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**Citation:** Eriksson, L. E. & Berglund, T. (2007). Health-related quality of life in homo- and bisexual men attending a sexually transmitted disease clinic in Sweden. *International Journal of STD and AIDS*, 18(3), pp. 207-211. doi: 10.1258/095646207780132442

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**Title:** Health-related quality of life in homo- and bisexual men attending an STD clinic in Sweden

**Short title:** HRQL in MSM

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**Summary:** Men who have sex with men (MSM) have an increased risk of contracting STD and HIV. Studies of their health-related quality of life (HRQL) are uncommon, though such studies may provide additional knowledge that is of interest in counseling and care. The HRQL in MSM attending a clinic for STD- and HIV-testing in Stockholm, Sweden, was investigated in 1996 and 2004, measured by means of the

Swedish Health-Related Quality of Life questionnaire. The results were compared with those for men from a general Swedish population sample and with HIV-infected men. The HIV-negative MSM had significantly worse emotional well-being, satisfaction with family life, relation to their partner and general health perception, and better physical HRQL compared with the general Swedish population. There were no differences in the emotional and family dimensions between HIV-infected and HIV-negative MSM, but the HIV-negative group scored their physical and general health higher than the HIV-infected group. No apparent differences over time were seen in the HIV-negative group. This study shows that psychosocial HRQL is lower for MSM than for a general male population sample, which calls for increased attention in the care of MSM patients.

**Key words:** Homosexual men, health-related quality of life (HRQL), psychosocial, STD Clinic, HIV

## Introduction

In Sweden, laws covering registered partnership for couples of the same sex and anti-discrimination laws were implemented during the decades around the turn of the millennium and the attitudes towards homosexuality became more tolerant in the Swedish population during the 1990s.<sup>1</sup> One could thus hypothesize that this would have a positive impact on the health-related quality of life (HRQL) of men who have sex with men (MSM). In this study we focus on the HRQL of HIV-negative MSM, both from a longitudinal perspective and in relation to men from a general population sample and HIV-positive men.

Several previous studies have focused on HRQL of HIV-positive MSM. However, it is not common to focus on HRQL of MSM without known HIV infection. Even though some European studies have indicated that this group's quality-of-life is affected,<sup>2,3</sup> there is limited knowledge about the HRQL of MSM.

In our own previous study of HRQL in HIV-positive men (69 MSM and 3 heterosexuals) we found a negative impact in scales measuring physical, emotional and social aspects of HRQL compared with a general population sample.<sup>4</sup> Since MSM in general are commonly seen in sexually transmissible disease (STD) clinics, our intention in the present study was to focus on the HRQL of a broader group of MSM without a known HIV diagnosis. The following research questions were addressed: (a) Does the HRQL of HIV-negative MSM differ from the HRQL of men from a general population sample, (b) Does the HRQL of HIV-negative MSM differ in comparison with the HRQL of a group of HIV-positive men and (c) Are there any differences in

HRQL when comparing a cohort of HIV-negative MSM from year 1996 with a cohort of HIV-negative MSM from year 2004.

## Methods

### *Setting*

Karolinska University Hospital Gay Men's Health Clinic located at South Stockholm General Hospital is directed towards MSM and offers counseling, testing and treatment for STDs including HIV.

### *Subjects*

Data stemming from three patient cohorts of the gay men's health clinic are presented: (a) a group of presumed HIV-negative MSM investigated in year 1996 (1996 cohort), (b) a group of presumed HIV-negative MSM investigated in year 2004 (2004 cohort) and (c) data from a previously published study<sup>4</sup> of HRQL in a group of HIV-positive male patients, the great majority of whom were MSM, who were investigated in 1993-95, *i.e.*, before the era of highly active antiretroviral therapy (HIV-positive group). Furthermore, the results are compared with data from a published study of HRQL in a random sample of Swedish citizens<sup>5</sup> (Swedish population group).

### MSM 1996 cohort

During a three-month period 1996 all persons visiting the clinic for STD screening/counseling received oral and written information about the study. The questionnaire was filled in anonymously by the respondents, either at the clinic in connection with the visit or at home. Out of a total of 211 persons visiting the clinic, 12 were not included due to language problems, and six had already answered the questionnaires on a previous visit. Of the remaining 193 patients, 164 (85%) responded to the questionnaires (29 declined to participate).

### MSM 2004 cohort

During a two-month period 2004 the study outline of 1996 was repeated. Out of a total of 380 persons visiting the clinic, three were not included due to language problems, and 135 had already participated/been asked to participate in the study on a previous visit. Of the remaining 242 patients, 201 (83%) responded to the questionnaire (21 declined to participate and 20 were by mistake not informed about the study).

### Swedish population group

The SWED-QUAL questionnaire has been used in a sample of Swedish men and women ( $n=1443$ ).<sup>5</sup> Details regarding the selection procedure have been presented by Brorsson *et al.*<sup>5</sup> From this publication, the results from men in the age range 18–74 years, corresponding to that of the study population, were extracted and used for comparison (Swedish population group).

### HIV-positive group

Thorough data about this study can be found elsewhere.<sup>4</sup> In brief, HRQL data was collected from 72 HIV-positive men (mean age 37 (SD 9) years, mean CD4 count 431 (SD 193)  $\times 10^6$  cells/l and of whom 96% were MSM) before entering a clinical trial with a therapeutic HIV vaccine.

### *Instruments*

#### The Swedish Health-Related Quality of Life questionnaire (SWED-QUAL)

The SWED-QUAL was developed by Brorsson *et al.*<sup>5</sup> from the measures used in the USA Medical Outcomes Study (MOS).<sup>6</sup> The instrument is designed to measure HRQL and consists 63 items which form two single-item and 11 multi-item dimension scales

of Likert type. Each separate scale is transformed into a 0–100 index, with higher scores indicating better perceived HRQL. The scales are described in <sup>5</sup> and the adaptation for use in the present group are described in <sup>4</sup>. The questionnaire also contained questions about age, country of origin, education, and current activity (*e.g.*, full or part time employment, sick leave, disability pension, *etc.*).

### *Statistical methods*

Statistical calculations were performed with SPSS for Windows, version 12.0.1 (SPSS Inc., Chicago, Illinois). The criterion for statistical significance was  $p < 0.05$ . The comparability in demographic variables of the MSM 1996 and 2004 cohorts was investigated by two group *t*-test as regards age and by  $\chi^2$ -test for frequency data. The differences in HRQL scores between the MSM 1996 cohort and the HIV-positive group and MSM 2004 cohort respectively were analyzed using the Mann-Whitney *U*-test. Since individual scores were not available for the published study <sup>5</sup>, one-sample *t*-test was used in the comparisons between the MSM 1996 cohort and the Swedish population group.

## Results

### *Demographics*

The age of the HIV-negative MSM 1996 cohort ranged between 17 and 74 years, and the mean age was 36 (SD 11) years; for the HIV-negative MSM 2004 cohort the age ranged between 16 and 67 years, and the mean age was 34 (SD 12; non-significant).

Further patient characteristics are shown in Table 1.

### *HRQL in HIV-negative MSM compared with a random population*

Compared with the Swedish population sample, the HIV-negative MSM 1996 cohort reported higher scores on the SWED-QUAL scales: physical functioning, satisfaction with physical ability and pain (Table 2). Further, they reported lower scores on the scales: emotional well-being positive and negative affect, satisfaction with family life, relation to partner and general health perception (Table 2).

### *HRQL in HIV-negative MSM compared with HIV-positive men*

Compared with the group of HIV-positive men, the HIV-negative MSM 1996 cohort reported higher scores as regards the SWED-QUAL scales: mobility, role limitations due to physical health, pain, sexual functioning and general health perception (Table 2). No statistically significant differences were found as regards the scales measuring the emotional or family dimensions of health-related quality of life.

### *HRQL in MSM 1996 compared with MSM 2004*

When comparing the results of the MSM 1996 and 2004 cohorts there were no differences between the two groups in terms of demographics (Table 1). As regards the

SWED-QUAL scales there were no statistically significant differences except for a slight decrease in the sleep problems scale (Table 2).

## Discussion

We found a decreased emotional HRQL in HIV-negative MSM when compared with the general population. There was, however, no difference in emotional HRQL of the HIV-negative MSM as compared with the HIV-positive sample. Interestingly, Perkins *et al.*<sup>7</sup> found higher incidence of depression in MSM compared with general population figures, but no difference when comparing HIV-positive and HIV-negative MSM. This also indicates a negative influence of the emotional HRQL in the investigated MSM compared with the general population. Further, despite the positive changes in legal rights and general attitudes towards same-sex sexuality during the last decade, there were no indications of changes in the negatively affected HRQL when we compared the MSM 1996 and MSM 2004 samples.

The HIV-negative MSM had higher scores on the physical and general health domains, both compared with HIV-positive MSM and the general population. The difference in relation to the HIV-positive group could possibly be explained by the fact that 72% of the patients in the HIV-positive group had symptoms from their HIV infection.<sup>4</sup> The difference in relation to the general population figures indicates that the investigated group of MSM is more concerned about their physical health than men from the general population.

Our main findings that the HIV-negative MSM group reported lower scores on the emotional well-being and general health domains compared with the general population sample may have been influenced by the fact that the measurement in the MSM group was performed when the participants were visiting a health care facility for information and screening with regard to STDs. However, a decreased quality-of-life among same-

sex oriented individuals has also been found in other studies not performed at clinical settings.<sup>2,3</sup> Young age, concealment of sexual orientation and a segregating lifestyle were related to worse psychological health.<sup>2</sup> Decreased quality-of-life has also been shown related to lack of self-esteem and mastery.<sup>3</sup> Other factors behind the negative effect on the HRQL of the MSM could be the social stigma,<sup>8</sup> internalized homophobia,<sup>9</sup> minority stress<sup>10</sup> and increased experience of discrimination, violence, harassment and/or threats<sup>2,11,12</sup> that have been found in investigations of same-sex oriented men.

The lack of positive changes in HRQL over time in HIV-negative MSM could possibly be related to several factors. Firstly, it might require a longer timeframe for the positive changes in legislation and attitudes to have positive influences of the individual experience of HRQL. Secondly, other factors could counteract the legal and attitudinal changes. One such factor could be experiences of increased vulnerability due to hate crimes related to homophobia, a phenomenon that have increased in Sweden during the last years.<sup>13</sup> Another reason could be increased vulnerability due to health aspects. For example, the STD incidence among MSM has increased markedly since the late 1990s, including outbreaks of syphilis in Sweden as well as in many other European countries.<sup>14</sup>

As found in several studies, MSM have an increased risk of contracting an STD including HIV (*e.g.*,<sup>15-17</sup>). The STD and HIV-screening clinics have a great opportunity to reach this population and even if this is not the primary focus of these settings, there is a need to pay attention to psychosocial aspects of these patients in the counseling and testing situation. It could therefore be useful to include psychosocial aspects, as for example relations to family and partner and emotional well-being, in the structured

interview guides used in the STD counselling. If problems in these domains are indicated, referral to services specialized in psychosocial issues is recommended. Since a relationship between mood and unsafe sexual practice in MSM has been suggested,<sup>18</sup> such a referral practice could be of importance in STD prevention on an individual basis.

We would like to stress some study limitations when interpreting the present results. Firstly, the fact that they visited a clinic with MSM as the special target group indicates that they had reached at least some level of acceptance of their same-sex sexuality and the risk of contracting STDs. It may not be possible to generalize the inferences drawn from this study to populations visiting clinics not directed towards MSM, and to non-clinical MSM-populations. The fact that concealment of sexual orientation has been shown to be related to worse psychological health,<sup>2</sup> indicates that an affected emotional HRQL probably holds true even for MSM with lower acceptance of their sexuality. Secondly, we wish to point out that the two measurements of HRQL in MSM 1996 and 2004 were cross-sectional; the study was not longitudinal on an individual level.

*Acknowledgements:* We would like to acknowledge the assistance of the participants, who took the time to respond to the questionnaires. We would also like to thank the staff at the Department of Venhälsan, Karolinska University Hospital for their help in administering the instruments to the participants, Lena Nilsson Schönnesson for valuable comments on the manuscript and Eric Sandström and Göran A. Bratt for support and helpful discussions.

This study was supported by grants from the South Stockholm General Hospital, Stockholm County Council and the Center for Health Care Sciences at Karolinska Institutet.

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**Table 1** Health-related quality of life in men who have sex with men (years 1996 and 2004), demographical data<sup>a</sup>

	MSM 1996	MSM 2004
	n=164	n=201
Mean age	36	34
SD	11	12
Country of origin:		
Sweden %	84	79
Other/not stated %	16	21
Working status:		
Full- or part-time work/studies %	84	84
Sick leave/disability pension %	6	7
Other/not stated %	10	9
Education:		
Compulsory school (6–9 years) %	7	7
Upper secondary/high school %	34	46
University studies %	57	45
Not stated %	2	2
Has a partner: Yes/No %	51/48	47/50
Not stated %	1	3

<sup>a</sup>there were no statistical differences between the groups as regards any of the variables; <sup>MSM</sup>men who have sex with men; <sup>SD</sup>standard deviation

**Table 2** The Swedish Health-Related Quality of Life questionnaire. Comparisons between the MSM 1996 cohort ( $n=164$ ) and the Swedish male population group, the HIV-positive men ( $n=72$ ) and MSM 2004 cohort ( $n=201$ ) respectively

	MSM 1996	Swedish population group	MSM 1996 vs. Swedish pop. group	MSM 1996	HIV-positive men	MSM 2004	MSM 1996 vs. HIV-pos	MSM 1996 vs. 2004
	Mean (SD)	Mean	$p$ -value <sup>a</sup>	Median (IQR)	Median (IQR)	Median (IQR)	$p$ -value <sup>b</sup>	$p$ -value <sup>b</sup>
Physical functioning	97.2 (6.0)	92.8	<0.001	100 (95.2–100)	100 (95.2–100)	100 (95.2–100)	NS	NS
Mobility	99.0 (5.7)	98.1	NS	100 (100–100)	100 (100–100)	100 (100–100)	0.005	NS
Satisfaction with physical ability	84.8 (19.0)	76.6	<0.001	100 (66.7–100)	66.7 (66.7–100)	100 (66.7–100)	NS	NS
Role limitations due to physical health	88.5 (22.7)	88.3	NS	100 (88.9–100)	100 (55.6–100)	100 (88.9–100)	0.016	NS

Pain	90.7 (16.2)	85.7	<0.001	100 (84.7–100)	100 (62.5–100)	100 (73.6–100)	0.034	NS
Positive affect	70.5 (23.2)	76.7	<0.01	75.0 (54.2–87.5)	68.7 (45.8–87.5)	77.1 (58.3–87.5)	NS	NS
Negative affect	62.2 (27.0)	76.7	<0.001	62.5 (41.7–87.5)	62.5 (34.4–83.3)	58.3 (33.3–75.0)	NS	NS
Role limitations due to emotional health	86.1 (22.7)	87.8	NS	100 (77.8–100)	100 (66.7–100)	100 (66.7–100)	NS	NS
Sleep problems	72.6 (21.9)	76.0	NS	78.6 (57.1–89.3)	71.4 (39.3–89.3)	75.0 (53.6–85.7)	NS	0.027
Satisfaction with family life	66.6 (26.5)	83.8	<0.001	72.9 (47.9–87.5)	68.8 (42.2–85.4)	72.9 (46.9–87.5)	NS	NS
Relation to partner	79.1 (19.0)	85.3	<0.01	83.3 (66.7–95.8)	79.2 (62.5–95.8)	79.2 (66.7–95.8)	NS	NS

Sexual functioning	85.8 (20.2)	85.9	NS	91.7 (75.0–100)	87.5 (64.6–100)	91.7 (75.0–100)	0.039	NS
General health perception	81.3 (16.9)	84.0	<0.05	86.1 (72.2–94.4)	72.2 (44.4–88.9)	83.3 (66.7–94.4)	<0.001	NS

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<sup>a</sup>one-sample *t*-test; <sup>b</sup>Mann-Whitney *U*-test; <sup>MSM</sup>men who have sex with men; <sup>NS</sup>non-significant; <sup>IQR</sup>inter-quartile range