for SUSS-users; the highest of the mean ages. Sex og Samfunn had the lowest average age, of only 17,3 years. The target ages given on the websites say nothing of the ages of those who actually visit the websites. It is not known if the target age group matches the age of the people who visit the websites.

It is likely that the time of existence of the websites has a lot to do with both the number of people that know about / visit the websites, and also the average ages found in the questionnaires. The average age of all the survey-responders was 20 years; 17 years for participants in high school, and 22 years for participants in university. This means that it is about five to ten years since many of them were well into puberty (22), approximately five years for high school students, and ten years for university students. Puberty is a time of life where you can expect youth to have a lot of questions about body, sexuality and health, and therefore wish to find websites where they can read about this. Klara Klok was started in 2000-2002, and may have been one of the newest and most modern websites at the time where the oldest students had started puberty. Klara Klok has probably been discussed in schools and

youth clubs, where the youth might have learned about the website. The starting year reflects the average age of people that both had heard about (20 years) and visited (20,6 years) Klara Klok. This website is more used and better known among those in the university, which supports the mentioned theory. The same applies to Ung.no, which was launched in 2003, and has slightly younger customers for both knowledge of (19,2 years) and visiting the site (18,5 years).

SUSS was previously mostly focusing on the phone line, and the web site may not have been well developed five to ten years ago. This may explain why it is not as well known as Klara Klok. The same applies for Sex og Samfunn's website, which was completed in 2010. The average age of this website may reflect that it is new, with 19,7 years for participants who have heard about the site, and 17 years for visitors. Among the university group, only four people had heard of Sex og Samfunn, and none had visited it. Sjekkddeg was recently developed and launched, and it is likely that this is the main reason for not being better known and visited. Sjekkddeg has a low average age among both visitors (18,7 years) and people who have heard about it (17,9 years). The average ages have not been tested significantly, so it is not known if there is an actual difference. The lower average age for Sjekkddeg, can be a result of the layout, name and features of the website, that may appeal to the younger adolescents. Although the layout is more appealing for a younger audience, the information on the site can be suitable for adolescents of all ages.

Sex og Samfunn was not well known among the participants in the survey, although it is the biggest center for sexual and reproductive health for young adults. Compared to the other sites, it does not have a lot of features on the website. It has mainly articles, and a link to a site that gives out free condoms. The mentioned clinic connected to Sex og Samfunn is a good health service, but the clinic is located in Oslo. This may explain why so few have heard about the site, as the survey made for this project was conducted in Northern Norway. It basically means that the site only gives access to information and articles on sexuality and sexual health, and very few other features for youth who do not live close to Oslo. However, the information on the site is good, and is mainly focused around sexually transmitted infections, testing and prevention.

The dissimilarity in knowledge about - and use of the websites between males and females, was more obvious when dividing the participants into a high school group and a university group, although no differences were found to be significant. 81,5% of the females in university had heard about Klara Klok, and 66,7% of the males. For high school youth, the difference between females and males for knowledge of Klara Klok was less than 3%. For high school students, the difference was bigger for SUSS. 29% of the females knew about SUSS, while only 19% of the high school males knew about the website. The statistics from SUSS show that 78% of the users of SUSS's secured e-mail are girls, and only 22% are boys. When comparing gender differences in our survey with SUSS' own numbers, the difference is not as big as expected. A reason for this may be that more girls than boys send in questions through the secured e-mail, while the number of visitors is more equal.

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## Limitations of the study

The survey made in this project includes 104 participants. A consequence of the small number of participants, is that three of the websites only had 3-5 visitors in the asked group. No statistical significances were found using Chi Square tests. A Fisher Irwin-test should have been used for some of the calculations, as a few of the expected numbers that were calculated, were below five. A non-parametric test would have given a more accurate significance. The reason that there are no significant differences, may be that there are no actual differences between the studied groups, or that the numbers are too small to find them.

By asking different age groups, we tried to make the sample as representable as possible for Norwegian youth. Health science students were not asked, as this may have given a bias. Four of the participants were more than 25 years old, and were older than the target group of three of the websites. 5 participants did not report their ages. This may have given a bias when interpreting the results from the questionnaires. However, it is likely that people of other age groups also visit the websites. Asking youth from only one high school could be a selection bias as different schools have different teaching programs about sexuality and sexual health. The questionnaire was distributed to random volunteers, and different inclination towards giving answers may have given a selection bias. Confounding factors could be that there are geographical differences. We can not know if this group in Tromsø is representable for youth in other parts of Norway. Only Norwegian websites were studied, but it is likely that youth in Norway also use websites or Apps with other languages or countries of origin. There is also a possibility that the participants do not recognize the website's URL.

The evaluation of the five websites is a result of my subjective opinion, so although I have tried to be neutral, the objectivity of the results are limited.

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## Conclusion

Websites for youth in Norway about sexual health and sexuality are generally very good regarding information, quality assurance, and services like Q&A. Ung.no also gathers a lot of information about other themes relevant to youths and young adults. This is a good tool for distributing validated knowledge. Sjekkedeg is very good on interactivity and showing realistic photos, and other websites may benefit from having more focus on this. Advertising of Sjekkedeg takes place on few channels, and the website may therefore be hard to find for adolescents searching for good information. If this applies to most of the good sites, the youth may end up finding sites of inferior quality. What lacks in one site, can be found in another, so the websites complement each other well. It may therefore be an advantage for young people if the sites advertise more for each other.

Many of the Norwegian youth know of good informational sites about sexuality and sexual health. Some of the good pages are not well known, maybe due to poor advertising, and lack of appearance in searches. Some of the websites are known by such a small number of participants in this survey, that the results should be applied with care.

In order to attain a better comparison of the contents and function of the different websites, there is a need for more research. Surveys involving bigger groups and with a wider geographical distribution, should be performed. A topic of significant interest would be to identify which properties that meet the youth's demand for a good website.



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## Appendix

### 1. Questionnaire

#### **Spørreundersøkelse**

*I denne undersøkelsen ønsker vi å kartlegge din kjennskap til- og bruk av nettsider som omhandler seksualitet og helse.*

*Spørreundersøkelsen er anonym, og vi ber dermed om at du ikke skriver navnet ditt.*

**Alder** \_\_\_\_\_

**Kjønn**  Jente  
 Gutt

#### **Hvilke av disse Internettssidene for ungdom har du hørt om? Flere svar mulig**

- [www.sjekkdeg.no](http://www.sjekkdeg.no)
- [www.suss.no](http://www.suss.no)
- [www.klaraklok.no](http://www.klaraklok.no)
- [www.sexogsamfunn.no](http://www.sexogsamfunn.no)
- [www.ung.no/sexogsamliv](http://www.ung.no/sexogsamliv)
- [www.guttogjente.no](http://www.guttogjente.no)
- Andre Internettsteder rettet spesifikt mot ungdom, om seksualitet og helse  
Noter: \_\_\_\_\_
- Har ikke hørt om noen

#### **Hvilke av disse nettsidene har du besøkt? Flere svar mulig**

- [www.sjekkdeg.no](http://www.sjekkdeg.no)
- [www.suss.no](http://www.suss.no)
- [www.klaraklok.no](http://www.klaraklok.no)
- [www.sexogsamfunn.no](http://www.sexogsamfunn.no)
- [www.ung.no/sexogsamliv](http://www.ung.no/sexogsamliv)
- [www.guttogjente.no](http://www.guttogjente.no)
- Andre nettsider jeg har besøkt som omhandler seksuell helse  
Noter: \_\_\_\_\_
- Har ikke besøkt noen

**Takk for hjelpen!**

2. The six following tables show calculations of significance, by using Chi Square.

Heard about	Klara Klok	ung.no/sexogsamliv	SUSS	Sjekkdeg	Sex og samfunn	Sum
Females	39	26	14	6	3	88
Males	28	23	6	5	3	65
Sum	67	49	20	11	6	153
Exp Females	38,536	28,183	11,503	6,327	3,451	88
Exp Males	28,464	20,817	8,497	4,673	2,549	65
Sum	67	49	20	11	6	153
Chi Square, P=	0,7605					

Visited	Klara Klok	ung.no/sexogsamliv	SUSS	Sjekkdeg	Sex og samfunn	Sum
Females	23	13	3	2	2	43
Males	17	11	2	1	1	32
Sum	40	24	5	3	3	75
Exp Females	22,933	13,760	2,867	1,720	1,720	43
Exp Males	17,067	10,240	2,133	1,280	1,280	32
Sum	40	24	5	3	3	75
Chi Square, P=	0,9880					

Calculation of difference between males and females in knowledge and visiting of websites.

Difference between students in High School and University, both for knowledge of websites, and visiting websites, using Chi Square. The P-value can not be trusted when the expected numbers are < 5. In this case, a non-parametrical test should be used.

Heard about	Klara Klok	ung.no/sexogsamilv	SUSS	Sjekkdeg	Sex og samfunn	Sum
High School	29	28	8	8	4	77
UNI	38	21	12	3	2	76
Sum	67	49	20	11	6	153
Exp High School	33,719	24,660	10,065	5,536	3,020	77
Exp UNI	33,281	24,340	9,935	5,464	2,980	76
Sum	67	49	20	11	6	153
Chi Square, P=	0,204					

Visited	Klara Klok	ung.no/sexogsamilv	SUSS	Sjekkdeg	Sex og samfunn	Sum
High School	13	17	1	2	3	36
UNI	27	7	4	1	0	39
Sum	40	24	5	3	3	75
Exp High School	19,200	11,520	2,400	1,440	1,440	36
Exp UNI	20,800	12,480	2,600	1,560	1,560	39
Sum	40	24	5	3	3	75
Chi Square, P=	0,0070					

Difference between students in high school and university, and between boys and girls, calculated using Chi Square.

	Knows websites	Knows no websites	Sum	Visit Websites	Visit no websites	Sum
High School	39	13	52	28	24	52
UNI	46	6	52	30	22	52
Sum	85	19	104	58	46	104
Exp. High School	42,5	9,5	52	29	23	52
Exp UNI	42,5	9,5	52	29	23	52
Sum	85	19	104	58	46	104
Chi Square, P=	0,076			0,693		

Males	36	9	45	25	20	45
Females	48	10	58	32	26	58
	84	19	103	57	46	103
Exp Males	36,699	8,301	45	24,903	20,097	45
Exp Females	47,301	10,699	58	32,097	25,903	58
	84	19	103	57	46	103
Chi Square, P=	0,720			0,969		

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