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Sexual orientation and self-rated health: the role of social capital, offense, threat of violence and violence

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Abstract

Objective: To study the association between sexual orientation and self-rated health, including trust, offense, threat of violence and violence.

Design/setting/participants/measurement: The 2008 public health survey in Skåne is a cross-sectional postal questionnaire study. A total of 28,198 persons aged 18–80 years responded (55%). Logistic regressions analyzed the association between sexual orientation and self-rated health.

Results: A 27.4% of all men and 30.0% of all women rated their health as poor. Poor self-rated health was significantly more prevalent in higher age, among immigrants, people with lower education, low social support, low trust, experience of being offended, experience of threat of violence and violence, and bisexual and other orientation. Homosexual and bisexual men and women had higher age-adjusted odds ratios of having felt offended compared to heterosexual respondents. The odds ratios of low trust, threat of violence (men) and experience of violence (women) were significant for respondents with bisexual orientation but not for respondents with homosexual orientation. In the age-adjusted model, no significant association was observed between homosexual orientation and poor self-rated health among women. All other associations between sexual orientation and health were significant in the age-adjusted model but non-significant in the multiple models.

Conclusions: Associations between sexual orientation and health disappear after multiple adjustments including trust, and experience of offense, threat of violence and violence. The study suggests that the group with bisexual orientation seems to be more exposed to low social capital (trust), threat of violence and violence than the group with homosexual orientation.

Key words: Social capital, sexual orientation, offense, violence, self-rated health, Sweden.

Introduction

One of the most important health policy goals in Sweden and other countries is to reduce differences in health between different segments of the population (1). International research findings suggest that people of homosexual and bisexual orientation have poorer health than the general population (2,3,4,5), although the study results mostly stem from populations of young people in the USA and Australia while relatively little knowledge has been gathered in Europe (2). The national public health report in Sweden revealed poorer health, health behaviors and psychosocial conditions in the bisexual and homosexual groups compared to the heterosexual group (1). One possible reason discussed is that homosexual and bisexual as well as other sexual minority persons are marginalized in society for instance by discrimination, prejudice, violence and adverse attitudes (6,7). Recent studies suggest that sexual minority adolescents and adults are exposed to an increased risk of discrimination, hate crimes and violence (8,9). Some studies have reported greater risk of violence and greater severity of violence directed at sexual minority groups in the USA (10), although some over-representation seems to be due to higher risks of between-partner (cohabitant) violence (11).

Discrimination is sometimes defined as "the process by which a member or members of a socially defined group is, or are, treated differently (especially unfairly) because of his/her/their membership of that group" (12). Three forms of discrimination are institutional discrimination, i.e. by discriminatory official policies by state, other public or non-governmental organizations, structural discrimination, i.e. the mechanisms by which a society reproduces discrimination, and interpersonal discrimination. In Sweden, all forms of discrimination are prohibited by the law, but as in all or at least most social systems discrimination still exists. Discrimination in its various forms affects health as well as

economic and social well-being (13). Systematic experiences of discrimination may have long term health effects through psychosocial, psychological and physiological mechanisms. Self-reported experience of discrimination has been demonstrated to be associated with self-rated health (14).

Discrimination exists in social environments, and social capital is an essential characteristic of social environments. There is a variety of aspects of social capital such as civic engagement among citizens, social participation, generalized trust in other (unknown) people, institutional trust towards public institutions (sometimes also non-governmental organizations) and high expectations of generalized reciprocity (15,16). Social capital has been hypothesized and shown to be associated with different aspects of health. In 1999, Kawachi et al. outlined a number of plausible causal pathways between social capital and health including health effects of social capital such as decreasing psychological and psychosocial stress, increased access to health care, lower rates of particularly violent crime, and norm improvement in relation to health related behaviours and lifestyles (17). Social capital can be either bonding, ie. it may comprise trusting and cooperative relations based on similarity and shared social identity, or bridging, i.e. it may comprise relations of trust, respect and mutuality between people who know they are not similar in some socio-demographic sense (18) as for instance sexual orientation. It may be hypothesized that if minority status, e.g. belonging to a sexual orientation minority, is stressful for example in terms of low bonding and/or bridging social capital and low social support, and if stress is related to poorer health, then minority groups such as sexual orientation minorities would be expected to have poorer health than the majority population, a notion which has be termed “the minority stress hypothesis” (19).

The present study concerns the self-rated (physical and mental) health of sexual majority and minority parts of the population in Skåne, southern Sweden in 2008. Self-rated health is an item with good validity because it is a strong prospective predictor of incidence and mortality of a broad variety of diseases including cardiovascular diseases (20). Self-rated health has in earlier studies been shown to be associated with age, sex, country of birth and socioeconomic status measured by education (21) as well as with emotional and instrumental support (22). Generalized trust in other people is positively associated with self-rated health (21). It seems plausible that bisexual and homosexual and other sexual minority orientations may be associated with lower levels of generalized trust in other people, feeling of having been offended, having experienced threat of violence, having experienced violence and poor self-rated health.

The aim of this study is to investigate the association between sexual orientation and self-rated health, taking generalized trust in other people, experience of offense, threat of violence and violence into account. A complementary aim is to investigate whether trust is negatively associated with homosexual and bisexual orientation.

Methods and materials

Study population

The 2008 survey concerning public health in Skåne (southern Sweden) has a cross sectional study design. It is based on a random sample drawn from the public population registers of people born between 1928 and 1990 living in Skåne. In August and September 2008, a total of 28,198 persons answered a postal questionnaire, which represents approximately a 55%

response rate in relation to the original sample. Two reminder letters were also dispatched. Ethical approval has been granted by the Ethical Committee at Lund University, Sweden.

Dependent variable

Self-rated health was measured by the question "How do you estimate your health status in general (physically and mentally)?" which included five alternative answers "Very good", "Good", "Fair", "Poor", and "Very poor". These alternatives were in this study dichotomized into "Good" (the two first alternatives) and "Poor" (the three latter alternatives).

Independent variables

Sexual orientation was assessed by the question "Do you regard yourself today as 1) heterosexual, 2) bisexual, 3) homosexual, 4) other?"

Age was divided into the groups 18-24, 25-34, 35-44, 45-54, 55-64 and 65-80 years.

Stratification according to *sex* was conducted in all analyses in this study.

Born in Sweden/born in other country than Sweden. All participants born outside Sweden were merged into a single immigrant group which was compared to those born in Sweden.

Education was divided regarding length of education into 13 years of education or above, 10-12 years of education and 9 years or below.

Emotional support was measured with the item "Do you feel that you have someone or some persons who can give you proper personal support to cope with the stress and problems of life?" which had four alternatives answers: "Yes, I am absolutely certain to get such support", "Yes, possibly", ""Not certain", and "No". The three latter were collapsed as low emotional support.

Instrumental support was retrieved with the question "Can you get help by some or several persons in case of illness or practical problems (borrow minor items, help with reparation, help to write a letter, getting advice or information)?" which contained the same alternatives as the emotional support item, and was dichotomized accordingly.

Generalized trust in other people assesses the individual's level of generalized trust in other people. It was appraised by the item "Generally, you can trust other people" which entails the four answer alternative: "Do not agree at all", "Do not agree", "Agree", and "Completely agree". These were dichotomized, the two first alternatives denoting low trust and the two latter denoting high.

The respondents were asked whether they had been treated in a way at one or several occasions during the past three months that had made them feel *offended*. The alternative options "No", "Yes, at one occasion", and "Yes, at several occasions" were given. In table 3 the item was dichotomized by collapsing the two latter alternatives.

The respondents were asked whether they had been *exposed to threat of violence* at any occasion during the past twelve months with the answer alternatives "No" and "Yes".

The respondents were also asked whether they had been *exposed to violence* at any occasion during the past twelve months with the optional answers “No” and “Yes”.

Statistics

Prevalences (%) of self-rated health, age, birth country, education, emotional support, instrumental support, trust, experience of having been offended during the past three months, exposed to threat of violence during the past twelve months and exposed to violence during the past twelve months, and sexual orientation stratified by sex were calculated (table 1). Prevalences (%) and odds ratios with 95% confidence intervals (OR:s, 95% CI) of self-rated health were calculated according to sexual orientation, age, country of birth, education, emotional support, instrumental support, trust, offended during the past three months, threat of violence during the past twelve months and exposed to violence during the past twelve months (table 2). Prevalences (%) and crude and age-adjusted odds ratios and 95% confidence intervals of trust in other people, offended during the past three months, threat of violence during the past twelve months and exposed to violence during the past twelve months were calculated according to sexual orientation (table 3). Age-adjusted and multiple adjusted odds ratios and 95% confidence intervals of self-rated health were calculated according to sexual orientation (table 4). The statistical analyses were performed using the SPSS software package version 18.0 (23).

Results

Table 1 indicates that 27.4% of the men and 30.0% of the women rated their health as health. The distribution (prevalence) according to age, country of birth, education, emotional support,

instrumental support, trust, experience of offense, having been exposed to threat of violence and having been exposed to violence, and sexual orientation are also shown in table 1.

Table 2 shows that the odds ratios and prevalence (%) of poor self-rated health in bivariate logistic regression analyses were significantly higher among older participants, immigrants, persons with medium and low education, with low emotional support, with low instrumental support, with low trust, having felt offended during the past three months, having been exposed to threat of violence during the past twelve months, having been exposed to violence during the past twelve months and among persons of bisexual and other orientation among both men and women.

The prevalence (%) and crude and age-adjusted odds ratios of low trust in others were significantly higher among both men and women of bisexual orientation and other orientation compared to the heterosexual category. In contrast, the homosexual category did not significantly differ from the heterosexual orientation category, age-adjusted odds ratios 0.93 (0.59-1.47) for men and 0.97 (0.62-1.53) for women. Both the bisexual and homosexual male and female respondents had significantly higher odds ratios of having felt offended at one or several occasions during the past three months. A significantly higher odds ratio of having felt offended was also observed for men in the other category. The age-adjusted odds ratios of threat of violence were significantly higher among bisexual men, odds ratio 2.42 (1.44-4.09), but not among bisexual women, odds ratio 1.45 (0.93-2.26). On the other hand, the age-adjusted odds ratios of having been exposed to violence during the past twelve months were significantly higher among bisexual women, odds ratio 2.50 (1.55-4.04) but not among bisexual men, odds ratio 1.30 (0.60-2.84) (table 3).

Table 4 shows that the age-adjusted odds ratios of poor self-rated health were significantly higher among the bisexual, homosexual and other categories among men compared to heterosexual men. The odds ratios among bisexual and homosexual men became not significant with the introduction of trust in the model. The odds ratio of poor health in the other category became not significant among men after the introduction of having been offended during the past three months in the model. The odds ratios of self-rated health among bisexual women became not significant after the introduction of having felt offended during the past three months in the model, while the odds ratios of self-rated health remained not significant among homosexual women throughout the age-adjusted and multiple analyses. The odds ratio in the other category among women became not significant after entering emotional support.

Discussion

In the age-adjusted model, no significant association was observed between homosexual orientation and self-rated health among women. All other associations between sexual orientation and health were significant in the age-adjusted model, but became non-significant in the multiple models. The results also indicate that the bisexual and "other" categories have lower trust than the heterosexual orientation part of the population, while the homosexual orientation category does not significantly differ from the heterosexual majority group. Homosexual and bisexual men and women had higher age-adjusted odds ratios of having felt offended compared to heterosexual respondents. The odds ratios of trust, threat of violence (men) and experience of violence (women) were significant for respondents with bisexual orientation but not for respondents with homosexual orientation. Age-stratified calculations reveal that bisexual respondents in the age groups 18-24, 25-34 and 35-44 years, homosexual

respondents aged 24-34 years, and other respondents aged 18-24 and 55-64 years had significantly higher odds ratios of having experienced offense (not in tables). Low trust seems to be connected with threat of violence and violence but not with the experience of offense among sexual minority respondents. Some findings, e.g. that females with bisexual orientation seem to be exposed to violence to a higher extent than heterosexual women and that respondents of "other" sexual orientation have particularly high odds ratios of low trust, call for further research. The results are important because self-rated health is an important predictor of incidence and mortality in a variety of diseases, most importantly cardiovascular diseases.

After age-adjustments the bisexual, homosexual and other group all had significantly higher odds ratios of poor self-rated health. Self-rated health is a variable with high validity, and it is a strong predictor of incidence and mortality of a variety of diseases (20). The causes behind the significant differences in self-rated health between the sexual minority categories and the heterosexual category may entail social and psychosocial conditions (including social capital), health related behaviours, sexually transmitted infections (STI:s) and also differences in not only physical health but also mental health. They also most probably include aspects of discrimination, i.e. "the dislike of the unlike" (12). This study demonstrates that social support, social capital, offense, threat of violence and violence reduce the higher odds ratios of poor self-rated health when comparing with heterosexuals to not significant levels even without adjusting for e.g. health related behaviours and STI:s. Still, the reduction of the odds ratio for the group with homosexual orientation is only from 1.56 (1.01-2.42) to 1.41 (0.83-2.40) which leaves some remaining variance which may be explained by health behaviours and STI:s. Homosexuality and bisexuality are often regarded as sexual orientations diverging from the norm of heterosexuality, and other studies have indicated presence of different forms

of discrimination (3,7,24). The results of this study thus partly support the minority status hypothesis (19). Discrimination against sexual minorities may also lead to higher alcohol consumption, poorer psychosocial conditions and other disadvantageous conditions for health (4,5,25,26). These plausible pathways should also be investigated in future research. Analyses stratified by age show that respondents aged 18-24 and 25-34 with bisexual orientation had significantly higher odds ratios of poor self-rated health compared to the heterosexual group, while the odds ratios for the homosexual and other groups did not significantly differ (not shown in tables).

The item concerning offense during the past three months had a follow-up question which specified the offence. The options included reasons of ethnicity, gender, sexual orientation, age, functional disability, religion, colour of skin, appearance, and "unknown". The gender reason was more prevalent among the bisexual (13.5%) and the heterosexual (8.0%) groups than the heterosexual (3.6%) group. The bisexual (4.7%) and the homosexual (13.5%) groups also differed more from the heterosexual (0.2%) group than the "other" (1.3%) group regarding the reason sexual orientation. Concerning appearance the bisexual (15.1%) group differs from the homosexual (4.2%), "other" (5.1%) and heterosexual (3.3%) groups (not in tables).

In the "other" sexual orientation group the odds ratio of poor self-rated health was reduced more than in the other groups after the introduction of education in the model. This group has a substantially higher proportion of respondents with low education (not in tables).

The sexual norms of society are partly interconnected with other norms in society entailed in the concept of social capital such as for instance norms of reciprocity, generalized trust in

other people and political and institutional trust. Social capital may thus be partly involved in some of the pathways explaining differences in health between groups with different sexual orientations. The explanation why the bisexual orientation group, but not the homosexual group, has significantly higher odds ratios of low generalized trust in other people remains to be disentangled, although the significantly higher odds ratios of not only low trust in the bisexual group but also significantly higher odds ratios of having experienced threat of violence and violence compared to people with heterosexual orientation may represent a part of the explanation.

Strengths and limitations

The approximately 55% response rate follows the internationally declining trend, but an earlier article has shown a very good correspondence between participants in a survey concerning public health in Skåne in 2000 with a very similar design and response rate, and the whole population in Skåne drawn from official population registers (27). The risk of systematic error in the form of selection bias is thus acceptable. The numbers of respondents with non-heterosexual orientation are comparatively small but the low prevalence corresponds well with findings in national Swedish data (28).

Confounders like age, sex, country of birth and education, social support, trust, having felt offended, having experienced threat of violence and having experienced violence were controlled by adjustment, and by sex-stratification. These adjustments affected the estimates as demonstrated in table 4.

The validity of self-rated health has been studied internationally. Self-rated health is a good predictor of morbidity and mortality (20). The item concerning sexual orientation has been used previously in the whole of Sweden in an investigation conducted by a state authority under the Swedish government, and this investigation yielded similar prevalence for the sexual orientation groups as this study (28).

The cross-sectional design of this study makes conclusions concerning causal inference formally impossible. However, the only plausible direction of causality in this study would be from sexual orientation to self-rated health.

Conclusions

Associations between sexual orientation and health disappear after multiple adjustments including trust, and experience of offense, threat of violence and violence. The study suggests that the group with bisexual orientation seems to be more exposed to low social capital (trust), threat of violence and violence than the group with homosexual orientation.

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References

1.Danielsson M. Folkhälsorapport 2009 (only in Swedish). Stockholm: Socialstyrelsen, 2009.

2. King M, McKeown E, Warner J, Ramsay A, Johnson K, Cort C, Wright L, Blizard R, Davidson O. Mental health and quality of life of gay men and lesbians in England and Wales: Controlled, cross-sectional study. British Journal of psychiatry 2003; 183: 552-558.

3. Kertzner RM, Meyer IH, Frost DM, Stirratt MJ. Social and Psychological Well-being in Lesbians, Gay Men, and Bisexuals: The Effects of Race, Gender, Age and Sexual Identity. American Journal of Orthopsychiatry 2009; 79(4): 500-510.

4. Hyde Z, Comfort J, McManus A, Brown G, Howat P. Alcohol, tobacco and illicit drug use amongst same-sex attracted women: results from the Western Australian Lesbian and Bisexuel Women´s Health and Well-being Survey. BMC Public Health 2009; 9: 317.

5. Grella CE, Greenwell LM, Mays VM, Cochran SD. Influence of gender, sexual orientation, and need on treatment utilization for substance use and mental disorders: Findings from the California Quality of Life Survey. BMC Psychiatry 2009; 9: 52.

6. Berg-Kelly K. Adolescent homosexuality: we need to learn more about causes and consequences. Acta Paediatrica 2003; 92: 141-144.

7. Scott L, D'Augelli A. The impact of victimization on the mental health and suicidality of lesbian, gay and bisexual youth. Developmental Psychology 1995; 3(1): 65-74.

8. Wong CF, Weiss G, Ayala G, Kipke MD. Harassment, discrimination, violence, and illicit drug use among young men who have sex with men. AIDS Education and Prevention 2010; 22(4): 286-298.

9. Herek GM. Hate crimes and stigma-related experiences among sexual minority adults in the United States: prevalence estimates from a national probability sample. Journal of Interpersonal Violence 2009; 24(1): 54-74.

10. Dunbar E. Race, gender, and sexual orientation in hate crime victimization: identity politics or identity risk? Violence Vict 2006; Jun 21(3): 323-337.

11. Tjaden P, Thoennes N, Allison CJ. Comparing violence over the life span in samples of same-sex and opposite-sex cohabitants. Violence and Victims 1999; 14(4): 413-25.

12. Scott J, Marshall G. *Oxford Dictionary of Sociology*. Oxford: Oxford University Press, Third Edition, 2005.

13. Krieger N. Discrimination and Health in Social Epidemiology. In Berkman, L., and. Kawachi, I. eds. Social Epidemiology, pp. 36-75. Oxford: Oxford University Press, 2000.

14. Paradies Y. A systematic review of empirical research on self-reported racism and health. International Journal of Epidemiology 2006; 35(4): 888-991.

15. Putnam RD. *Making Democracy Work. Civic Traditions in Modern Italy.* Princeton: Princeton University Press, 1993.

16. Putnam RD. *Bowling Alone. The Collapse and Revival of American Community.* New York: Simon and Schuster, 2000.

17. Kawachi I, Kennedy BP, Glass R. Social capital and self-rated health: a contextual analysis. American Journal of Public Health 1999; 89(8): 1187-93.

18. Szreter S, Woolcock M. Health by association? Social capital, social theory, and the political economy of public health. International Journal of Epidemiology 2004; 33: 650-667.

19. Meyer IH. Minority stress and mental health in gay men. Journal of Health and Social Behavior 1995; 36 (March): 38-56.

20. Heistaro S, Jousilahti P, Lahelma E, Vartiainen E, Puska P. Self rated health and mortality: a long term prospective study in eastern Finland. Journal of Epidemiology and Community Health 2001; 55: 227-232.

21. Lindström M. Social capital, the miniaturization of community and self-reported global and psychological health. Social Science & Medicine 2004; 59(3): 595-607.

22. Lindström M. Marital status, social capital, material conditions and self-rated health: A population-based study. Health Policy 2009; 93: 172-179.

23. Norusis MJ. *SPSS for Windows. Advanced Statistics. Release 17.0.* Chicago: SPSS, 2010.

24. Hatzenbuehler ML. How Does Sexual Minority Stigma "Get Under the Skin"? A Psychological Mediation Framework. Psychology Bulletin 2009; 135(5): 707-730.

25. Fendrich M, Mackesy-Amiti ME, Johnson TP. Validity of self-reported substance use in men who have sex with men: comparison with a general population sample. Annals of Epidemiology 2008; 18(10): 752-759.

26. Heck JE, Sell R, Gorin SS. Health care access among individuals involved in same-sex relationships. American Journal of Public Health 2006; 96(6): 1111-1118.

27. Carlsson F, Merlo J, Lindström M, Östergren PO, Lithman T. Representativity of a postal questionnaire survey in Sweden, with special reference to ethnic differences in participation. Scandinavian Journal of Public Health 2006; 34(2): 132-9.

28. Boström G, Roth N, Nykvist K. Hälsa på lika villkor? Hälsa och livsvillkor bland hbt-personer. Stockholm: Statens Folkhälsoinstitut, 2006. Rapport 2006: 08.

Table 1. Prevalence (%) of self-rated health, demographic characteristics, socioeconomic characteristics, emotional support, instrumental support, generalized trust in other people, feeling offended, threat of violence, violence and sexual orientation. Men (n = 12,726), women (n = 15,472), and total (n = 28,198). The public health survey in Skåne 2008.

	Men (n = 12,726)	Women (n = 15,472)	Total (n = 28,198)
Self-rated health			
Good	72.6	70.0	71.2
Poor	27.4	30.0	28.8
(Missing)	(250)	(396)	(646)
Age			
18-24	8.3	9.1	8.8
25-34	12.3	13.9	13.2
35-44	16.4	17.2	16.9
45-54	17.7	18.5	18.1
55-64	21.2	19.3	20.1
65-80	24.2	21.9	22.9
(Missing)	(0)	(0)	(0)
Born in Sweden/born in other country than Sweden			
Sweden	86.1	85.9	86.0
Other country	13.9	14.1	14.0
(Missing)	(273)	(282)	(555)
Education			
13-year	33.2	41.2	37.5
10-12 years	41.9	38.3	39.9
-9 years	25.0	20.4	22.5
(Missing)	(1098)	(1631)	(2729)
Emotional support			
High	62.8	69.6	66.6
Low	37.2	30.4	33.4
(Missing)	(289)	(357)	(646)
Instrumental support			
High	71.3	76.6	74.2
Low	28.7	23.4	25.8
(Missing)	(295)	(338)	(633)
Trust			
High	66.1	64.3	65.2
Low	33.9	35.7	34.8
(Missing)	(522)	(685)	(1207)
Violated/offended past three months			
No	75.6	68.8	71.9
Yes, at one occasion	21.2	27.3	24.5
Yes, several times	3.2	3.9	3.6
(Missing)	(311)	(407)	(718)
Threats of violence past 12 months			
No	94.8	94.7	94.7
Yes	5.2	5.3	5.3
(Missing)	(222)	(214)	(436)
Exposed to physical violence past 12 months			
No	96.8	97.5	97.2
Yes	3.2	2.5	2.8
(Missing)	(266)	(279)	(545)
Sexual orientation			
Heterosexual	96.8	96.9	96.8
Bisexual	1.2	1.6	1.4

Homosexual	0.8	0.6	0.7
Other	1.2	0.9	1.1
(Missing)	(1145)	(1616)	(2761)

Table 2. Prevalence (%) and odds ratios (OR, 95% CI) in bivariate analyses of poor self-rated health according to sexual orientation, age, country of origin, education, emotional support, instrumental support, generalized trust in other people, offense, threat of violence and violence. Men (n = 12,726) and women (n = 15,472). The public health survey in Skåne 2008.

	Men (n=12,726)		Women (n=15,472)	
	%	OR(95%CI)	%	OR(95%CI)
Sexual orientation				
Heterosexual	25.4	1.00	28.0	1.00
Bisexual	36.2	1.66 (1.16-2.38)	34.4	1.48 (1.18-1.85)
Homosexual	33.3	1.47 (0.95-2.26)	31.7	1.32 (0.83-1.81)
Other	47.1	2.61 (1.86-3.66)	49.6	2.54 (1.99-3.25)
(Missing)	(1292)		(1884)	
Age				
18-24	14.5	1.00	20.5	1.00
25-34	16.0	1.15 (0.92-1.43)	19.5	0.94 (0.79-1.11)
35-44	19.2	1.43 (1.16-1.75)	23.8	1.21 (1.04-1.42)
45-54	27.5	2.28 (1.87-2.77)	27.9	1.50 (1.28-1.75)
55-64	33.0	2.96 (2.44-3.58)	36.2	2.20 (1.90-2.56)
65-80	38.6	3.77 (3.12-4.56)	42.3	2.84 (2.46-3.30)
(Missing)	(250)		(396)	
Born in Sweden/born in other country than Sweden				
Sweden	26.4	1.00	28.7	1.00
Other country	32.6	1.35 (1.21-1.51)	37.1	1.46 (1.33-1.61)
(Missing)	(456)		(616)	
Education				
13-year	17.7	1.00	20.5	1.00
10-12 years	25.2	1.57 (1.41-1.75)	30.0	1.66 (1.52-1.82)
-9 years	41.5	3.31 (2.96-3.70)	45.7	3.26 (2.95-3.60)
(Missing)	(1267)		(1920)	
Emotional support				
High	21.4	1.00	23.8	1.00
Low	36.0	2.16 (1.99-2.34)	43.3	2.45 (2.227-2.64)
(Missing)	(466)		(686)	
Instrumental support				
High	22.5	1.00	24.9	1.00
Low	38.8	2.19 (2.01-2.38)	45.3	2.49 (2.30-2.70)
(Missing)	(473)		(665)	
Trust				
High	22.6	1.00	24.1	1.00
Low	34.8	1.83 (1.69-2.00)	38.7	1.99 (1.85-2.14)
(Missing)	(706)		(1009)	
Offended past three months				
No	24.3	1.00	26.4	1.00
Yes, at one occasion	32.6	1.51 (1.37-1.66)	34.1	1.44 (1.34-1.56)
Yes, several times	57.3	4.19 (3.41-5.14)	54.7	3.37 (2.84-3.99)
(Missing)	(478)		(735)	
Threats of violence past 12 months				
No	26.9	1.00	29.2	1.00
Yes	36.0	1.43 (1.21-1.69)	42.6	1.80 (1.55-2.08)
(Missing)	(403)		(549)	
Exposed to physical violence past 12 months				
No	27.0	1.00	29.4	1.00
Yes	33.5	1.36 (1.10-1.68)	43.8	1.86 (1.51-2.29)
(Missing)	(447)		(614)	

Table 3. Prevalence (%), and crude and age-adjusted odds ratios (OR, 95% CI) of low generalized trust in other people, offense, threat of violence and violence according to sexual orientation. Men (N=12,726) and women (N=15,472). The public health survey in Skåne 2008.

	%	OR (95% CI)[a]	OR (95% CI)[b]
Trust			
Men			
Heterosexual	32.7	1.00	1.00
Bisexual	44.5	1.65 (1.16-2.35)	1.58 (1.11-2.24)
Homosexual	31.2	0.94 (0.60-1.49)	0.93 (0.59-1.47)
Other	47.8	1.89 (1.35-2.64)	1.94 (1.38-2.71)
(Missing)	(1324)		
Women			
Heterosexual	34.3	1.00	1.00
Bisexual	52.1	2.09 (1.59-2.74)	1.78 (1.35-2.34)
Homosexual	35.4	1.05 (0.67-1.65)	0.97 (0.62-1.53)
Other	50.0	1.92 (1.33-2.77)	2.03 (1.40-2.93)
(Missing)	(1829)		
Offended			
Men			
Heterosexual	24.8	1.00	1.00
Bisexual	37.7	1.83 (1.28-2.62)	1.64 (1.14-2.36)
Homosexual	35.2	1.64 (1.07-2.53)	1.61 (1.03-2.49)
Other	33.8	1.55 (1.09-2.21)	1.69 (1.18-2.43)
(Missing)	(1202)		
Women			
Heterosexual	31.8	1.00	1.00
Bisexual	60.7	3.33 (2.52-4.39)	2.27 (1.71-3.01)
Homosexual	51.2	2.26 (1.47-3.46)	1.89 (1.22-2.94)
Other	34.4	1.13 (0.78-1.64)	1.34 (0.91-1.98)
(Missing)	(1702)		
Threat of violence			
Men			
Heterosexual	5.1	1.00	1.00
Bisexual	13.0	2.78 (1.66-4.65)	2.42 (1.44-4.09)
Homosexual	7.5	1.52 (0.70-3.29)	1.46 (0.67-3.19)
Other	7.9	1.60 (0.86-2.98)	1.73 (0.92-3.24)
(Missing)	(1217)		
Women			
Heterosexual	5.2	1.00	1.00
Bisexual	10.6	2.16 (1.39-3.35)	1.45 (0.93-2.26)
Homosexual	4.9	0.93 (0.34-2.54)	0.74 (0.27-2.03)
Other	9.0	1.79 (0.96-3.35)	2.10 (1.12-3.96)
(Missing)	(1675)		
Exposed to violence			
Men			
Heterosexual	3.3	1.00	1.00
Bisexual	5.3	1.67 (0.78-3.60)	1.30 (0.60-2.84)
Homosexual	3.3	1.01 (0.32-3.20)	0.94 (0.29-3.03)
Other	2.1	0.65 (0.21-2.04)	0.70 (0.22-2.24)
(Missing)	(1247)		
Women			
Heterosexual	2.4	1.00	1.00
Bisexual	9.3	4.14 (2.38-6.65)	2.50 (1.55-4.04)

Homosexual	2.4	0.99 (0.24-4.05)	0.75 (0.18-3.08)
Other	3.3	1.36 (0.50-3.71)	1.63 (0.59-4.48)
(Missing)	(1711)		

a Crude.
b Adjusted for age.

Table 4. Age-adjusted and multiple adjusted odds ratios (OR, 95% CI) of poor self-rated health according to sexual orientation. Men (N=12,726) and women (N=15,472). The public health survey in Skåne 2008.

Men				
	OR (95% CI)[a]	**OR (95% CI)[b]**	**OR (95% CI)[c]**	**OR (95% CI)[d]**
Hetero-sexual	1.00	1.00	1.00	1.00
Bisexual	1.95 (1.35-2.82)	1.84 (1.27-2.68)	1.81 (1.22-2.69)	1.56 (1.04-2.34)
Homosexual	1.56 (1.01-2.42)	1.51 (0.96-2.36)	1.79 (1.12-2.85)	1.69 (1.05-2.73)
Other	2.55 (1.80-3.61)	2.38 (1.68-3.39)	1.87 (1.29-2.71)	1.62 (1.11-2.37)
R^2 Nagelkerke	0.055	0.058	0.085	0.119
	OR (95% CI)[e]	**OR (95% CI)[f]**	**OR (95% CI)[g]**	**OR (95% CI)[h]**
Hetero-sexual	1.00	1.00	1.00	1.00
Bisexual	1.53 (1.01-2.29)	1.43 (0.94-2.16)	1.30 (0.85-1.98)	1.29 (0.84-1.97)
Homosexual	1.66 (1.02-2.68)	1.60 (0.96-2.66)	1.49 (0.89-2.52)	1.41 (0.83-2.40)
Other	1.58 (1.08-2.32)	1.54 (1.05-2.27)	1.44 (0.97-2.13)	1.46 (0.98-2.17)
R^2 Nagelkerke	0.122	0.134	0.157	0.158
Women				
	OR (95% CI)[a]	**OR (95% CI)[b]**	**OR (95% CI)[c]**	**OR (95% CI)[d]**
Hetero-sexual	1.00	1.00	1.00	1.00
Bisexual	1.95 (1.45-2.61)	1.93 (1.44-2.60)	1.77 (1.30-2.43)	1.61 (1.17-2.23)
Homosexual	1.40 (0.87-2.25)	1.27 (0.79-2.06)	1.59 (0.96-2.64)	1.38 (0.82-2.33)
Other	2.33 (1.62-3.36)	2.16 (1.50-3.11)	1.78 (1.17-2.70)	1.46 (0.95-2.32)
R^2 Nagelkerke	0.043	0.048	0.073	0.117
	OR (95% CI)[e]	**OR (95% CI)[f]**	**OR (95% CI)[g]**	**OR (95% CI)[h]**
Hetero-sexual	1.00	1.00	1.00	1.00
Bisexual	1.58 (1.15-2.19)	1.53 (1.10-2.11)	1.35 (0.97-1.88)	1.30 (0.93-1.82)
Homosexual	1.38 (0.82-2.33)	1.45 (0.85-2.46)	1.37 (0.81-2.33)	1.40 (0.82-2.38)
Other	1.41 (0.92-2.17)	1.28 (0.82-2.01)	1.32 (0.84-2.06)	1.31 (0.83-2.06)
R^2 Nagelkerke	0.123	0.136	0.159	0.161

a Adjusted for age.
b Adjusted for age and country of origin.
c Adjusted for age, country of origin and education.
d Adjusted for age, country of origin, education and emotional support.
e. Adjusted for age, country of origin, education, emotional support and instrumental support.
f. Adjusted for age, country of origin, education, emotional support, instrumental support and generalized trust in other people.
g. Adjusted for age, country of origin, education, emotional support, instrumental support, generalized trust in other people, and offended past 3 months.
h. Adjusted for age, country of origin, education, emotional support, instrumental support, generalized trust in other people, offended past 3 months, threat of violence past 12 months and violence past 12 months.