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MASTURBATION IN A GENERATIONAL PERSPECTIVE

ABSTRACT. Each generation has adopted views on masturbation via transforming cultural definitions of sexuality and normality. This article presents how masturbation habits have changed during the last decades in different generations and how these habits are linked to the partnership status. The analysis is based on three national follow-up sex surveys in Finland (in 1971, in 1992, and in 1999), and sex surveys in Sweden (in 1996), in Estonia (in 2000), and in St. Petersburg, Russia (in 1996).

Across these countries, each new generation had been more active in masturbation than the previous one. However, in Estonia masturbation had increased in each generation about 20 years later and in St.Petersburg about 30 years later than in Finland and Sweden. The increase in masturbation was almost unrelated to the relationship status and to the years spent in the relationship. The masturbation habits that each generation had internalized in adolescence seemed to remain unchanged through the course of their lives. The implication of these findings that masturbation did not decrease with age and that masturbation was not either a compensation for a missing sex partner but an independent way to gain sexual pleasure. The results indicate that masturbation is linked to the perceptions within a given culture of its nature and consequences during the teenage years of participants.

MASTURBATION IN A GENERATIONAL PERSPECTIVE

Masturbation in history

The origin of the term masturbation is in Latin ‘manus stuprare’, that suggests self-abuse or self-defile by the hand (Kay, 1992). Some authors claim that the word more neutrally originates from the term ‘manus turbare’ meaning to agitate or disturb by the hand. Other, more modern terms for masturbation are self-pleasuring, self-loving, self-caressing, self-fondling and self-stimulating. In this article, the traditional term masturbation will be used because of the historical and generational perspective it provides to the masturbation habits and to the feelings related to masturbation.

Historically masturbation has been one of the most private, hidden, and underestimated sexual habits. Patton (1985) argues: "There is no other sexual behaviour so indigenous to the

human species, more thoroughly discussed, more roundly condemned, yet more universally practised than masturbation”. That is why the study of masturbation habits reveal issues that are essential indicators of local sexual cultures.

Even though masturbation is a private act, it has been actively regulated and negatively labeled by societies. The origins of the prejudices directed towards masturbation are in the semen conservation theory that has been very popular, for instance in Taoism. Women have been presented to compensate for their lack of semen by robbing it from men in excessive coition. In addition, it was believed that if a man ejaculates his semen inside the female genitals he lost his energy simultaneously as she gained more energy. Loss of semen in the non-reproductive activity was claimed to cause weakness and disease. A solution to this deficit was suggested to be found in semen conservation. (Parrinder, 1980; Money, 1999.)

In the Western sexual tradition one can speak of a masturbation panic. Some of the earliest evidence of this panic was found in the writings of Jean Gerson (1363-1429) who described masturbation as an abominable and horrid sin. His suggested remedies for masturbation included cold baths, flagellation, sobriety, prayer and good company. In the dormitories, night-lights should be kept burning, hands should be kept outside of the bedclothes, and the boys should report of their classmates’ ‘misbehavior’ (Money, 1999).

Masturbation has been an ideal target for projects of self-control that has been a part of every day moral regulation in Christianity and Judaism. Male sexual purity was declared to be a fundamental virtue in a State. It was also called a project of ‘civilizing an animal’. With the help of sexual purity, a State could ensure sufficient healthy men who would fit for military service in CHECK QUOTE ‘**modern**’ **mass armies** (Hunt, 1998). All pleasure sensation was argued to be a satanic temptation in disguise. Because sex was the most stimulating activity of all, it was considered the most dangerous. If it was immoral, it (including masturbation) had to be **unhealthy** CHECK QUOTE--**UNHEALTHY** as well. (Whorton, 2001.)

Both religious and medical arguments have been used as weapons against masturbation. In the 18th century there were claims that masturbation provokes mental illness as a prelude to the eternal punishment. In the texts of Simon André Tissot (1974), first published in 1758, masturbation was fully medicalized. Tissot paid special attention to the effects of masturbation on the nervous system (Stolberg, 2000). He claimed that masturbation caused an excessive blood flow to the brain that can result in impotence and insanity (Kay, 1992).

John Harvey Kellogg’s (1974, originally 1877) method of ‘treatment’ for chronic

masturbation was to set up the foreskin with silver wire, that caused enough pain to prevent masturbation and to burn off the clitoris with carbolic acid (Money, 1999; Money, 1985). Any kinds of means were justified in the war against masturbation. Originally, male circumcision was started with the hope that it could prevent male masturbation. Later this origin was gradually forgotten and revised arguments were presented to legitimate the male circumcision.

The Western medical profession created the concept of post-masturbatory disease that could cause impotence (Stolberg, 2000). Masturbating women were said to develop an unnaturally enlarged, penis-like clitoris, or to lose their attractiveness. According to the masturbation neurosis hypothesis, excessive masturbation was claimed to cause draining of sexual energy that could give rise to neurasthenia or neurosis (Kay, 1992). And still, physical damage caused by masturbation was argued to make a person engaged in masturbation incapable of consummating the marriage or of having children (Stolberg, 2000). The aim of these invented threats was to prevent masturbation via fear and. In a sum, masturbation-guilt has been also the centrepiece of erotophobia (Tiefer, 1998).

Masturbation anxiety has been shown to be at its peak in the early 1900s (Hall, 1992). The generation which lived its childhood in the early 1900s was the most afraid of the possible health damages caused by masturbation acts. Some of the practical implications of this 'sex education' were found in the several thousands of letters sent to the scientist Marie Stolpes (the author of several sex manuals) in 1918-1945 (Hall, 1992). These letters reveal many sorts of anxieties over masturbation. Some writers could name the literal source that caused their anxiety:

"Somehow I got hold at the age of nineteen of a book called 'What a Young Man Ought to Know.' Having read it, and with a violent assertion of willpower, I overcame the vice of masturbation, and have kept free from it ever since."

"When I was about twenty-two, I had a nervous breakdown. It was not until I read that book that I realised what harm I had been doing to my health through a self-abuse."

Some doctors considered prostitutes to be better for their patients than masturbation:

"I was told and I believed, that the only possible alternative to this (masturbation) was to go with prostitutes, and that this alternative was more degrading than the other."

"The doctor strongly advised me to drop masturbation. He even suggested certain houses where I might meet women of a better class, and advised the use of sheaths or injections. The doctor even advised women as a lesser evil than the risk of disease in masturbation."

Some people were trying to rid themselves of masturbation by increasing the frequency of their intercourse:

”Before I was married, I used to have unions three and four times a night, two or three times a week with different girls in the hope of curing myself but it was of no use.”

A true man was presented to be able to control his sexual urges.

”Studies in the Psychology of Sex” by Havelock Ellis (1910, originally 1899) was the first book to attempt to break off some prejudices toward masturbation. According to Ellis, only habitual, prolonged masturbation could be harmful. In the U.S., in the 1920s and 1930s, the more sophisticated members of the medical community launched a full-scale assault on the myths of masturbatory insanity, but it took another generation before the myths were exposed to the general public (Bullough, 1987).

These myths related to masturbation were at last challenged in the West in the sexual revolution that was launched in the 1960s. New sources of information were available and in sexual issues and values related to sexuality were reassessed. Sexual science blossomed was created. Masturbation was not only approved, it was also recommend to be used as an important technique in the exercises of sex therapy (Kaplan, 1975). Instead of being a dangerous sin, masturbation was defined to be a virtue by which individuals could promote their well-being and skills for sexual interaction. This was assumed to have an impact on the masturbation habits especially among the better educated who had the new knowledge at their disposal.

This article attempts to show how masturbation habits have changed during the last decades in different generations in two Nordic countries and in two parts of the former Soviet Union. With the help of sex surveys we present how masturbation has been related to different relationship statuses and how masturbation activities can be explained by social background and to people’s sexual ideas and activities.

Nordic countries have been pioneers in the Western sexual revolution with it's public debates and wide distribution of sex education, information, pornography and literature about sex (Kontula & Kosonen, 1996). This has been assumed to have decreased the fears and guilt associated with masturbation habits in Western countries.

In the Soviet Union (after a short period of sexual liberalization after following the 1917 revolution), the sexual policy enforced heterosexual monogamous family life and

motherhood (Liljeström, 1995). Up until the 1980s, sexual education and research on sexuality had to be very limited in scope, while small amounts of information and moral advice featured in medical and pedagogical journals. All other public discussion of so called intimate questions were censored. The Gorbachev policy of glasnost eventually led to the liberalization of the printed word and a Russian public 'sexual revolution' in 1989, when topics such as abortions, birth clinics, contraceptives, and young people's sexuality entered public debate.

However, still in 1990s there were several authorities who described masturbation as psychologically harmful and a cause of excessive morbidity and mortality (Kon, 1995, 199, 267; Rotkirch, 2000, 173). Similar warnings were presented still in the early 1990s in the Estonian medical school (Poolamets, 2001). This is assumed to have inhibited masturbation in many parts of the former Soviet Union, even in the young cohorts, much more than in the Western countries where more reasonable sex education has been available since the 1960s.

Method

The data for this article was gathered by six sex surveys conducted toward the end of the 20th century in two Nordic and two former Soviet areas. The main data is from Finland, where three national population sexuality surveys have been conducted. First, there was the 1971 survey of 2,188 participants (age-group 18-54) with face-to-face interviews in which each interviewee also completed a self-administered questionnaire. The response rate was 91%. Second, in the 1992 survey, the data collection method was identical and the number of respondents was 2,250 (age-group 18-74). The response rate was 76%. Third, in 1999 a similar mail survey was conducted with 1,556 responses (age-group 18-81), with a response rate of 46%. In order to correct for a bias in the demographic composition of the data, it was weighted by age and gender. As a result, the demographic structure of the data now represents that of the original sample.

According to some characteristics other than age and gender, the 1999 data don't seem to be biased. By analyzing the distributions of several identical retrospective questions measuring sexual issues in different generations, Kontula (2001) could show that the low response rate in 1999 has not had any major impact on the results of sex history among those who were less than 55 years old. In the age group 55-74 the male respondents were more monogamous than on the average in that age group.

In their analyses of the Western sex surveys, Michaels and Giami (1999) wrote about the Finnish (1992) sex survey: "The Finnish survey appears as a turning point, a kind of hybrid

between the 1970s model of sex surveys and the subsequent 1990s AIDS-related sex surveys. It reflects the long-term trend toward 'sexual optimism' increasingly considering sex as a positive and fulfilling experience that has characterized modern sex research from Havelock Ellis to Masters and Johnson".

In the same period when the later Finnish surveys were carried out, comparable national sex surveys were conducted in Sweden (1996), Estonia (2000) and St. Petersburg (1996). The results of these surveys will in some cases be compared with those of the three follow-up surveys in Finland. In Sweden and St. Petersburg, the data collection took place in a similar manner as in Finland in 1971 and 1992. In Sweden, a representative sample was drawn from the central population register of the state (Lewin et al., 1998). In St. Petersburg, the voting register was used as the sampling base (Gronow et al., 1997). In Sweden and St. Petersburg, the respondents answered to the general questions orally, face-to-face and then filled completed the intimate part of the questionnaire by themselves in paper-and-pencil. The response rate was 59% in Sweden and 60% in St. Petersburg. The respondents were representative of the general population in regard to gender and age. (Lewin et al., 1998; Haavio-Mannila & Rotkirch, 1998; Haavio-Mannila & Kontula, 2001.)

In Estonia, the universes of the Omnibus type surveys, carried out by the market research organization Emor twice a month, are formed of the permanent residents of the Republic of Estonia at the age of 15 - 74, 1,1 million people, as of January 1st, 1999. Each time the sample size is 500 persons. The sex survey was repeated five times in May-August 2000. In practice, the data collection took place in the following way: The interviewers took the questionnaires to the respondents, who completed and returned them to Emor. Of the selected persons 1,031, that is, 41% returned the questionnaire.

Emor forms the samples by two-staged stratified sampling method. First, the universe is divided by territorial domicile into six strata. Then, a two stages selection is done in each stratum. The primary sampling units are settlements. In each primary sampling unit the secondary sampling units - individuals - are chosen. Eight persons are interviewed at each sampling point. In towns starting addresses are selected at random from the population register. After the apartment or private house is chosen by means of random route method, the youngest male at home, and if not present, the youngest female aged 15-74 is interviewed. In rural areas, the addresses are selected at random from the list of residents provided by the local parish administrations. Also here, the so-called young-men-rule is used for selecting individuals in selected household.

To check the formed sample, its socio-demographic structure is compared to the

corresponding data of the universe. The data are weighted to ensure the representability of the sample. Among our respondents, there were more people living in the capital, Tallinn, and in rural areas than in the other towns and cities; the proportion of men was lower; there were more 25-34 year olds and less 55-74 year olds, and more national Estonians than in the population at large. In order to correct for these biases, the data was weighted by type of settlement, gender, age, and nationality.

The frequency of masturbation was measured in the Finnish, Estonian and St. Petersburg surveys by using a question with the exact same wording (see Table 2 below). It covers both lifetime and current masturbation activities. In Sweden masturbation habits were studied, for instance, by asking 'How old were you when you masturbated (satisfied yourself) for the first time?' 'How many times have you masturbated during the last 30 days?' On the basis of these two questions we can compare the Swedish data on lifetime and monthly masturbation with the data from the other areas. In addition to studying masturbation habits, in the Finnish samples, people's perceptions of health hazards of masturbation were also examined.

The generations were analyzed in 13 birth cohorts. The cohorts were born in 1917-1921, 1922-1926, 1927-1931, 1932-1936, 1937-1941, 1942-1946, 1947-1951, 1952-1956, 1957-1961, 1962-1966, 1967-1971, 1972-1976 and 1977-1980. In addition to presenting distributions and means according to age, gender and area, the data has been analyzed by using Multiple Classification Analysis (MCA), a type of regression analysis, in which the dependent variable has to be an interval scale but the independent variables can be non-parametric, that is, ordinal scales or categorical response alternatives.

Results

Opinions on the Healthiness of Masturbation

The warnings presented against masturbation in the text books and in the media have had impact on the individual cognition and feelings related to masturbation. This can be seen in the Finnish sex surveys in 1992 and 1999 where responses to the statement 'Masturbation does not endanger health' were studied. Respondents could entirely or somewhat agree or disagree with the statement or respond 'hard to say'.

The proportion of respondents entirely agreeing with the statement was 52% for both genders in 1992 and for men 63% and women 59% in 1999. These persons were not at all worried of the unhealthiness of masturbation. Roughly one third of the respondents born before 1940, agreed entirely with the statement (Figure 1). Among the respondents who were born after

the beginning of the 1950s, the proportion was much higher: about two thirds. The ideas concerning the healthiness of masturbation had 'revolutionarily' changed for men who were teenagers in the 1950s. For teenage women, the change toward not being worried about the health hazards of masturbation happened in the beginning of the 1960s. A second turning-point for men was in the late 1960s and for women in the early 1970s. On the average, men had adopted more positive ideas about of masturbation 5-10 years earlier than women. However, to for people who were adolescents since the 1970s, the ideas of masturbation have remained fairly similar.

(Figure 1)

Uncertainty of the health effects of masturbation was related to a lack of other kind of relevant information and education. This can be seen by looking at the attitudes toward masturbation according to the length of education of the respondents (Table 1). The Finns with fewer years of education were most often uncertain or sure of the unhealthiness of masturbation. The proportions of uncertain respondents were two to five times as high among those who had a low level of education as opposed to those with higher education who were more likely to be certain that masturbation was not unhealthy. This was true for both genders and both surveys in Finland in the 1990s.

(Table 1)

Still in 1999, one fourth of the Finnish respondents in the younger generation (18-34 years of age) were not absolutely sure if masturbation was healthy or not (Haavio-Mannila, Kontula & Kuusi, 2001, 121-122). The fears and guilt that related to masturbation were evident even though some decrease in the ignorance was found. According to the U.S. sex survey (Laumann et al., 1994), every second man and woman reported feeling guilty after masturbation. These feelings existed quite similarly in different age groups. Even the younger generations had not succeeded to get rid of fears and guilt related to masturbation.

Masturbation Habits in Different Countries

The masturbation anxiety has had a major impact on the actual behavior. A high proportion of participants people have abstained from masturbation for their entire life. The difference between Finland/Sweden and the former Soviet Union is great (Table 2). The distributions of recency of masturbation in Estonia in 2000 resemble those in Finland in 1971. In St. Petersburg in 1996 masturbation was even more rare than in Finland in 1971. Most St. Petersburg women had never masturbated. The women born before the second world war in

St. Petersburg abstained from masturbation almost completely (Figure 2). Even in the young generation only a half of the women in St. Petersburg had masturbated in their life time.

(Table 2)

(Figure 2)

In the generations born before the 1930s, most women in Finland, Sweden and Estonia had abstained from masturbation. In Estonia, until those born in the 1960s, half of the women avoided masturbation. In the youngest Estonian generations, the proportions of women not reporting masturbation were still about one third. Looking at the trends in the different generations, it seems that the increase in female masturbation had taken place in St. Petersburg 40 years and in Estonia 30 years later than in Finland and Sweden. We assume that this difference is to a great extent due to the more negative information available about of masturbation in the former Soviet Union than in the Nordic countries.

Comparing Finland and Sweden, the proportions of women inexperienced in masturbation were fairly similar in each generation. In the younger generations only around 10% of women had abstained from masturbation. In these countries, the turning point for women seems to have been in the generation that were teenagers in the early 1960s and later. This is consistent with the results on the change of ideas related to the healthiness of masturbation that took place at the same time. The misinformation of the health hazards of masturbation had apparently had a strong impact on masturbation habits in the generations of women who were teenagers before 1960s.

For men, the proportions inexperienced in masturbation were lower than those of women (Figure 3). In St. Petersburg and Estonia around one-half of men born before the 1950s had never masturbated. In the young generations, still 20-30% of the Estonian and St. Petersburg men had never masturbated. There was a fairly steady decline in the rates of people without experiences of masturbation. This decline started among men who were teenagers after the beginning of the 1960s. The Western sexual revolution seems to have had some impact on sexual habits also in the former Soviet Union but the timing of the trends differs significantly from that in the Nordic countries (Kon, 1995; Rotkirch, 2000). The Gorbachev policy of glasnost eventually led to the liberalization of the printed word and a Russian public "sexual revolution" in 1989, when topics such as abortions, birth clinics, contraceptives, and young people's sexuality entered into public debate. (Kon 1995, 267)

(Figure 3)

In Finland, a quarter of the men born before the 1940s had never masturbated. In this age group men were more active in masturbation in Sweden than in Finland. In the younger generations, only a few per cent of men had never masturbated neither in Finland nor in Sweden. The younger Nordic men were not afraid of experimenting with masturbation.

A look at the current masturbation habits (i.e., masturbation during the last month) reveals that the younger generations have been much more active masturbators than the older generations (Figures 4 and 5). Among the older people, 20-30% of men and a few per cent of women had masturbated during the last month. In St. Petersburg, the oldest men had masturbated as seldomly as women in Estonia and Finland did. Of the youngest men, about 80% in Finland and Sweden, one-half in Estonia, but only one-quarter in St. Petersburg had masturbated during the last month. Among women, the respective proportions of masturbators were about one-half in Finland and Sweden, one-third in Estonia, and one-fifth in St. Petersburg.

(Figures 4 and 5)

In Sweden both men and women of all generations had masturbated somewhat more often than men and women in Finland. Estonians had masturbated less than Finns but more than people in St. Petersburg. Estonian women resembled Finnish women more than Estonian men resembled Finnish men. On the average, in all the areas studied, the rate of monthly masturbation of women was almost 40 percent units lower than that of men.

Masturbation activities stayed very stable in Finland across time through time in for each generation or birth cohort. For instance, the proportion of people who had masturbated during the last month was almost identical in every birth cohort and among both genders according to all three sex surveys, in spite of the fact that the respondents of the last survey were on the average 27 years older than those in the first survey (Figures 6 and 7). The masturbation habits that every generation adopted during its teenage years seemed to have remained unchanged throughout people's life course. People who were not interested in masturbation when they were young, were also not interested in masturbation throughout the rest of their life. This means that aging in and of itself does not seem to have much effect on the practice of masturbation. Instead of the biological age, the quality of sex education and public opinion about masturbation in society during the teenage period of each generation seems to be of utmost importance for the future masturbation habits of each generation.

(Figures 6 and 7)

These results can be compared to some other findings from the Western sex surveys. Unfortunately, in the sex surveys of in the late 1980s and early 1990s, masturbation was seldom measured (Michaels & Giami, 1999). Of several other European surveys it was studied only in France (Spira et al., 1994) and in the Netherlands (Sandfort et al., 1998). Comparisons to these surveys are difficult because the questions did not measure masturbation over lifetime (as here), but only at the time of the survey.

Comparisons with the French and the Dutch studies show that gender differences in masturbation activities were in the 1990s much larger in France and the Netherlands than in Finland and Sweden. In France there were more women who never masturbated. Another finding is that in France and the Netherlands, the younger generation of women was not much more active in masturbation than the older generations of women. There was no similar increase in the masturbation rates from one generation to the other as we found in Northern Europe.

According to the findings by Laumann et al. (1994), masturbation has been less common in the United States than in Finland. For men less than 60 years of age, 37% in the U.S. compared to 28% in Finland had not masturbated at all during the last month. For women, these proportions were 58% and 39%, respectively. This means that masturbation was much more common in Finland than in the U.S. This holds true in all age groups under the age of 60. The most visible difference between the U.S. and Finland was in the young generation, among the 18-24 year olds (Laumann et al., 1994, 81-82; Haavio-Mannila & Kontula, 2001, 244-245). The increase in the practice of masturbation from the older to the younger generations was much more remarkable in Finland, Sweden, Estonia and St. Petersburg than in the United States.

Twenty-seven percent of U.S. men compared to 37% of Finnish men reported masturbating during the last week. For women these proportions were 8% and 17%, respectively. In the generation less than 40 years of age, women in Finland reported masturbating twice as often as women in the U.S during the last week.

In the developing world, masturbation has been an even stronger taboo than in those countries studied here. In India only a third of the college women ever masturbated. All of them had strong feelings of anxiety and guilt (Sharma & Sharma, 1998). In Turkey parents have even looked for medical help for their daughters, but not for their sons, in the case of masturbation (Unal, 2000).

Masturbation in Different Types of Relationships

In the U.S., cohabiting individuals have been characterized by comparatively high rates of masturbation (Laumann et al., 1994). Is this true also in Finland where we can look at this issue over time?

In Finland in the 1990s, masturbation was most common among men who were single at the time of the survey. In 1999, two-thirds of single men had reported masturbating during the last month. The men who were 'living apart together,' i.e., lived separately from their permanent partner ranked second in terms of masturbation during the last month, and the cohabiting men third. The married men reported masturbating least often. Part of these differences can be contributed to the different average age of the people with different relationship status.

Masturbation had increased in the 1990s in each of these relationship types, most visibly among those who were married (Figure 8). For women, differences between the cohabiting, living apart together, and single women were small.

(Figure 8)

Almost 40% of the women belonging to the three non-married relationship status groups had masturbated during the last month. When the influence of age was controlled for, the proportion of those who reported masturbating in the last month of the cohabiting and living apart together people declined to about 30% whereas the masturbation rate of single women remained the same (39%). Older cohabiting and separately-living women resembled married women who masturbated least often of all gender and relationship type groups. This was partly due to their higher average age; controlling for age increased the proportion of people who reported masturbating in the last month among married women from 21% to 25%.

Married men masturbated twice as often as married women. However, the married women had almost doubled their masturbation in the 1990s, from 13% to 21%. More and more men and women seem to continue masturbation after getting married.

This can be seen more clearly by looking at the masturbation rates according to the number of years the respondents had stayed in their present relationship (from 1-40+ years) in the three Finnish surveys (Figures 9 and 10). In 1992 and 1999, the data includes the married, those who cohabited and those who lived apart together; the relationships that had lasted more than ten years were almost always marriages. In 1971, the results apply only to married respondents.

(Figures 9 and 10)

Having masturbated increased in each relationship category from one survey to the next (in time) Masturbation also increased in relationships that had lasted a long time. Some people still have an interest in to masturbation after a relationship of 40 years, which was almost always marriage. This supports our earlier conclusion that marriage does not necessarily inhibit masturbation activities. With time, men in a sexual relationship increased their masturbation more than women in a sexual relationship. The largest growth had taken place among women who had just started their relationship. They had tripled their masturbation in from 1971 to 1999. Among men, masturbation fivefolded among those who had been married from 10-19 years.

Predictors of Recent Masturbation

Masturbation increased from one generation to another among both the respondents with a steady sexual partner and those who were single. During the same time, there was a growing number of Finns who considered masturbation as a healthy habit. Which social and cultural factors promoted this change?

One of the promoters of this change is education. Finns with more education expressed less unjustified fears and guilt of about masturbation than those with less education. The more educated seldom considered masturbation unhealthy (Table 1 above).

As described above, education also seemed to have an impact on those who are uncertain about the effects of masturbation on health. The proportion of respondents who were uncertain of the healthiness of masturbation was lower among those with more education.

With regards to behavior, the more educated masturbated more often during the last month more often than the less educated (Table 3). This was true in Finland as well as and in Estonia. In Sweden it held true to some extent. The lowest educated women masturbated less than those with middle and high levels of education. However, in St. Petersburg, education was not at all related to people's masturbation habits. Finally, in Russia, masturbation seemed to be a taboo topic across educational groups.

(Table 3)

A similar relationship between masturbation and education has been found in the U.S.

(Laumann et al., 1994). Eighty percent of men who had graduate degrees reported masturbating in the past year, and this proportion declined in a stair-step fashion to 45% of among those who had not completed high school. A similar pattern was found among women. Sixty percent of women who attended graduate school reported masturbating in the past year. The proportion of masturbators declined to 25% among those women who did not complete high school.

Other European surveys have found that people with a stronger sexual desire masturbate more. Those who report an earlier age of first intercourse, more sexual partners, with more frequent intercourse, and more liberal sexual attitudes, usually report masturbating more (Sandfort et al., 1998.) In the U.S., the most important motivation for masturbation was found to be relieving sexual tension and obtaining getting physical pleasure (Laumann et al., 1994).

We assumed that sexual motivation and desire for sexual pleasure would be important predictors of active masturbation. There are many indicators of sexual desire, such as the frequency of intercourse, the number of sexual partners, age of first intercourse, and use of pornography. Masturbation was also hypothesized to be common among people who are not afraid of the health hazards of masturbation, who were actively looking for other types of pleasure (e.g., intoxication with alcohol), and among people living in urban areas where sexual scripts are more permissive than in the countryside. Because age, type of relationship, and education were already found to be important demographic predictors of masturbation, they were included in the Multiple Classification Analysis as covariates in order to predict recency of masturbation in Finland (Table 4; the classification of recency of masturbation is presented in the footnote of the table).

(Table 4)

In Finland, recent masturbation was in the 1990s strongly related to frequent intercourse in the last month, number of partners in the last month, watching of sexually-explicit videos during the last year, and lack of fear of health hazards of masturbation. In addition, respondents who often got drunk, had higher education, and lived in an urban area, masturbated more than those who were sober, lower educated, and rural. Being male, young, and single were other characteristics associated with frequent masturbation.

The association between age at first intercourse and recent masturbation was weak among men, and its significance disappeared when other factors were controlled for. Among women, however, the association between age at first intercourse and masturbation was very

strong. Of the women who started coitus before the age of 16, 31% in 1992 and 40% in 1999 reported masturbating in a month whereas the proportions for the late starters (22+ years) were only 9% and 13%, respectively. The gender difference in masturbation was very small among early starters compared to the late starters of intercourse.

The increase in masturbation rate in different categories according to of time of last intercourse, number of sexual partners, and use of pornographic materials was also examined in Finland (data not presented here). Masturbation increased between 1971 and 1999 almost without any relationship to the frequency of intercourse. This means that those with a high frequency of intercourse had increased masturbation as much as those who had had intercourse less frequently. Furthermore, masturbation increased during the same time span as much among those with no or one partner as among those with several partners in a year. Between 1992 and 1999 (there is no corresponding data from 1971), masturbation increased regardless of whether or not one used pornography. These three results indicate that the growth in masturbation has taken place at the same pace among people with different sexual lifestyles.

Among those who experienced a problem in their sexual relationship due to the lack of sexual desire on the part of their sexual partner during the past year, 46% of the men (N=787) and 31% of the women (N=363) had masturbated (during the last month; based on combined data from the 1992 and 1999 Finnish surveys. Among those who did not experience a problem with the lack of sexual desire on the part of their sexual partners, 34% of men (N=580) and 22% of women (N=987) reported masturbating during the last month.

In 1999 in Finland, 88% of men and 66% of women reported that at least sometimes they experienced orgasm through masturbation. In the younger generations these figures were around 95% for men and 80% for women. In the U.S., about 80% of men and 60% of women reported that they usually or always experienced orgasm when masturbating. The more often people masturbated, the more likely they were to report experiencing orgasm when masturbating (Laumann et al., 1994).

Discussion

This study provided an overview of changes in masturbation habits in different generations born between 1917 and 1980 by using three national sex surveys in Finland and comparable data from Sweden, Estonia, and St. Petersburg (Russia). Our analysis showed how masturbation has varied in different generations in two Western societies (Finland and Sweden) and in two former Soviet societies (Estonia and St. Petersburg), resulting in a social

history of masturbation in Northern Europe in the 1900s.

Our findings support the notion that the revolution of sexual knowledge and values that took place in the Western societies in the late 1960s and early 1970s had a major impact on the attitudes and behaviors related to masturbation. Fears about the health hazards of masturbation decreased and masturbation increased considerably from one generation to the next. The observed masturbation trends are consistent with the ideas presented in the public discussion and information on masturbation in the teenage years of each generation.

Some of these trends may be due to increasing social desirability and social acceptability of masturbation during the latest decades (Dubois-Arber et al., 1997). In the later generations it might have been easier to reveal one's own masturbation habits. However, no evidence is currently available that would confirm this assumption. On the other hand, the sex surveys among the of general population have provided more valid estimates of life time masturbation prevalence than surveys among adolescents (Halpern et al., 2000). Being honest about one's masturbation habits may be easier for adults than for adolescents.

Some of the increase in masturbation rates could be due to selection bias of the respondents. In order to check the possible impact of such a bias we have used some measures to assess the validity of the results. One such measure is the comparison of the survey responses to life time abortion rates and national abortion statistics. They matched. In addition, we were able to examine retrospective reports obtained three times from most of the age groups in the Finnish surveys. Adolescent sex education and first sexual experiences of each generation were reported in the same way from one survey to the other. And finally, the responses of men and women to several other questions in the surveys (loving and being loved; the quality of the relationship; the frequency of intercourse, oral sex, anal sex, and erection disorders) were also consistent. These findings indicate that the results presented in this article are at least reasonably valid. (Kontula, 2001; Haavio-Mannila & Kontula, 2001.)

The increasing masturbation rates in Finland are also consistent with some other findings in recent European sex surveys. The age of first intercourse has declined in Western Europe by two years on average the 1960s (Bozon & Kontula, 1998). At the same time there has been an increase in the frequency of intercourse, the number of sex partners, and the practice of oral and anal sex (Sandfort et al., 1998). The European sexual habits have become more versatile. Masturbation is one indicator of this more general trend.

The 1990s surveys in Finland showed that fears related to masturbation decreased. This was expected on the basis of findings from a national Finnish press study (1961-1991) showing that sexuality and sexual issues have, to a large extent, been brought out from privacy into the

open by the media since the beginning of the 1960s (Kontula & Kosonen, 1996). By analyzing the contents of different popular magazines, we observed that sexuality was discussed in greater detail in public than earlier **HOW MUCH EARLIER? OR DID YOU OBSERVE AN INCREASE THROUGH THE YEARS 1961-1991?**. One could argue that the more open and detailed the discussion about sex in public, the easier it is for people to approve of sexuality in its different manifestations.

According to studies of the sexual autobiographies of ordinary people, fears related to masturbation have been common among many generations in Finland, Estonia and St. Petersburg. Several authors of sexual life histories have been afraid of the negative consequences of masturbation after reading warnings in publications or after hearing about them from others. Fears (of becoming insane) and guilt related to masturbation were common especially before the 1970s. Some people explained how they had tried to stop masturbating because of these fears, usually unsuccessfully. Even among women in the youngest generations, feelings of guilt remained common (Kontula & Haavio-Mannila, 1997; Karusoo, 1997; Rotkirch, 2000; Haavio-Mannila et al., 2002).

Due to the restrictive public policy against sexual education and expression in the former Soviet Union, changes in masturbation habits took place in Estonia and especially in St. Petersburg 20 or even 30 years later than in Sweden and Finland. This is consistent with close to Kon's (1995) estimate that the Russian sexual culture lags about 25 years behind that of the West. The Russian tradition to oppose Western ideas ensures that the border between Finland and Russia is a real cultural boarder with each side having different views on sexual issues. Another manifestation of this it is the double standard in St. Petersburg where people give more sexual freedom in marriage to men than to women (Haavio-Mannila et al., 2001, 104-110; Haavio-Mannila & Kontula, 2002).

Masturbation rates have been much lower in Estonia than in Finland, including teenagers. According to the surveys conducted in schools in Estonia in 1994 and in Finland in 1992, 59% of Finnish boys but only 15% of Estonian boys masturbated at least sometimes. For girls these figures were 40% and 6%, respectively. (Papp et al., 1997.)

In all areas studied here, men have been more active in masturbation than women. However, gender equality has increased even when it comes to masturbation. In the late 1990s, the masturbation rate of women in Finland was as high as that of men 20 years earlier. Women who had started intercourse at a young age were almost as active in masturbation as their male counterparts (Kontula, 2001b).

Some of the gender differences in masturbation habits can be explained by the fact that boys are socialized more to masturbation by their peers than girls. The sexual autobiographies of Finnish men revealed that older boys showed the younger ones how to masturbate. Women almost completely missed this type of sex education. (Kontula & Haavio-Mannila, 1995.)

One important finding of the current study is that masturbation does not necessarily decrease during the course of one's life. In fact, the three surveys in Finland show that masturbation remained almost at the same level in every birth cohort from one survey to another. This implies that the masturbation habits, which each generation adopted in its teenage years, tend to remain very similar throughout life, even over a 28 years time span. This tells us how important a generational approach is to understand differences between age groups in sexual attitudes and behaviors. Comprehensive sex education for teenagers would help new generations enjoy their sexuality free from unnecessary fears and anxiety.

Our findings suggest that in the future, more and more elderly people will masturbate as they have grown up in a masturbation-friendly society. Today's results from the elderly population may not be applicable to the older people of the future. Moreover, our findings question the assumption that masturbation markedly decreases with age. Instead, masturbation can be a way of satisfying sexual desire in later life when people have widowed and may experience difficulty finding a new sexual partner.

Some people believe that masturbation represents a compensation for 'real' sex that is missing for some reason (Kontula & Haavio-Mannila, 1997). By comparing the masturbation habits of people in different relationships of various durations, it was found that masturbation for most of the respondents was an independent part of their sexual activity. It did not simply compensate for not having enough intercourse. Masturbation increased with time in long-lasting unions. Self-pleasuring seems to have become more and more a means of enhancing sexual satisfaction unrelated to one's relationship status. The same phenomenon was found in the Finnish sexual autobiographies (Kontula & Haavio-Mannila, 1997).

Looking at changes in sexual techniques over time, one can assume that fears about masturbation have had a strong impact on inhibitions with manual sex. As manual sex was considered improper with one's own genitals, manual sex with a partner was likely also affected. This is supported by the fact that at the same time that masturbation has increased, there has been a growth of manual sex with a partner (Haavio-Mannila et al., 2001, 271-273).

Sex surveys such as the ones presented here have indirectly promoted active masturbation by revealing that masturbation is a common practice that is not harmful. It has become common

practice to encourage men and women with sexual problems to masturbate in order to overcome their inhibitions (Kay, 1992). In addition, people with a high interest in masturbation have been found to be less afraid of intimacy than those with no interest in masturbation (Rinehart & McCabe, 1998).

In conclusion, our findings clearly show that masturbation is linked to the perceptions in a given culture of its nature and consequences during people's teenage years. Masturbation is a safe sexual technique without any risks. Thus, promotion of masturbation is a way to promote sexual health.

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Table 1. Reactions to Statement "Masturbation Does Not Endanger Health" (range 1-5, high scores indicate agreement) according to Gender and Years in Education in Finland in 1992 and 1999. Unadjusted and Age-Adjusted Means. Multiple Classification Analysis.

Gender and Years in Education	N	Predicted mean, unadjusted	Predicted mean, adjusted	Eta	Beta, adjusted for factors	P<	R Squared
Men							
Finland 1992							
-8	282	3.95	4.03				
9-10	202	4.15	4.15				
11-13	356	4.24	4.20				
14-	259	4.47	4.44	.190	.152	.001	.041
Finland 1999							
-8	133	4.09	4.24				
9-10	113	4.08	4.13				
11-13	200	4.48	4.40				
14-	224	4.63	4.58	.241	.171	.001	.082
Women							
Finland 1992							
-8	315	3.78	3.94				
9-10	238	4.05	4.08				
11-13	310	4.27	4.17				
14-	276	4.57	4.49	.294	.204	.001	.102
Finland 1999							
-8	128	3.92	1.13				
9-10	109	4.00	4.10				
11-13	206	4.35	4.25				
14-	248	4.59	4.52	.262	.173	.001	.101

Table 2. Replies to the Question: "When Was the Last Time When You Practised Masturbation?" by 18-54 Year Old Men and Women in Sweden, Finland, Estonia and St. Petersburg, %.

Gender/ Time Since Last Masturbation Event	Sweden 1996	Finland 1971	Finland 1992	Finland 1992	Estonia 2000	St. Petersburg 1996
Men						
Never	3	26	10	6	31	35
More than 10 years ago	..	16	13	8	9	23
1-10 years ago	30 1)	16	16	12	10	15
During the past year	..	14	20	14	12	9
During the past month	29	14	19	21	12	10
During the past week	36	11	20	27	15	6
During the past 24 hours	2	3	4	12 11	2	
Total	100	100	100	100	100	100
N	1 089	1 037	845	513	284	588
Women						
Never	15	49	23	14	45	68
More than 10 years ago	..	9	16	8	2	7
1-10 years ago	43	14	16	16	6	6
During the past year	..	12	21	25	18	8
During the past month	30	9	14	20	14	6
During the past week	11	6	9	13	10	4
During the past 24 hours	1	1	1	4	5	1
Total	100	100	100	100	100	100
N	974	990	611	501	468	808

1) Has not masturbated during the last month but has done it during lifetime.

Table 3. Education and Age as Predictors of Monthly Masturbation of Men and Women in Sweden, Finland, Estonia and St. Petersburg. Unadjusted and Age-Adjusted Percentages. Multiple Classification Analysis.

Gender/Area/Education	N	Predicted mean, unadjusted	Predicted mean, age adjusted	Eta	Beta, adjusted for age	P<	R Squared
Men							
Sweden 1996							
Academic	329	59	65				
College	388	66	61				
Vocational school	410	59	59				
None	187	59	58	.066	.055	.202	.163
Finland 1992							
Academic	87	40	40				
College	142	48	46				
Vocational school	392	36	33				
None	405	31	34	.119	.087	.028	.148
Finland 1999							
Academic	73	56	58				
College	147	62	60				
Vocational school	235	47	42				
None	199	46	52	.128	.148	.001	.170
Estonia							
Academic	731	34	36				
College	642	36	35				
Vocational school or less	212	24	25	0.1	0.115	0	0.061
St. Petersburg							
Academic	298	11	14				
College	235	16	13				
Vocational school or less	333	12	11	0	0.045	0.4	0.062

Women							
Sweden 1996							
Academic	287	37	34				
College	282	40	40				
Vocational school	241	42	41				
None	349	30	34	0.1	0.068	.129	.063
Finland 1992							
Academic	72	35	33				
College	194	24	20				
Vocational school	326	13	12				
None	476	19	22	.146	.145	.001	.116
Finland 1999							
Academic	93	52	50				
College	179	25	24				
Vocational school	172	29	28				
None	213	24	26	.202	.186	.001	.124
Estonia							
Academic	123	26	28				
College	231	22	20				
Vocational school or less	187	17	17	0	0.093	0	0.099
St. Petersburg							
Academic	392	8	9				
College	394	9	8				
Vocational school or less	421	6	6	0	0.045	0.3	0.057

Table 4. Predictors of Recent Masturbation in Finland in 1992 and 1999 (combined). Unadjusted and Age-Adjusted Means (Range 1-7). Multiple Classification Analysis.

Predictor	N	Pre- dicted mean, un- adjust- ed	Pre- dicted mean, adjust- ed	Eta	Beta, adjusted for factors and cova- riates	P<
“Masturbation does not endanger health“						
Absolutely agree	1844	4.10	3.91			
Somewhat agree	615	3.22	3.34			
Difficult to say	597	2.10	2.48			
Disagree slightly	61	2.46	2.78			
Absolutely disagree	64	2.64	2.95	.436	.310	.001
Age at first intercourse						
-15	452	3.89	3.46			
16-17	938	3.70	3.48			
18-19	914	3.46	3.51			
20-21	438	3.17	3.42			
22-	440	3.03	3.57	.156	.024	.591
Intercourse during last month						
Not at all	604	3.38	3.77			
Once	272	3.64	3.81			
Once or twice	628	3.48	3.59			
Once a week	610	3.40	3.44			
Ot least twice a week	1068	3.58	3.23	.051	.123	.001
Watched sex videos last year						
No or no information	1975	3.00	3.29			
Yes	1207	4.30	3.82	.347	.143	.001
Sexual partners during last year						
No or no information	323	2.96	3.60			
1	2251	3.32	3.40			
2	275	4.31	3.82			
3	136	4.55	3.75			
4	66	4.35	3.74			
5+	130	4.56	3.73	.258	.084	.001
Years of education						
-8	698	2.44	3.13			
9-10	577	3.14	3.37			
11-13	965	3.78	3.46			
14+	942	4.19	3.86	.363	.147	.001
Intoxication						
Never	1117	2.65	3.25			
Yearly	1094	3.63	3.53			
Monthly	791	4.19	3.65			
Weekly	180	4.75	3.99	.376	.112	.001

Place of living						
Helsinki	320	3.99	3.65			
Other city of over 100 000 inhabitants	565	3.74	3.59			
A city or town of 20 000-100 000 inhabitants	824	3.58	3.50			
A city or town of under 20 000 inhabitants	373	3.39	3.44	.165	048	.041
rural centre	656	3.39	3.45			
Elsewhere in a rural area	445	2.90	3.35			

1) The scale values are: 1 never, 2 more than 10 years ago, 3 1-10 years ago, 4 during the last year, 5 during the last month, 6 during the last week, and 7 during the last 24 hours.

The statistical significance of all covariates, age, gender, and single status, $p < .001$.
Variance explained (R squared)
.418.

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Table Predictors of Recent Masturbation in Finland. Means, Range 1-7, High Values Indicate Recent Masturbation. Multiple Classification Analysis.

Predictor	N	Predicted mean, unadjusted	Predicted mean, adjusted	Eta	Beta, adjusted for factors	P<
“Masturbation does not endanger health”						
Absolutely agree	1 936	4.11	3.96			
Somewhat agree	661	3.27	3.33			
Difficult to say	669	2.09	2.43			
Disagree	135	2.57	2.81	.440	.333	.001
Gender						
Man	1676	3.92	3.81			
Woman	1725	3.08	3.18	.230	.171	.001
Age Group						
18-34	1212	4.26	3.92			
35-54	1436	3.49	3.44			
55-74	754	2.25	2.89	.407	.209	.001
Relationship type						
Couple relationship	2708	3.41	3.37			
Single	694	3.81	3.97	.089	.134	.001
Years of Study						
-8	751	2.41	3.05			
9-10	620	3.14	3.36			
11-13	1045	3.79	3.52			
14-	985	4.21	3.88	.370	.165	.001
Intoxication						
Never	1225	2.67	3.18			
Yearly	1156	3.66	3.54			
Monthly	829	4.18	3.72			
Weekly	191	4.73	4.14	.368	.146	.001
Intercourse during last month						
Not at all	596	3.39	3.78			
Once a month	270	3.66	3.81			
Once or twice a month	635	3.48	3.58			
Once a week	618	3.39	3.40			
At least twice a week	1075	3.58	3.27	.051	.115	.001

Variance explained (R squared) 39.1 %

