



## Health status, behavior, and care utilization in the Geneva Gay Men's Health Survey

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### Abstract

**Background.** Recent reviews and studies suggest distinctive health needs among gay men.

**Methods.** Swiss residents in the Geneva Gay Men's Health Survey (GGMHS,  $n=477$ ) were matched with controls from the Swiss Health Survey (SHS,  $n=477$ ) along sex, age, nationality, and region of residence and compared along standard indicators of health status, health behaviors, and health care utilization. Both health surveys were conducted in 2002 using probability sampling—i.e., time-space sampling (GGMHS) and household probability telephone sampling (SHS).

**Results.** Although gay men were significantly less likely to be overweight (adjusted odds ratio (AOR)=0.54), they reported significantly more and severe physical symptoms (AOR ranged from 1.72 to 9.21), short-term disability (AOR=2.56), risk factors for chronic disease—i.e., high cholesterol, high blood pressure, high glucose, and smoking (AOR ranged from 1.67 to 3.89), and greater health services utilization (AOR ranged from 1.62 to 4.28), even after adjustment for differences in socio-demographic characteristics and health behaviors.

**Conclusions.** Evidence of greater morbidity among a community sample of gay men along standard health indicators underlines the relevance of sexual orientation as a socio-demographic indicator in public health in general and in the health inequalities discourse in particular.

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**Keywords:** Homosexuality; Health surveys; Risk factors; Health services use; Smoking; Alcohol consumption; Drug abuse; Obesity; Blood pressure; Glucose

### Introduction

The focus of public health efforts among gay men in the past 20 years has been dominated by the HIV/AIDS epidemic, yet recent reviews of health issues relevant to gay men, lesbians, bisexual men and women, and transgender people (GLBT) released on three continents (Dean et al., 2000; Gay and Lesbian Medical Association and LGBT health experts, 2001; Ryan and Chervin, 2001; Ministerial Advisory Committee on Gay and Lesbian Health, 2002; Douglas Scott et al., 2004) suggest higher morbidity in sexual health (e.g., HIV and other sexually transmitted infections), mental health (e.g., depression and suicide), and substance use (e.g., smoking, alcohol, and drugs). Yet while GLBT are gaining recognition as a “community” for

targeted public health policies, the evidence basis is poor (Sell and Becker, 2001; Boehmer, 2002), leading the American Public Health Association (APHA) to pass a resolution calling for more research on the relationship between disease and sexual orientation (1999).

The Geneva Gay Men's Health Survey (GGMHS) was a comprehensive health survey – i.e., patterned along national health interview surveys – conducted among a community sample of gay men. In order to explore the possible existence of distinctive health needs, this paper presents a comparison between a community sample of gay men and matched general population controls along key health indicators.

### Methods

#### Sample

The Geneva Gay Men's Health Survey (GGMHS) was a cross-sectional venue-based probability survey using time-space sampling developed by the

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Centers for Disease Control and Prevention (CDC) (MacKellar et al., 1996; Stueve et al., 2001). All meeting points ( $N=35$ ) frequented by an important number of gay men in Geneva – i.e., gay organization events, bars/cafes, clubs, sex clubs, bathhouses, parks/public toilets, and chatrooms – were enumerated for visits over a 1-week period, providing the basis for a sampling scheme. During actual recruitment in autumn 2002, venues were randomly selected in a first step, followed by random selection of time slot in a second step, and finally with random selection of participants at the venue in a third step. Men (1) who self-identified as gay and/or who have sex with men and (2) proficient in French were eligible to take part in the survey. The participation rate was 50% overall ( $N=571$ )—i.e., 62% in all physical venues and 15% in chatrooms (see Table 1). Participants were given a unique code and asked to complete the first part of the questionnaire at a laptop onsite (for physical venues) and the second part within 2 weeks at their leisure online.

The Swiss Health Survey (SHS) (Office fédéral de la statistique, 2003) is conducted every 5 years, and from January to December 2002, it drew a representative sample of 19706 respondents aged 15 years and over living in households with a telephone (response rate 64%) (Office fédéral de la statistique, 2005). Conducted in German, French, and Italian, data collection was carried out in two parts: the computer-assisted telephone interview (CATI) was followed by a written self-completed questionnaire which respondents received and returned by post. There was no question on sexual orientation.

For the analyses in this paper, each of the 477 men from the GGMHS resident in Switzerland was matched with a respondent from the SHS by sex, year of birth ( $\pm 1$  year), nationality (Swiss vs. non-Swiss), and canton (or linguistic region) of residence. When more than one SHS respondent matched the profile for a given GGMHS respondent, one match was selected randomly for a total of 477 men from the SHS.

### Measures

The GGMHS instrument comprised 550 standardized questions covering socio-demographic characteristics, subjective health status, physical health, mental health, substance use, psycho-social resources, health care, life domains, and socio-environmental stressors taken from the Swiss Health Survey, WHO Europe's EUROHIS initiative (Nosikov and Gudex, 2003), the Canadian National Public Health and Community Health Surveys, and major studies among gay men. This publication covers a selection of comparable indicators for health outcomes, health behaviors, and health care utilization between the two surveys. Most of these indicators are standard and described in detail elsewhere (Nosikov and Gudex, 2003; Office fédéral de la statistique, 2000), but the original questions are also available from the authors upon request.

Of note, the SHS collects data on a small number of chronic conditions within the past 12 months for which the respondent has received "medical treatment (by a physician)". This indicator combines disease self-report with health care utilization and permits neither estimates of the prevalence of chronic conditions nor analyses of access to treatment among those reporting the condition. The GGMHS used the protocol recommended by EUROHIS which

Table 1  
Participation rates by venue type in the Geneva Gay Men's Health Survey, 2002

	Actual participants		Target sampling frame		All eligible men	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	% <sup>a</sup>
Gay organization events	69	12	60	9	80	86
Bars and cafés	69	12	74	12	114	61
Discos and clubs	220	39	260	41	320	69
Sex clubs	28	5	18	3	37	76
Bathhouses	97	17	124	19	182	53
Parks and public toilets	41	7	50	8	109	38
Chatrooms	47	8	50	8	311	15
Total	571	100	636	100	1153	50

<sup>a</sup> Participation rate: number of actual participants divided by number of eligible men selected and invited to participate in that venue type.

collects data on self-report, diagnosis by a physician, treatment, and medications use separately for each of over a dozen chronic conditions (Nosikov and Gudex, 2003).

### Statistical analysis

The main objective of this analysis was to assess possible differences in morbidity and health care utilization between respondents in the Geneva Gay Men's Health Survey and their general male population controls. The model estimates were calculated using Stata 9 for Macintosh. Crude and adjusted odds ratios for each health indicator were computed with reference to the general male population controls. For dichotomous-dependent variables, both crude and adjusted odds ratios were calculated using a random effects logistic regression for matched pairs using xtlogit. For ordinal-dependent variables, both crude and adjusted odds ratios (and their 95% confidence intervals) were calculated using a partial proportional logistic regression (gologit2) model (Williams, 2005) which likewise took matching into account. Statistical significance was assessed using the likelihood ratio test.

## Results

### Socio-demographic factors

The GGMHS sample consisted largely of a young and mid-life population with an average age of 35 years ( $SD=10.7$ ). Although matching by canton of residence could not be carried out to the point of parity between the two samples, cultural region could as 96% of both samples live in French-speaking Switzerland. Even after matching, however, the two samples still exhibited considerable differences in socio-economic status (SES) and habitation patterns (see Table 2). Although there were twice as many university graduates in the gay male sample, the median monthly net personal incomes were sFr 4400 among gay men and sFr 4950 among their general male population controls ( $p=0.45$ ). When the analyses are limited only to those in paid employment, the difference shrinks to only sFr 180.

### Health behaviors

Gay men were significantly more likely to report paying attention to food choices, yet the discrepancy was limited to men who had never been diagnosed with high cholesterol (see Table 3). The GGMHS respondents also had a significantly lower BMI score than their general population controls (23.0 vs. 24.3,  $p<0.0001$ ), and at every age category, gay men had lower BMI scores than their general population counterparts.

At time of data collection, 49.7% of the gay male sample smoked, compared to 44.4% of their matched counterparts in the general population ( $p=0.13$ ). Gay men were significantly more likely to have ever smoked and be heavy smokers—i.e., average number of cigarettes smoked per day were 18 for gay men and 15 for the general population ( $p=0.007$ ). In the general population sample, the prevalence of current smoking declines with age and ex-smoking increases with age; however, this pattern is not evidenced in the gay male sample, where both current and ex-smoking prevalences remain stable across age groups. In both samples, however, men in the 35–44 age group smoked the greatest average number of

Table 2  
Socio-demographic characteristics of gay men in the Geneva Gay Men's Health Survey and matched general population controls from the Swiss Health Survey, 2002

	Gay men (%)	Gen. male population (%)	P-value
Age <sup>a</sup>			0.97
15–24	17.8	19.5	
25–34	30.4	29.8	
35–44	34.8	34.8	
45–54	12.2	11.3	
≥55	4.8	4.6	
Education			<0.00001
Mandatory education	4.7	15.0	
Apprenticeship	28.4	44.5	
Gymnasium	6.1	7.4	
Other prof. training	22.3	14.7	
University	38.6	18.5	
Employment status			<0.03 <sup>b</sup>
Paid employment	80.3	85.5	
In school	9.4	6.1	
Other situation	6.1	4.4	
Unemployed	4.2	2.5	
Net monthly income			0.0002
<sFr 3000	30.5	18.9	
sFr 3000–4449	20.7	17.7	
sFr 4500–5999	20.7	28.0	
≥sFr 6000	28.1	35.4	
Canton of residence <sup>a</sup>			0.0004
Geneva	58.7	47.8	
Vaud	31.7	35.2	
Other	9.6	17.0	
Urbanicity			<.00001
<20'000 inhabitants	28.7	59.3	
20,000–99,999 inhabitants	15.1	10.1	
≥100,000 inhabitants	56.2	30.6	
Cohabitation			<0.00001
Lives alone	57.9	27.0	
Lives with others	42.1	73.0	
Nationality <sup>a</sup>			1.00
Swiss	73.2	73.2	
Foreign	26.8	26.8	

<sup>a</sup> Respondents were matched for sex, year of birth, nationality (Swiss/foreign), and canton (or linguistic region) of residence.

<sup>b</sup> Employed vs. non-employed.

cigarettes daily (23 among gay men and 16 among the general population).

One out of ten gay men reported consuming high daily quantities of alcohol in the past 4 weeks, although the OR loses statistical significance after adjusting for socio-demographic characteristics. No age group differences were evidenced for quantity of alcohol in either sample, although in both samples, the prevalence of binge drinking decreases after 35 years.

Although controlling for socio-demographic characteristics accounts for differences in lifetime use, drug use was significantly more prevalent in the gay male sample for all substances examined. Among those using drugs in the past 12 months, one third of gay men used more than one drug compared to fewer than one in ten men in the general population controls. The most popular drug was marijuana in both the gay male and the general population sample (37.5% vs. 12.3% in the

past 12 months,  $p < 0.00001$ ). The other substance widely used among gay men were inhalants (31.5% in the past 12 months) – most likely amyl nitrite (“poppers”) used during sex – which were not included in the summary drug use indicator. If inhalants were included, then 49.5% of the gay male sample used drugs in the past 12 months. Drug use in the past 12 months was limited largely to the 15–34 age groups in the general male population, whereas it remained highly prevalent among all age groups in the gay male sample.

### Health outcomes

The self-rated health scores were very high for both populations with over 90% reporting “good” or “very good” health (see Table 4). There were no statistically significant differences for having received medical treatment for chronic conditions in the past 12 months, except for bronchitis, whereby gay men were nearly five times more likely to have been treated after adjustment for socio-demographic and health behavioral variables. Men in the GGMHS were 2 to 4 times more likely to have ever had a health care provider tell them that their values for

Table 3  
Health behaviors of gay men in the Geneva Gay Men's Health Survey and matched general population controls from the Swiss Health Survey, 2002

	Gen. male population %	Gay men		
		%	OR	AOR <sup>a</sup>
Attention to food choices	50.0	71.5	2.51 *	1.66 *
Body mass index				
(a) Underweight (<18.5)	2.5	3.5	–	–
(b) Normal (18.5–24.9)	59.2	79.5	–	–
(c) Overweight (25–29.9)	30.5	12.9	0.37 *	0.54 *
(d) Obese (≥30)	7.8	4.0	0.50 *	0.55
Smoking				
(a) Never smoked	39.8	25.8	–	–
(b) Ex-smoker	15.7	24.5	1.90 *	1.67 *
(c) Light smoker	28.9	24.5	1.24	1.11
(d) Heavy smoker	15.5	25.3	1.84 *	2.24 *
Alcohol consumption <4 weeks				
Quantity and risk				
(a) Abstinent	15.8	15.9	–	–
(b) Low (<40 g/day)	76.2	68.9	0.99	0.98
(c) Moderate (40–59 g/day)	4.9	4.1	2.05 *	1.28
(d) High (≥60 g/day)	3.2	11.1	3.81 *	2.04
Binge drinking <sup>b</sup>	38.0	40.9	1.14	1.08
Drug use <sup>c</sup>				
Any drug use lifetime	44.7	56.7	1.70 *	1.21
Any drug use <12 months	12.6	38.4	4.34 *	3.37 *

<sup>NB</sup> Crude (OR) and adjusted odds ratios (AOR) for attention to food choices, binge drinking, and drug use variables are model-based estimates calculated by random-effects logistic regression. For body mass index, smoking, and quantity and risk of alcohol consumption, OR and AOR are model-based estimates calculated by ordinal, multinomial proportional logistic regression and correspond to b vs. c/d and b/c vs. d for body mass index and a vs. b/c/d, a/b vs. c/d, a/b/c vs. d for smoking, and quantity and risk of alcohol consumption.

<sup>a</sup> Odds ratio adjusted for socio-demographics—i.e., education, employment status, net monthly income, canton of residence, urbanicity, and cohabitation.

<sup>b</sup> Among all respondents, or 48.1% vs. 44.9% among drinkers,  $p = 0.40$ .

<sup>c</sup> Includes marijuana, stimulants (e.g., amphetamines), opioids, cocaine, hallucinogens.

\*  $P < 0.05$ .

Table 4  
Health status indicators of gay men in the Geneva Gay Men's Health Survey and matched general population controls from the Swiss Health Survey, 2002

	Gen. male population %	Gay men			
		%	OR	AOR <sup>a</sup>	AOR <sup>b</sup>
<i>Self-rated health</i>					
Very good or good	91.6	90.6	1.00	1.00	1.00
Fair, poor, or very poor	8.4	9.4	1.13	1.28	1.23
<i>Treated for selected chronic conditions &lt;12 months</i>					
Allergies	14.3	10.8	0.72	0.58	0.65
Hypertension	7.3	6.1	0.81	1.23	1.06
Depression	6.8	10.5	1.64	1.38	1.21
Bronchitis	1.6	3.7	2.32	3.41*	4.89*
Diabetes	1.6	1.1	0.65	0.56	3.48
<i>Screening values ever deemed too high by a health care provider</i>					
Cholesterol	15.8	25.6	1.85*	1.81*	1.96*
Blood pressure	14.2	20.4	2.15*	2.01*	2.59*
Glucose	2.4	5.0	2.40*	2.81*	3.89*
<i>Selected symptoms &lt;4 weeks</i>					
<i>Back pain</i>					
(a) None	61.8	51.2	–	–	–
(b) Mild	30.2	22.6	1.55*	1.58*	1.46
(c) Moderate/Severe	8.0	26.3	4.11*	3.76*	3.62*
<i>Fatigue</i>					
(a) None	66.0	32.0	–	–	–
(b) Mild	30.4	35.4	4.13*	3.56*	3.23*
(c) Moderate/Severe	3.6	32.5	13.06*	9.11*	9.21*
<i>Insomnia</i>					
(a) None	66.5	47.5	–	–	–
(b) Mild	26.2	24.7	2.19*	2.00*	1.72*
(c) Moderate/Severe	7.3	27.8	4.87*	4.25*	4.67*
<i>Headaches</i>					
(a) None	71.2	52.0	–	–	–
(b) Mild	25.2	27.6	2.29*	2.12*	1.94*
(c) Moderate/Severe	3.6	20.4	6.95*	4.58*	4.21*
Short-term disability <sup>c</sup>	9.0	25.4	3.53*	2.64*	2.56*

<sup>NB</sup> Crude (OR) and adjusted odds ratios (AOR) for self-rated health, select chronic conditions, screening values, and short-term disability are model-based estimates calculated by random-effects logistic regression. For select symptoms, OR and AOR are model-based estimates calculated by ordinal, multinomial proportional logistic regression and correspond to a vs. b/c and a/b vs. c.

<sup>a</sup> Odds ratio adjusted for socio-demographics—i.e., education, employment status, net monthly income, canton of residence, urbanicity, and cohabitation.

<sup>b</sup> Odds ratio adjusted for socio-demographics—i.e., education, employment status, net monthly income, canton of residence, urbanicity, and cohabitation—and health behaviors—i.e., attention to food choices, body mass index (BMI), smoking, alcohol consumption in the past 4 weeks, and drug use in the past 12 months.

<sup>c</sup> “In the past 2 weeks” in GGMHS and “in the past 4 weeks” in SHS.

\*  $P < 0.05$ .

cholesterol, blood pressure, or glucose values were too high. There were no significant differences in lifetime history of screening between the two samples, although gay men were significantly more likely to have been last screened in the past 12 months for all three conditions.

Gay men were significantly more likely to report any of ten common symptoms (92.7% vs. 82.4%,  $p = 0.00001$ ), report a higher number of symptoms (3.9 vs. 2.2,  $p < 0.0001$ ), and report any moderate/severe symptoms (64.8% vs. 20.5%,  $p < 0.00001$ ) in the previous 4 weeks. Differences remain significant for each

of the four most common symptoms, except any backpain after adjustment. Although the data on short-term disability are not entirely comparable given the different time-frames, it is noteworthy that despite the shorter time-frame for GGMHS at 2 weeks, a quarter of gay men reported being hindered in their daily activities due to a physical or mental health problem.

### Health care utilization

Gay men were significantly more likely to have consulted any health care provider in the past 12 months (97.8% vs. 91.9%,  $p = 0.00006$ , excluding pharmacists) (see Table 5). Among those consulting in the past 12 months, gay men reported a significantly higher number of visits for general practitioners (4.1 vs. 2.9,  $p = 0.0004$ ), specialists (7.7 vs. 3.5,  $p = 0.004$ ), and opticians/optometrists (1.5 vs. 1.1,  $p = 0.02$ ). While greater use of pharmacists, physiotherapists, psychologists/psychotherapists, and stationary hospital care lost statistical significance when adjusting for socio-demographics and health behaviors, differences for all other sources of care remained.

Table 5

Health care utilization of gay men in the Geneva Gay Men's Health Survey and matched general population controls from the Swiss Health Survey, 2002

	Gen. male population %	Gay men			
		%	OR	AOR <sup>a</sup>	AOR <sup>b</sup>
Has a regular doctor	76.1	74.7	0.96	1.36	1.40
<i>Consulted health care provider &lt;12 months</i>					
Regular doctor <sup>c</sup>	65.0	87.1	4.28*	4.72*	3.40*
Dentist/Orthodontist	55.2	68.1	1.82*	1.93*	1.62*
Pharmacist	38.7	51.2	1.72*	1.51*	1.40
Specialist	27.3	46.8	2.41*	1.82*	1.65*
Optician/Optometrist	22.4	42.3	2.69*	2.78*	2.79*
Complementary medicine	15.7	17.2	1.11	1.29	0.85
Physiotherapist	11.5	17.0	1.59*	1.63*	1.72
Psychologist/ Psychotherapist	5.9	13.2	2.46*	1.62	1.27
Homeopathy/ Naturopathy	3.5	12.8	4.08*	5.19*	4.38*
<i>Received care in a hospital &lt;12 months</i>					
Stationary	6.9	10.8	1.65*	1.15	1.03
Ambulatory	14.3	25.0	2.00*	2.38*	2.25*
<i>Medications use</i>					
<12 months	NA	97.1	–	–	–
<7 days	34.3	59.2	2.84*	3.18*	3.28*

<sup>NB</sup> Crude (OR) and adjusted odds ratios (AOR) are model-based estimates calculated by random-effects logistic regression.

<sup>a</sup> Odds ratio adjusted for socio-demographics—i.e., education, employment status, net monthly income, canton of residence, urbanicity, and cohabitation.

<sup>b</sup> Odds ratio adjusted for socio-demographics—i.e., education, employment status, net monthly income, canton of residence, urbanicity, and cohabitation and health – behaviors – i.e., attention to food choices, body mass index (BMI), smoking, alcohol consumption in the past 4 weeks, and drug use in the past 12 months.

<sup>c</sup> Among those with a regular doctor.

\*  $P < 0.05$ .

Overall, a small majority of gay men expressed satisfaction with their health care providers—from 53.3% for doctors' interest in their personal situation to 67.1% for doctors' ability to listen. Although data on patient satisfaction were not assessed in the SHS, results from the EUROPEP survey conducted among a general population sample in Switzerland showed that satisfaction among men and women for five common indicators ranged from 84% for doctors' advice on disease prevention to 97% for doctors' ability to listen (Grol and Wensing, 2000).

## Discussion

Although the gay male sample presented a healthier profile for attention to food choices and body mass index, all other health indicators were either equivocal or suggested greater morbidity than the general male population, even after controlling for differences in socio-demographic characteristics and health behaviors. While the findings underscore greater morbidity (Dean et al., 2000; Ryan and Chervin, 2001; Stall et al., 2003; Douglas Scott et al., 2004), this study is among the first to show that health disparities among gay men can be evidenced even using standard indicators of health status and care utilization. HIV status was not collected in the Swiss Health Survey, and while bivariable analyses showed that HIV-positive gay men (11% in GGMHS) manifested significantly poorer health on many of these indicators than other gay men (data not shown), the effect was too small to change overall prevalence estimates for gay men in GGMHS. Therefore, the differences between the GGMHS and SHS cannot be attributed to greater morbidity among HIV-positive gay men.

## Limitations

The Geneva Gay Men's Health Survey has no direct control group, and as a proxy, the GGMHS respondents residing in Switzerland were matched *a posteriori* with a representative general population sample from the Swiss Health Survey (including both gay and heterosexual men). The sampling frame is comprised of gay men who use meeting points (and thus can be counted) as an approximation for the gay male population (which remains hitherto unknown). While probability facilitates representativity within the sampling scheme, these results cannot be generalized to gay men who fall outside it—i.e., men with no contact to any physical or virtual venues. Frequent visitors had a higher probability of being recruited into the study, yet venue frequentation over the past 12 months – when quantified and divided into quartiles – did not distinguish significantly for any of the study variables (results not shown).

The stark differences in socio-demographic characteristics in Table 1 may suggest methodological problems in GGMHS, yet such differences have been found repeatedly in studies among gay men in Western societies. High levels of educational attainment and urbanicity as well as low levels of cohabitation have even been replicated in large national surveys (e.g., Sandfort et al., 2001) as has the lower proportion of gay men over 45 years (Mays and Cochran, 2001; Mills et al., 2004). While methodological differences in recruitment and data

collection may account for some of the observed differences, available research – e.g., smoking (Ryan et al., 2001; Tang et al., 2004), alcohol and drug use (Stall and Purcell, 2000) – supports the validity of these findings. Regardless of the broader generalizability of this survey, the project has uncovered poor health among a community sample of gay men who can and should be reached for additional health interventions.

## Practical implications

In Switzerland, differences in health status have been found for age, sex, cultural regions, nationality, and socio-economic status (in particular, educational attainment) (Office fédéral de la statistique, 2000). Since the magnitude of the differences seen in this comparison surpasses those known to exist between men and women or Swiss and migrants, sexual orientation should be added to the list of “communities” in discussions on health inequalities. But as is the case for these vulnerable groups, documenting health disparities is more straightforward than explaining them. It does appear, however, that well-known differences in socio-demographics and health behaviors as examined in this paper do not in and of themselves account for greater morbidity among gay men.

These findings also show that the distinctive health needs of gay men extend well beyond HIV prevention and treatment. Thus, the HIV epidemic among gay men needs to be resituated within this larger context of vulnerability and health morbidity, and targeted health policies/interventions for issues other than HIV need to be devised with this population. Data on sexual orientation need to be collected in major health surveys (Tang et al., 2004; Statistics Canada, 2004) in order to provide unequivocal evidence of health inequalities. Such data need to be complemented by similar community-based health surveys which possess certain advantages in terms of recruitment, sample size, and survey content.

Such data are valuable to stakeholders in and outside the gay community in setting priorities and providing services. For example, several municipalities and states in Europe, North America, and Australia have designated delegates and/or task forces for gay/lesbian health, commissioned needs assessments, and/or drafted action plans. On the research side, further study using approaches such as social determinants of health (Marmot and Wilkinson, 1999), minority stress (Meyer, 2003), and syndemics (Stall et al., 2003) may improve our understanding of increased health vulnerability among gay men.

## Conclusions

Although poor indicators for chronic conditions in the SHS make it difficult to establish higher disease morbidity in this gay male sample with certainty, gay men were more likely to have suffered from moderate/severe symptoms in the past 4 weeks and have reported short-term disability. Furthermore, gay men were more likely to report high cholesterol, high blood pressure, high glucose, and smoking which are all major risk factors for serious chronic diseases. Finally, greater health care utilization may also be seen as an indicator of greater morbidity – i.e.,

those who are ill consult more – as evidenced in other groups such as women and people with low socio-economic status (SES) (Office fédéral de la statistique, 2000; Statistics Canada, 2001). In Switzerland, the vast majority of the insured population are entitled to choose their health care providers, and yet there appears to be evidence that gay men are markedly less satisfied with their providers. High levels of service utilization, lower satisfaction with providers, and a poor health profile suggest that gay men may not be receiving adequate care.

### Acknowledgments

The authors wish to thank project assistant Vincent Jobin and the many volunteers and experts who have contributed to the Geneva Gay Men's Health Project. Special acknowledgement goes to Ron Clarke at Health Canada for his participation in discussions on the overall project. Data collection for the Geneva Gay Men's Health Survey was financed by the Swiss National Research Foundation grant 3326-062448 and the Swiss Federal Office of Public Health. This publication and the analyses therein were financed by the Swiss National Research Foundation grant 3346C0-104189.

### References

- American Public Health Association policy statement 9819: the need for public health research on gender identity and sexual orientation, 1999. *Am. J. Public Health* 89, 444–445.
- Boehmer, U., 2002. Twenty years of public health research: inclusion of lesbian, gay, bisexual, and transgender populations. *Am. J. Public Health* 92, 1125–1130.
- Dean, L., Meyer, I.H., Robinson, K., et al., 2000. Lesbian, Gay, bisexual and transgender health: findings and concerns. *J. Gay Lesbian Med. Assoc.* 4, 101–151.
- Douglas Scott, S., Pringle, A., Lumsdaine, C., 2004. Sexual exclusion—homophobia and health inequalities: a review. UK Gay Men's Health Network.
- Gay and Lesbian Medical Association and LGBT health experts, 2001. *Healthy People 2010: Companion document for lesbian, gay, bisexual, and transgender (LGBT) health*. Gay and Lesbian Medical Association, San Francisco.
- Grol, R., Wensing, M., 2000. Patients evaluate general/family practice: the EUROPEP instrument. Mediagroep KUN/UMC, Nijmegen.
- MacKellar, D., Valleroy, L., Karon, J., Lemp, G., Janssen, R., 1996. The Young Men's Survey: methods for estimating HIV prevalence and risk factors among young men who have sex with men. *Public Health Rep.* 111, 138–144 (Suppl.).
- Marmot, M., Wilkinson, R.G., 1999. *Social determinants of health*. Oxford Univ. Press, Oxford.
- Mays, V.M., Cochran, S.D., 2001. Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *Am. J. Public Health* 91, 1869–1876.
- Meyer, I.H., 2003. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychol. Bull.* 129, 674–697.
- Mills, T.C., Paul, J., Stall, R., et al., 2004. Distress and depression in men who have sex with men: the Urban Men's Health Study. *Am. J. Psychiatry* 161, 278–285.
- Ministerial Advisory Committee on Gay and Lesbian Health, 2002. *What's the difference? Health issues of major concern to gay, lesbian, bisexual, transgender and intersex (GLBTI) Victorians*. Victorian Government Department of Human Services, Melbourne.
- Nosikov, A., Gudex, C. (Eds.), 2003. *EUROHIS: developing common instruments for health surveys*. IOS Press, Amsterdam.
- Office fédéral de la statistique (Ed.), 2000. *Enquête suisse sur la santé: Santé et comportements vis-à-vis de la santé en Suisse 1997*. Office fédéral de la statistique, Neuchâtel.
- Office fédéral de la statistique, 2003. *Enquête suisse sur la santé 2002: premiers résultats*. Office fédéral de la statistique, Neuchâtel.
- Office fédéral de la statistique, 2005. *Enquête suisse sur la santé 2002: Plan d'échantillonnage, pondération et estimation de la précision*. Office fédéral de la statistique, Neuchâtel.
- Ryan, B., Chervin, M., 2001. Framing gay men's health in a population health discourse. *Gay and Lesbian Health Services, Saskatoon*.
- Ryan, H., Wortley, P.M., Easton, A., Pederson, L., Greenwood, G., 2001. Smoking among lesbians, gays, and bisexuals; a review of the literature. *Am. J. Prev. Med.* 21, 142–149.
- Sandfort, T.G.M., de Graaf, R., Bijl, R.V., Schnabel, P., 2001. Same-sex sexual behavior and psychiatric disorders: findings from The Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Arch. Gen. Psychiatry* 58, 85–91.
- Sell, R.L., Becker, J.B., 2001. Sexual orientation data collection and progress toward Healthy People 2010. *Am. J. Public Health* 91, 876–882.
- Stall, R., Purcell, D.W., 2000. Intertwining epidemics: a review of research on substance use among men who have sex with men and its connection to the AIDS epidemic. *AIDS Behav.* 4, 181–192.
- Stall, R., Mills, T.C., Williamson, J., et al., 2003. Association of co-occurring psychosocial health problems and increased vulnerability to HIV/AIDS among urban men who have sex with men. *Am. J. Public Health* 93, 939–942.
- Statistics Canada, 2001. *How healthy are Canadians? 2001 Annual Report: the health divide—How the sexes differ*. Health Reports, vol. 12 (3). Statistics Canada, Ottawa.
- Statistics Canada, 2004. *Canadian Community Health Survey. The Daily from June 15, 2004*, accessed on <http://www.statcan.ca/Daily/English/040615/d040615b.htm> on April 19, 2006.
- Stueve, A., O'Donnell, L.N., Duran, R., San Doval, A., Blome, J., 2001. Time-space sampling in minority communities: results with young Latino men who have sex with men. *Am. J. Public Health* 91, 922–926.
- Tang, H., Greenwood, G.L., Cowling, D.W., Lloyd, J.C., Roeseler, A.G., Bal, D. G., 2004. Cigarette smoking among lesbians, gays, and bisexuals: how serious a problem? *Cancer Causes Control* 15, 797–803.
- Williams, R., 2005. *Gologit2: Generalized Logistic Regression/Partial Proportional Odds Model for Ordinal Dependent Variables*. (Revision dated July 29, 2005, accessed online.).