The Geneva Gay Men's Health Project: A community-research collaboration to assess and improve the health of gay men in Geneva, Switzerland

INAUGURALDISSERTATION

zur

Erlangung der Würde eines Doktors der Philosophie

vorgelegt der

Philosophisch-Naturwissenschaftlichen Fakultät der

Universität Basel

von

Jen Wang

geboren in

Taipeh, Taiwan, Republik von China

mit Heimatorten in

Yixing (Jiangsu) und Zürich (ZH)

Basel, 2013

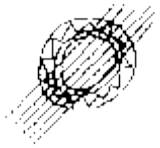
Genehmigt von der Philosophisch-Naturwissenschaftlichen Fakultät auf Antrag von Prof. Dr. Marcel Tanner (Fakultätsverantwortlicher), Prof. Dr. Mitchell G. Weiss (Dissertationsleiter) und Prof. Dr. Udo Rauchfleisch (Korreferent).

Basel, den 23. April 2013

Prof. Dr. Jörg Schibler
Dekan

Lo que duele no es ser homosexual,
sino que lo echen en cara como si fuera una peste.

Chavela Vargas



Contents

List of tables and figures

Tables

Figures

Acknowledgements

The work compiled in this volume reflects the combined effort of many people. First and foremost, I would like to begin by acknowledging over 1000 gay men who participated in the 3 Geneva Gay Men's Health Surveys (GGMHS) between 2002-11, exhibiting much generosity and grace in completing long and, at times, tedious health surveys. Some of their experiences have been summarized in the work presented here, and through that, I hope that they shall be able to derive some benefit in return.

Michael Häusermann was the visionary who developed Projet santé gaie at Dialogai with considerable thoughtfulness and insight about the male and gay male condition. At a time when I was ready to drop both HIV research and community collaborations, he invited me to join him in exploring this issue. While gay men's health intrigued me personally as a gay man and professionally as an HIV epidemiologist who had considered all other health issues distractions for much of his career, I looked foward to working with and learning from Michael whose biography reflected the history of gay organization and HIV prevention in Switzerland. His delightful charm, no holds barred sense of humor, and piercing honesty kept our collaboration enjoyable and fruitful. While he could be strict about keeping research relevant, his questions and comments often inspired important avenues of inquiry for research. Indeed, the project and the field of gay men's health owe him a great deal.

Indeed, the entire atmosphere at Dialogai was unique in Switzerland and made the development of the project possible. I have consistently been impressed by the quality of the staff at Dialogai who juggle their professional obligations with the many demands of a community-based organization with amazing elan. The inimitable Alexander Rhys was the first to raise the issue of gay men's health, and many members of the board and volunteers have since supported the project and its activities throughout the years. Vincent Jobin, Richard Zahno, and Fabien Bertrand coordinated recruitment for the 2002, 2007, and 2011 surveys, respectively,

organizing a team who selected and invited gay men to participate in the surveys at numerous venues.

Michael Parsons created the excellent graphics for Projet santé gaie, and Chatty Ecoffey for Blues-out. Data collection in 2002 was programmed by Bruno Steiner and in 2007 and 2011 by Patrick Risch, both of whom showed flair in executing attractive, user-friendly interfaces and saintly patience in trouble-shooting.

Bill Ryan, McGill University and Séro Zéro, provided us with early and continued access to work in Québec and Canada around gay men's health and sexual minority health. Séro Zéro was in a similar process as Dialogai in wanting to transition from a sole focus on HIV prevention to a broader, more holistic focus on gay men's health. Bill's many papers and presentations highlighting projects and initiatives in Canada were always deeply inspiring to me and the colleagues at Dialogai, no less because much of the progress was possible thanks to his vision and commitment.

The first health survey required that I gain deep familiarity with the methodologies and instruments used in national health interview surveys. In particular, I appreciated the counsel of Ronald Kessler, Harvard Medical School, and Ron de Graaf, the Netherlands Institute of Mental Health and Addiction, for WHO CIDI. Martin Plöderl, Salzburg University Clinic, shared his entensive experience and tools with us in working with suicidality and sexual orientation.

The project priority in mental health motivated me to get additional training in psychiatric epidemiology and buddhism in order to better understand the mind and mental afflictions/disorders. I benefited greatly from a summer at McGill University with Laurence Kirmayer and his inter-disciplinary team. I am profoundly grateful to the Mind and Life Institute and the Dalai Lama, Alan Wallace, and Matthieu Ricard for opening the door to the tremendous wealth of knowledge and experience in

buddhism by speaking of buddhist insights on the nature of the mind and buddhist methods in training the mind in a way that made sense to a modern, scientifically trained person. Since then, I have attended teachings and retreats with many eminent buddhist teachers and have continually found myself impressed by the coherent and profound presentations on the mind and its afflictions and the variety and effectiveness of the methods maintained in buddhist traditions to train and transform the mind. Perhaps most importantly, I have been inspired by teachers who clearly embody enhanced mental health and higher human qualities. These teachings have not only fostered my understanding of mental health for the project and my professional work, but have brought me tremendous personal benefit as well.

The project team's interest in mental health interventions owes deep gratitude to Anthony Jorm, University of Melbourne, who introduced us to all the exciting community interventions being developed and implemented in Australia. He also generously permitted use of his instruments to assess mental health literacy in the 2007 and 2011 waves of GGMHS. The creation of the depression awareness campaign Blues-out was facilitated thanks to Regula Rička, the Swiss contact person for the Alliance Against Depression at the Swiss Federal Office of Public Health, and Ulrich Hegerl's coordination team for the European Alliance Against Depression. Guillaume Mandicourt, Dialogai, and Sylvie Berrut, Lestime, did an excellent job in adapting and creating materials for the Blues-out campaign launched in 2009.

I would like to acknowledge my many colleagues at the ISPM, University of Zurich. For the work contained in this volume, special mention goes to Hans Wydler and Meichun Mohler-Kuo, experts in adolescent health, for including sexual orientation in surveys and their support with the publication on suicidality. I look forward to future work on adolescent health and sexual orientation. Vladeta Ajdacic-Gross, also of the Psychiatric University Clinic, has been generous in advising me in psychiatric epidemiology, suicidology, and methodology. Margareta Schmid has been my office-

mate and collaborator on several projects in both LGBT health and health literacy over the years.

I have had the tremendous fortune of spending some time with the legendary Don DesJarlais during his visits to Switzerland, and thanks to his sage and timely advice, I finally resolved to stay and prepare a dissertation in Switzerland.

Mitchell Weiss has been my supervisor. Initially, I approached him because of his work in psychiatry and suicide—priority areas for gay men's health—and because I was keen to learn more about the inter-disciplinary methods in cultural epidemiology which he had developed. Although he was very busy, Mitchell kindly agreed to take me and the project on board. Over time, more and more areas of mutual interest emerged such as his work in stigma, qualitative methods, and medical anthropology. Although always appreciative of inter-disciplinary approaches, I came to see the limitations of quantitative data and the understanding and meaning that came from qualitative data first-hand. Indeed, Mitchell's work exemplifies inter-disciplinarity. The 2007 and 2011 waves of the GGMHS contain many elements from the EMIC and reflected growing cross-fertilization. Despite his busy schedule, Mitchell made himself available for meetings and was just very supportive of me and the project in general. His feedback reflected his expertise in several fields and led to greater clarity and quality in the publications. I am deeply grateful to him for his interest, support, and advice.

My deep gratitude also extends to Marcel Tanner and Udo Rauchfleisch at the University of Basel who are both also incredibly busy yet have generously lent their vital support to this endeavor at key stages. Udo inspired me early on by saying that it is very important for gay people to actively move this work forward. Marcel's vision and care are reflected in the dynamic public health culture at Swiss TPH where I have benefited greatly from exchanges with students, staff, and faculty alike.

Summary

In the 1970s, gay and lesbian organizations and even some gay health clinics were established to provide services to the community. When the HIV epidemic struck in the 1980s, many gay organizations and health clinics shifted their focus to address the pressing AIDS crisis. In the late 1990s, in light of crisis mode fatigue and profound changes wrought by the introduction of antiretroviral therapies (ART), several prominent leaders in the gay and HIV prevention communities made calls for a return to gay men's health in order to address other health issues which had been neglected for over a decade.

Comprehensive overviews of research in the late 1990s on health issues relevant to gay men, lesbians, bisexuals, and transgender people (LGBT) identified issues which appear to affect sexual minorities disproportionately, but the quality of the available data was deemed too poor to translate into policy initiatives. To help rectify this situation, the American Public Health Association passed a resolution in 1999 calling for more research on the relationship between disease and sexual orientation.

The issue of gay men's health entered Switzerland via Dialogai, a gay organization in Geneva and the only gay organization in the country active in HIV prevention work, who embarked on a community-research partnership with the Institute for Social and Preventive Medicine, University of Zurich, for the Geneva Gay Men's Health Project with the following objectives: gather information on gay men's health in order to educate itself and others, set priorities based on evidence, and introduce new interventions in response to community needs.

After two rounds of focus groups and an extensive literature review phase, the first Geneva Gay Men's Health Survey (GGMHS)—patterned on national health interview surveys—was carried out in 2002 among 571 gay men recruited using randomized time-space sampling. In order to explore the possible existence of distinctive health

needs among gay men along key public health indicators of health status, health-related behaviors, and health care utilization, we performed a post-hoc comparison with matched general population controls from the 2002 Swiss Health Survey. Gay men reported significantly more and severe physical symptoms (AOR=1.72-9.21), short-term disability (AOR=2.56), risk factors for chronic disease—i.e., high cholesterol, high blood pressure, high glucose, and smoking—(AOR=1.67-3.89), and greater health services utilization (AOR=1.62-4.28), even after adjustment for socio-demographic characteristics and health behaviors. The only exceptions to greater morbidity were greater attention to food choices (AOR=1.66) and less obesity (AOR=0.54) among gay men.

GGMHS assessed common psychiatric disorders using the WHO Composite International Diagnostic Interview Short Form (CIDI-SF). Nearly half (43.7%) of the sample fulfilled diagnostic criteria for at least one of five DSM-IV disorders in the past 12 months: major depression 19.2%, specific and/or social phobia 21.9%, and alcohol and/or drug dependence 16.7%. Over one quarter of cases were comorbid with another kind of disorder. Despite chronicity, half the men with major depression and a third of the men with social and/or specific phobia actually self-reported the condition. Such men were 5 times more likely to have sought treatment, underscoring the importance of recognition in help-seeking. In all, only 35.7% of cases consulted a health care professional in the past 12 months for mental health.

GGMHS assessed various forms of suicidality. Suicidal ideation (12 months/lifetime) was reported by 22%/55%, suicide plans 12%/38%, and suicide attempts 4%/19%. While lifetime prevalences and ratios are similar across age groups, men under 25 years reported the highest 12-month prevalences for suicidal ideation (35.4%) and suicide attempts (11.5%) and the lowest attempt ratio (1:3.1 for attempt to ideation). In order to bolster the findings for the youngest age group, we performed secondary analyses of two national adolescent health surveys from 2002—i.e., Swiss

Multicenter Adolescent Survey on Health (SMASH) and Swiss Recruit Survey (ch-x)—comparing homo- and bisexually attracted young men directly with their heterosexual counterparts. Homo/bisexual men aged 16-20 years were significantly more likely to report 12-month suicidal ideation, plans, and attempts (OR=2.09-2.26) and lifetime suicidal ideation (OR=2.15) and suicide attempts (OR=4.68-5.36).

GGMHS was repeated in 2007 and 2011 with a focus on mental health and assessed the understanding and experience of gay men using mental health literacy with features of cultural epidemiology. A depression vignette was labelled as such by 44.1% of the entire sample, and 61.9% of the men with major depression in the past 12 months. Discrimination (33.2%), acceptance/rejection by others (21.4%), and loneliness (24.9%) were the most common reasons given for greater susceptibility among gay men, yet men with major depression reported problems with love/relationship (32.5%) and work (28.9%) as the most common perceived causes of recent depression, and problems with love/relationship (21.9%), accepting one's homosexuality (21.1%), and family (20.2%) at initial outset. The highest proportions of gay men rated non-medical options such as a close friend (91.6%), relaxation exercises or meditation (84.4%), and physical activity (83.5%) as being helpful for the depression vignette, and seeing friends (17.2%) and doing sports (17.2%) were the most common non-professional activities mentioned spontaneously by men with major depression. Gay-friendliness would promote presentation and communication with professionals. While gay men share many commonalities in labelling, perceived causes, and help-seeking with general populations, several specificities in understanding and experience were identified.

Taken together, these findings suggest that the higher prevalence of depression among gay men may be due to a higher prevalence of common causes and the existence of gay-specific causes. Furthermore, the median ages at initial onset for those diagnosed with a mood or anxiety disorder in the past 12 months or ever

reporting a suicide attempt interweave with the median ages for gay developmental milestones, suggesting that psycho-social challenges encountered during such phases may trigger psychiatric disorders and/or suicidality among some gay men during childhood, adolescence, and young adulthood. Both depression and suicidality go on to display high levels of chronicity/recurrence among gay adults.

As the first mental health intervention for a gay community, Blues-out is a depression awareness campaign modelled after the evidence-based European Alliance Against Depression. The pre-post intervention evaluation confirmed levels of recognition of depression and Blues-out comparable to those found in general populations. A third of the respondents (32.9%) recognized Blues-out in 2011. Such men were more likely to find specialists and psychological therapies helpful and correctly identify depression and gay men's greater risk for depression. Despite small effect sizes, significant net decreases (18 - 28%) were seen in lifetime suicide plans, 12-month suicidal ideation, self-reported lifetime depression, and 4-week psychological distress between 2007 and 2011. It should be a priority to test and implement public mental health interventions in such high prevalence populations.

The Geneva Gay Men's Health Project has been a successful community-research collaboration that has turned Switzerland into a center of excellence for sexual minority health. Since its initial conception in 2000, numerous initiatives have been launched worldwide, and in public health, there has been growing recognition of sexual minorities as a group with distinctive health needs. A more cohesive picture is emerging, but recommendations call for additional research to bolster the evidence base, and in particular, sexual orientation should be introduced as a routine socio-demographic indicator in large surveys. Such data will help document health disparities and facilitate a syndemic approach in analyzing a complex system of multi-morbidity with multiple factors at multiple levels, supporting good policy and effective action in improving the health of sexual minorities.

Zusammenfassung

In den 70er Jahren wurden schwul-lesbische Vereinigungen und sogar einige schwule Gesundheitszentren gegründet, um Dienstleistungen Gleichgesinnten anzubieten. Als in den 80er Jahren die HIV-Epidemie in vielen westlichen Industrieländern zuschlug, stellten sich viele schwule Vereinigungen und Gesundheitszentren auf die dringliche AIDS-Krise ein. Angesichts der Ermüdung durch den Krisenalltag und der Einführung der neuen antiretroviralen Therapien (ART), riefen einige prominente Figuren der schwulen und der HIV-Präventions-Bewegungen in den späten 90er Jahren zu einer Rückbesinnung auf die Gesundheit schwuler Männer, um andere Gesundheitsthemen, die lange vernachlässigt wurden, wieder anzugehen.

Umfangreiche Literaturübersichten in den spät 90er Jahren identifizierten Gesundheitsthemen, die Schwule, Lesben, Bisexuelle und Transsexuelle (LGBT) in besonderem Ausmass betrafen. Leider aber genügten die vorhandenen Daten dem Qualitätsanspruch nicht, um in der Gesundheitspolitik aufgenommen zu werden. Um diese Lage zu verbessern, verabschiedete die American Public Health Association (APHA) 1999 eine Resolution für die Erforschung des Zusammenhanges zwischen Krankheit und sexueller Orientierung.

Dialogai, ein schwuler Verein in Genf, der als einziger schwuler Verein im Lande die HIV-Präventionsarbeit selber durchführte, brachte das Thema Gesundheit von schwulen Männern in die Schweiz ein und schloss sich zu einer Praxis-Forschungspartnerschaft für das Projet santé gaie mit dem Institut für Sozial- und Präventivmedizin der Universität Zürich zusammen mit folgenden Hauptzielen:
1) Informationen zur Gesundheit schwuler Männer sammeln, um sich und andere zu schulen; 2) Prioritäten aufgrund der Evidenz setzen und 3) neue Interventionen entwickeln, die sich auf Bedürfnisse stützen.

Nach zwei Runden von Fokusgruppen und einer Literaturrecherche wurde 2002 die erste Genfer Gesundheitsbefragung bei schwulen Männern (ESG) lanciert. 571 Männer, die nach dem Zufallsverfahren time-space sampling ausgewählt wurden, nahmen teil. Um allfällige Unterschiede zu den Public Health-Schlüsselindikatoren Gesundheitszustand, gesundheitsbezogenes Verhalten, und Inanspruchnahme von

medizinischen Leistungen herauszufinden, wurde ein Post-hoc-Vergleich mit gepaarten Kontrollen der Allgemeinbevölkerung aus der schweizerischen Gesundheitsbefragung 2002 durchgeführt. Schwule Männer wiesen signifikant mehr körperliche Symptome (AOR=1.72-9.21), kurzfristige gesundheitliche Beeinträchtigungen (AOR=2.56), Risikofaktoren für chronische Erkrankungen wie hoher Cholesterinspiegel, hoher Blutdruck, hoher Blutzucker und Rauchen (AOR=1.67-3.89), mehr Inanspruchnahme von medizinischen Leistungen (AOR=1.62-4.28) auf, auch nach statistischer Anpassung für sozio-demographische Merkmale und Gesundheitsverhalten. Einzig positiv bei schwulen Männern waren ein erhöhtes Ernährungsbewusstsein (AOR=1.66) und weniger Adipositas (AOR=0.54).

In der ESG wurde das WHO Composite International Diagnostic Interview Short Form (CIDI-SF) zur Erfassung psychischer Störungen eingesetzt. Knapp die Hälfte (43.7%) der Probanden erfüllte die diagnostischen Kriterien für eine der fünf DSM-IV Störungen in den letzten 12 Monaten: Major Depression 19.2%, spezifische und/oder soziale Phobie 21.9% sowie Alkohol- und/oder Drogenabhängigkeit 16.7%. Über ein Viertel aller Fälle war komorbid mit einem anderen Störungsart. Trotz hoher Chronizität solcher Störungen gab nur die Hälfte der Männer mit Major Depression bzw. ein Drittel der Männer mit spezifischer und/oder sozialer Phobie ihre Störung in der Befragung an. Diese Männer suchten auch fünfmal häufiger professionelle Hilfe, was die Bedeutung der Selbsterkennung unterstreicht. Insgesamt suchten in den letzten 12 Monaten 35.7% dieser Fälle einen professionellen Leistungserbringer zwecks psychischer Gesundheit auf.

Die ESG erhob zudem mehrere Formen von Suizidalität. Suizidgedanken (in den letzten 12 Monaten/im Verlauf ihres Lebens) wurde von 22%/55% der Befragten angegeben, Suizidpläne von 12%/38% und Suizidversuche von 4%/19%. Die Lebenszeitprävalenzen der verschiedenen Formen der Suizidalität und die Verhältnisse untereinander waren vergleichbar über die Altersgruppen. Männer unter 25 Jahren gaben jedoch die höchsten Jahresprävalenzen für Suizidgedanken (35.4%) und Suizidversuche (11.5%) und das tiefste Verhältnis von Versuch zu Gedanken an (1 : 3.1). Für die jüngste Altersgruppe führten wir Sekundäranalysen mit zwei nationalen Gesundheitsbefragungen bei Jugendlichen aus 2002 durch —

die Befragung zu Gesundheit und Lebensstil der Jugendliche in der Schweiz (SMASH) und die Eidgenössische Rekrutenbefragung (ch-x). Homo-/bisexuelle Männer im Alter von 16-20 Jahren gaben signifikant mehr Suizidgedanken, -pläne und -versuche (OR=2.09-2.26) in den letzten 12 Monaten sowie Suizidgedanken (OR=2.15) und -versuche (OR=4.68-5.36) im Verlauf ihres Lebens an.

2007 und 2011 wurde die ESG mit dem Schwerpunkt psychische Gesundheit wiederholt, inkl. die psychische Gesundheitskompetenz mit Eigenschaften kultureller Epidemiologie. Die Fallvignette zu Depression wurde als solche von 44.1% der gesamten Stichprobe benannt, bei Männern mit Major Depression in den letzten 12 Monaten waren es 61.9%. Die am häufigsten genannten Gründe erhöhter Betroffenheit schwuler Männer waren Diskrimierung (33.2%), Akzeptanz/Abweisung von anderen (21.4%) und Einsamkeit (24.9%). Männer mit Major Depression gaben Probleme mit Liebe/Beziehung (32.5%) und Arbeit (28.9%) als die am häufigsten wahrgenommenen Ursachen der jüngsten Episode ihrer Depression an. Bei Ausbruch der Depression wurden Probleme mit Liebe/Beziehung (21.9%), Akzeptanz der eigenen Homosexualität (21.1%) und Familie (20.2%) angegeben. Als hilfreich für die Fallvignette wurden nicht medizinische Angaben wie ein enger Freund (91.6%), Entspannungsübungen oder Meditation (84.4%) und Bewegung (83.5%) am ehesten von allen Befragten eingestuft. Die Männer mit Major Depression nannten spontan Freunde sehen (17.2%) und Sport treiben (17.2%) am häufigsten zur Linderung ihrer Symptome. Insgesamt waren die Teilnehmenden der Meinung, dass der Zugang zu gay-friendly Therapeuten das Aufsuchen eines Therapeuten als auch die Kommunikation stark begünstigen würde. Schwule Männer weisen viele Gemeinsamkeiten mit der Allgemeinbevölkerung in Bezug auf die Benennung der Störung, die wahrgenommenen Ursachen und die Suche nach Hilfe auf, aber auch mehrere Besonderheiten in Bezug auf Verständnis und Erfahrung.

Die erhöhte Prävalenz von Depression bei schwulen Männern könnte durch eine erhöhte Prävalenz gemeinsamer Ursachen sowie das Bestehen schwulen-spezifischer Ursachen entstehen. Betrachtet man das Medianalter bei Ausbruch einer affektiven oder Angststörung bzw. eines Suizidversuchs und das Medianalter der homosexuellen Entwicklungsmeilensteine, so zeigt sich eine auffällige

Verflechtung. Vielleicht lösen psycho-soziale Herausforderungen während solchen Phasen bei gewissen Männern während der Kindheit, Adoleszenz und im jungen Erwachsenenalter psychische Störungen aus. Bei schwulen Erwachsenen zeigen sich sowohl die Depression als auch die Suizidalität als chronisch bzw. rezidiv.

Als erste Intervention für Homosexuelle im Bereich psychischer Gesundheit wurde Blues-out – eine Depressionskampagne nach dem evidenzbasierten europäischen Allianz gegen Depression – entwickelt und lanciert. Die Pre-post Ergebnisevaluation konnte einen vergleichbaren Grad der Erkennung von Depression bzw. von Blues-out mit Kampagnen in der Allgemeinbevölkerung erweisen. 2011 erkannte ein Drittel der Befragten (32.9%) Blues-out. Diese Männer stuften Spezialisten und psychologische Therapien eher als hilfreich ein und erkannten eher eine Depression sowie das erhöhte Risiko einer Depression bei schwulen Männern. Gesamthaft nahm bei den Befragten zwischen 2007 und 2011 der Anteil an Suizidplänen und selbstangegebener Depression im Verlauf ihres Lebens, an Suizidgedanken in den letzten 12 Monaten und an psychische Belastung in den letzten 4 Wochen signifikant ab (-18% – -28% Nettorückgang). Diese Ergebnisse zeigen deutlich, dass Interventionen in Public Mental Health prioritär bei Gruppen mit erhöhter Prävalenz von chronischer/ rezidiver Depression bzw. Suizidalität geprüft bzw. eingesetzt werden sollten.

Das Projet santé gaie ist eine gelungene Zusammenarbeit zwischen Praxis und Forschung und ein Kompetenzzentrum für die Gesundheit sexueller Minderheiten in Europa. Seit seiner Konzeption im Jahr 2000 sind weltweit viele Ansätze lanciert worden und in Public Health werden sexuelle Minderheiten zunehmend als Gruppe mit unterschiedlichen Gesundheitsbedürfnissen anerkannt. Es ergibt sich langsam ein kohärentes Bild, aber in allen Empfehlungen wird mehr Forschung gefordert, um die Evidenzbasis zu stärken. Insbesondere soll sexuelle Orientierung als üblicher sozio-demographischer Indikator in grossen Erhebungen aufgenommen werden. Solche Daten unterstützen den Beleg gesundheitlicher Ungleichheiten und ermöglichen die Auswertung eines komplexen Systems der Multi-Morbidität mit mehrfachen Faktoren auf mehrfachen Ebenen. Damit wird es möglich, mit guter Politik und wirksamer Praxis die Gesundheit sexueller Minderheiten zu verbessern.

Résumé

Dans les années 1970, des organisations de gais et de lesbiennes et ainsi que même des centres de santé destinés aux gais ont été créés pour offrir des services de santé à la communauté homosexuelle. Quand l'épidémie de VIH a frappé dans les années 1980, nombre de ces organisations et centres de santé ont revu leurs priorités pour répondre à l'urgence de la crise du SIDA. A la fin des années 1990, en raison des changements profonds entraînés par l'apparition des traitements antirétroviraux et d'une relative normalisation du sida, plusieurs acteurs influents dans les milieux homosexuels et de la prévention du VIH ont lancé des appels à un retour à la santé gaie pour que soient pris en considération d'autres aspects de la santé qui avaient été négligés pendant plus d'une décennie.

Des examens détaillés d'études menées à la fin des années 1990 sur les problèmes de santé importants pour les personnes gaies, lesbiennes, bisexuelles et transgenres (LGBT) ont relevé des affections qui semblent toucher les minorités sexuelles de façon disproportionnée. Toutefois, on a considéré que la qualité des données disponibles était trop médiocre pour envisager une transposition en mesures concrètes. En 1999, pour tenter de remédier à cette situation, l'American Public Health Association a adopté une résolution dans laquelle elle invite à intensifier la recherche sur la relation entre maladie et orientation sexuelle.

La question de la santé des hommes gais a fait son apparition en Suisse via Dialogai, une organisation homosexuelle de Genève qui est aussi la seule organisation de gais du pays qui accomplit un travail professionnel de prévention du VIH. Dialogai a établi un partenariat de recherche avec l'Institut de médecine sociale et préventive de l'Université de Zurich pour lancer le Projet santé gaie, dont les objectifs sont les suivants : recueillir des données sur la santé des hommes gais, arrêter des priorités fondées sur des bases de preuve et mettre en œuvre de nouvelles interventions pour répondre aux besoins de la communauté.

Après deux séries de recherches qualitatives par des discussions de groupe et un examen exhaustif de la littérature, la première Enquête sur la santé des hommes gais de Genève – inspirée d'enquêtes nationales sur la santé de la population – a été menée en 2002 auprès de 571 hommes gais recrutés selon un échantillonnage aléatoire «temps-espace». Pour étudier l'existence éventuelle de besoins de santé spécifiques des hommes gais selon les indicateurs clés de santé publique que sont l'état de santé, les comportements liés à la santé et le recours aux soins de santé, nous avons procédé à une comparaison post-hoc avec des témoins appariés de la population générale de l'enquête suisse sur la santé de 2002. Les hommes gais ont fait état, avec une fréquence et une gravité nettement supérieures, de symptômes physiques (AOR=1,72-9,21), d'incapacité de courte durée (AOR=2,56), de facteurs de risque de maladie chronique — à savoir hypercholestérolémie, hypertension artérielle, hyperglycémie et tabagisme — (AOR=1,67-3,89), et d'un recours plus élevé aux services de santé (AOR=1,62-4,28), même après ajustement en fonction des caractéristiques sociodémographiques et des comportements de santé. Les seules exceptions à cette morbidité plus forte étaient l'attention plus grande portée aux choix alimentaires (AOR=1,66) et un taux moindre d'obésité (AOR=0,54) parmi les homosexuels masculins.

L'Enquête sur la santé des hommes gais de Genève a évalué les troubles psychiatriques courants en utilisant la forme abrégée du Composite International Diagnostic Interview (CIDI-SF) de l'OMS. Presque la moitié (43,7%) de l'échantillon répondait aux critères de diagnostic pour au moins un de cinq troubles mentaux du DSM-IV durant les 12 mois écoulés : dépression majeure 19,2%, phobie spécifique et/ou sociale 21,9% et dépendance à l'alcool et/ou à la drogue 16,7%. Plus d'un quart des cas présentaient une comorbidité avec un autre type de trouble. En dépit du caractère chronique de leur affection, seuls la moitié des hommes souffrant de dépression majeure et un tiers de ceux souffrant de phobie sociale et/ou spécifique

en ont effectivement déclaré. Chez ces hommes, la probabilité d'avoir cherché à se faire soigner était 5 fois plus élevée, ce qui met en évidence l'importance de la prise de conscience d'une affection psychique pour la recherche d'aide. Au total, seuls 35,7% des personnes souffrantes avaient consulté un professionnel de la santé pour un problème de santé mentale durant les 12 mois écoulés.

L'Enquête sur la santé des hommes gais de Genève a également évalué la suicidalité. Des idées suicidaires (12 mois/vie) ont été rapportées par 22%/55%, des plans de suicide par 12%/38% et des tentatives de suicide par 4%/19% des répondants. Alors que les prévalences durant la vie et les proportions sont similaires dans tous les groupes d'âge, les hommes de moins de 25 ans ont fait état des prévalences les plus élevées sur 12 mois pour les idées suicidaires (35,4%) et les tentatives de suicide (11,5%) et du plus faible coefficient de tentatives (1:3,1 pour les tentatives par rapport aux idées suicidaires). Pour étayer les données recueillies auprès du groupe le plus jeune, nous avons procédé à des analyses secondaires de deux enquêtes nationales sur la santé des adolescents menées en 2002 – à savoir la Swiss Multicenter Adolescent Survey on Health (SMASH) et l'enquête auprès des recrues suisses (ch-x). Nous avons comparé les jeunes hommes ayant une attirance homosexuelle ou bisexuelle avec leurs homologues hétérosexuels. Les hommes homosexuels ou bisexuels de 16 à 20 ans étaient nettement plus susceptibles de faire état d'idées suicidaires, de plans et de tentatives de suicide sur 12 mois (OR=2,09-2,26) et d'idées suicidaires (OR=2,15) et de tentatives de suicide (OR=4,68-5,36) depuis le début de leur vie.

L'Enquête sur la santé des hommes gais de Genève a été renouvelée en 2007 et 2011 en ciblant la santé mentale. Elle a évalué la compréhension et l'expérience des hommes gais face à la santé mentale en incluant les compétences en matière de santé mentale avec des éléments d'épidémiologie culturelle. Une vignette évoquant la dépression a été identifiée comme telle par 44,1% de l'échantillon total et par

61,9% des hommes ayant souffert de dépression majeure durant les 12 mois écoulés. La discrimination (33,2%), le rejet par autrui (21,4%) et la solitude (24,9%) étaient les raisons le plus souvent données pour une susceptibilité plus élevée chez les homosexuels masculins. Toutefois, les hommes souffrant de dépression majeure ont signalé les problèmes amoureux ou de relation (32,5%) et professionnels (28,9%) comme étant les causes les plus communément perçues de dépression récente. Pour le premier épisode de dépression, ce sont les problèmes amoureux ou de relation (21,9%), d'acceptation de son homosexualité (21,1%) et familiaux (20,2%). Les soutiens non médicaux comme parler à un ami proche (91,6%), des exercices de relaxation ou la méditation (84,4%) et l'activité physique (83,5%) ont été le plus souvent cités comme étant utiles pour la améliorer la situation décrite dans la vignette dépression. Voir des amis (17,2%) et faire du sport (17,2%) étaient les activités non professionnelles les plus fréquemment mentionnées par les hommes souffrant de dépression majeure. Une attitude positive à l'égard des homosexuels faciliterait le recours à des professionnels et la communication avec ces derniers. Alors que les hommes gais ont de nombreux points communs avec la population générale pour la désignation, les causes perçues et la recherche d'aide, les enquêtes ont mis en évidence certaines spécificités en matière de compréhension et d'expérience.

Prises dans leur ensemble, ces constatations semblent indiquer que la prévalence plus élevée de la dépression chez les hommes gais peut être due à une prévalence supérieure de causes semblables à celles de la population générale et à l'existence de causes propres aux gais. De plus, les âges médians lors de la première apparition des symptômes de l'humeur ou d'anxiété ou la première tentative de suicide sont décalés avec les âges médians des principales étapes du développement homosexuel (coming out), ce qui porte à penser que les difficultés psychosociales rencontrées durant ces phases pourraient déclencher des troubles psychiatriques et/ou des tendances suicidaires chez certains homosexuels masculins

pendant l'enfance, l'adolescence et au début de l'âge adulte. Aussi bien la dépression que les tendances suicidaires continuent ensuite de présenter des niveaux élevés de chronicité/récurrence parmi les adultes gais.

Première intervention dans le domaine de la santé mentale pour une communauté homosexuelle, Blues-out est une campagne de sensibilisation à la dépression conçue sur le modèle de l'Alliance européenne contre la dépression (EAAD), qui a déjà fait ses preuves. L'évaluation pré-post intervention a confirmé des niveaux de reconnaissance de la dépression et de Blues-out comparables à ceux trouvés dans la population générale. Un tiers des répondants (32,9%) a reconnu Blues-out dans l'évaluation post intervention en 2011. Ces hommes étaient plus susceptibles d'estimer utiles le recours à des spécialistes et les traitements psychologiques et d'identifier correctement la dépression et le risque plus élevé de dépression chez les homosexuels masculins. Malgré la faible ampleur des effets observés, des baisses nettes marquées (18-28%) ont été constatées entre 2007 et 2011 dans les plans de suicide depuis le début de la vie, les idées de suicides durant les 12 mois écoulés, les cas autodéclarés de dépression depuis le début de la vie et la détresse psychologique durant les 4 dernières semaines. Une priorité devrait être d'évaluer et de mettre en œuvre des interventions de santé publique en santé mentale au sein de ces populations à forte prévalence.

Le Projet santé gaie de Genève a été une collaboration fructueuse entre la communauté et les milieux de la recherche, qui a fait de la Suisse un centre d'excellence pour la santé des minorités sexuelles. Depuis sa conception en 2000, de nombreuses initiatives ont été lancées dans le monde et, dans le domaine de la santé publique, on reconnaît de plus en plus largement les minorités sexuelles comme groupe ayant des besoins particuliers dans le domaine de la santé. Un tableau d'ensemble est en train d'apparaître, mais des recommandations appellent à mener des études supplémentaires pour renforcer la base de preuve, en particulier, à

prendre en compte l'orientation sexuelle comme indicateur sociodémographique de manière systématique dans les grandes enquêtes sur la population générale. Ces données contribueraient à prouver les disparités en matière de santé et faciliteraient une approche syndémique pour analyser un système complexe de multi-morbidité avec des facteurs multiples à des niveaux multiples, en vue de servir de base à de bonnes politiques et à des mesures efficaces pour améliorer la santé des minorités sexuelles.

Part I

Gay men's health and the Geneva Gay Men's Health Project

Chapter 1

Introduction

1.1 Gay men's health

1.1.1 An early history from gay liberation to the AIDS crisis

It can be argued that the issue of gay men's health was born shortly after the gay liberation movement in the 1970s. Gay and lesbian community-based organizations were created in many industrialized countries—sometimes as unified gay-lesbian organizations or as separate organizations for gay men and lesbians—and one of the main activities was to provide assistance to the community such as counselling. The first gay health clinics were opened in several large urban cities in North America in the 1970s and early 1980s, addressing a variety of health issues—e.g., testing and treatment for sexually transmitted infections (STI), psychological therapies [Rofes, 2000; Ryan and Chervin, 2001]. These "underground" clinics were initially staffed by volunteer gay doctors, providing services which proved difficult for gay men to obtain elsewhere, without revealing their sexual orientation. Gay men also attracted the attention of public health in the 1970s with the first studies on hepatitis B.

When the HIV/AIDS epidemic appeared in many Western industrialized countries in the 1980s, it devastated many local gay communities. Well poised to respond, the gay health clinics shifted their focus to address the pressing health needs of the AIDS crisis. Many benefited from AIDS funding to professionalize and grow their infrastructure and services into becoming high quality community health centers; however, the development of services for other health needs often fell to the wayside during this time. The HIV/AIDS epidemic shone a public health spotlight on gay men, and many epidemiological studies were carried out among gay men to uncover risk factors for HIV infection and monitor HIV prevalence and risk behaviors. Good public health practice also underscored the importance of engaging and empowering community-based organizations to do HIV prevention work. Also here, thanks to AIDS funding, gay and gay-lesbian organizations began to professionalize and grow,

securing infrastructure and personnel for HIV prevention but also gay community work and political advocacy.

1.1.2 Come-back as a response to changes in the HIV epidemic in the late 1990s

In the late 1990s, the introduction of effective antiretroviral therapies (ART) was followed by dramatic changes in both risk behavior [Weatherburn et al., 2000] and HIV transmission [BAG, 2003] among gay men in Switzerland and elsewhere in Western Europe [Wang, 2000]. Several studies explored the impact of ART on changing the attitudes of gay men towards HIV/AIDS and condom use [Adam et al., 1998; Dilley et al., 1997; Dilley et al., 1998; Hickson et al., 1998; Kelly et al., 1998]. The normalization of AIDS [Rosenbrock et al., 2000] and the rise in unprotected anal intercourse (aka barebacking) [Mansergh et al., 2002] have challenged established practices in prevention and research. Indeed, many community-based organizations and government agencies have been struggling to adapt their response as familiar approaches appear increasingly ineffective and out-dated.

As a response to this new reality and since the crisis phase is now over [Rofes, 1998], several prominent leaders in the US gay and HIV prevention communities have made calls for a return to gay men's health [Rofes, 2000]. Although AIDS is but one of many health issues affecting gay men in the "post-AIDS era", many of these other health issues were ignored for over a decade.

Key researchers and policymakers have increasingly acknowledged the need for a gay men's health approach to better understand and deal with the resurgence in HIV case reports among gay men, as evidenced by these statements from experts at the Centers for Disease Control and Prevention (CDC) in the US:

> "Our recommendations for addressing the HIV prevention needs of MSM include the need to consider HIV-related issues within the broader context of the physical, mental, and sexual health of MSM."
>
> - Wolitski et al. (CDC), *AJPH* 2001

> "AIDS prevention among MSM has overwhelmingly focused on sexual risk alone. Other health problems among MSM not only are important in their own right, but also may interact to increase HIV risk. HIV prevention might become more effective by addressing the broader health concerns of MSM while also focusing on sexual risks."
>
> - Stall et al. (CDC), *AJPH* 2003

Canada was the first country to actually place gay men's health on a new national HIV prevention agenda. A National Reference Group of gay men was formed by the HIV/AIDS Policy, Coordination and Programs Division of Health Canada in concert with the community to examine the relationship between the determinants of health and the issues of gay men's health. Administered by the Gay and Lesbian Health Services of Saskatoon, the national project produced a strategy document to inform new health policy, concluding that HIV prevention in Canada be reinvigorated "through repositioning HIV prevention in a context of gay men's health" [National Reference Group, 2001]. Some perceived advantages of the gay men's health approach include it 1) speaking more readily to gay men at this stage of the HIV epidemic, 2) being more relevant to HIV-positive men with a focus on promoting health, and 3) addressing other health needs to raise the overall health of gay men and thereby decrease their vulnerability to disease and poor health [Ryan and Chervin, 2001].

1.1.3 Evidence for syndemic of HIV and other health problems

Internationally, the link between social marginalization and vulnerability to HIV has been well established. As such, there is recognition that HIV often accompanies other social and health problems. The concept of syndemic was first formulated explicitly in AIDS research among the urban poor [Singer, 1994], IDUs [Maher, 2002],

and most recently, among gay men [Stall et al., 2003]. All these studies have documented links between the AIDS epidemic, substance use, violence, and other health issues.

The literature on factors associated with sexual risk behavior has sometimes indicated a link between HIV/AIDS and other health issues such as substance use and mental health [Hospers and Kok, 1995; Chesney et al., 1998; NIMH, 1999]. Many studies have shown higher prevalences of many STDs among gay men [Ungvarski and Grossman, 1999] which in turn facilitate transmission of HIV. While these issues can be considered co-factors for HIV infection or risk factors for unprotected anal intercourse, a better understanding would be that they point to other important health needs which, when taken together, may indicate an underlying vulnerability. As one HIV counsellor remarked:

> "I think that you can make a direct link between the various kinds of unhealthy situations or realities in our community and HIV transmission. And I think that we can't just say that people need to learn more about how to protect themselves… we've got to address homophobia, we've got to address intolerance, self-loathing, the suicide rate."

There is also evidence that such health concerns are more pronounced among HIV-positive gay men. A national sample of HIV-positive gay men under treatment in France reported that 68% manifested psychological distress which was also independently associated with unsafe sex [Bouhnik et al., 2006]. The US National Comorbidity Survey reported that HIV-positive status was significantly associated with higher levels of mood, anxiety, and substance use disorders [Gilman et al., 2001]. Epidemiological field studies among gay men in European cities have shown that lab-confirmed HIV-positive gay men—including HIV-positive men unaware of their HIV-positive status—were more likely to consume drugs and demonstrate greater vulnerability in terms of psycho-social (e.g., self-esteem, self-efficacy) and

sexual health (e.g., history of sexual abuse, earlier sexual debut, more sexual partners, more unprotected sex, more STDs) [Wang et al., 1997; Wang et al., 1999]. Qualitative studies confirm that depression, substance use, and psycho-social factors like low self-esteem precede seroconversion among HIV-positive gay men and most likely contributed to sexual risk behavior leading to seroconversion [Elam et al., 2008].

Although HIV epidemiology helped collect the very first health data on gay men in many countries, these studies have focused on HIV and sexual risk behavior, and other health issues have been addressed—if at all—only as co-factors for HIV. As such, there has been a strong HIV bias or gaze in health data on gay men.

1.1.4 Sexual minority health emerges as a public health issue

Until the turn of the new millenium, gay men and lesbians were not widely recognized as a group with a distinctive socio-demographic profile and distinctive health needs. In the United States, the Institute of Medicine published a report on lesbian health in 1999, which reviewed the available knowledge about the needs and specificities of this population and highlighted the need for new population-based research [Solarz, 1999]. The Center for Lesbian, Gay, Bisexual and Transgender Health at Columbia University Joseph L. Mailman School of Public Health [Dean et al., 2000] and the Gay and Lesbian Medical Association [GLMA, 2001] released documents presenting a comprehensive overview of research on health issues relevant to lesbians, gay men, bisexual men and women, and transgender people (LGBT) along the lines of Healthy People 2010, the US national health strategy for the first decade of the new millenium. These groundbreaking documents identified health issues such as mental disorders, STDs, and substance use which appear to affect sexual minorities disproportionately, but also issues in access and care such as bias and

discrimination by health care providers and institutions. Although these overviews point to important health inequalities and issues of particular concern, the quality of the available data was deemed too poor to translate into policy initiatives [Sell and Becker, 2001]. Due to poor data, LGBT were excluded from Healthy People 2010.

Table 1-1. Social/behavioral factors and health concerns relevant to LGBT populations identified in 2000

Sexual behavior	Cultural factors	Disclosure of sexual orientation, gender identity	Prejudice and discrimination	Concealed sexual identity
• HIV/AIDS • Hepatitis A and B • Enteritis • Human papillomavirus • Bacterial vaginosis • Anal cancer • Other STDs	• Body culture: eating disorders • Socialization through bars: drug, alcohol, and tobacco use • Nulliparity: breast cancer • Parenting: insemination and mental health concerns • Gender polarity in dominant culture: conflicts for transgender and intersex persons	• Psychological adjustment, depression, anxiety, suicide • Conflicts with family of origins, lack of social support • Physical/ economical dislocation	• Provider bias, lack of sensitivity • Harassment and discrimination in medical encounters, employment, housing, and child custody • Limited access to care or insurance coverage • Pathologizing of gender-variant behavior • Violence against LGBT populations	• Reluctance to seek preventive care • Delayed medical treatment • Incomplete medical history

Source: Dean et al., 2000.

In response to the poor body of evidence, the American Public Health Association (APHA) passed a resolution calling for more research on the relationship between disease and sexual orientation [APHA, 1999]. In June 2001, the APHA helped spur further research by dedicating an issue of the *American Journal of Public Health* to LGBT health for the very first time. The APHA also helped popularize the terms "sexual minority" and "sexual minority health", thereby creating links to other groups affected by health inequalities. Indeed, the first decade of the new millenium has been characterized by efforts to improve the evidence base, as captured by special issues on LGBT health in other scientific journals since then: *Journal of Adolescence* (2001), *Journal of Clinical Psychology* (2001), *Journal of Clinical Child and*

Adolescent Psychology (2003), *Clinical Research and Regulatory Affairs* (2003), *Journal of Urban Health* (2005), *Developmental Psychology* (2008), *Journal of Homosexuality* (2008 and 2012), *Journal of Counseling Psychology* (2009), and the *Canadian Journal of Community Mental Health* (2011).

1.2 Geneva Gay Men's Health Project – Projet santé gaie

1.2.1 From gay organization to AIDS service organization to gay men's health

Just as gay men's health was being launched at the turn of the millenium, the issue entered Switzerland via Dialogai, a local gay men's organization founded in 1982 in Geneva. This was no coincidence. Dialogai is the only gay organization which has been active in HIV prevention work since the mid-1980s, not relegating prevention for gay men to the local AIDS-Hilfen, initially gay health organizations focused on AIDS. As a consequence, Dialogai has received direct government funding, allowing it to solidify a community-based infrastructure and build significant expertise as an AIDS-service organization (ASO). The resources from HIV prevention have also meant that Dialogai has been the largest and best funded gay/lesbian organization in Switzerland. Its community mandate has meant that, alone among the AIDS-Hilfen, Dialogai has maintained a strong link to the gay community and gay community issues.

As a gay organization, Dialogai's resources have always been dedicated to HIV prevention in the gay community, something that has not been true for many AIDS-Hilfen which started off with many gay personnel and a gay focus that shifted over time into mainstream health organizations. Dialogai's unique position among the AIDS-Hilfen led it to be the first organization to openly question the effectiveness of prevention activities in light of the changes in the late 1990s. As a response to these

changes but also to the fact that a gay organization continues to receive gay men presenting with problems other than HIV, the board of Dialogai mandated Michael Häusermann, founding member of Dialogai and former director of the Swiss AIDS Foundation, to formulate a strategy paper on gay men's health [Häusermann, 2000] which was then approved by members at the annual assembly in 2000.

After focusing its efforts on HIV for 15 years, Dialogai and its staff were recognized for their high level of competence in HIV but did not have comparable experience with other health issues. To their own admission, the AIDS crisis pushed other health issues and activities to the sidelines. As seen in the reviews written around 2000, there was little quality data on gay men's health beyond HIV and sexual risk indicators.

1.2.2 Community-research collaboration

Dialogai hired one of its co-founders and a former director of the Swiss AIDS Foundation to spearhead the new direction. He invited an epidemiologist specializing in HIV at the Institute for Social and Preventive Medicine, University of Zurich (ISPMZ), to discuss how best to proceed along gay men's health, and the community-research partnership for the Geneva Gay Men's Health Project was born. The team decided to begin by gathering information on gay men's health in order to educate itself and others (i.e., the gay community and professional/political stakeholders), set priorities based on evidence, and design and implement projects in response to community needs.

The community-research collaboration is a central aspect of this project. Some of the important shifts in HIV prevention and public health in general have to do with the way research and interventions are conceived, carried out, and evaluated. There is a

shift away from academically dominated research projects towards more community-based approaches which imply participation, partnership, and even full ownership of the research by community organizations and their members. The main advantage of community-based research is that research is more directly relevant to community issues, and community participation greatly increases the chance that the knowledge won will inform follow-up activities.

The Center for AIDS Prevention Studies (CAPS) makes the following recommendations for community-based research based on their Legacy Project [Goldstein et al., 2000]:

Rec. 1: thoughtful selection of interventions for evaluation
→ formative, descriptive, and theory-development research are more likely to succeed than outcome research

Rec. 2: secondary and alternative research questions should be incorporated from the beginning
→ less rigid research designs have greater chances for success; changes in study design may be necessary

Rec. 3: appropriate and stable CBO as partner
→ CBO stability and experience were positively correlated with a successful project

Rec. 4: high level of university researcher involvement
→ researcher should meet and work with CBO staff as a full partner and not a distant consultant

Rec. 5: adequate time and funding for researcher/CBO staff collaboration
→ successful collaboration requires adequate planning and additional resources

Within the framework of the Geneva Gay Men's Health Project [Häusermann et al., 2010], all five recommendations have been practiced successfully. The community partner has helped set the research agenda, organize data collection, and enriched discussion of research findings. The research partner has provided an evidence basis for priority-setting and informing new initiatives in existing areas such as community activities and HIV and in new areas of activity such as mental health.

1.3 Geneva Gay Men's Health Survey

1.3.1 Focus groups on gay men's health

The needs assessment began with a series of focus groups conducted among gay men in Geneva in May-June 2001 [Wang et al., 2001]. The objective was to gather basic information about gay men's conceptions of health, their perceived health-related needs, and their strategies and ideas for meeting those needs. Each focus group session was divided into 3 sections. In the first section, the goal was to gather men's conceptions of health and their reactions to the expression "gay men's health". This section were carried out with a flip-chart in brainstorming fashion to get the participants thinking about health and speaking in the group. In the second section, we implemented questions and exercises based on the SEIQoL (Standard Evaluation of Individual Quality of Life) measure [Boyle, 1994] to elicit important areas of life as determined by the participants themselves and have them rate their level of functioning in those areas. In the third section, the goal was to elicit concrete needs associated with the main life domains arising in each focus group and how those needs may be addressed.

The focus groups were split according to age groups. Each session was recorded. Both principal investigators were present at all focus group sessions to observe the discussions and protocol the key points. Abridged transcripts were made for each focus group and formed the basis of the analysis. For each question, each statement was coded and tabulated electronically, noting the frequency, extensiveness, and valence. Quotes were selected to illustrate key points.

We found that gay men have a holistic view of health, and in particular, mental health issues directly or indirectly related to homosexuality figure prominently. HIV/AIDS occupied a small place in the discussions. The most important life domains were

love and relationships, work, friends, and health, even though the order is exactly reversed in terms of functioning. As for perceived needs, having a stable relationship, coming out, self-acceptance, respect from others, having the chance to socialize with other gay men in a non-sexualized context, coming out to one's doctor, and access to gay-friendly health services were most often cited.

Although the findings of the focus groups were helpful and interesting, a health survey would provide prevalences for a broad palette of health outcomes and risk factors. To this end, the team submitted a research proposal for approval by the AIDS Commission of the Swiss National Science Foundation (SNSF).

1.3.2 Literature review

The primary objective of the literature review was to establish an information and contact base for developing the concept of gay men's health in general as well as an evidence base for specific health issues therein. While this phase had begun with the strategy paper [Häusermann, 2000], a systematic and concerted effort was made to collect available articles, reports, and project information once funding for the research project was secured.

Findings from population and gay/lesbian studies were summarized by health topic in a survey handbook on gay men's health. The handbook played an important role in providing a basis for the researcher-practitioner team to access and discuss the many health topics covered in health surveys and make initial comparisons between general and gay populations where possible.

Both the literature review generally and the handbook specifically have been works in progress and updated periodically. As evident in the overview on gay men’s health,

little high quality data was available during the preparation of the 2002 survey, with many studies being carried out and published during this past decade.

1.3.3 Methods of the Geneva Gay Men's Health Surveys

Based on the qualitative findings and the dearth of international, national, and local data, the team decided to collect concrete, comparable data on gay men's health status along a wide spectrum of life domains and health issues with a full-scale health interview survey. The main objective of the baseline health survey in 2002 was to determine the prevalence of a wide range of selected health issues (conditions, behaviors, and attitudes) relevant to gay men living in Geneva. These data should provide some indication of the most widely experienced issues and thus facilitate priority-setting and planning, not only for intervention projects but also for policy makers. Furthermore, the data will permit analyses of inter-relationships between various conditions, behaviors, and attitudes which should provide valuable information for intervention design and further research.

Survey instrument

The questionnaire was developed along the principles of comparability and relevance. Comparability meant that there will be an emphasis on using questions and question formulations which maximize comparability with other Swiss and international studies. The following criteria on relevance guided the selection of health topics and indicators:

1) standard key indicators in health surveys with public health relevance
2) ≥5% prevalence in the general population and/or among gay men and lesbians
3) priority in the gay health literature, including our own research
4) community organization ratings and discussions

In the selection of actual questions, preference was given to the Swiss Health Survey, except in instances where standardized European Health Interview Survey (EUROHIS) indicators have been propagated for the same issue [Nosikov and Gudex, 2003]. In this regard, the Belgian Health Interview Survey proved particularly useful given its early integration of standardized EUROHIS indicators. We also used indicators from the Canadian National Population Health Survey (NPHS) given its excellent coverage of psycho-social variables and life domains. With these particular sources, we were able to enjoy the important advantage of adopting the questions directly in the French language.

In order to gather data on a broad range of health issues, the questionnaire has the length of a traditional population health survey which is around 600 questions and takes 1-1.5 hours to complete. The study questionnaire for the Geneva Gay Men's Health Survey contains 550 questions, of which over 95% are standardized questions from existing instruments or surveys. One important advantage over standard health interview surveys is the inclusion of gay-specific variables on coming out, relationships, sex, health care providers, and stigma. Over 80% of the questions were available in French, with the remaining questions translated into French using translation/back-translation. Table 1-2 presents an overview of the topics covered in the 2002 Geneva Gay Men's Health Survey.

Table 1-2. Topics covered in the Geneva Gay Men's Health Survey, 2002

social-demographics	mental health	health care
age	disability	health insurance
socio-economic status	psychological distress	health care providers
place of residence	chronic conditions	services utilization
living situation	major depression	use of medicines
nationality	specific and social phobias	patient-oriented issues
subjective health status	generalized anxiety disorder (stem)	life domains/lifestyle
overall health	eating disorders (stem)	physical activity
health-related quality of life	substance use	eating habits
physical health	tobacco	relationships
disability	alcohol	sex
chronic conditions	other drugs	work
symptoms	psycho-social variables	social support
	personal resources	leisure
	satisfaction with weight/body	spirituality
	coming out	socio-environmental stressors
	HIV/AIDS-related attitudes	accidents
	suicide	stigma & discrimination
		violence

As is common practice in certain population health surveys, the GGMHS was split into two parts. This allowed us to gather the most important data via laptop at the recruitment venue, while permitting the respondent to complete a second part of additional questions online. The first part of the questionnaire was programmed for laptops using the NIPO Interview System Software (Amsterdam, the Netherlands). Both parts of the questionnaire were programmed for online administration. A unique code linked Part I on the laptop with Part II on the Internet, or permitted the user to complete both parts online. Both the laptop and Internet versions were programmed with user-friendly interfaces and an attractive layout. In terms of data quality, jumps and data checks were programmed in both versions. Finally, both platforms were pre-tested for format, language, and time.

Sampling

All men who have ever had sex with men and/or identify as gay/bisexual were eligible to participate in this study. The issue of representativity in a partially hidden population such as gay men and other men who have sex with men remains problematic and unresolved. Probability samples from the general population are

considered the gold standard, but gay men remain a partially hidden group. Rather than taking the unknown denominators of all gay-identified men or all men who have sex with men, a venue-based strategy allows researchers to obtain a certain level of representativity with the use of specialized multi-stage probability sampling schemes, such as time-space sampling developed originally by the CDC [MacKellar et al., 1996; Stueve et al., 2001; Catania et al., 2001]. Gay meeting points are located mostly in larger cities and attract men from the entire surrounding region. While the type and number of settings can be increased for better representation, men who do not frequent meeting points of gay men will, by definition, be excluded from the sampling frame. Finally, a venue-based study permits site-specific analyses of data and facilitates site-specific interventions.

Geneva's gay venues constitute the primary setting for on-site recruitment: gay organization events, bars/cafés, discos, saunas, beaches, and public cruising areas. Futhermore, recruitment also takes place in chatrooms. A list was compiled of all meeting points in Geneva where gay men socialize and/or pick up male sex partners. For each venue, a form was completed based on direct enumeration and informants: time (opening hours, fluctuations during the day/week), clientele profile (age, sub-scene), and the number of gay men. Due to HIV prevention outreach work, most of the venues and their owners were already known to Dialogai staff.

On the basis of this mapping, a targeted sampling frame can be erected to yield a proportionally representative sample for each venue, venue type, and the gay scene in Geneva. The recruitment schedule is erected by first randomly selecting a venue and then randomly assigning it to a valid recruitment slot/date. If additional slots or dates are necessary for the same venue, it is then reintroduced for random selection;

otherwise, it is removed. A random number is also assigned to each venue, so that trained recruiters can sample participants on-site using a randomized procedure.

Recruitment

Between October-December 2002, the recruitment team invited 1153 eligible men to participate in the survey. Of them, 63% agreed to participate, with rates ranging from 23% in chatrooms to 93% in the gay organizations. Fifty percent of eligible men actually participated, with rates ranging from 15% in chatrooms to 86% in the gay organizations. In both instances, participation rates were highest in gay organizations, bars/cafés, discos/parties, and sex-clubs; somewhat lower in saunas and parks/toilets; and very low in chatrooms. Excluding the chatrooms, the actual participation rate among men recruited at physical venues was 62%.

Table 1-3. Participation rates among randomly selected eligible men by venue type, GGMHS, 2002

Type of venue	No. of eligible men invited	No. of men agreeing to participate	% of men agreeing to participate	No. of men who actually participated	% of men who actually participated
Gay organizations	80	74	93%	69	86%
Bars / cafés	114	93	82%	69	61%
Discos / parties	320	275	86%	220	69%
Sex-clubs	37	30	81%	28	76%
Saunas	182	128	70%	97	53%
Parks, toilets	109	69	63%	41	38%
Chatrooms	311	71	23%	47	15%
TOTAL	1153	730	63%	571	50%

In the physical venues, men were encouraged to complete the first part of the questionnaire via laptop on-site. However, as lack of time was one of the top three grounds for refusal in the 1998 Zurich Men's Survey [Wang et al., 1999] which had implemented the same recruitment strategy, men were invited to complete the first part of the questionnaire on the Internet if they had refused to complete the

questionnaire on-site. Forty-two percent of the participants (range 22% in bars to 68% in parks/toilets to 100% in the chatrooms) completed with first part of the questionnaire at a later point online, with 60% of those who had agreed to complete the first part online actually doing so.

Among the 582 non-participants, 42% expressed no interest in participating, 27% had agreed to participate but did not actually do so, and 11% expressed not having the time to participate. Only 1% of non-participants gave concerns of anonimity and confidentiality as a reason for not participating. For each direct refusal, his reason of refusal as well as his age group were recorded. It appears that direct refusals were disproportionately high among men 50 years and over.

As for the effect of the innovation of allowing initial refusers to fill out the survey at another time online, we see that it did increase the level of initial consenters (78% in 2002 compared to 68% in 1998). The innovation did lower the percentage of people who refused due to time (18% in 2002 vs. 27% in 1998), although it clearly did not eliminate time as a reason. However, only 60% of those who had agreed to complete the questionnaire online eventually did so, leaving us with an overall response rate of 62% for the physical venues. This is somewhat lower than in 1998.

The actual participation rate for the chatrooms was only 15%, compared to 62% at the physical venues. Also, time was a more important reason for refusal at virtual venues (27%) compared to physical venues (18%), even though just like the latter, they did not have to complete the questionnaire online right away. Also, many refusers in the chatrooms simply broke off contact and did not indicate a reason for refusal (these were categorized as “no interest, no response”). These findings point

to the difficulty of doing online recruitment and should really cause one to seriously consider bias in open online surveys.

GGMHS 2007 and 2011

As part of an outcome evaluation for Blues-out—a depression awareness campaign for gay men (and lesbians)—the Geneva Gay Men's Health Surveys were repeated in 2007 and 2011. The content of the surveys was revamped with a focus on mental health and campaign evaluation: 1) mental health status, 2) mental health literacy, and 3) project evaluation. The section on mental health status was repeated from indicators used in 2002, allowing comparisons over a decade.

The main section was newly constructed based on research interests in both cultural epidemiology and mental health literacy. Both fields share in-depth assessment of symptoms, causes, and help-seeking from the patient's (or citizen's) perspective. Jorm and colleagues founded and have researched the issue of mental health literacy for well over a decade and kindly permitted use of their detailed instruments in assessing mental health literacy and evaluating depression campaigns. The interview is based on a case vignette of a man with depression. Respondents were then asked a series of questions about the vignette: recognition of depression, first-aid response, perceived discrimination and stigma, perceived risk, exposure, help-seeking beliefs about people and professionals, help-seeking beliefs about substances (incl. medications), and help-seeking beliefs about activities (incl. therapies). We included a series of attitudes about depression and suicide as recommended by the European Alliance Against Depression (EAAD). For actual cases of depression and suicide, open questions about perceived causes and help-seeking/treatment were added as per EMIC [Weiss et al., 1997].

Originally, the study design was conceived as pre- and post-intervention assessments with a control city—i.e., sample sizes of 250 in Geneva vs. 250 in control at T1, and 250 in Geneva vs. 250 in control at T2. Since Zurich could not be used as a control and a comparable replacement could not be found by campaign launch, the study design was modified to pre- and post-intervention assessments in Geneva alone. The sample size was modified to 500 in Geneva at T2.

The same recruitment strategy of time-space sampling was repeated in 2007 and 2011, updating the mapping and enumeration each time. Compared to 2002, the proportion of men recruited online has grown in importance to about 20% in recent waves, and given the low response rate at virtual meeting points, the overall response rate has decreased. However, according to their socio-demographic profiles, the samples over the 3 waves are highly comparable, with the possible exception of increased cohabitation in 2011 (Table 1-4). Laptops took advantage of wireless technology, and data collection was moved entirely to a secured online database (FilemakerPro). However, occasional technical problems with speed and wireless access rendered data collection difficult at times.

Table 1-4. Overview of the Geneva Gay Men's Health Surveys in 2002, 2007, and 2011

	2002	2007	2011
Number of respondents	571	276	486
Response rate	50%	44%	38%
Recruited online	7%	19%	21%
Gay/homosexual identity	87%	92%	89%
Living in Geneva canton	50%	56%	45%
<25 years old	17%	21%	14%

1.4 Chapter outlines

The dissertation is organized in three sections, covering some of the original scientific work for the Geneva Gay Men's Health Project, spanning the period 2001-2013:

Part I Gay men's health and the Geneva Gay Men's Health Project (Ch. 1, 7)

Part II Findings on health, mental health, and mental health literacy among gay men (Ch. 2, 3, 4, 5)

Part III Impact of an evidence-based intervention addressing depression and suicidality among gay men (Ch. 6)

Part I presents an overview of the topic of gay men's health, the process and contributions of the Geneva Gay Men's Health Project, and the overarching methods and findings of the Geneva Gay Men's Health Surveys. Part II presents findings on gay men's health. After an overview of gay men's health, additional work is done in the priority area of mental health with particular attention to depression and suicidality. Part III presents the outcome evaluation of a community-based intervention targeting depression and suicidality among gay men. Chapters 2-4 use data from the 2002 survey. Chapters 5-6 use data from the 2007 and 2011 surveys.

Ch. 2: Health status, behavior, and care utilization in the Geneva Gay Men's Health Survey

This paper presents an overview of gay men's health by using key public health indicators of health status, health-related behaviors, and health care utilization. In order to explore the possible existence of distinctive health needs among gay men, we matched the community sample of gay men from the 2002 Geneva Gay Men's Health Survey with general population controls from the 2002 Swiss Health Survey by sex, year of birth (±1 year), nationality (Swiss vs. non-Swiss), and canton (or

linguistic region) of residence and calculated odds ratios (OR) and adjusted odds ratios (AOR), using the latter as the reference group.

Ch. 3: High prevalence of mental disorders and comorbidity in the Geneva Gay Men's Health Survey

This paper presents a psychiatric epidemiological profile for five mood, anxiety, and alcohol/drug use disorders—i.e., major depression, simple phobia, social phobia, alcohol dependence, and drug dependence—assessed using the WHO Composite International Diagnostic Interview Short Form (CIDI-SF) among a community sample of gay men from the 2002 Geneva Gay Men's Health Survey. The larger sample size permits analyses to go beyond 12-month prevalence estimates published to date to include new findings on patterns of comorbidity, onset (hazard rates), disability by symptom severity, and treatment of selected psychiatric disorders for a gay population.

Ch. 4: Suicidality and sexual orientation among men in Switzerland: findings from 3 probability surveys

This paper presents findings on suicidality among a community sample of gay men from the 2002 Geneva Gay Men's Health Survey, and compares young gay men 20 years and under with homosexually attracted and heterosexually attracted men from the 2002 Swiss Multicenter Adolescent Survey on Health (SMASH) and the 2002 Swiss Recruit Survey (ch-x). Given the wide ranges in prevalences and OR reported for gay men in the literature, we hoped to situate the actual levels—bolstered by possible homogeneity across samples—for gay men in Switzerland. Since differences by region, time frame, sex, and age also appear to be relevant among sexual minorities, we wanted to explore possible differences in time frame, age, and

sampling design by directly comparing data on three forms of suicidality, across two time frames, from three different samples.

Ch. 5: Mental health literacy and the experience of depression in a community sample of gay men

This paper describes the understanding of depression in a gay community sample and, given the high prevalence, the experience of depression among gay men fulfilling diagnostic criteria for major depression. To bolster power for the latter, we report data from the combined 2007 and 2011 Geneva Gay Men's Health Surveys. The data collection and analysis draw on state-of-the-art methods in mental health literacy expanded and deepened with reference to cultural epidemiology. The findings are based on responses to both open questions and specific probes in labelling/recognition, perceived causes, and help-seeking. The identification of cases also makes it possible to compare understanding to actual experiences.

Ch. 6: The impact of a depression awareness campaign on mental health literacy and mental morbidity among gay men

This paper assesses the possible impact of Blues-out, a depression awareness campaign launched in 2009 based on the European Alliance Against Depression (EAAD), adapted for and targeting the gay/lesbian community in Geneva. We compared pre- and post-intervention data from the Geneva Gay Men's Health Surveys in 2007 and 2011 which focused on mental health status, mental health literacy, and intervention exposure. Effect sizes are reported for possible changes in mental health literacy (e.g., labelling/recognition of a depression vignette) and mental health outcomes (e.g., suicide attempts) between 2007 and 2011 as well as between men aware and unaware of Blues-out in 2011.

References

Adam P, Moreau-Gruet F, Miller M, Hamers F, Delmas M-C, Brunet J-B, Dubois-Arber F. HIVAIDS preventive attitudes and behaviour of French and Swiss gay men in the era of new treatments: a comparison of two national surveys. Oral presentation 642/34107 at the XII World AIDS Conference in Geneva, Switzerland, June - July 1998

American Public Health Association policy statement 9819: the need for public health research on gender identity and sexual orientation. *Am J Public Health* 1999;89:444-445.

Bouhnik A-D, Préau M, Schiltz A-A, Peretti-Watel P, Obadia Y, Lert F, Spire B, and the VESPA Group. Unsafe sex with casual partners and quality of life among HIV-infected gay men: evidence from a large representative sample of outpatients attending French hospitals (ANRS-EN12-VESPA). *J Acquir Immune Defic Syndr* 2006;42(5):597-603.

Boyle CA. The Schedule for the Evaluation of Individual Quality of Life (SEIQoL). *Int J Ment Health* 1994;23(3):3-23.

Bundesamt für Gesundheit. Anstieg der positiven HIV-Tests im Jahr 2002. *BAG Bulletin* 2003;16:268-273.

Catania JA, Osmond D, Stall RD, Pollack L, Paul JP, Blower S, Binson D, Canchola JA, Mills TC, Fisher L, Choi K-H, Porco R, Turner C, Blair J, Henne J, Bye LL, Coates TC. The continuing HIV epidemic among men who have sex with men. *Am J Public Health* 2001;91:907-914.

Chesney MA, Barrett DC, Stall R. Histories of substance use and risk behavior: precursors to HIV seroconversion in homosexual men. *Am J Public Health* 1998;88:113-116.

Dean L, Meyer IH, Robinson K, Sell RL, Sember R, Silenzio VMB, Bowen DJ, Bradord J, Rothblum E, White J, Dunn P, Lawrence A, Wolfe D, Xavier J, and with acknowledgement to Carter D, Pittman J, Tierney R. Lesbian, Gay, bisexual and transgender health: findings and concerns. *Journal of the Gay and Lesbian Medical Association* 2000;4:101-151.

Dilley JW, Woods WJ, McFarland W. Are advances in treatment changing views about high-risk sex? *NEJM* 1997;337:501-502.

Dilley J, Woods W, McFarland W, Sabatino J, Rinaldi J, Adler B, Lihatsch T. Improved antiretroviral treatment does not affect sexual decision-making among the

majority of men who have high-risk sex with men. Poster presentation 23130 at the XII World AIDS Conference in Geneva, Switzerland, June - July 1998.

Elam G, Macdonald N, Hickson FCI, Imrie J, Power R, McGarrigle CA, Fenton KA, Gilbart VL, Ward H, Evans BG, on behalf of the INSIGHT Collaborative Research Team. Risky sexual behaviour in context: qualitative results from an investigation into risk factors for seroconversion among gay men who test for HIV. *Sex Transm Infect* 2008;84:473-477.

Gay and Lesbian Medical Association and LGBT health experts. *Healthy People 2010: Companion Document for Lesbian, Gay, Bisexual, and Transgender (LGBT) Health.* San Francisco: Gay and Lesbian Medical Association, 2001.

Gilman SE, Cochran SD, Mays VM, Hughes M, Ostrow D, Kessler RC. Prevalences of DSM-III-R disorders among individuals reporting same-gender sexual partners in the National Comorbidity Survey. *Am J Public Health* 2001;91:933-939.

Goldstein E, Freedman B, Richards A, Grinstead O. The Legacy Project: lessons learned about conducting community-based research. Poster presentation at the XIII International AIDS Conference in Durban, South Africa, July 2000

Häusermann M. *Santé gaie: un papier de discussion.* Geneva: Dialogai, 2000.

Häusermann M, Wang J, Mandicourt G. Le projet santé gaie de Dialogai: de la recherche à l'action. In Jablonski O, Le Talec J-Y, Sidéris G (eds). *Santé gaie.* Paris: Editions Pepper – L'Harmattan, 2010.

Hickson F, Reid DS, Henderson LA, Weatherburn P, Keogh PG. Treatment advances, risk taking and HIV testing history among gay men in the UK. Poster presentation 14159 at the XII World AIDS Conference in Geneva, Switzerland, June - July 1998

Hospers HJ, Kok GJ. Determinants of safe and risk-taking sexual behavior among gay men: a review. *AIDS Education and Prevention* 1995;7:74-96

Kelly JA, Hoffmann RG, Rompa D, Gray M. Protease inhibitor combination therapies and perceptions of gay men regarding AIDS severity and the need to maintain safer sex. *AIDS* 1998;12:F91-F95.

MacKellar D, Valleroy L, Karon J, Lemp G, Janssen R. The Young Men's Survey: methods for estimateing HIV seroprevalence and risk factors among young men who have sex with men. *Public Health Reports* 1996;3(Suppl 1):856-859.

Maher L. Don't leave us this way: ethnography and injecting drug use in the age of AIDS. *The International Journal of Drug Policy* 2002;13(4):311-325.

Mansergh G, Marks G, Colfax GN, Guzman R, Rader M, Buchbinder S. "Barebacking" in a diverse sample of men who have sex with men. *AIDS* 2002;16:653-659.

National Institutes of Mental Health. *Comorbid mental disorders and HIV/STD Prevention.* RFA: MH-99-008, 1999.

National Reference Group. *Valuing Gay Men's Lives: Reinvigorating HIV Prevention in the Context of our Health and Wellness.* Ottawa: Canadian Public Health Association, 2001.

Nosikov A and Gudex C. *EUROHIS: Developing Common Instruments for Health Surveys.* Amsterdam: IOS Press, 2003.

Rofes E. *Dry Bones Breathe: Gay Men Creating Post-AIDS Identities and Cultures.* New York: Harrington Park Press, 1998.

Rofes E. What is a healthy gay man? Opening Plenary Address at the Gay Men's Health Summit II, Boulder, Colo., USA, July 19-23, 2000.

Rosenbrock R, Dubois-Arber F, Moers M, Pinell P, Schaeffer D, Setbon M. The normalization of AIDS in Western European countries. *Social Science & Medicine* 2000;50(11):1607-1629.

Ryan B and Chervin M. *Framing gay men's health in a population health discourse.* Saskatoon: Gay and Lesbian Health Services, 2001.

Sell RL and Becker JB. Sexual orienation data collection and progress toward Healthy People 2010. *Am J Public Health* 2001;91(6):876-882.

Singer M. AIDS and the health crisis of the US urban poor: the perspective of critical medical anthropology. *Social Science & Medicine* 1994;39(7):931

Solarz AL, ed. *Lesbian health: current assessment and directions for the future*. Washington: National Academy Press, 1999.

Stall R, Mills TC, Williamson J, Hart T, Greenwood G, Paul J, Pollack L, Binson D, Osmond D, Catania JA. 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* 2003;93:939-942.

Stueve A, O'Donnell LN, Duran R, San Doval A, Blome J. Time-space sampling in minority communities: results with young Latino men who have sex with men. *Am J Public Health* 2001;91:907-914.

Ungvarski PJ and Grossman AH. Health problems of gay and bisexual men. *Nurs Clin North Am* 1999;34:313-331.

Wang J. *The Epidemiology of Sexual and Drug-related Behaviors Associated with HIV Transmission in the 1990s: Will HAART Matter?* Expert report for the Swiss National AIDS Commission, 2000.

Wang J, Häusermann M, Rias A. *"Santé gaie" Project: First-round focus group discussions among gay men in Geneva on health, needs, and strategies.* Zurich: Institut für Sozial- und Präventivmedizin and Geneva: Dialogai, 2001.

Wang J, Rodés A, Blanch C, Casabona J. HIV testing history among gay/bisexual men recruited in Barcelona: Evidence of high levels of risk behavior among self-reported HIV+ men. *Soc Sci Med* 1997;44(4):469-477.

Wang J, Twisselmann W, Somaini B with Dubois-Arber F and the Swiss Federal Office of Public Health. HIV-Prävalenz und selbst mitgeteiltes Schutz- und Risikoverhalten bei homosexuellen Männern in Zürich 1998. *BAG Bulletin* 1999;55:916-919.

Weatherburn P, Stephens M, Reid D, Hickson F, Henderson L, Brown D. *Vital Statistics: Findings from the National Gay Men's Sex Survey 1999.* London: Sigma Research, 2000.

Weiss M. Explanatory Model Interview Catalogue (EMIC): framework for the comparative study of illness. *Transcultural Psychiatry* 1997;34(2):235-263.

Wolitski RJ, Valdiserri RO, Denning PH, Levine WC. Are we headed for a resurgence of the HIV epidemic among men who have sex with men? *Am J Public Health* 2001;91:883-888.

Part II

Findings on health, mental health, and mental health literacy among gay men

Chapter 2

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

Jen Wang[1,3], Michael Häusermann[2], Penelope Vounatsou[3], Peter Aggleton[4], Mitchell G. Weiss[3]

1 Institute for Social and Preventive Medicine, University of Zurich, Switzerland

2 Dialogai, Geneva, Switzerland

3 Swiss Tropical Institute, University of Basel, Switzerland

4 Institute of Education, University of London, United Kingdom

Published in *Preventive Medicine* 2007;44:70-75.

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.

Keywords: homosexuality, health surveys, risk factors, health services use, smoking, alcohol consumption, drug abuse, obesity, blood pressure, glucose

2.1 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.

2.2 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 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 one-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. 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 two weeks at their leisure online.

Table 2-1. Participation rates by venue type in the Geneva Gay Men's Health Survey, 2002

	Actual participants		Target sampling frame		All eligible men	
	n	%	n	%	n	%[1]
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

[1] participation rate: number of actual participants divided by number of eligible men selected and invited to participate in that venue type

The Swiss Health Survey (SHS) [Office fédéral de la statistique, 2003] is conducted every five 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 (±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 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.

2.3 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 2-2). 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.

Table 2-2. 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[2]			.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			<.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			<.03[1]
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			.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[2]			.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			<.00001
lives alone	57.9	27.0	
lives with others	42.1	73.0	
Nationality[2]			1.00
Swiss	73.2	73.2	
foreign	26.8	26.8	

[1] employed vs. non-employed
[2] respondents were matched for sex, year of birth, nationality (Swiss/foreign), and canton (or linguistic region) of residence

Health behaviors

As seen in Table 3, 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. 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 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.

Table 2-3. 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[†]
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 (<40g/day)	76.2	68.9	0.99	0.98
(c) moderate (40-59g/day)	4.9	4.1	2.05*	1.28
(d) high (≥60g/day)	3.2	11.1	3.81*	2.04
binge drinking[1]	38.0	40.9	1.14	1.08
Drug use[2]				
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*

[NB] 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.
[1] among all respondents, or 48.1% vs. 44.9% among drinkers, p=0.40
[2] includes marijuana, stimulants (e.g., amphetamines), opioids, cocaine, hallucinogens
* p<0.05
[†] odds ratio adjusted for socio-demographics—i.e., education, employment status, net monthly income, canton of residence, urbanicity, and cohabitation

Health outcomes

The self-rated health scores were very high for both populations with over 90% reporting “good” or “very good” health. (See Table 2-4) 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 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 four 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 two weeks, a quarter of gay men reported being hindered in their daily activities due to a physical or mental health problem.

Table 2-4. 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[†]	AOR[††]
Self-rated health					
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
Treated for selected chronic conditions <12 months					
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
Screening values ever deemed too high by a health care provider					
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*
Selected symptoms <4 weeks					
back pain					
(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*
fatigue					
(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*
insomnia					
(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*
headaches					
(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[1]	9.0	25.4	3.53*	2.64*	2.56*

[NB] 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.

[1] "in the past 2 weeks" in GGMHS and "in the past 4 weeks" in SHS

* $p<.05$

[†] odds ratio adjusted for socio-demographics—i.e., education, employment status, net monthly income, canton of residence, urbanicity, and cohabitation

[††] 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

Health care utilization

As seen in Table 2-5, 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). 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.

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].

Table 2-5. 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[†]	AOR[††]
Has a regular doctor	76.1	74.7	0.96	1.36	1.40
Consulted health care provider <12 months					
regular doctor [1]	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*
Received care in a hospital <12 months					
stationary	6.9	10.8	1.65*	1.15	1.03
ambulatory	14.3	25.0	2.00*	2.38*	2.25*
Medications use					
< 12 months	NA	97.1	–	–	–
< 7 days	34.3	59.2	2.84*	3.18*	3.28*

[NB] Crude (OR) and adjusted odds ratios (AOR) are model-based estimates calculated by random-effects logistic regression.
[1] among those with a regular doctor
* $p<0.05$
[†] odds ratio adjusted for socio-demographics—i.e., education, employment status, net monthly income, canton of residence, urbanicity, and cohabitation
[††] 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

2.4 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 2-1 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.

2.5 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 morely 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.

Acknowledgements

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. *Am J Public Health* 1999;89:444-445.

Boehmer U. Twenty years of public health research: includion of lesbian, gay, bisexual, and transgender populations. *Am J Public Health* 2002;92:1125-1130.

Dean L, Meyer IH, Robinson K, Sell RL, Sember R, Silenzio VMB, Bowen DJ, Bradford J, Rothblum E, White J, Dunn P, Lawrence A, Wolfe D, Xavier J, and with acknowledgement to Carter D, Pittman J, Tierney R. Lesbian, Gay, bisexual and transgender health: findings and concerns. *Journal of the Gay and Lesbian Medical Association* 2000;4:101-151.

Douglas Scott S, Pringle A, Lumsdaine C. *Sexual Exclusion—Homophobia and health inequalities: a review.* UK Gay Men's Health Network, 2004.

Gay and Lesbian Medical Association and LGBT health experts. *Healthy People 2010: Companion Document for Lesbian, Gay, Bisexual, and Transgender (LGBT) Health.* San Francisco: Gay and Lesbian Medical Association, 2001.

Grol R and Wensing M. *Patients evaluate general/family practice: the EUROPEP instrument.* Nijmegen: Mediagroep KUN/UMC, 2000.

Häusermann M and Wang J. *Projet santé gaie: les premiers résultats de l'enquête sur la santé des hommes gais de Genève.* Genève: Dialogai, 2003.

MacKellar D, Valleroy L, Karon J, Lemp G, Janssen R. The Young Men's Survey: methods for estimating HIV prevalence and risk factors among young men who have sex with men. *Public Health Reports* 1996;111(Suppl):138-144.

Marmot M and Wilkinson RG. *Social Determinants of Health.* Oxford: Oxford University Press, 1999.

Mays VM, Cochran SD. Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *Am J Public Health* 2001;91:1869-1876.

Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological Bulletin* 2003;129:674-697.

Mills TC, Paul J, Stall R, Pollack L, Canchola J, Chang YJ, Moskowitz JT, Catania JA. Distress and depression in men who have sex with men: the Urban Men's Health Study. *Am J Psychiatry* 2004;161:278-285.

Ministerial Advisory Committee on Gay and Lesbian Health. *What's the Difference? Health Issues of Major Concern to Gay, Lesbian, Bisexual, Transgender and Intersex (GLBTI) Victorians.* Melbourne: Victorian Government Department of Human Services, 2002.

Nosikov A and Gudex C (eds). *EUROHIS: Developing Common Instruments for Health Surveys.* Amsterdam: IOS Press, 2003.

Office fédéral de la statistique (ed). *Enquête suisse sur la santé: Santé et comportements vis-à-vis de la santé en Suisse 1997.* Neuchâtel: Office fédéral de la statistique, 2000.

Office fédéral de la statistique. *Enquête suisse sur la santé 2002: premiers résultats.* Neuchâtel: Office fédéral de la statistique, 2003.

Office fédéral de la statistique. *Enquête suisse sur la santé 2002: Plan d'échantillonnage, pondération et estimation de la précision.* Neuchâtel: Office fédéral de la statistique, 2005.

Ryan B and Chervin M. *Framing gay men's health in a population health discourse.* Saskatoon: Gay and Lesbian Health Services, 2001.

Ryan H, Wortley PM, Easton A, Pederson L, Greenwood G. Smoking among lesbians, gays, and bisexuals; a review of the literature. *Am J Prev Med* 2001;21:142-149.

Sandfort TGM, de Graaf R, Bijl RV, Schnabel P. Same-sex sexual behavior and psychiatric disorders: Findings from the Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Arch Gen Psychiatry* 2001;58:85-91.

Sell RL and Becker JB. Sexual orientation data collection and progress toward Healthy People 2010. *Am J Public Health* 2001;91:876-882.

Stall R and Purcell DW. Intertwining epidemics: a review of research on substance use among men who have sex with men and its connection to the AIDS epidemic. *AIDS and Behavior* 2000;4:181-192.

Stall R, Mills TC, Williamson J, Hart T, Greenwood G, Paul J, Pollack L, Binson D, Osmond D, Catania JA. 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* 2003;93:939-942.

Statistics Canada. *How healthy are Canadians? 2001 Annual Report: The Health Divide – How the Sexes Differ. Health Reports* 12(3). Ottawa: Statistics Canada, 2001.

Statistics Canada. *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 LN, Duran R, San Doval A, Blome J. Time-space sampling in minority communities: results with young Latino men who have sex with men. *American Journal of Public Health* 2001;91:922-926.

Tang H, Greenwood GL, Cowling DW, Lloyd JC, Roeseler AG, Bal DG. Cigarette smoking among lesbians, gays, and bisexuals: how serious a problem? *Cancer Causes and Control* 2004;15:797-803.

Williams R. Gologit2: Generalized Logistic Regression/Partial Proportional Odds Model for Ordinal Dependent Variables. Revision dated July 29, 2005, accessed online.

Chapter 3

High prevalence of mental disorders and comorbidity in the Geneva Gay Men's Health Study

Jen Wang[1,5], Michael Häusermann[2], Vladeta Ajdacic-Gross[1,3], Peter Aggleton[4], Mitchell G. Weiss[5]

1 Institute for Social and Preventive Medicine, University of Zurich, Switzerland

2 Dialogai, Geneva, Switzerland

3 Research Unit for Social and Clinical Psychiatry, Psychiatric University Clinic, Zurich, Switzerland

4 Institute of Education, University of London, England, United Kingdom

5 Swiss Tropical Institute, University of Basel, Switzerland

Published in *Social Psychiatry and Psychiatric Epidemiology* 2007;42:414-420.

Abstract

Background. Several large surveys have suggested high prevalence of psychiatric disorders among gay men and other men who have sex with men.

Methods. In 2002, a comprehensive health survey was conducted among 571 gay men in Geneva, Switzerland, using probability-based time-space sampling. The Composite International Diagnostic Interview Short-Form (CIDI-SF) was used to assess 12-month prevalence of major depression, specific phobia, social phobia, alcohol dependence, and drug dependence.

Results. Nearly half (43.7%, 95% CI=39.0-48.4) of the sample fulfilled the criteria for at least one of the five DSM-IV disorders: 19.2% had major depression, 21.9% had specific and/or social phobia, and 16.7% had an alcohol and/or drug dependence disorder in the past 12 months. Over one quarter of the cases were comorbid with another kind of disorder, and 35.7% of cases consulted a health care professional in the past 12 months for mental health. Like cases, screen-positives for mood and/or anxiety disorders (24.7%) also reported significantly greater disability and lower quality of life.

Conclusions. Nearly two-thirds of this community sample of gay men was affected by psychiatric morbidity with new evidence for comorbidity, subthreshold disorders, and low levels of awareness of psychiatric disorders and their treatment. This population needs to be a priority in psychiatric epidemiology and mental public health.

Keywords: homosexuality, major depression, anxiety, substance use, comorbidity

3.1 Introduction

The study of mental health in non-clinical populations has received a huge boost in the past decade thanks to the advent of standardized instruments to assess psychiatric disorders [de Girolamo and Bassi, 2003]. Using the WHO Composite International Diagnostic Interview (CIDI), the European Study of the Epidemiology of Mental Disorders (ESEMeD) has provided population prevalences for over 10 different disorders—e.g., 12-month prevalences of 2.8% (95% CI=2.3-3.3) for any mood disorder, 3.8% (95% CI=3.3-4.3) for any anxiety disorder, and 1.7% (95% CI=1.4-2.0) for any alcohol disorder [ESEMeD/MHEDEA 2000 Investigators, 2004a] among men—in western Europe. Such data are essential for understanding the health burden associated with psychiatric disorders and identifying groups with elevated morbidity.

Psychiatric epidemiological studies among the general population in industrialized countries on three continents have repeatedly shown increased morbidity among women, urban residents, the unmarried/unpartnered, and the unemployed [WHO International Consortium in Psychiatric Epidemiology, 2000; ESEMeD/MHEDEA 2000 Investigators, 2004a]. The only large psychiatric epidemiological surveys to include any indicator of sexual orientation have been the US National Comorbidity Survey (NCS) [Gilman et al., 2001] and the Netherlands Mental Health Survey and Incidence Study (NEMESIS) [Sandfort et al., 2001]. Two other US surveys have gathered data on both sexual orientation and psychiatric disorders [Cochran and Mays, 2000; Cochran et al., 2003]. The 12-month point prevalence for men with same-sex partners in these surveys ranges from 9.8-31.0% for major depression, 8.8-11.0% for specific phobia, 7.3-8.3% for social phobia, 6.1-12.9% for alcohol abuse, 8.9-12.1% for alcohol dependence, 1.2-10.7% for drug abuse, and 0-9.2% for drug dependence. Most of these prevalences are significantly higher than those found among

heterosexual men. While these analyses have provided some solid indications of increased psychiatric morbidity among gay men, they have the following limitations: discrepancy between DSM-III-R and DSM-IV diagnostic criteria, different time frames for history of same-sex activity as proxy for sexual orientation, and fewer than 100 men who fulfill the same-sex criteria despite large samples.

With few exceptions [Mills et al., 2004], most of the other existing data on mental health among gay men come from HIV clinical studies [Ciesla and Roberts, 2001], many of which are limited by small size, a focus on mood disorders, and instruments which measure non-specific psychological distress rather than criteria for clinical disorders. Against this backdrop, the Geneva Gay Men's Health Survey was conceived of as a comprehensive health survey—the first of its kind—conducted among a probability sample of gay men. Given the importance of mental health, a section on DSM-IV psychiatric disorders was included.

Aims of the study

This paper presents a psychiatric epidemiological profile for five mood, anxiety, and alcohol/drug use disorders among a community sample of gay men in Geneva, Switzerland. The larger sample size permits analyses to go beyond 12-month prevalence estimates published to date to include comorbidity, onset, disability, and treatment of selected psychiatric disorders.

3.2 Materials and methods

Design and sample

The Geneva Gay Men's Health Survey was a cross-sectional venue-based probability survey, using time-space sampling developed by the Centers for Disease Control and

Prevention (CDC) [MacKellar et al., 1996; Stueve et al., 2001]. All meeting points frequented by gay men in Geneva were enumerated for visits over a one-week period in 2002, and target numbers of participants were set for each venue by an algorithm to reach an overall sample of 600. Venues were randomly selected in a first step, followed by random selection of time slots in a second step, and finally random selection of participants at the venue in a third step.

From September through December 2002, recruitment took place at 35 different meeting points—i.e., gay organization events, bars/cafes, discos/parties, sex clubs, saunas, parks/toilets, and Internet chatrooms. A total of 1153 eligible men—i.e., self-identified as gay and/or having sex with men—were invited to take part in the survey of whom 571 (50%) actually participated. The participation rates ranged from 15% in chatrooms to 86% in gay organization events. At the physical venues—i.e., excluding the chatrooms—the participation rate was 62%.

The endeavor was publicized as a general health survey among gay men, and not one focusing on mental health or HIV. Indeed, the survey instrument contained 550 questions, covering socio-demographics, subjective health status, physical health, mental health, substance use, psycho-social variables, health care, life domains, and socio-environmental stressors. Questions specific to sexual orientation were included in several of the aforementioned domains. 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 at their leisure online.

Quantifiable venue frequentation data over the past 12 months were collected in order to examine potential biases related to recruitment. Splitting the combined frequency of all venues into quartiles, no significant differences were found for any of

the study variables. According to informants, there are few self-identified gay men in Geneva who do not use any of the meeting points, thereby falling outside of the sampling scheme.

Assessment of 12-month diagnosis

Five disorders—i.e., major depression, specific phobia, social phobia, alcohol dependence, and drug dependence—were selected from the WHO Composite International Diagnostic Interview Short-Form (CIDI-SF) 12-month DSM-IV version 1.0 [Kessler et al., 1998] which was conceived for inclusion in health interview surveys. Caseness is determined by standard algorithms [Kessler et al., 1998], whereby a certain proportion of symptomatic criteria is met. Men who pass screen questions but do not fulfill diagnostic criteria are referred to as "screen-positive" or "subthreshold" in this paper. Screen questions for mood and anxiety disorders address main symptom(s) and duration, whereas for substance use disorders, they merely indicate use.

Questions on self-reported history of depression and chronic anxiety were taken from the Swiss Health Survey, which also included additional questions on treatment. The CIDI-SF for major depression also includes questions on treatment. A general question on consulting any health professional for mental health was taken from the Canadian Community Health Survey, whereby the responses were adapted to yield both 12-month and lifetime percentages.

The question on current subjective health was taken from the European Health Interview Survey (EUROHIS) initiative by WHO Europe [de Bruin et al., 1996]. Temporary mental disability was measured by an instrument recommended by EUROHIS based on the OECD which covers restriction of daily activities in the past 2

weeks [de Bruin et al., 1996]. Quality of life was assessed using instruments recommended by EUROHIS [Nosikov and Gudex, 2003]—i.e., MHI-5 (from MOS SF-36) for psychological distress and WHOQOL-BREF for global quality of life and the four domains of physical health, psychological health, social relationships, and environment.

Statistical analysis

Data analysis was performed by SPSS version 6.1.1 for the Power Macintosh (Gornichem, Netherlands). In general, nominal and ordinal variables were analyzed using contingency tables and the chi-square test. For normally distributed continuous variables such as age, the t-test was used. Odds ratios (OR) and 95% confidence intervals (CI) are presented without adjustments due to the lack of differences along socio-demographic variables. For analysis of continuous data with a dependent variable consisting of three categories, ANOVA with Tukey test to correct for multiple comparisons at $p<.05$ was used.

3.3 Results

Socio-demographic characteristics

Table 3-1 outlines the characteristics of the study population. When compared to the general male population resident in Switzerland, this sample of gay men had fewer men over 55 years, more men with a university-level education, more men living in a large-size urban city, fewer men cohabitating, and fewer men currently in a relationship.

Table 3-1. Description of sample and demographic correlates of mental disorder* in the past 12 months, Geneva Gay Men's Health Survey, 2002

	Total sample		Any mental disorder*		
	n	%	%	OR	95% CI
Age					
under 24	96	17.2	41.2	1.60	(0.58-4.40)
25-34	173	31.0	46.4	1.98	(0.76-5.14)
35-44	194	34.8	45.6	1.92	(0.75-4.94)
45-54	67	12.0	38.9	1.45	(0.51-4.13)
55 and above	28	5.0	30.4	1.00	—
Education					
mandatory education	26	4.7	30.8	0.60	(0.18-2.03)
apprenticeship	134	24.0	45.7	1.14	(0.69-1.89)
gymnasium	43	7.7	53.1	1.54	(0.73-3.27)
other prof. training	123	22.0	41.8	0.98	(0.59-1.61)
university	232	41.6	42.4	1.00	—
Employment status					
paid employment	446	78.9	42.4	1.00	—
in school	49	8.7	50.0	1.35	(0.70-2.62)
other situation	40	7.1	42.3	1.00	(0.44-2.23)
unemployed	30	5.3	47.8	1.24	(0.53-2.90)
Income					
≤ sFr 3000	133	31.3	46.6	1.15	(0.58-2.28)
sFr 3001 - 5000	95	22.4	51.6	1.40	(0.68-2.88)
sFr 5001 - 7000	100	23.5	38.8	0.83	(0.40-1.72)
sFr 7001 - 9000	53	12.5	32.1	0.62	(0.27-1.42)
≥ sFr 9001	44	10.4	43.2	1.00	—
Urbanicity					
rural	94	16.8	41.3	1.00	—
small town	91	16.3	45.3	1.18	(0.60-2.31)
mid-size urban	87	15.6	42.9	1.06	(0.54-2.10)
large-size urban	286	51.3	43.8	1.11	(0.65-1.88)
Cohabitation					
lives with partner	122	21.8	34.4	1.00	—
lives with family	75	13.4	41.2	1.34	(0.66-2.69)
lives with friends	40	7.2	44.0	1.50	(0.61-3.67)
lives alone	321	57.5	47.4	1.72**	(1.05-2.80)
Relationship status					
in a relationship	226	40.1	34.7	1.00	—
not in a relationship	337	59.9	49.8	1.87**	(1.25-2.79)
Venue frequentation					
1st quartile	143	25.5	39.8	1.00	—
2nd quartile	133	23.7	43.6	1.17	(0.68-2.01)
3rd quartile	143	25.5	45.1	1.24	(0.72-2.13)
4th quartile	142	25.3	45.6	1.27	(0.74-2.18)

* major depression, specific phobia, social phobia, alcohol dependence, and/or drug dependence
** p<.05

Prevalence estimates and self-report

Nearly half (43.7%, 95% CI=39.0-48.4) of the participants sampled fulfilled the criteria for at least one of the five DSM-IV disorders covered in the health survey (Table 3-2). The most common condition was major depression (19.2%, 95% CI=16.0-22.4).

Among those who fulfilled diagnostic criteria, 52.2% of men with major depression actually self-reported "depression" and only 38.0% of men with specific and/or social phobia self-reported "chronic anxiety" in the past 12 months. Among those who fulfilled diagnostic criteria and self-reported their disorder, 77.1% had actually been medically diagnosed for major depression and 62.9% for an anxiety disorder.

In addition to the cases, 18.1% only screen positive major depression, 14.0% for specific phobia, and 12.1% for social phobia. Overall, 34.4% (S.E. 2.3) fulfilled diagnostic criteria for major depression, specific phobia, and/or social phobia, with an additional 24.7% being subthreshold for at least one of those three disorders. Around one quarter of the latter also fulfilled diagnostic criteria for a substance dependence disorder.

Table 3-2. 12-month prevalence of selected DSM-IV disorders, Geneva Gay Men's Health Survey, 2002

	% (SE)
mood disorder	19.2 (1.7)
major depression	19.2 (1.7)
anxiety disorders	21.9 (2.0)
specific phobia	12.6 (1.6)
social phobia	13.5 (1.7)
substance use disorders	16.7 (1.8)
alcohol dependence	11.4 (1.5)
drug dependence	7.3 (1.3)
any disorder	43.7 (2.4)
pure disorders	
mood	10.0 (1.5)
anxiety	12.6 (1.6)
substance dependence	8.8 (1.4)
comorbid disorders	12.4 (1.6)
mood & anxiety	4.5 (1.0)
mood & substance	2.6 (0.8)
anxiety & substance	2.4 (0.7)
mood & anxiety & substance	2.9 (0.8)

NB: mood=major depression, anxiety=specific and/or social phobia, substance use=alcohol and/or drug dependence

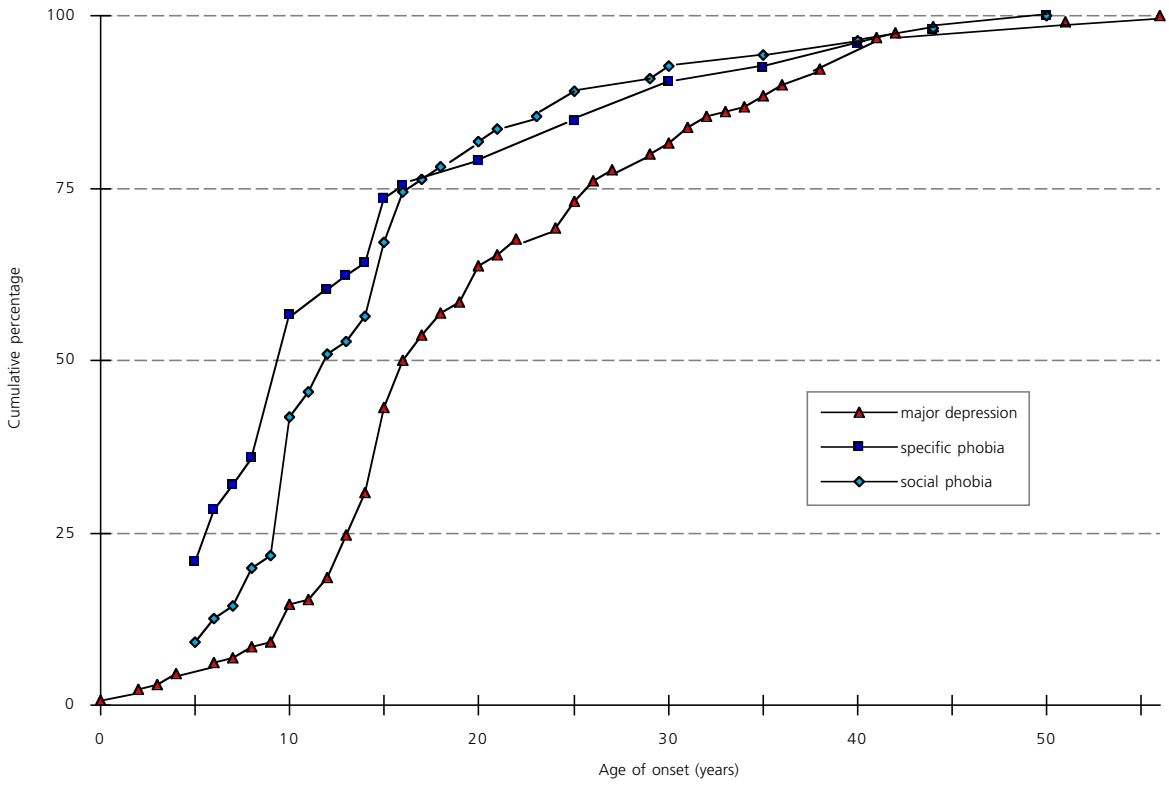
Socio-demographic correlates of mental disorder

As can be seen in Table 3-1, most socio-demographic indicators were not significantly associated with the presence of mental disorder in the past 12 months. The only exceptions were increased risk for mental disorder among men who live alone (OR=1.72, 95% CI=1.05-2.80) and men not currently in a relationship (OR=1.87, 95% CI=1.25-2.79). Detailed examination reveals that men who live alone were twice as likely to have major depression (OR=2.10, 95% CI=1.15-3.82) and substance use dependence (OR=2.31, 95% CI=1.12-4.75), and men not currently in a relationship were twice as likely to report major depression (OR=2.37, 95% CI=1.07-5.87) and alcohol dependence (OR=1.97, 95% CI=1.02-3.78). Currently partnered men were less likely to have any disorder—and in particular major depression—regardless of whether they cohabitated with their partner or not.

Age at onset

Figure 3-1 shows the cumulative distribution of age of onset for participants with a 12-month diagnosis of mood and anxiety disorders. Among the three conditions covered, most cases of specific phobia (25th percentile 6 years, median 10 years, 75th percentile 18 years) and social phobia (25th percentile 10 years, median 12 years, 75th percentile 17 years) had onset in childhood and adolescence, whereas most cases of major depression (25th percentile 14 years, median 16 years, 75th percentile 26 years) had onset during adolescence and early adulthood. For social phobia, there was a span of only 7 years between the 25th and 75th percentiles.

Figure 3-1. Age of onset for selected DSM-IV psychiatric disorders, Geneva Gay Men's Health Survey, 2002



Comorbidity

Comorbity between the three main categories—mood, anxiety, and substance use disorders—is shown in Table 3-2. In general, it can be noted for each category that roughly half the cases constituted a pure disorder for that category and the other half a condition comorbid with another category. Among study participants with any diagnosis, 71.6% had a diagnosis in one category only, and 28.4% had diagnoses in two or more categories. Overall, 12.4% [95% CI 9.3-15.5) exhibited psychiatric comorbidity, with the most common condition being comorbid mood and anxiety disorders (4.5%, 95% CI 2.5-6.5).

Disability and quality of life

Of the entire sample, 16.7% (S.E. 1.8) reported temporary disability due to a mental health problem in the past 2 weeks. The 2-week disability rate was around 20% of those with pure mood or pure anxiety disorders but twice that (42.3%) for those who manifested comorbid disorders in the past 12 months. The mean number of disability days was 3.8 days (S.E. 0.5), without any significant differences by type of disorder.

The results for disability and quality of life are shown separately for mood and anxiety disorders on the one hand, and for alcohol and drug dependence disorders on the other in Table 3-3. While the lowest scores registered were for psychological health, cases also reported lower scores for physical health, social relationships, and their living environment. Men who were subthreshold for mood and/or anxiety disorders took an intermediate position in terms of health outcome, demonstrating significantly greater disability for all indicators than men who did not pass screening.

Table 3-3. Disability and health-related quality of life (QoL) by psychiatric conditions in the past 12 months, Geneva Gay Men's Health Survey, 2002

	CIDI-SF diagnostic (1)	CIDI-SF screen (2)	no screen (3)	statistical significance
major depression, specific phobia, or social phobia (n)	172	104	105	
very good or good subjective health	83.5%	89.5%	97.1%	.001
temporary disability due to mental health problem in the past 2 weeks	29.0%	17.3%	6.4%	<.00001
EUROHIS QoL score*	62.0	70.0	76.4	1<2<3
WHOQoL-BREF physical health*	66.1	75.3	82.3	1<2<3
WHOQoL-BREF psychological health*	55.7	67.5	74.8	1<2<3
SF-36 MHI-5 psychological health*	52.5	64.9	74.6	1<2<3
WHOQoL-BREF social relationships*	62.0	66.8	72.5	1<2<3
WHOQoL-BREF environment*	68.7	71.6	76.8	1,2<3
alcohol or drug dependence (n)	100	255	71	
very good or good subjective health	87.3%	91.3%	89.0%	.46
temporary disability due to mental health problem in the past 2 weeks	36.6%	13.7%	10.0%	<.00001
EUROHIS QoL score	65.9	71.3	69.3	1<2
WHOQoL-BREF physical health*	70.1	76.5	74.9	1<2
WHOQoL-BREF psychological health*	60.8	68.0	66.2	1<2
SF-36 MHI-5 psychological health*	59.3	65.8	65.5	1<2
WHOQoL-BREF social relationships*	67.0	69.1	63.8	3<2
WHOQoL-BREF environment*	71.0	73.9	71.0	ns

* comparision of mean quality of life (QoL) scores on a standardized scale from 0 to 100 for respondents who meet diagnostic criteria (Group 1), who screen positive without fulfilling diagnostic criteria (Group 2), and who screen negative (Group 3), where p<.05 using the Tukey test for multiple comparisons—e.g., "1<2<3" indicates that Group 3 is significantly greater than both Groups 1 and 2, and Group 2 is also significantly greater than Group 1

Health services utilization

In the entire sample, 23.6% of the participants reported having seen a health professional in the past 12 months about a mental health problem. However, among those fulfilling diagnostic criteria for a psychiatric disorder, only 35.7% consulted a health professional in the past 12 months for mental health, and 27.5% of all cases actually saw a mental health professional—i.e., psychiatrist, psychologist, and/or psychotherapist—in the past 12 months. Nearly half of the cases had never consulted any providers for mental health in their lifetime.

As evidenced in Table 3-4, consultation rates differ depending on the disorder profile, with the lowest rates found for pure substance disorder and the highest for pure mood and comorbid disorders. Men who were subthreshold for major depression, specific phobia, and/or social phobia were also significantly more likely to have consulted a health professional for a mental health problem in the past 12 months than men who did not pass screening for those disorders (24% vs. 10%, p<.00001).

Seemingly self-evident, cases who were aware of their disorder—i.e., self-reported—were five times more likely to have sought treatment for their condition in the past 12 months: "depression" (OR=4.77, 95% CI=1.97-11.5) and "chronic anxiety" (OR=4.97, 95% CI=1.95-12.7). Specific data on treatment for substance use were not collected in the study.

Table 3-4. Consultations with health professionals for mental health by type of psychiatric disorder* in the past 12 months, Geneva Gay Men's Health Survey, 2002

	Consultation with health professional		
	in past 12 months	prior to past 12 months	never
no disorder	14.8	18.6	66.7
pure mood disorder	45.2	11.9	42.9
pure anxiety disorder	29.4	19.6	51.0
pure substance disorder	18.9	27.0	54.1
comorbid disorders	46.2	21.2	32.7

* mood disorder: major depression; anxiety disorder: specific phobia, social phobia; substance disorder: alcohol dependence, drug dependence; comorbid: across two or more of the disorder categories above

3.4 Discussion

The present article presents a general overview of psychiatric epidemiology among a probability venue-based sample of gay men in Europe, using standardized instruments of the CIDI family. The results confirm high 12-month prevalence of DSM-IV disorders among gay men evidenced in previous surveys [Gilman et al., 2001; Sandfort et al., 2001; Cochran and Mays, 2000; Cochran et al., 2003]. Indeed, 43.7% (95% CI=39.0-48.4) fulfilled diagnostic criteria for at least one of five disorders examined. Although covering more psychiatric conditions, 12-month prevalence for any DSM-IV disorders were considerably lower among the male general population in the ESEMeD (9.6%, 95% CI=9.1-10.1) [ESEMeD/MHEDEA 2000 investigators, 2004a] and in the German Health Interview and Examination Survey (GHS) (25.3%, S.E.=1.1) [Jacobi et al., 2004]. This remains the case even for age-group prevalences.

An additional 24.7% were subthreshold for major depression, specific phobia, and/or social phobia in the past 12 months yet reported significantly poorer health and quality of life and greater disability and services utilization than men who did not pass screening criteria. Lifetime prevalences are not assessed with the CIDI-SF, but given

self-report rates of 39.8% (S.E. 2.3) for depression and 35.5% (S.E. 2.3) for chronic anxiety, these findings further underscore significant psychiatric morbidity. Clearly, gay men should be a priority in public mental health, and conversely, mental health should be a priority for organizations working with gay men.

Despite higher prevalences, the proportion of cases consulting a health professional for mental health reasons (one-third) is comparable to that found in general population studies [Andrews et al., 2001; Jacobi et al., 2004; ESEMeD/MHEDEA 2000 investigators, 2004c]. However, among those who did consult, it appears that a greater proportion (77%) saw a mental health professional than found in western Europe (two-thirds) [ESEMeD/MHEDEA 2000 investigators, 2004c] or Australia (one-half) [Andrews et al., 2001]. While we did not ask specifically about satisfaction with mental health professionals, satisfaction with health professionals is considerably lower than in the Swiss general population [Häusermann and Wang, 2003]. Therefore, the issue of gay-friendly and culturally competent care may very well also be pertinent for mental health services.

Distinctive features of psychopathology

While inconclusive, the study findings lend support to suggestions that mental disorders may develop and/or progress differently among gay men. Firstly, there is high comorbidity, which is generally associated with poor prognosis and treatment difficulty. With only five conditions, more than one quarter of cases in this study were comorbid across disorder categories compared to 15.5% among men in the ESEMeD [Häusermann and Wang, 2003b]. Is increased comorbidity due to higher prevalences or different disease development?

Secondly, gay men with mental disorders appear to exhibit early onset. While the results concur that anxiety disorders set in at an earlier age than mood disorders, the median age at onset is much lower than that in the GHS—16 years in ESE vs. 31 years in GHS for mood disorders and 11 years in ESE vs. 18 years in GHS for anxiety disorders. This discrepancy may be due in part to the age structure of this sample; however, a birth cohort study yielded compelling evidence for higher OR for lifetime psychiatric disorders among gays, lesbians, and bisexuals aged 14-21 compared to heterosexual counterparts [Fergusson et al., 1999]. Studies on childhood gender non-conformity [D'Augelli et al., 2006] show that being different or feeling that one is different happens in early childhood for many gay men and lesbians and may be accompanied by negative judgments [Fagot, 1977], engendering noxious effects on mental health and psychosocial resources [Aube and Koestner, 1992; Egan and Perry, 2001]. In general, early onset is also associated with disease chronicity and greater treatment difficulty.

Finally, most socio-demographic indicators commonly associated with psychiatric disorder—i.e., age, urbanicity, employment status—were not statistically relevant in this sample of gay men. Cohabitation and relationship status—which in general population samples are also consistently related to psychiatric disorder—were correlated independently with psychiatric disorder. While lower rates of cohabitation and partnership may in part account for higher prevalences of psychiatric disorder among gay men, even partnered men exhibited high psychiatric morbidity.

Limitations

As with all studies among gay men, there are important methodological limitations to consider [Cochran, 2001]. Cognizant of the difficulties in sampling a numerically small and hetergenous group whose behavior and/or identity are still stigmatized by

society at large, the sampling basis consisted of meeting points in Geneva where gay men and other men who have sex with men meet one another for leisure, socializing, and sex. While probability permits a certain degree of 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. A recent methodological paper confirmed that time-space sampling provided robust coverage of gay men resident in an urban area [Stall et al., 2003].

The actual rate of venue frequentation is a potential bias as frequent visitors have a higher probability of being recruited into the study. However, venue frequentation over the past 12 months—when quantified—did not distinguish significantly for any of the study variables, including the psychiatric disorders covered here. Physical and virtual venues have heightened importance in many gay communities as meeting points and safe spaces. Importantly, as seen in the response to the HIV/AIDS epidemic, they can serve as effective entry points for health intervention delivery.

Practical implications

The findings raise questions about the reasons and specific approaches to treatment and prevention of psychiatric disorders and mental health promotion among gay men. The relationship between psychiatry and homosexuality has not been easy [Cochran, 2001], but the fact that such research takes place in a politicized context is not exclusive to either mental health as a subject area nor gay men as a target group. Identifying and understanding deficits are crucial in ensuring that adequate resources are invested where the need is greatest.

The accumulated evidence suggests strongly that sexual orientation should be ascertained in all large psychiatric epidemiological surveys. However, due to the

small numbers of gay men in many such samples to date, such studies need to be supplemented by well-designed surveys in gay communities utilizing robust methods—e.g., probability sampling and diagnostic assessment of psychiatric disorders. In a population with such high mental morbidity, a full-length psychiatric epidemiological survey covering more conditions as well as lifetime prevalences would also benefit from the psychometric properties of the full CIDI, permitting more nuanced analyses across threshold levels.

Addressing the question of why greater psychiatric morbidity, other findings from the health survey reveal considerable morbidity and vulnerability in many other health domains [Häusermann and Wang, 2003] which point to the saliency of looking at multi-morbidity or syndemics to better understand the global and specific health issues of gay men [27]. But while attention to issues such as psycho-social resources and socio-environmental stressors may very well shed further light on this question [Mays and Cochran, 2001; Meyer, 2003], indicators specific to sexual orientation may be particularly informative, as such variables are not collected in large national surveys. Future analyses with this dataset will explore these questions.

Acknowledgements

The authors wish to thank project assistant Vincent Jobin and the many volunteers and experts in Geneva who have contributed to the overall project. Special acknowledgement goes to Ron Clarke at Health Canada for his participation in discussions on the overall project and Dr. Ron de Graaf at the Netherlands Institute of Mental Health and Addiction (or Trimbos Institute) for his valuable input on the subject of mental health. Dialogai is a non-profit organisation supported by a grant from the canton of Geneva. The 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

Andrews G, Henderson S, Hall W. Prevalence, comorbidity, disability and service utilisation: Overview of the Australian National Mental Health Survey. *Br J Psychiatry* 2001;178:145-153.

Aube J, Koestner R. Gender characteristics and adjustment: A longitudinal study. *Journal of Personality and Social Psychology* 1992;63:485-493.

Ciesla JA, Roberts JE. Meta-analysis of the relationship between HIV infection and risk for depressive disorders. *Am J Psychiatry* 2001;158:725-730.

Cochran S. Emerging issues in research on lesbians' and gay men's mental health: Does sexual orientation really matter? *Am Psychol* 2001;56:932-947.

Cochran SD, Mays VM. Relation between psychiatric syndromes and behaviorally defined sexual orientation in a sample of the US population. *Am J Epidemiol* 2000;151:516-523.

Cochran SD, Sullivan JG, Mays VM. Prevalence of mental disorders, psychological distress, and metnal health services use among lesbian, gay, and bisexual adults in the United States. *J Consult Clin Psychol* 2003;71:53-61.

D'Augelli AR, Grossman AH, Starks MT. Childhood gender atypicality, victimization, and PTSD among lesbian, gay, and bisexual youth. *Journal of Interpersonal Violence* 2006;21:1462-1482.

de Bruin A, Picavet HSJ, Nossikov A (Eds). *Health interview surveys: Towards international harmonization of methods and instruments.* WHO regional publications. European series No. 58. Copenhagen: World Health Organization Regional Office for Europe, 1996.

de Girolamo and Bassi M. Community surveys of mental disorders: recent achievements and works in progress. *Curr Opin Psychiatry* 2003:16:403-411.

Egan SK, Perry DG. Gender identity: A multidimensional analysis with implications for psychosocial adjustment. *Developmental Psychology* 2001;37:451-463.

The ESEMeD/MHEDEA 2000 Investigators (a). 12-month comorbidity patterns and associated factors in Europe: results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project. *Acta Psychiatr Scand* 2004;109(Suppl. 420):21-27.

The ESEMeD/MHEDEA 2000 Investigators (b). Prevalence of mental disorders in Europe: results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project. *Acta Psychiatr Scand* 2004;109(Suppl. 420):28-37.

The ESEMeD/MHEDEA 2000 Investigators (c). Use of mental health services in Europe: results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project. *Acta Psychiatr Scand* 2004;109(Suppl. 420):47-54.

Fagot BI. Consequences of moderate cross-gender behavior in preschool children. *Child Development* 1977;48:902-907.

Fergusson DM, Horwood LJ, Beautrais AL. Is sexual orientation related to mental health problems and suicidality in young people? *Arch Gen Psychiatry* 1999;56:876-880.

Gilman SE, Cochran SD, Mays VM, Hughes M, Ostrow D, Kessler RC. Prevalences of DSM-III-R disorders among individuals reporting same-gender sexual partners in the National Comorbidity Survey. *Am J Public Health* 2001;91:933-939.

Jacobi F, Wittchen H-U, Hölting C, Höfler M, Pfister H, Müller N, Lieb R. Prevalence, co-morbidity and correlates of mental disorders in the general population: results from the German Health Interview and Examination Survey (GHS). *Psychol Med* 2004;34:597-611.

Kessler RC, Andrews G, Mroczek D, Ustun B, Wittchen H-U. The World Health Organization Composite International Diagnostic Interview Short-Form (CIDI-SF). *Int J Methods Psychiatr Res* 1998;7:171-185.

MacKellar D, Valleroy L, Karon J, Lemp G, Janssen R. The Young Men's Survey: methods for estimating HIV prevalence and risk factors among young men who have sex with men. *Public Health Rep* 1996;111(Suppl):138-144.

Mays VM, Cochran SD. Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *Am J Public Health* 2001;91:1869-1876.

Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychol Bull* 2003;129:674-697.

Mills TC, Paul J, Stall R, Pollack L, Canchola J, Chang YJ, Moskowitz JT, Catania JA. Distress and depression in men who have sex with men: the Urban Men's Health Study. *Am J Psychiatry* 2004;161:278-285.

Nosikov A and Gudex C. *EUROHIS: Developing Common Instruments for Health Surveys.* Amsterdam: IOS Press, 2003.

Pollack LM, Osmond DH, Paul JP, Catania JA. Evaluation of the Center for Disease Control and Prevention's HIV Behavioral Surveillance for men who have sex with men: sampling issues. *Sexually Transmitted Diseases* 2005;32:581-589.

Sandfort TGM, de Graaf R, Bijl RV, Schnabel P. Same-sex sexual behavior and psychiatric disorders: Findings from the Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Arch Gen Psychiatry* 2001;58:85-91.

Stall R, Mills TC, Williamson J, Hart T, Greenwood G, Paul J, Pollack L, Binson D, Osmond D, Catania JA. 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* 2003;93:939-942.

Stueve A, O'Donnell LN, Duran R, San Doval A, Blome J. Time-space sampling in minority communities: results with young Latino men who have sex with men. *Am J Public Health* 2001;91:922-926.

WHO International Consortium in Psychiatric Epidemiology. Cross-national comparisons of the prevalences and correlates of mental disorders. *Bull World Health Org* 2000;78:413-426.

Chapter 4

Suicidality and sexual orientation among men in Switzerland: findings from 3 probability surveys

Jen Wang[1,3], Michael Häusermann[2], Hans Wydler[1], Meichun Mohler-Kuo[1], Mitchell G. Weiss[3,4]

1 Institute for Social and Preventive Medicine, University of Zurich, Switzerland

2 Dialogai, Geneva, Switzerland

3 Swiss Tropical and Public Health Institute, Basel, Switzerland

4 University of Basel, Switzerland

Published in *Journal of Psychiatric Research* 2012;46:980-986.

Abstract

Few population-based surveys in Europe have examined the link between suicidality and sexual orientation. The objective of this study was to assess the prevalences of and risk for suicidality by sexual orientation, especially among adolescent and young adult men. Data came from three probability-based surveys in Switzerland from 2002: 1) Geneva Gay Men's Health Survey (GGMHS) with 571 gay/bisexual men, 2) Swiss Multicenter Adolescent Survey on Health (SMASH) with 7'428 16-20 year olds, and 3) Swiss Recruit Survey (ch-x) with 22'415 new recruits. In GGMHS, suicidal ideation (12 months/lifetime) was reported by 22%/55%, suicide plans 12%/38%, and suicide attempts 4%/19%. While lifetime prevalences and ratios are similar across age groups, men under 25 years reported the highest 12-month prevalences for suicidal ideation (35.4%) and suicide attempts (11.5%) and the lowest attempt ratios (1:1.5 for attempt to plan and 1:3.1 for attempt to ideation). The lifetime prevalence of suicide attempts among homo/bisexual men aged 16-20 years varies from 5.1% in ch-x to 14.1% in SMASH to 22.0% in GGMHS. Compared to their heterosexual counterparts, significantly more homo/bisexual men reported 12-month suicidal ideation, plans, and attempts (OR=2.09-2.26) and lifetime suicidal ideation (OR=2.15) and suicide attempts (OR=4.68-5.36). Prevalences and ratios vary among gay men by age and among young men by both sexual orientation and study population. Lifetime prevalences and ratios of non-fatal suicidal behaviors appear constant across age groups as is the increased risk of suicidality among young homo/bisexual men.

Keywords: suicidal ideation, attempted suicide, homosexuality, adolescent, young adult, Switzerland

4.1 Introduction

Prevalence of suicidality in the general population

In Europe, rates of suicide vary strongly between regions—highest in east and lowest in the south [Chishti et al., 2003]—and are correlated with rates of suicide attempts, especially among young men [Hawton et al., 1998]. Although suicidality—i.e., suicidal ideation, suicide plans, and suicide attempts—is not regularly assessed in most countries, multi-national studies have presented compelling discrepancies across countries and by sex and age group [Nock et al., 2008; Kovess-Masfety et al., 2011]. According to studies in western and northern Europe, the prevalence of suicidal ideation in the male general population is 3-14% lifetime [Weissman et al., 1999; Nock et al., 2008] or 2-7% in the past year [Hintikka et al., 1998; Kjøller and Helweg-Larsen 2000], whereas the prevalence of suicide attempts is 1-4% lifetime [Weissman et al., 1999; Nock et al., 2008; McManus et al., 2009] or 0.5-1% in the past year [Hintikka et al., 1998; McManus et al., 2009].

Generally, suicidality has been assessed more frequently in adolescent health surveys which have also yielded much higher prevalence estimates: in Europe, the mean prevalence of suicide attempts is 6.9% lifetime or 2.0% in the past year [Evans et al., 2005]. Switzerland has one of the higher rates of completed suicides and occupies an intermediate position in attempted suicides [Bille-Brahe, 1999], yet population data on suicidality exist only for adolescents. According to the 1992 Swiss Multicenter Adolescent Survey on Health (SMASH), 26% of 15-20 year old adolescents reported suicidal thoughts, 15% suicidal plans, and 3% suicide attempts in the past year [Rey Gex et al., 1998]. According to the 1993 Swiss Recruit Survey of 20 year olds, 49.1% reported lifetime suicidal ideation and 2.3% suicide attempts [Mohler-Kuo et al., 2006].

Prevalence of suicidality among gay men

Compelling evidence for higher risk of suicidal behaviors associated with homosexuality have come from a Christchurch (New Zealand) birth cohort (OR=5.4 for lifetime suicidal ideation and OR=3.0-6.2 for lifetime suicide attempts) [Fergusson et al., 1999; Skegg et al., 2003], a US male twin registry (OR=4.1 for lifetime suicidal ideation and OR=6.5 for lifetime suicide atttempts) [Herell et al., 1999], a Danish national population registry (OR=1.9-8.2 for suicide incidence) [Mathy et al., 2011], several national health surveys in Europe and North America (OR=1.9-7.7 for lifetime suicidal ideation and OR=2.2-10.2 for lifetime suicide attempts among men and/or men and women combined) [Cochran and Mays, 2000; Gilman et al., 2001; de Graaf et al., 2006; Jouvin et al., 2007; Brennan et al., 2010; Bolton and Sareen, 2011; Chakraborty et al., 2011], and several national/regional adolescent health surveys in Europe and North America (OR=4.3-6.7 for lifetime suicide attempts among male and/or male and female secondary school students combined) [Remafedi et al., 1998; Wichstrøm and Hegna, 2003]. (NB: An excellent overview of findings on suicidality in the past 12 months by sexual orientation among high school students in the various Youth Risk Behavior Surveys is presented in Kann et al., 2011.)

Reviews of studies examining suicidality among sexual minorities point out discrepancies by country/region, sex, and age group [Russell and Toomey, 2010; Haas et al., 2011], albeit with some noteworthy distinctions. Both fatal and non-fatal suicidality appear to be more pronounced among gay/bisexual men than women [Haas et al., 2011]. Although suicidality among sexual minorities also appears to be especially elevated during adolescence [Russell and Toomey, 2010], prevalences of lifetime suicidality remain high among sexual minority adults whereas they fall among general population adults.

National health surveys with representative samples of self-reported gay/bisexual men in western Europe have yielded lifetime prevalences of 33-40% for suicidal ideation [Statens Folkhälsoinstitut, 2005; de Graaf et al., 2006] and 10-15% for suicide attempts [Statens Folkhälsoinstitut, 2005; de Graaf et al., 2006; Jouvin et al., 2007] as well as 12-month prevalence of 13% for suicidal ideation [Jouvin et al., 2007]. A national survey among secondary school students in Norway reported a lifetime prevalence of 15.4% for suicide attempts among male and female homo/bisexual respondents [Wichstrøm and Hegna, 2003].

Studies with convenience samples of gay men in western Europe have found lifetime prevalences of 47% for suicidal ideation [Warner et al., 2004] and 15-25% for suicide attempts [Cochand and Bovet, 1998; Hegna et al., 1999; Warner et al., 2004; Mayock et al., 2009]. Studies with convenience samples of young gay men (between 15-16 and 24-27 years) in western Europe have yielded lifetime prevalences of 71% for suicidal ideation [McNamee, 2006] and 12-27% for suicide attempts [van Heeringen and Vincke, 2000; Cochand et al., 2000; Hanner, 2002; McNamee, 2006; Hegna and Wichstrøm, 2007]. Using convenience samples of gay men in French-speaking Switzerland, Cochand and colleagues have reported lifetime prevalences of 23% for suicide attempts among gay men [Cochand and Bovet, 1998] and 24% among young gay men aged 16-25 years [Cochand et al., 2000]. In brief, the prevalences reported in convenience samples appear to be higher than those in probability samples. For an exhaustive overview of studies in Europe and internationally, please consult the website by Ramsay and Tremblay.

This growing body of evidence has not always influenced public health action—or even mention—of sexual minorities in suicide prevention programs and strategies. As in most places, sexual minorities are largely invisible in suicide prevention efforts

in Switzerland, and one reason may be the dearth of Swiss data. Given the relative paucity of population data on suicidality in Europe generally, for sexual minorities in Europe specifically, and for sexual minority adolescents in Europe in particular (to date, only one publication from Norway), this paper contributes to the evidence base by presenting findings for the key forms of suicidality from three distinct probability samples of men from Switzerland.

As the afore-mentioned findings all point to increased risk of suicidality among gay men and young gay men, our working hypothesis is that the three samples will also yield higher prevalences and risk for suicidality for this group. However, given the wide ranges in OR and prevalences reported in the literature, we wish to situate the actual levels—bolstered due to possible homogeneity across samples—for the population in Switzerland. Most studies collect and present data for only one or two forms of suicidality along a single time frame. Since differences by region, time frame, sex, and age also appear to be relevant among sexual minorities, we wanted to explore possible differences in time frame, age, and sampling design by directly comparing data on three forms of suicidality, across two time frames, from three different samples. The two nation-wide adolescent samples complement the gay male community sample by including young men who have not yet presented at meeting points. In turn, the gay male community sample complements the adolescent surveys with data on suicidality post-adolescence and the inclusion of gay-specific variables. Through their juxtaposition, we explore in a direct and explicit way whether a coherent picture for higher prevalences and risk among sexual minority men emerges.

4.2 Data & methods

Study samples and measures of sexual orientation and suicidality

The first Geneva Gay Men's Health Survey (GGMHS) was a comprehensive health interview survey conducted in 2002 among gay men in Geneva, using time-space sampling at both physical venues and virtual meeting points [for a detailed description of the methods, see Wang et al., 2007]. All 571 participants were either self-identified gay/bisexual men or other men who have sex with men. No age limits were imposed, and the final sample had a mean and median age of 35 years (range 14-83). Participants filled out anonymous self-completed questionnaires on the computer in French. Mental health was an important domain. In addition to major depression (and 4 other disorders) measured using the CIDI-SF [Kessler et al., 1998], 12-month and lifetime suicidality were measured using Paykel's 5 items covering life weariness ("Have you ever felt that life was not worth living?"), death wishes ("Have you ever wished you were dead? – for instance, that you could go to sleep and not wake up?"), suicidal ideation ("Have you ever thought of taking your life, even if you would not really do it?"), suicide plans ("Have you ever reached the point where you seriously considered taking your life or perhaps made plans how you would go about doing it?"), and suicide attempt ("Have you ever made an attempt to take your life?") [Paykel et al., 1974].

The second Swiss Multicenter Adolescent Survey on Health (SMASH) was conducted in 2002 among 7'428 adolescents (4'044 males and 3'384 females) aged 16-20 years in post-compulsory schooling, using a two-stage cluster sampling of schools in 19 of 26 cantons [for a detailed description of the methods, see Jeannin et al., 2005]. Participants filled out anonymous self-completed paper questionnaires in German, French, or Italian. Sexual orientation was assessed by a single question on sexual attraction from the Minnesota Adolescent Health Survey ("Which of the

following best describes your feelings? I am only attracted to people of my own sex and will only be sexual with persons of the same sex. I am strongly attracted to people of the same sex, and most of my sexual experiences will be with persons the same sex as mine. I am equally attracted to men and women and would like to be sexual with both. I am strongly attracted to persons of the opposite sex, and most of my sexual experience will be with persons of the opposite sex. I am only attracted to persons of the opposite sex and will only be sexual with persons of the opposite sex. Not sure"). Suicidality in the past 12 months was assessed by 5 questions covering suicidal ideation ("Have you ever thought about suicide?"), suicide plans ("Were there times when you would have wanted to commit suicide / kill yourself?", "Would you have committed suicide / killed yourself if given a chance?", and "Have you thought about the methods you could use to commit suicide / kill yourself?"), and suicide attempt ("Have you attempted suicide?"). There was one question on lifetime suicide attempt ("Have you ever attempted suicide?").

The second Swiss Recruit Survey (ch-x) on health was a survey conducted among 22'415 new recruits (22'191 males and 224 females) for the Swiss armed forces (mostly aged 20 yrs) at the recruit schools in 2002-3 [for a detailed description of the methods, see Wydler, 2011]. Military service is compulsory for Swiss men and voluntary for Swiss women, and 50% of all recruits were selected with a 100% participation rate. Participants filled out anonymous self-completed paper questionnaires in German, French, or Italian. Sexual orientation was assessed with a single question on sexual attraction with an eleven-point scale ("Do you feel more sexually attracted to women or to men? I feel... 1 "attracted to men", 6 "attracted to both", and 11 "attracted to women"). Lifetime suicidality was assessed with a single question covering both ideation and attempt ("There are many people who have thought about suicide. Have you ever thought that it will would be better to end your

life? I have already made a suicide attempt. Yes, I have already thought seriously about it. Yes, I have had such a thought. No, none of these statements apply to me.").

Only the male respondents in SMASH and the male recruits in ch-x were considered for this paper. In SMASH 2002, the male school respondents could be classified as follows: 72.5% only heterosexual, 23.3% mostly heterosexual, 0.8% equally bisexual, 0.4% mostly homosexual, 0.4% only homosexual, and 2.6% non-response. In ch-x 2002/03, the male military recruit respondents could be classified as follows: 91.7% only heterosexual, 5.3% mostly heterosexual, 0.9% equally bisexual, 0% mostly homosexual, 0.7% only homosexual, and 1.2% non-response. Given comparable prevalences for suicidality, the categories "equally bisexual", "mostly homosexual", and "only homosexual" were collapsed into a single category "homo/bisexual" for both clarity and improved statistical power. With the exception of lifetime suicide ideation, "mostly heterosexual" young men and non-responders to the question on sexual orientation reported prevalences of suicidality comparable to their "only heterosexual" counterparts. For clarity and conciseness, only the findings for "only heterosexual" (72.5% in SMASH and 91.7% in ch-x) and "homo/bisexual" (1.6% in SMASH and 1.6% in ch-x) young men will be reported.

Statistical analysis

Data analysis was performed separately for each of the 3 datasets using SPSS 17 for Mac OS X (Chicago, IL, USA). The point prevalences for suicidal ideation, suicide plans, and suicide attempts were the key indicators. The 95% confidence intervals (CI) reflect the different sizes between groups and surveys. Ratios between the prevalences of three suicidal behaviors offer a convenient and useful indication of

severity. Odds ratios (OR) are presented without adjustment for covariates, given the different measures and selection of measures used in the 3 surveys.

4.3 Results

Suicidality among gay men in the Geneva region

Table 4-1 shows the lifetime and 12-month prevalences of five suicide behaviors among men from the Geneva Gay Men's Health Survey (GGMHS). Overall, 69.8% of the respondents reported any of the five suicide behaviors in their lifetime and 32.5% in the past 12 months. Among those reporting at least one behavior, 87.1% reported more than one in their lifetime and 68.6% in the past 12 months. Although life weariness, death wishes, and suicidal ideation were equally prevalent at just over 50% lifetime and 20% in the past 12 months, suicidal ideation was more prevalent than suicide plans (38.7% lifetime, 12.4% past year) which was in turn more prevalent than suicide attempts (18.6% lifetime, 3.6% past year).

Table 4-1. Lifetime and 12-month prevalence of suicidality among gay men in GGMHS, 2002 (N=571)

	lifetime	<12 months
any suicide symptom	69.8	32.5
life weariness	53.4	21.6
death wishes	58.4	21.6
suicidal ideation	55.4	21.9
suicide plans	38.7	12.4
suicide attempts	18.6	3.6

The mean and median age of first suicide attempt is 20 years, with the first quartile at 15 years and the third quartile at 24 years. With the exception of men 55 years and over, the lifetime prevalences for suicidal ideation, plans, and attempts are similar across all age groups as are the lifetime ratios—i.e., every second person reporting a suicide plan and every third person reporting suicidal ideation also reported a suicide attempt. In contrast, the 12-month prevalences and ratios for suicidal ideation, plans,

and attempts exhibit strong age-group effects as evidenced in Table 4-2. Men under 25 years report the highest prevalences (35.4% thought about suicide and 11.5% attempted suicide) and the lowest attempt ratios (1:1.5 for attempt to plan and 1:3.1 for attempt to ideation) in the past 12 months. Indeed, the 12-month attempt ratios differ dramatically across age groups (from 1:1.5-8.9 for attempt to plan and 1:3.1-13.7 for attempt to ideation).

Table 4-2. 12-month prevalence and ratios of suicidality by age group, among gay men in GGMHS, 2002

	n	prevalence, %			ratio		
		suicidal ideation	suicide plans	suicide attempts	attempt: plan	attempt: ideation	plan: ideation
<25 years	96	35.4	17.6	11.5	1:1.5	1:3.1	1:2.0
25-34 years	173	20.8	10.4	2.3	1:4.5	1:9.0	1:2.0
35-44 years	194	20.6	13.4	1.5	1:8.9	1:13.7	1:1.5
45-54 years	67	14.9	9.3	3.0	1:3.1	1:5.0	1:1.6
≥55 years	28	7.1	8.7	0.0	--	--	1:0.8
TOTAL	558	21.9	12.4	3.6	1:3.4	1:6.1	1:1.8

Given the highest 12-month prevalences of suicidality in the under-25 age group (and that three-quarters of all lifetime suicide attempts debut in this age group), we supplement these findings with data on suicidality from two youth health surveys. Taking the target age group in SMASH of 16-20 year olds, suicidality and sexual orientation for this age group can be compared for males recruited from gay venues in GGMHS, schools in SMASH, and military recruit schools in ch-x.

Suicidality among adolescent/young men in Switzerland by sexual orientation

Table 4-3 presents an overview of lifetime and 12-month suicidality among men 16-20 years by sexual orientation in each of the three studies (NB: SMASH and ch-x did not assess all forms of suicidality along both time frames). Although the lifetime prevalence of suicidal ideation is comparable for homo/bisexual men in both GGMHS and ch-x at just above 60%, the lifetime prevalence of suicide attempts among

homo/bisexual men rises from 5.1% in ch-x to 14.1% in SMASH to 22.0% in GGMHS. The lifetime prevalence of suicide attempts among the reference populations of heterosexual men was twice as high in SMASH than in ch-x (3.0% vs. 1.3%, $p<0.05$).

Looking at 12-month prevalences of suicidality among homo/bisexual men in GGMHS and SMASH, the prevalences for suicide plans are comparable yet suicidal ideation and suicide attempt are both considerably more prevalent in GGMHS. The fact that the 12-month prevalences for both suicidal ideation and suicide plans are essentially the same among both heterosexual and homo/bisexual men in SMASH point to methodological considerations such as question formulation or data entry/programming error.

Table 4-3. Lifetime and 12-month prevalence of suicidality among men 16-20 years by sexual orientation in ch-x, SMASH, and GGMHS, 2002

		lifetime		<12 months	
	n	%	95% CI	%	95% CI
Suicidal ideation					
Heterosexual men (ch-x)	17072	44.1	(43.4-44.8)	NA	NA
Heterosexual men (SMASH)	2901	NA	NA	15.5	(14.2-16.8)
Homo/bisexual men (ch-x)	296	61.1	(55.5-66.7)	NA	NA
Homo/bisexual men (SMASH)	65	NA	NA	29.2	(18.1-40.3)
Homo/bisexual men (GGMHS)	41	63.4	(48.7-78.1)	48.8	(33.5-64.1)
Suicide plans					
Heterosexual men (ch-x)	NA	NA	NA	NA	NA
Heterosexual men (SMASH)	2896	NA	NA	16.6	(15.2-18.0)
Homo/bisexual men (ch-x)	NA	NA	NA	NA	NA
Homo/bisexual men (SMASH)	66	NA	NA	30.3	(19.2-41.4)
Homo/bisexual men (GGMHS)	28	46.4	(27.9-64.9)	25.0	(9.0-41.0)
Suicide attempts					
Heterosexual men (ch-x)	17072	1.3	(1.1-1.5)	NA	NA
Heterosexual men (SMASH)	2903	3.0	(2.4-3.6)	1.5	(1.1-1.9)
Homo/bisexual men (ch-x)	296	5.1	(2.6-7.6)	NA	NA
Homo/bisexual men (SMASH)	64	14.1	(5.6-22.6)	3.1	(-1.1-7.3)
Homo/bisexual men (GGMHS)	41	22.0	(9.3-34.7)	17.1	(5.6-28.6)

NA=not available

The ratios between the different suicidal behaviors presented in Table 4-4 present additional information. The ratio of lifetime suicide attempt to ideation is almost 3 times higher among homo/bisexual men (1:12) than their heterosexual counterparts (1:33.9) in ch-x. The ratios of all three 12-month suicidal behaviors are highly comparable between the two groups in SMASH, but the same methodological considerations may apply. Where comparisons are possible, the ratios among homo/bisexual men in GGHMS are considerably higher than those in the two youth health surveys: 1 out of every 3 men in GGMHS who ideate also attempt suicide (both lifetime and in the past 12 months).

Table 4-4. Lifetime and 12-month ratios of suicidality among men 16-20 years by sexual orientation in ch-x, SMASH, and GGMHS, 2002

		lifetime			<12 months		
	n	attempt: plan	attempt: ideation	plan: ideation	attempt: plan	attempt: ideation	plan: ideation
Heterosexual men (ch-x)	17072	NA	1:33.9	NA	NA	NA	NA
Heterosexual men (SMASH)	2903	NA	NA	NA	1:10.9	1:10.2	1:0.9
Homo/bisexual men (ch-x)	296	NA	1:12	NA	NA	NA	NA
Homo/bisexual men (SMASH)	66	NA	NA	NA	1:9.8	1:9.4	1:1
Homo/bisexual men (GGMHS)	41	1:2.1	1:2.9	1:1.4	1:1.5	1:2.9	1:2

NA=not available

The differences in various suicidal behaviors between young homo/bisexually and heterosexually attracted men are quantified with odds ratios (OR) in Table 4-5. Compared to heterosexual men as the reference group, significantly more homo/bisexual men report 12-month suicidal ideation, plans, and attempts (OR=2.26, 2.18, and 2.09, respectively) and lifetime suicidal ideation (OR=2.15). Despite significantly different prevalences, the OR for lifetime suicide attempts among homo/bisexual men are similar between SMASH (OR=5.36) and ch-x (OR=4.68).

Table 4-5. Lifetime and 12-month odds ratios (OR) of suicidality among men 16-20 years by sexual orientation in ch-x and SMASH, 2002

	ch-x		SMASH	
	OR	95% CI	OR	95% CI
lifetime				
Suicidal ideation				
Heterosexual men	1.00		NA	NA
Homo/bisexual men	2.15	(1.72-2.67)	NA	NA
Suicide plans				
Heterosexual men	NA	NA	NA	NA
Homo/bisexual men	NA	NA	NA	NA
Suicide attempts				
Heterosexual men	1.00		1.00	
Homo/bisexual men	4.68	(3.06-7.15)	5.36	(2.57-11.2)
<12 months				
Suicidal ideation				
Heterosexual men	NA	NA	1.00	
Homo/bisexual men	NA	NA	2.26	(1.31-3.89)
Suicide plans				
Heterosexual men	NA	NA	1.00	
Homo/bisexual men	NA	NA	2.18	(1.28-3.72)
Suicide attempts				
Heterosexual men	NA	NA	1.00	
Homo/bisexual men	NA	NA	2.09	(0.50-8.81)

NA=not available

4.4 Discussion

Despite mounting evidence of higher risk of suicidality among sexual minorities, this issue has often been met with scepticism or inattention in Switzerland and elsewhere. This paper presents findings from 3 distinct surveys which all point to higher prevalences and risk of lifetime and 12-month suicidal ideation, suicide plans, and suicide attempts among gay and other homo/bisexually attracted men in Switzerland.

Despite heterogeneity in prevalence values for some indicators between surveys, the odds ratios (OR) for increased risk are remarkably clear and uniform: OR≈5 for lifetime suicide attempts and OR≈2 for all other forms of suicidality measured. While the convergent odds ratios and the divergent prevalences evidenced in the 3 surveys generally fall within the ranges shown in the literature, they also serve to remind the

reader that the findings must be interpreted against some important methodological considerations.

Limitations

First, while all 3 studies employ probability sampling in 2002, each draws its sample from a distinct base population.

- The first Geneva Gay Men's Health Survey (GGMHS) drew its sample from all physical and virtual meeting points for gay-identified and/or homosexually active men in the Geneva area. As such, the sample does not include men who do not access the meeting points, such as men who are not yet socially active with other gay men or sexually active with other men.
- The second Swiss Multicenter Adolescent Survey on Health (SMASH) drew its sample of 16-20 year olds in post-compulsory schooling. Although representative of students and apprentices, an estimated 20% of this age group are either attending another form of training or have entered the job market [Jeannin et al., 2005]. Samples of adult gay men consistently demonstrate higher education, so while a school-based sample is likely to capture many future gay men, the most vulnerable segment among both homosexuals and heterosexuals is likely to have dropped out [Delbos-Piot et al., 1995].
- The second Swiss Recruit Survey (ch-x) drew its sample from new recruits of the Swiss army. Non-Swiss citizens (22% of the resident population) were excluded from the survey, as were Swiss men with health exemptions and those opting for civil service. A significant proportion of Swiss gay men avoid compulsory military service through those means.

While GGMHS excludes many young men who have not yet had their first contact with gay meeting points, SMASH and especially ch-x may have a bias towards

healthier respondents which accounts in part for the significantly lower prevalences of suicidality among both homo/bisexual and heterosexual respondents in ch-x compared to both SMASH and GGMHS, and indeed most published studies to date.

Second, sexual orientation was assessed differently in each survey. Homo/bisexual identity and/or homo/bisexual behavior constituted eligibility criteria for GGMHS which did not have a heterosexual comparison group. While the two youth health surveys permit comparisons against control groups, sexual attraction was measured on a 5-point scale in SMASH and an 11-point scale in ch-x. While 1.6% of respondents reported homo- or bisexual attraction, there were large differences between the two studies among men who reported “mostly heterosexual” and “only heterosexual” attraction, the comparison group. Given the stigmatization of homosexuality, men do not always report homosexual attraction or activity until they have largely completed the process of coming to terms with a stigmatized identity. The median age for initial disclosure of homosexual orientation in GGMHS is 21 years which means that less than half of the men in the 16-20 year age group have reached that point. In a nation-wide school-based survey on sexuality, 1.7% of the male respondents self-identified as homo/bisexual and 3.9% reported homo/bisexual attraction [Narring et al., 2003], confirming likely under-estimation of homosexual respondents in SMASH and ch-x. The discrepancy may be due to the subject matter (focus on sexuality vs. general health and well-being) or mode of data collection (computer self-administered interview vs. self-completed paper questionnaire) [Turner et al., 1998].

Third, suicidality was assessed with a different battery of questions in each survey. Only GGMHS implemented an internationally validated battery of questions on suicidality, whereas SMASH and ch-x radically adapted their questions from existing

instruments. Translations also differed in their inclusion of the term “suicide”. While all surveys assessed more than one suicide behavior, only GGMHS assessed all three suicidal behaviors at two time intervals (lifetime and in the past 12 months).

Finally, it is important to note that 20 years is the mean and median age reported for the first suicide attempt among gay men in GGMHS. Therefore, the age group of 16-20 years covered by the three-study comparison in this paper actually precludes half of all gay men attempting suicide for the first time. In accordance with studies among both the general and gay male populations, GGMHS finds the highest 12-month prevalences of suicidality and the lowest 12-month ratios of suicide attempts to plans and ideation in the youngest age group. GGMHS also replicates the age discrepancy between the general and gay male populations with high lifetime prevalences of suicidality across all age groups well into middle age.

As seen in cross-sample/country comparisons [Bertolote et al., 2005], suicidal ideation may not be indicative of suicide plans or attempts in a constant way across groups. Although lifetime prevalences of suicidality were comparable across age groups, young gay men not only reported higher prevalences of all forms of suicidality in the past 12 months than their older counterparts, but twice as many ideators (i.e., 1 out of 3) attempted suicide. Homo/bisexual men aged 16-20 years in GGMHS not only reported higher prevalence of suicidal attempts but also 3-4-times lower attempt-to-ideation ratios than their counterparts in SMASH and ch-x, suggesting greater severity of suicidal ideation. In turn, attempt-to-ideation ratios among young homo/bisexual men were 1-3-times lower than their heterosexual counterparts. Besides demonstrating a certain degree of heterogeneity between the various forms of suicidality, these findings further underscore higher levels of suicidality among young homo/bisexual men, particularly in GGMHS.

Timing of gay developmental milestones and onset of suicide attempts

Addressing the multiple risk factors for increased suicidality among gay men lies beyond the scope of the current paper. Several excellent overviews [Kulkin et al., 2000; Saewyc, 2007; Haas et al., 2011] review the evidence for both higher prevalence of common causes such as previous suicide attempt and major depression as well as causes unique to sexual minorities such as coming out and gender (role) non-conformity.

To better contextualize the different prevalences in suicide attempts among the young homo/bisexual men in the 3 surveys, a life-course approach juxtaposes the onset of psychiatric morbidity and suicidality against gay developmental milestones (measured only in GGMHS). Previously, we noted that the onset of major depression (median age=16 years) lies between the first homosexual attraction (median age=12 years) and the first homosexual encounter (median age=18 years) [Wang et al., 2007]. We now add the first suicide attempt (median age=20 years) lies between the first homosexual encounter (median age=18 years) and first coming out (median age=21 years). This sequence appears to suggest that the circumstances and stress encountered at each milestone may trigger depression and/or suicidality among some gay men.

Indeed, in-depth studies have noted the association of age at initial suicide attempt with age at first homosexual encounter [Wichstrøm and Hegna, 2003] and coming out [Remafedi et al., 1991] rather than chronological age per se. Studies have also shown that younger age at onset for any or all gay developmental milestones are associated with greater social and health risks [D'Augelli et al., 1998; Kulkin et al., 2000; Friedman et al., 2008]. Given its sampling procedure, GGMHS includes not

only young men who are more likely to have had already hit those gay developmental milestones but also hit them at a younger age overall. These factors may account in part for the higher prevalences of suicidality found in GGMHS and other random and non-random gay community samples.

Conclusions

In summary, the prevalences of suicidality and their ratios differ among gay men by both age and time frame and among young men by both sexual orientation and study population. Although increased risk of suicidality is especially pronounced among young homo/bisexual men, it remains elevated among gay men through middle age. Among gay men, homogenous lifetime prevalences and ratios across all age groups contrast with variable 12-month prevalences and ratios which are most discrepant in the youngest age group. Here, prevalences grow increasingly discrepant as one moves from suicidal ideation to suicide attempts and are most pronounced in GGMHS, the group which has already gone through various gay developmental milestones.

These findings underscore two important take-home messages. First, a certain homogeneity gives way to increasing heterogeneity as the time frame becomes more recent and as the form of suicidality becomes more severe. As such, different indicators of suicidality, time frames, and samples complement each other in providing a more complete picture. Second, point prevalence estimates of suicidality among the most vulnerable group—i.e., homo/bisexual men in their late teens and early twenties—should be interpreted with particular caution, since they appear to be particularly sensitive to sampling young men who have reached certain developmental milestones and/or demonstrate greater vulnerability to more severe forms of suicidality.

Against this differentiated picture of suicidality among gay men, the lifetime prevalences and ratios of suicidal behaviors are constant across age groups as is the increased 2-5-fold risk of suicidality among young homo/bisexual men versus their heterosexual counterparts, at levels concordant with meta-analyses of international population-based studies [King et al., 2008; Marshal et al., 2011]. As such, these findings constitute further evidence on the importance of sexual orientation and suicidality. Additional European research and monitoring on this issue would be particularly welcome, given possible regional differences and the modest evidence base to date. More urgently, we hope such findings will motivate key stakeholders to support measures addressing suicidality among sexual minorities. Gay organizations need to continue their efforts in raising awareness about this issue both inside the gay community as well as among policy and professional stakeholders. Suicide prevention and mental health programs need to address the relevance of sexual orientation in their work.

Funding sources

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.

Dialogai is a non-profit organization supported by a grant from the canton of Geneva.

Contributors

Jen Wang designed the Geneva Gay Men's Health Survey (GGMHS), performed the literature review, designed the statistical analysis, analyzed the data from GGMHS, and wrote the manuscript. Michael Häusermann participated in the design of the Geneva Gay Men's Health Survey, led the data collection, and contributed to the discussion of the results. Hans Wydler designed the Swiss Recruit Survey (ch-x) and performed the statistical analysis with that dataset. Meichun Mohler-Kuo performed the statistical analysis with the Swiss Multicenter Adolescent Survey on Health (SMASH). Mitchell Weiss contributed to the protocol and advised with his expertise at all steps. All authors contributed to and have approved the final manuscript.

Acknowledgements

The authors wish to acknowledge 1) recruitment coordinator Vincent Jobin and the many volunteers and experts in Geneva who have contributed to the Geneva Gay Men's Health Survey, 2) Pierre-André Michaud of the University of Lausanne for his kind permission to use the data from SMASH 2002 for this analysis, and 3) two anonymous referees for their thorough and insightful comments on an earlier draft.

References

Bertolote JM, Fleischmann A, DeLeo D, Bolhari J, Botega N, De Silva D, Thanh HTT, Phillip M, Schlebusch L, Värnik A, Vijayakumar L, Wasserman D. Suicide attempts, plans, and ideation in culturally diverse sites: WHO SUPRE-MISS community survey. *Psychological Medicine* 2005;35:1457-1465.

Bille-Brahe U (ed). *WHO/EURO Multicentre Study on Parasuicide: Facts and Figures.* Copenhagen: WHO Regional Office for Europe, 1999.

Brennan DJ, Ross LE, Dobinson C, Veldhuizen S, Steele LS. Men's sexual orientation and health in Canada. *Canadian Journal of Public Health* 2010;101(3): 255-8.

Bolton S-L and Sareen J. Sexual orientation and its relation to mental disorders and suicide attempts: findings from a nationally representative sample. *Canadian Journal of Psychiatry* 2011;56(1): 35-43.

Chakraborty A, McManus S, Brugha TS, Bebbington P, King M. Mental health of the non-heterosexual population of England. *British Journal of Psychiatry* 2011;198:143-148.

Chishti P, Stone DH, Corcoran P, Williamson E, Petridou E, EUROSAVE Working Group. Suicide mortality in the European Union. *Eur J Public Health* 2003;13(2):108-14.

Cochand P and Bovet P. HIV infection and suicide risk: an epidemiological inquiry among male homosexuals in Switzerland. *Social Psychiatry and Psychiatric Epidemiology* 1998;33(5):230-4.

Cochand P, Moret P, Singy P. *Incidence du développement de l'identité sexuelle sur les risques de contamination par le VIH chez les homosexuels et bisexuels de 25 ans et moins en Suisse romande.* Lausanne: Institut universitaire de médecine sociale et préventive, 2000.

Cochran SD and Mays VM. Lifetime prevalence of suicide symptoms and affective disorders among men reporting same-sex sexual partners: Results from NHANES III. *American Journal of Public Health* 2000;90(4):573-578.

D'Augelli AR, Herschberger SL, Pilkington NW. Lesbian, gay, and bisexual youth and their families: disclosure of sexual orientation and ist consequences. *American Journal of Orthopsychiatry* 1998;68(3):361-371.

de Graaf R, Sandfort TGM, ten Have M. Suicidality and sexual orientation: differences between men and women in a general population-based sample from the Netherlands. *Archives of Sexual Behavior* 2006;35(3):253-262.

Delbos-Piot I, Narring F, Michaud P-A. La santé des jeunes hors du système de formation: comparaison entre jeunes hors formation et en formation dans le cadre de l'enquête sur la santé et les styles de vie des 15-20 ans en Suisse Romande. *Santé Publique* 1995;1:59-72.

Evans E, Hawton K, Rodham K, Deeks J. The prevalence of suicidal phenomena in adolescents: a systematic review of population-based studies. *Suicide Life Threat Behav* 2005;36:239-250.

Fergusson DM, Horwood LJ, Beautrais AL. Is sexual orientation related to mental health problems and suicidality in young people? *Arch Gen Psychiatry* 1999;56:876-880.

Friedman MS, Marshal MP, Stall R, Cheong JW, Wright ER. Gay-related development, early abuse and adult health outcomes among gay males. *AIDS Behav* 2008;12:891-902.

Gilman ST, Cochran SD, Mays VM, Hughes M, Ostrow D, Kessler RC. Risk of psychiatric disorders among individuals reporting same-sex sexual partners in the Ntaional Comorbidity Survey. *Am J Public Health* 2001;91:933-939.

Haas AP, Eliason M, Mays VM. Mathy RM, Cochran SD, D'Augelli AR, Silverman MM, Fisher PW, Hughes T, Rosario M, Russell ST, Malley E, Reed J, Litts DA, Haller E, Sell RL, Remafedi G, Bradford J, Beautrais AL, Brown GK, Diamond GM, Friedman MS, Garofalo R, Turner MS, Hollibaugh A, Clayton PJ. Suicide and Suicide Risk in Lesbian, Gay, Bisexual, and Transgender Populations: Review and Recommendations. *Journal of Homosexuality* 2011;58(1):10-51.

Hanner H. *Psykisk hälsa och ohälsa hos ungdomar 16-24 år som attraheras av personer av sitt eget kön: En enkätundersökning.* PhD Thesis. Stockholm: Stockholm University, 2002.

Hawton K, Arensman E, Wasserman D, Hultén A, Bille-Brahe U, Bjerke T, Crepet P, Deisenhammer E, Kerkhof A, De Leo D, Michel K, Ostamo A, Phillippe A, Querejeta I, Salander-Renberg E, Schmidtke A, Temesváry B. The relationship between attempted suicide and suicide rates among young people in Europe. *Journal of Epidemiology and Community Health* 1998;52:191-194.

Hegna K, Kristiansen HW, Moseng BU. *Levekår og livskvaliteit blant lesbiske kvinner og homofile menn.* Rapport 1/99. Oslo: Norsk institutt for forskning om oppvekst, velferd og aldring (NOVA), 1999.

Hegna K and Wichstrøm L. Suicide Attempts among Norwegian Gay, Lesbian and Bisexual Youths General and Specific Risk Factors. *Acta Sociologica* 2007;50(1):21-37.

Herrell R, Goldberg J, True WR, Ramakrishnan V, Lyons M, Eisen S, Tsuang MT. Sexual orientation and suicidality: a co-twin control study in adult men. *Arch Gen Psychiatry* 1999;56:867-874.

Hintikka J, Viinamäki H, Tanskanen A, Kontula O, Koskela K. Suicidal ideation and parasuicide in the Finnish general population. *Acta Psychiatrica Scandinavica* 1998;98(1):23-27.

Jeannin A, Narring F, Tschumper A, Bonivento LI, Addor V, Butikofer A, Suris J-C, Diserens C, Alsaker F, van Melle G, Michaud P-A. Self-reported health needs and use of primary health care services by adolescents enrolled in post-mandatory schools or vocational training programmes in Switzerland. *Swiss Medical Weekly* 2005;135:11-18.

Jouvin É, Beaulieu-Prévost D, Julien D. Minorités sexuelles : des populations plus exposées que les autres? In P. Guilbert et A. Gauthier (Dir.), *Baromètre Santé 2005: Attitudes et comportements de santé* (p271-284). Paris: Institut national de prévention et d'éducation en santé, 2007.

Kann L, O'Malley Olsen E, McManus T, Kinchen S, Chyen D, Harris WA, Wechsler H. Sexual identity, sex of sexual contacts, and health-risk behaviors among students in grades 9-12 - youth risk behavior surveillance, selected sites, United States, 2001-2009. *MMWR* 2011;60(7):1-133.

Kessler RC, Andrews G, Mroczek D, Üstün B, Wittchen H-U. The World Health Organization Composite International Diagnostic Interview Short-Form (CIDI-SF). *Int J Methods Psychiatr Res* 1998;7:171-185.

King M, Semlyen J, Tai SS, Killaspy H, Osborn D, Popelyuk D, Nazareth I. A systematic review of mental disorder, suicide, and deliberate self-harm in lesbian, gay and bisexual people. *BMC Psychiatry* 2008;8:70.

Kjøller M and Helweg-Larsen M. Suicidal ideation and suicide attempts among adult Danes. *Scandinavian Journal of Public Health* 2000;28(1):54-61.

Kovess-Masfety V, Boyd A, Haro JM, Vilagut G, Lepine J-P, Gasquet I, Alonso J. High and low suicidality in Europe: A fine-grained comparison of France and Spain within the ESEMeD surveys. *Journal of Affective Disorders* 2011;133(1-2):247-256.

Kulkin HS, Chauvin EA, Percle GA. Suicide among gay and lesbian adolescents and young adults: a review of the literature. *Journal of Homosexuality* 2000;40(1):1-29.

Marshal MP, Dietz LJ, Friedman MS, Stall R, Smith HA, McGinley J, Thoma BC, Murray PJ, D'Augelli AR, Brent DA. Suicidality and depression disparities between

sexual minority and heterosexual youth. *Journal of Adolescent Health* 2011;49:115-123.

Mathy RM, Cochran SD, Olsen J, Mays VM. The association between relationship markers of sexual orientation and suicide: Denmark, 1990-2001. *Soc Psychiatry Psychiatr Epidemiol* 2011;46:111-117.

Mayock P, Bryan A, Carr N, Kitching K. *Supporting LGBT Lives: A Study of the Mental Health and Well-Being of Lesbian, Gay, Bisexual and Transgender people. Dublin: National Office of Suicide Prevention.* Dublin: Gay and Lesbian Equality Network and BeLonG To Youth Service, 2009.

McManus S, Meltzer H, Brugha T, Bebbington P, Jenkins R (ed). *Adult psychiatric morbidity in England, 2007: Results of a household survey.* Leeds: NHS Information Centre for health and social care, 2009.

McNamee H. *Out on your own: An examination of the mental health of young same-sex attracted men.* Belfast: The Rainbow Project, 2006.

Mohler-Kuo M, Wydler H, Zellweger U, Gutzwiller F. Differences in health status and health behaviour among young Swiss adults between 1993 and 2003. *Swiss Med Wkly* 2006;136:464-472.

Narring F, Stronski Huwiler SM, Michaud P-A. Prevalence and dimensions of sexual orientation in Swiss adolescents: a cross-sectional survey of 16 to 20-year-old students. *Acta Pædiatr* 2003;92:233-239.

Nock MK, Borges G, Bromet EJ, Alonso J, Angermeyer M, Beautrais A, Bruffaerts R, Chiu WT, de Girolamo G, Gluzman S, de Graaf R, Guerje O, Haro JM, Huang Y, Karam E, Kessler RC, Lepine J-P, Levinson D, Medina Mora ME, Ono Y, Posada Villa J, Williams D. Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. *British Journal of Psychiatry* 2008;192:98–105.

Paykel ES, Myers JK, Lindenthal JJ, Tanner J. Suicidal feelings in the general population: a prevalence study. *British Journal of Psychiatry* 1974;124:460–469.

Ramsey RF and Tremblay PJ. Gay, Lesbian, Bisexual & Transgender "Attempted Suicide" Incidences/Risks Suicidality Studies From 1970 to 2011. Available at http://people.ucalgary.ca/~ramsay/attempted-suicide-gay-lesbian-all-studies.htm#All-Studies, accessed on 4 Jun 2011.

Remafedi G, Farrow J, Deischer RW. Risk factors for attempted suicide in gay and bisexual youth. *Pediatrics* 1991;87:869-875.

Remafedi G, French S, Story M, Resnick MD, Blum R. The relationship between suicide risk and sexual orientation: Results of a population-based survey. *Am J Public Health* 1998;88:57.60.

Rey Gex C, Narring F, Ferron C, Michaud, PA. Suicide attempts among adolescents in Switzerland: Prevalence, associated factors and comorbidity. *Acta Psychiatrica Scandinavica* 1998;98:28–33.

Russell ST and Toomey RB. Men's sexual orientation and suicide: evidence for adolescent-specific risk. *Social Science & Medicine* 2010;xxx:1-7. Available online 30 August 2010.

Saewyc EM. Contested conclusions: claims that can and cannot be made from the current research on gay, lesbian, and bisexual teen suicide attempts. *Journal of LGBT Health Research* 2007;3(1):79-87.

Skegg K, Nada-Raja S, Dickson N, Paul C, Williams S. Sexual orientation and self-harm in men and women. *American Journal of Psychiatry* 2003;160(3):541-6.

Statens Folkhälsoinstitut. *Homosexuellas, bisexuellas och transpersoners hälsosituation: Återrapportering av regerinsuppdrag att undersöka och analysera hälsosituationen bland hbt-personer.* Stockholm: Statens Folkhälsoinstitut, 2005.

Turner C, Ku L, Lindberg L, Pleck J, Sonenstein F. Adolescent sexual behavior, drug use, and violence: increased reporting with computer survey technology. *Science* 1998;280:867-973.

van Heeringen C and Vincke J. Suicidal acts and ideation in homosexual and bisexual young people: a study of prevalence and risk factors. *Social Psychiatry and Psychiatric Epidemiology* 2000;35(11):494-9.

Wang J, Häusermann M, Ajdacic-Gross V, Aggleton P, Weiss MG. High prevalence of mental disorders and comorbidity in the Geneva Gay Men's Health Survey. *Social Psychiatry and Psychiatric Epidemiology* 2007;42:414-420.

Wang J, Häusermann M, Vounatsou P, Aggleton P, Weiss MG. Health status, behavior, and care utilization in the Geneva Gay Men's Health Survey. *Preventive Medicine* 2007;44:70-75.

Warner J, McKeown E, Griffin M, Johnson K, Ramsay A, Cort C, King M. Rates and predictors of mental illness in gay men, lesbians and bisexual men and women: Results from a survey based in England and Wales. *British Journal of Psychiatry* 2004;185:479-485.

Weissman MM, Bland RC, Canino GJ, Greenwald S, Hwu H-G, Joyce PR, Karam EG, Lee C-K, Lellouch J, Lepine J-P, Newman SC, Rubio-Stipec M, Wells JE,

Wickramaratne PJ, Wittchen H-U, Yeh E-K. Prevalence of suicide ideation and suicide attempts in nine countries. *Psychol Med* 1999;29:9–17.

Wichstrøm L and Hegna K. Sexual orientation and suicide attempt: a longitudinal study of the general Norwegian adolescent population. *Journal of Abnormal Psychology* 2003;112(1):144-51.

Wydler H. *Sport, Freizeit, Körper und Gesundheit. Gesundheitliche Lebensstile 20-Jähriger.* Glarus/Chur: Rüegger, 2011.

Chapter 5

Mental health literacy and the experience of depression in a community sample of gay men

Jen Wang[1,3], Michael Häusermann[2], Mitchell G. Weiss[3,4]

1 Institute for Social and Preventive Medicine, University of Zurich, Switzerland

2 Dialogai, Geneva, Switzerland

3 Swiss Tropical and Public Health Institute, Basel, Switzerland

4 University of Basel, Switzerland

Published in *Journal of Affective Disorders* 2014;155:200-207.

Abstract

Background: Gay men are at higher risk of suffering from a variety of psychiatric disorders, yet the mental health literacy of this population has remained largely unknown.

Methods: In 2007 and 2011, surveys were conducted among gay men in Geneva, Switzerland, recruited by probability-based time-space sampling. Based on a case vignette of a man with major depression, respondents were asked a series of questions about labelling, perceived risk, and help-seeking beliefs. Men meeting caseness for major depression were asked open questions about perceived causes and additional help-seeking/self-help.

Results: Among the 762 respondents, 14.7% met diagnostic criteria for major depression (MDD) in the past 12 months. The vignette was labelled depression by 44.1% of the entire sample, and 61.9% of the men with MDD. Discrimination (33.2%), acceptance or rejection by others (21.4%), and loneliness (24.9%) were the most common reasons given for greater susceptibility among gay men, yet men with MDD reported problems with love/relationship (32.5%) and work (28.9%) as the most common perceived causes of recent depression, and problems with love/relationship (21.9%), accepting one's homosexuality (21.1%), and family (20.2%) at initial outset. The highest proportions of gay men rated non-medical options such as a close friend (91.6%), relaxation exercises or meditation (84.4%), and physical activity (83.5%) as being helpful for the depression vignette.

Limitations: No probes used for open questions, and findings generalizable only to gay men in the sampling scheme.

Conclusions: There are many commonalities in labelling, perceived causes, and help-seeking with general populations, but also numerous specificities in mental health literacy and experience among gay men.

Keywords: mental health literacy, help-seeking, depression, cultural epidemiology, homosexuality

5.1 Introduction

The high lifetime prevalence of mental disorders generally (25%) and major depression in particular (12.8%) [ESEMeD/MHEDEA 2000 Investigators, 2004a] is coupled with low rates of help-seeking [ESEMeD/MHEDEA 2000 Investigators, 2004b] in the general population. To better understand this situation, research on mental health literacy has yielded valuable insights into knowledge, attitudes, and behaviors vis-à-vis mental disorders like depression in the general population [Jorm, 2000; Jorm, 2012], informing population campaigns to improve recognition, help-seeking, and prevention [Francis et al., 2002; Jorm, 2012]. Inter-disciplinary research in cultural epidemiology [Weiss, 2001] has described the experience of depression among patient groups, thereby capturing the socio-cultural context and facilitating culturally sensitive diagnosis, care, and prevention [Raguram et al., 1996; Jadhav et al., 2001].

Recent reviews summarize the body of evidence for higher prevalence and risk of depression among sexual minorities generally (lifetime OR=2.03, 12-month OR=2.05) and among gay men in particular (lifetime OR=2.58, 12-month OR=2.41) [King et al., 2008; Corboz et al., 2008]. A health survey among gay men in Geneva, Switzerland, confirmed high prevalences of depression (lifetime self-report 40%, 12-month diagnosis 19%) in this population, coupled with early onset, high comorbidity, and low levels of awareness of one's own depression and professional help-seeking [Wang et al., 2007b]. Given its distinctive socio-demographic [Gates and Ramos, 2008] and psychiatric profiles, this population may demonstrate a distinctive profile in mental health literacy and a distinctive experience of depression. Yet despite higher risk, nothing has been published to date on either issue for sexual minorities.

We drew on state-of-the-art approaches to mental health literacy with reference to features of cultural epidemiology as both fields share in-depth assessment of symptoms, causes, and help-seeking that centers on the citizen's or patient's perspective. In particular, 1) we describe how a community sample of gay men understands and responds to depression using mental health literacy. Given the high prevalence, 2) we also describe the experience of depression among gay men fulfilling diagnostic criteria using cultural epidemiology. By identifying actual cases of major depression, we are also able to compare 3) understanding between cases and non-cases as well as 4) understanding and experience among the cases.

5.2 Methods

The Geneva Gay Men's Health Survey (GGMHS) was conducted in 2002, 2007, and 2011. The 2007 and 2011 waves focused on mental health and also provided the indicators for a pre- and post-intervention study for the depression awareness campaign Blues-out [Wang et al., 2013].

Samples

The study design has been described in detail elsewhere [Wang et al., 2013]. Briefly, the target population consisted of gay-identified men and other men who have sex with men who access meeting points—both real and virtual—in Geneva, Switzerland. All surveys employed time-space sampling, a multi-stage randomized sampling scheme developed by the Centers for Disease Control and Prevention (CDC), involving mapping of meeting points, enumeration of visits, and random selection of both venues and participants [MacKellar et al., 1996; Stueve et al., 2001]. Men who were randomly selected and agreed to participate could complete the anonymous survey in French directly on-site at laptops provided or later online via a unique

access code. In 2007, 276 gay men participated in the survey (response rate 44%), whereas in 2011, the target sample size was doubled, and 486 gay men participated (response rate 38%).

Survey questions

In 2007 and 2011, the survey instrument focused on 1) mental health status and 2) mental health literacy. Both sections were supplemented with items from the Explanatory Model Interview Catalog (EMIC) [Weiss et al., 1997] used in cultural epidemiology.

Mental health status was assessed by a series of questions recommended by the EUROHIS project on harmonizing indicators for health interview surveys in Europe [Nosikov and Gudex, 2003]—i.e., 1) self-reported history of chronic depression and chronic anxiety taken from a standardized check-list of chronic conditions modified to yield both 12-month and lifetime prevalences [Eurostat, 2007] and 2) assessment of 12-month major depression, simple phobia, and social phobia by the WHO Composite International Diagnostic Interview Short Form (CIDI-SF) [Kessler et al., 1998]. Those men meeting caseness for major depression or either of the two forms of anxiety were asked open questions about perceived causes for the most recent episode and at initial outset of symptoms and additional help-seeking/self-help (NB: probes for consulting professionals and medication/substance use are already included in the CIDI-SF) as per EMIC [Weiss et al., 1997].

Mental health literacy was assessed by detailed instruments developed by Jorm and colleagues [2006] used in Australia and elsewhere. Based on a case vignette of a man with major depression according to the DSM-IV, respondents were then asked a series of questions about the vignette, including labelling, perceived risk, help-

seeking beliefs about people and professionals, help-seeking beliefs about substances (incl. medications), and help-seeking beliefs about activities (incl. therapies). A series of core items recommended by the European Alliance Against Depression (EAAD) was included to assess general attitudes towards depression—i.e., treatability and anti-depressants [Hegerl, 2007]. For the sub-section on perceived risk of various groups for depression, we created a new question on the relative susceptibility of gay men vs. heterosexual men and, for those believing in different susceptibility, an open question on the reasons why. The final questions using the vignette were a new series on the impact of gay-friendly providers on help-seeking if the man in the vignette is gay.

Analysis

Open questions and specific probes are commonly used in both mental health literacy and cultural epidemiology research. The verbatim responses to the open questions ranged from a single word to an entire paragraph. Since most responses were brief, and since quite a few responses contained spelling errors for key terms, they were imported into an Excel file and hand-coded by one researcher in at least 3 separate iterations. At each iteration, the codes were compared within and between questions, so that an overall framework emerged which facilitated identification of key terms and comparison across all open questions for depression, anxiety (simple and social phobias), and suicide attempt in both 2007 and 2011. The findings for suicide attempt are presented elsewhere [Wang et al., submitted for publication], and only the findings for depression are covered here.

In order to facilitate tabulation and further analysis, the individual codes were grouped into over-arching categories which were also harmonized across all open questions and both datasets. For the open questions on labelling the vignette,

reasons for gay men's greater susceptibility for the vignette, and perceived causes of major depression in the past 12 months, a strict distinction was made between "disease" and "problem" along the following categories: disease (unspecified), mental disorder, somatic disease, problems (general), mental problems, social/interpersonal problems, lifestyle problems, problems with homosexuality, and "don't know". The open questions on help-seeking/self-help activities were categorized into professional solutions, social solutions (general and loved ones), and individual solutions (personal development, psycho-behavioral methods, and lifestyle activities). All codes and categories were reviewed by a second researcher.

Data analysis was performed using IBM SPSS Statistics for Macintosh version 19.0 (Chicago, IL, USA). The codes for the open questions were imported into SPSS, so that qualitative data may be integrated into quantitative data analysis. The categories were formed in SPSS according to the iteration framework. For the sake of clarity and concision, only codes with a prevalence of over 5% are shown in the tables together with all the categories for both understanding and experience of depression. In order to compare understanding between cases and non-cases, we performed bivariable analyses with depression as the dependent variable, using both self-reported depression (≤12 months, >12 months, never) and CIDI-SF major depression in the past 12 months (diagnosis, screen positive only, screen negative). For the most part, the findings on mental health literacy are comparable between self-reported depression and CIDI-SF major depression. Furthermore, for nearly all of the codes reported here, the responses by men self-reporting depression prior to the past 12 months and never could be collapsed into a single group as could those for men screen positive without caseness and screen negative for major depression in the past 12 months.

The findings reported in this paper focus on the entire community sample of gay men and a sub-sample of gay men meeting diagnostic criteria for major depression in the past 12 months (diagnosis vs. no diagnosis). Since no differences in the mental health literacy items were evidenced between 2007 and 2011 [Wang et al., 2013] and in order to increase statistical power for the latter, we present the findings for the combined 2007 and 2011 dataset. Finally, we include select quotations from over a dozen different respondents to illustrate key themes.

5.3 Results

Diagnostic profile

During the study period, 13.3% of the respondents self-reported depression in the past 12 months, and 50.6% self-reported depression in their lifetime. As for the depression vignette, 21.9% of the respondents reported experiencing the condition depicted in the vignette in the past 12 months, and 56.6% in their lifetime.

According to the CIDI-SF, 14.7% of the respondents met diagnostic criteria for major depression (MDD) in the past 12 months. An additional 22.3% were screen-positive for having depressed mood and/or anhedonia for a continuous two-week period in the past 12 months. Half of MDD cases (49.5%) actually self-reported depression in the past 12 months, whereas 60% of MDD cases actually reported experiencing the condition depicted in the vignette in the past 12 months.

Labelling / recognition

Table 5-1 lists the most common labels for the depression vignette. Although there are 46 different codes for this question with an average 1.5 codes per respondent, only 4 items met the 5% threshold. The most common label was depression,

correctly identified by 44.1% of the sample. This was followed by depressed mood (or "déprime" in French) at 13.9% and problems with love/relationship at 11.5%. The most common categories were mental disorder (44.8%), mental problems (24%), and social problems (20.3%). In addition to depressed mood, the category of mental problems includes low morale, malaise, sadness/melancholy, fatigue, etc... In addition to problems with love/relationship, the category of social/inter-personal problems includes loneliness, problems at work, burnout, etc... Overall, 66.1% reported a disease, 49.5% a problem, and only 2.9% "don't know".

Table 5-1. Labels for the condition depicted in a depression case vignette, Geneva Gay Men's Health Surveys 2007-11

	Total (N=762)		MDD* (n=105)	No MDD (n=608)	
	n	%	%	%	p-value
Disease (unspecified)	126	16.5	8.6	18.4	0.01
Mental disorder	341	44.8	62.9	42.1	<0.001
Depression	336	44.1	61.9	41.4	<0.001
Somatic disease	93	12.2	10.5	12.8	0.50
HIV/AIDS	69	9.1	8.6	9.4	0.79
Problems (general)	71	9.3	9.5	9.9	0.91
Mental problems	183	24.0	18.1	25.8	0.09
Depressed mood ("déprime")	106	13.9	12.4	14.8	0.52
Social/inter-personal problems	155	20.3	20.0	20.4	0.92
Love / relationship	88	11.5	14.3	11.2	0.36
Lifestyle problems	21	2.8	2.9	2.6	0.90
Problems with homosexuality	21	2.8	3.8	2.6	0.50
Don't know	22	2.9	1.0	2.6	0.30

NB: spontaneous responses to open question coded (only those with 5% or higher shown) and grouped into categories (all shown); multiple responses possible
* CIDI-SF diagnosis for major depression (MDD) in the past 12 months

Men who met caseness for major depression in the past 12 months were significantly more likely to label the depression vignette as such (61.9% vs. 41.4%, p<0.001) and significantly less likely to report an unspecified disease (8.6% vs. 18.4%, p=0.01). Men who self-reported depression in the past 12 months were significantly more

likely to label the vignette as depression than those who self-reported an earlier episode of depression or never having experienced depression (66.3% vs. 45.7% vs. 38%, $p<0.001$). Similarly, men who reported experiencing the vignette in the past 12 months or prior were significantly more likely than those who never experienced the vignette to label it as depression (57.6% vs. 46.2% vs. 37.2%, $p<0.001$).

Perceived causes

All respondents were asked whether they believed gay men are more/less/equally susceptible to the condition depicted in the depression vignette than heterosexual men: half the respondents (51.4%) believed gay men to be more susceptible, 41.1% equally susceptible, 0.6% less susceptible, and 6.9% did not know. None of the 4 men (0.6%) who believed gay men are less susceptible identified the vignette as depicting depression. Significantly more men with major depression in the past 12 months affirmed that gay men (71.4% vs. 48.5%, $p<0.001$) and single people (59% vs. 37.8%, $p=0.001$) are more likely to experience the condition depicted in vignette.

As seen in Table 5-2, the respondents who believed gay men to be more susceptible reported discrimination (33.2%), acceptance or rejection by others (21.4%), and loneliness (24.9%) most frequently. Other reasons include poor self-image (12.3%) and hiding oneself (12.1%). These aforementioned causes fall within two of the top three categories social/inter-personal problems (78%) or mental problems (25.7%). Problems related explicitly to one's homosexuality (29.1%)—e.g., difficulties in coming to terms with one's own homosexuality and coming out, stress/superficiality of the gay scene, and being a minority in a heteronormative society—constitute the second-most common category.

Table 5-2. Reasons why gay men are more susceptible to the condition depicted in a depression case vignette, Geneva Gay Men's Health Surveys 2007-11

	Total (n=373)		MDD* (n=75)	No MDD (n=295)	
	n	%	%	%	p-value
Disease (unspecified)	6	1.6	0.0	2.0	0.21
Mental disorder	8	2.1	1.3	1.7	0.83
Somatic disease	22	5.9	1.3	7.1	0.06
HIV (risk / stress)	22	5.9	1.3	7.1	0.06
Problems (general)	43	11.5	16.0	10.2	0.16
More difficult / unstable life	16	4.3	9.3	3.1	0.02
Mental problems	96	25.7	20.0	27.0	0.21
Fear	23	6.1	2.7	6.8	0.18
Self-image	46	12.3	8.0	13.2	0.22
Weaker / more sensitive	35	9.4	9.3	9.5	0.97
Social/inter-personal problems	291	78.0	80.0	77.6	0.66
Discrimination	124	33.2	36.0	32.2	0.53
Acceptance / rejection by others	80	21.4	21.3	21.4	1.00
Hiding oneself	45	12.1	16.0	11.2	0.26
Loneliness	93	24.9	25.3	25.1	0.97
Love / relationship	28	7.5	6.7	7.8	0.74
Family problems	19	5.1	4.0	5.1	0.70
Lifestyle problems	6	1.6	2.7	1.4	0.42
Problems with homosexuality	109	29.1	38.7	27.0	0.05
Homosexuality / identity	32	8.6	12.0	7.8	0.25
Being different	29	7.8	10.7	7.1	0.31
Being a minority / heteronormativity	29	7.8	13.3	6.4	0.05
Gay scene	30	8.0	6.7	8.4	0.61
Don't know	2	0.5	0.0	0.7	0.48

NB: spontaneous responses to open question coded (only those with 5% or higher shown) and grouped into categories (all shown); multiple responses possible
* CIDI-SF diagnosis for major depression (MDD) in the past 12 months

Quotations from the respondents themselves illuminate these figures. Already evident to many respondents in the initial question on labelling, "depression never happens without a reason," and some volunteer causes from the problem categories. "There are two categories of reasons" at the macro level for gay men's greater susceptibility to depression: "1) social and cultural repression of homosexuality and 2) internal pressures within the gay scene". Within the first category, some men speak of pressures common to all minorities as an "additional burden", whereas others speak of the specificity of sexual minorities being "outside the norm": "If you

don't manage being gay sufficiently well, it makes you fragile and creates doubt and a lack of self-confidence. Even if you manage being gay well, it's not easy to live it in daily life and adds an additional pressure on top of everything else." Others speak more directly of discrimination: "a homosexual child lives a situation of constant and permanent abuse, so it takes an enormous effort to overcome this and be comfortable and positive with oneself." One man contextualizes the nexus of causes nicely: "In our society, homosexuality is seen as a mental illness, and homosexuals are often obliged to hide themselves in order to avoid discrimination. Having to hide themselves and not showing their true personality may cause poor self-esteem and lead to depression." As for the second category, some respondents felt that "the (gay) scene is particularly discriminatory, so one winds up feeling even more rejected".

Men diagnosed with major depression by the CIDI-SF reported similar responses to this question as their counterparts, with the exceptions of being significantly more likely to report being a minority or heteronormativity (13.3% vs. 6.4%, p=0.05) and a more difficult or unstable life (9.3% vs. 3.1%, p=0.02). Nevertheless, Table 5-3 shows that the actual causes perceived to have precipitated their own symptoms are quite different from the reasons given for greater susceptibility among gay men generally. There are also important differences in perceived causes/triggers between the most recent episode and at initial outset, with a median interval of 11 years.

Problems with love/relationship (32.5%) and work (28.9%) accounted for over half of the cases in the past 12 months, making social/inter-personal problems the most important category by far (70.2%). The most common perceived causes at initial outset are problems with love/relationship (21.9%), accepting one's homosexuality (21.1%), and family (20.2%), which together account for almost two thirds of the

cases. Social/inter-personal problems remain the most important category at 60.5%, followed by problems with homosexuality (22.8%). Only 7% were unable to report a cause for the onset of their symptoms. One respondent's narrative not only demonstrates the normality of multiple causes but also the enduring or repetitive nature of some causes leading to chronic depression: "always the same things: failures, chaotic love life and social life, non-existant guidance and understanding on the part of my parents, and extreme loneliness which has continued to this day and lead to isolation."

Table 5-3. Perceived causes given by gay men fulfilling diagnostic criteria for major depression in the past 12 months, Geneva Gay Men's Health Surveys 2007-11 (n=114)

	In the past 12 months		At intial outset	
	n	%	n	%
Disease (unspecified)	6	5.3	4	3.5
Mental disorder	6	5.3	3	2.6
Somatic disease	1	0.9	1	0.9
Problems (general)	16	14.0	10	8.8
Existential questions	6	5.3	1	0.1
Adolescence	0	0.0	6	5.3
Mental problems	12	10.5	4	3.5
Social/inter-personal problems	80	70.2	69	60.5
Violence	4	3.5	7	6.1
Loneliness	11	9.6	12	10.5
Love / relationship	37	32.5	25	21.9
Family problems	9	9.7	23	20.2
Work	33	28.9	9	7.9
Lifestyle problems	12	10.5	5	4.4
Substance dependence	6	5.3	1	0.1
Problems with homosexuality	9	7.9	26	22.8
Accepting one's homosexuality	6	5.3	24	21.1
Don't know	6	5.3	8	7.0

NB: spontaneous responses to open question coded (only those with 5% or higher shown) and grouped into categories (all shown); multiple responses possible

Help-seeking and self-help

While the vast majority of respondents believed that depression can be treated (88.7%) and that untreated depression gets worse (79.8%), fewer than half (42.4%) believed that most people with depression recover. Most men believed that anti-depressants have side-effects (80.7%), change one's personality (63.4%), and create dependency (66.5%). These attitudes are shared by men with major depression.

Table 5-4. Beliefs about people, treatments, and medications as help for a depression case vignette, Geneva Gay Men's Health Surveys 2007-11 (N=762)

	Helpful %	Harmful %	Neither %	Don't know %
People				
Close friend	91.6	0.7	5.3	2.4
Psychologist	77.1	6.4	11.2	5.3
General practitioner (GP)	75.3	5.6	16.2	2.8
Counsellor	70.2	6.2	15.1	8.5
Close family	66.3	8.8	15.3	9.6
Psychiatrist	51.6	18.8	18.9	10.6
Practitioner of alternative medicine	36.4	17.3	30.8	15.5
Deal with it alone	18.4	55.0	17.2	9.3
Treatments				
Relaxation exercises, meditation	84.4	1.4	10.4	3.7
Physical activity	83.5	2.3	9.8	4.5
Counselling	63.4	3.8	16.6	16.3
Psychotherapy	60.6	8.7	16.0	14.7
Read about problem in a book	53.8	19.0	20.6	6.6
Read about problem online	48.9	11.9	27.2	11.9
Cognitive-behavioral therapy (CBT)	36.8	7.2	19.9	36.1
Light therapy	30.9	6.3	26.3	36.5
Do nothing	1.7	87.6	6.1	4.5
Medications				
Anti-depressants	34.8	40.6	12.2	12.5
Tranquilizers	24.2	48.1	15.0	12.6
St. John's wort	19.9	16.1	26.2	37.8
Sleeping pills	17.2	61.1	12.5	9.2
Pain relievers	6.2	53.9	30.1	9.8

NB: original response categories to probes are: very helpful, somewhat helpful, neither helpful nor harmful, somewhat harmful, very harmful, don't know

Table 5-4 presents ratings of helpfulness/harmfulness for a list of specific people, treatments, and medications. The highest proportions of gay men rated non-medical options such as a close friend (91.6%), relaxation exercises or meditation (87.6%), and physical activity (83.5%) as being helpful. Around three-quarters rated health

care providers such as psychologists (77.1%) and general practitioners (75.3%) as being helpful. The majority rated doing nothing (87.9%) and dealing with it alone (55%) as being harmful. One fifth of the respondents also rated reading about the problem online (19%) and psychiatrists (18.8%) as harmful. Consistent with the aforementioned attitudes towards anti-depressants, more men rated medications as harmful rather than helpful. Over a third of the men reported not knowing St. John's wort (37.8%), luminotherapy (36.5%), or cognitive-behavioral therapy (36.1%).

The ratings provided by men meeting caseness for major depression in the past 12 months were similar, except that significantly more of these men rated anti-depressants (44.7% vs. 33.4%, p=0.02) and tranquilizers (31.5% vs. 23.3%, p=0.008) as helpful.

Table 5-5. Help-seeking activities among gay men fulfilling diagnostic criteria for major depression in the past 12 months, Geneva Gay Men's Health Surveys 2007-11 (n=114)

	n	%
General help (unspecified)	0	0.0
Professional solutions		
Doctor*	54	46.6
Other health professionals*	53	45.7
Medications / drugs / alcohol*	66	57.4
Social solutions	8	7.0
Social solutions – loved ones	26	22.8
See friends	20	17.5
Individual solutions – personal development	11	9.6
Personal development	7	6.1
Individual solutions – psycho-behavioral methods	11	9.6
Individual solutions – lifestyle activities	41	36.0
Spend time on activities	14	12.3
Sports	19	16.7
Diet	6	5.3
Going out / partying	7	6.1
Don't know	0	0.0

NB: spontaneous responses to open question coded (only those with 5% or higher shown) and grouped into categories (all shown); multiple responses possible
* specific probe questions

Table 5-5 presents the actual help-seeking activities of men fulfilling diagnostic criteria of the CIDI-SF for major depression in the past 12 months. The CIDI-SF probes specifically for seeing a doctor (46.6%), other health professionals (45.7%), and use of medications/drugs/alcohol (57.4%). In all, 58.6% saw either a doctor and/or other health professionals. 60% also did something else to feel better, and among their spontaneous responses, seeing friends (17.5%) and doing sports (16.7%) were the two most common activities. The most important categories were lifestyle activities (36%) and loved ones (22.8%). All told, 91.4% reported help-seeking and/or self-help activities from the probes and open question.

If the man in the vignette is gay and has access to a gay-friendly provider, 64.5% of all respondents believed that he would be more likely to consult, 76.3% that he would be more likely to speak openly during the consultation, and 41.3% that the treatment outcome would be more successful. There are no differences by caseness for major depression in the past 12 months.

The very lack of communication and help is perceived as a reason for gay men's greater vulnerability to depression. For example, "it's not easy talking about a gay break-up to one's social circle. Everyone goes through the end of a relationship at one time or another, but for gay men, it's often a world of silence." This lack of help is often expressed as loneliness as gay men "find themselves dealing with their problems alone and not finding help when they need it" because "it's more difficult to find a confidant in their social circle, and there's greater discomfort in explaining their problems." Of note, these hindrances are attributed to an over-arching "problem of acceptance at the societal level which makes it more difficult to talk about one's problems, share them, and try to find a solution with someone's help". As above,

some gay men also note that “in the gay scene, men rarely if ever talk about their own problems—e.g., HIV status and problems with sex, work, or relationships—and they force themselves to present an artificially joyous and positive image of themselves.”

5.4 Discussion

This is the first study of mental health literacy and the cultural epidemiology of depression among a gay population. As such, these findings cannot be compared with those from other gay samples but rather with similar studies among the general population. Such comparisons are useful in identifying possible specificities in mental health literacy among gay men. As a unique contribution to the literature, this paper also presents findings on the understanding and experience of people diagnosed with major depression, rendered feasible in a population with higher prevalence, irrespective of the indicator used—i.e., CIDI-SF diagnosis, self-reported depression, and self-reported condition depicted in the vignette [ESEMeD/MHEDEA 2000 Investigators, 2004a; Reavley and Jorm, 2011]. Self-reported depression has higher sensitivity than self-reported history of the condition depicted in vignette, although the latter was reported more frequently among cases.

Labelling / recognition

Compared to Australian data through the late 1990s [Jorm et al., 1997; Goldney et al., 2009] and Swiss data [Lauber et al., 2003b; Wang and Schmid, 2007] among the general population, a comparable percentage of gay men labelled the vignette as depression. Nonetheless, this finding is disappointing for two reasons. First, gay men demonstrate much higher education and prior exposure to depression—both factors are correlated positively with precise labelling—than the general population,

leading us to hypothesize a correspondingly higher rate of recognition. Second, data in the new millenium show that over 70% of the general population recognize depression in Australia [Jorm et al., 2006; Goldney et al., 2009] and Canada [Bourget and Chenier, 2007; Wang et al., 2007c]. Gay men fulfilling diagnostic criteria for or self-reporting depression demonstrate better recognition, but still not at the levels reported elsewhere, suggesting much room for improvement.

The values for the other main labels and categories are quite comparable as well, save for a few noteworthy exceptions. First, stress (22%) is the second most common label in Australia [Jorm et al., 1997; Goldney et al., 2009], whereas in Switzerland, only 6% of the general population [Wang and Schmid, 2007] and 2.6% of gay men labelled the vignette in this way. Second, depressed mood ("déprime" in French) is the second most common label in this survey, but not reported elsewhere as it may be a cultural/linguistic peculiarity. To clarify the distinction, one man described the vignette as "a temporary 'déprime' or, more seriously, depression". Third, HIV/AIDS or risk for HIV/AIDS was the fourth most common label among gay men, although it is not reported in any of the general population surveys. Of course, HIV/AIDS prevalence is many times higher among gay men, and HIV prevention has been the most prominent public health intervention in this community. Finally, a small percentage labelled the vignette as representing someone having problems dealing with his homosexuality even though the vignette does not state anything about the man's sexual orientation.

Perceived causes

In general population studies, some three out of four respondents believe that the unemployed and the separated/divorced are more likely to experience the condition depicted in a depression vignette, in accordance with actual data [Jorm et al., 2005a].

Despite a growing body of evidence for increased risk of depression among gay men [King et al., 2008; Corboz et al., 2008] and high prevalence of depression among gay men in Geneva [Wang et al., 2007b], only half of the respondents agreed that gay men are more likely to experience the condition depicted in the vignette.

Social/inter-personal problems is the most important category accounting for greater vulnerability of gay men for the depression vignette as well as perceived causes of actual cases of major depression in the past 12 months. However, while discrimination, acceptance/rejection by others, and loneliness are the most common perceived causes for gay men's greater susceptibility, even among gay men fulfilling diagnostic criteria for major depression in the past 12 months, only loneliness is cited spontaneously as a cause by 5% or more of such men.

Rather, problems with love/relationship (mostly break-ups) and family each account for one quarter of the latest and initial episodes, respectively. Fewer than 5% mentioned work in Table 2, but over one quarter cited it as the perceived cause for major depression in the past 12 months. Problems with love/relationship and work are also the top two causes for depression mentioned by the Swiss general population [Lauber et al., 2003a]. Overall, the social/inter-personal problems category was also the most important among the Canadian general population [Bourget and Chenier, 2007] and white Britons with depression [Jadhav et al., 2001]. Accordingly, social support was considered the top protective factor for good mental health [Bourget and Chenier, 2007].

The category unique to this population is problems with homosexuality. One quarter of the respondents cited causes in this category as accounting for gay men's greater vulnerability. Indeed, this category accounted for one quarter of the cases of major

depression at the initial outset. Merely realizing one's difference or sexuality not to mention accepting one's homosexuality are repeatedly qualified as being "difficult". Qualitive studies reveal that the process of coming out continues to be challenging for most gay people, with a large proportion attributing the onset of their depression symptoms to directly to these issues [Mayock et al., 2007; Diamond et al., 2011].

Problems with love/relationship, family, and coming to terms with one's homosexuality account for over half of the cases at the outset (median age 16), whereas problems with love/relationship and work account for over half of the cases in the past 12 months (median age 31.5). As such, these findings underscore variations in perceived causes over the life course among a population with a high prevalence of mostly chronic/recurrent depression. Qualitative work among gay men in Geneva has shown that love/relationship was rated the most important domain for quality of life, but coupled with the lowest level of satisfaction [Wang et al., 2001]. Problems with love/relationship were the most common perceived cause of major depression among gay men. The topic of same-sex relationships should constitute a priority for research and action as well as understanding how the gay scene creates support and/or stress for gay men, especially as some mention a similar dynamic of rejection and silence in both society at large and in the gay scene.

Taken together, the narratives yield a coherent map of both proximal and distal causes at multiple levels, accounting for the apparent discrepancy between the reasons cited for greater vulnerability and the perceived causes of one's own actual depression. While inter-personal problems appear to be the most commonly perceived causes, they are attributed to macro-level causes on the one hand but also aggravate individual-level problems on the other. Causes at the macro, meso, and individual levels are named in this respondent's account:

"Even though we've seen improvements in terms of societal acceptance for homosexuals, there is still fear of marginalization or homophobia. A homosexual person always has to screen those around him—even his friends—in order to find that person who is able to listen to him without prejudice. Even the initial step of self-acceptance, something not readily understood by heterosexuals, already poses the first obstacle and creates a complex of greater suffering."

Help-seeking

There are striking similarities in help-seeking beliefs between this and general population samples [Jorm et al., 1997; Lauber et al., 2001; Wang et al., 2007c; Goldney et al., 2009]. The vast majority believe that it is harmful to deal with the condition alone, and at least as many if not more people consider general practitioners as being as helpful as specialists such as psychologists and psychiatrists. But whereas close friends and family receive similar ratings in the general population, close friends were rated most helpful in this sample, 50% more than close family. Family problems constitute one of the main perceived causes of depression, and the majority of gay men are single. The other discrepancy is that a higher percentage of gay men considered psychiatrists harmful. This may be a remnant of psychiatry's role in pathologizing homosexuality in the 20th century, and a reflection of the predominance of Freudian psychoanalysis among therapists in French-speaking Europe.

Physical activity and relaxation/meditation are rated as the most helpful activities in both this and general population samples. However, bibliotherapy was rated more highly in the general population overseas than among gay men in Geneva. More respondents rated medications such as anti-depressants as being harmful than

helpful. However, data from Australia have shown improved ratings for specialists and anti-depressants over time, likely as a result of *beyondblue* campaign activities [Jorm et al., 2005b; Jorm et al., 2006; Goldney et al., 2009; Reavley and Jorm, 2011]. Such changes were not evidenced in a two-year follow-up of a depression campaign in Nuremberg, Germany [Dietrich et al., 2010].

Given the significant negative impact of major depression on quality of life in this population [Wang et al., 2007a], it is not surprising that over 90% of men with major depression in the past 12 months undertook some help-seeking or self-help activity. Despite predominantly negative attitudes towards medications, half these men consumed medications, drugs, and/or alcohol because of their symptoms. While close friends and physical activity were considered the most helpful sources, only 1 in 5 gay men with major depression actually mentioned having done them, albeit the most common spontaneous responses. Being uncomfortable about asking for help was the second most important reason mentioned for not seeking help in the Canadian general popuation [Bourget and Chenier, 2007], and these narratives suggest that concerns about stigma and coming-out may keep gay men from seeking help not only from one's social circle but also the health care system. These findings underscore the importance of access to gay-friendly health providers, especially for mental health [Dumas et al., 2000].

Limitations

First, only spontaneous responses were collected for open questions without probes or rankings. Research using the EMIC has shown that the frequency of the response items can change dramatically after probing, although this varies from item to item [Jadhav et al., 2001; Parkar et al., 2008]. As such, the frequencies of spontaneous responses should only be understood as a conservative estimate of the prominence

of these responses. Coding verbatim responses produced rich sets of items for each question, even though only one half of the items at most met the threshold criteria for inclusion in the tables.

Second, the mode of data collection in these surveys—self-completed computer-assisted interviews—differs from that of most surveys in mental health literacy (computer-assisted telephone interviews) and cultural epidemiology (face-to-face interviews). As such, the similarities in many findings are all the more striking in light of differences in both data collection and population. Furthermore, the findings reported here have been validated by analyzing the datasets separately and by several modes of assessing depression.

Third, the response rate has dropped from 50% in 2002 to 38% in 2011, despite maintenance of the same recruitment strategy since 2002. The decline may be attributed to the increasing proportion of Internet recruits, a weak recruitment team in 2011, and a certain survey fatigue given the increased frequency of HIV monitor surveys. While the generalizability of these findings is limited to gay men within the sampling scheme of meeting points, confirmation studies have shown that time-space sampling provides robust coverage of gay men living in urban areas [Pollack et al., 2005].

Conclusions

Previous studies have identified specificities in psychiatric morbidity—e.g., early onset, high comorbidity, and chronicity [Wang et al., 2007a]—and care—e.g., pathologization and dissatisfaction [McFarlane, 1998]—among gay men. These findings on experience suggest that most cases of depression among gay men arise due to social stress and the higher prevalence of depression among gay men may be

attributed to a higher prevalence of causes shared with the general population and the existence of causes specific to sexual minorities. The discrepancies between 1) mental health literacy and actual experience among recent sufferers, 2) recent and ever sufferers, 3) recent sufferers and recent subthreshold, and 4) perceived causes of the latest and initial onset of symptoms point to a need to understand the experience of depression over the life course. In-depth qualitative work should be undertaken to explore the distinction between understanding and experience as well as the prevalence and role of perceived causes at multiple levels (individual, meso, and macro).

These findings can be taken into account when developing campaigns and interventions for the gay community. The many commonalities in labelling, perceived causes, and help-seeking with general populations suggest that evidence-based interventions developed for general populations may be effective in gay populations and vice versa. However, specificities in mental health literacy suggest that mainstream interventions need to be adapted accordingly for the gay community, a population with a high prevalence of chronic/recurrent depression, specific stressors associated with homosexual developmental milestones, and expressed preference for gay-friendly providers. In particular, better understanding of the difficulties gay men have with love/relationships and coming to terms with one's homosexuality are needed in order to devise better support. Despite evidence suggesting great need, there have been few mental health interventions in gay populations to date. Given the high prevalence of mental morbidity, a long history of successful health interventions in HIV, and a highly educated and highly wired community, gay populations constitute an ideal group in which to develop and test mental health interventions in prevention and care.

Acknowledgements

The authors wish to thank Fabien Bertrand, recruitment coordinator for the 2011 survey, and Richard Zahno, recruitment coordinator for the 2007 survey, and their recruitment teams. Special acknowledgement goes to project leaders Guillaume Mandicourt and Sylvie Berrut who assisted the research team in addition to developing materials for the depression awareness campaign Blues-out. The authors express their gratitude to Anthony Jorm for kindly permitting use of his instruments to assess mental health literacy.

Role of funding source

The Blues-out campaign was financed by grants from the canton of Geneva and the Swiss AIDS Foundation. The process and outcome evaluations were financed by an anonymous private grant to the University of Zurich.

Conflict of interest

None

References

Bourget B, Chenier R. *Mental Health Literacy in Canada: Phase One Report of the Mental Health Literacy Project.* Ottawa: Canadian Alliance on Mental Illness and Mental Health, 2007.

Corboz J, Dowsett G, Mitchell A, Couch M, Agius P, Pitts M. *Feeling queer and blue: a review of the literature on depression and related issues among gay, lesbian, bisexual, and other homosexually active people.* Melbourne: La Trobe University, 2008.

Diamond GM, Shilo G, Jurgensen E, D'Augelli A, Samarova V, White K. How depressed and suicidal sexual minority adolescents understand the causes of their distress. *Journal of Gay & Lesbian Mental Health* 2011;15:130-151.

Dietrich S, Mergl R, Freudenberg P, Althaus D, Hegerl U. Impact of a campaign on the public's attitudes towards depression. *Health Education Research* 2010;25(1):135-150.

Dumas J, Lavoie R, Desjardins Y. *Projet national three-cities—volet montréalais: étude de besoins en matière de santé des hommes gais de Montréal.* Montréal: SéroZéro, 2000.

ESEMeD/MHEDEA 2000 Investigators. Prevalence of mental disorders in Europe: results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project. *Acta Psychiatr Scand* 2004;109(Suppl. 420):21–27. [A]

ESEMeD/MHEDEA 2000 investigators. Use of mental health services in Europe: results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project. *Acta Psychiatr Scand* 2004;109(Suppl. 420):47–54. [B]

Eurostat. *European Health Interview Survey (EHIS) 1st Round 2007-2008: Background and Rationale of the Questions.* Brussels: European Commission, 2007.

Francis C, Pirkis C, Dunt D, Warwick Blood R, Davis C. *Improving Mental Health Literacy: A Review of the Literature.* Melbourne: Centre for Health Program Evaluation, 2002.

Gates GJ, Ramos C. *Census snapshot: California lesbian, gay, and bisexual population.* Los Angeles: The Williams Institute, 2008.

Goldney RD, Dunn KI, Dal Grande E, Crabb S, Taylor A. Tracking depression-related mental health literacy across South Australia: a decade of change. *Australian and New Zealand Journal of Psychiatry* 2009;43:476-483.

Hegerl U. *Catalogue of EAAD evaluation materials.* Leipzig: Universität Leipzig, 2007.

Jadhav S, Weiss MG, Littlewood R. Cultural experience of depression among white Britons in London. *Anthropology & Medicine* 2001;8(1):47-69.

Jorm AF. Mental health literacy: public knowledge and beliefs about mental disorders. *British Journal of Psychiatry* 2000;177: 396-401.

Jorm AF. Mental health literacy: empowering the community to take action for better mental health. *American Psychologist* 2012;67:231-243.

Jorm AF, Christensen H, Griffiths KM. Public beliefs about causes and risk factors for mental disorders: changes in Australia over 8 years. *Social Psychiatry and Psychiatric Epidemiology* 2005;40:764-767. [A]

Jorm AF, Christensen H, Griffiths KM. The impact of beyondblue: the national depression initiative on the Australian public's recognition of depression and beliefs about treatments. *Australian and New Zealand Journal of Psychiatry* 2005;39:248-254. [B]

Jorm AF, Christensen H, Griffiths KM. The public's ability to recognize mental disorders and their beliefs about treatment: changes in Australia over 8 years. *Australian and New Zealand Journal of Psychiatry* 2006;40:36-41.

Jorm AF, Korten AE, Jacomb PA, Christensen H, Rodgers B, Pollitt P. "Mental health literacy": a survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *MJA* 1997;166-182-186.

Kessler RC, Andrews G, Mroczek D, Üstün B, Wittchen H-U. The World Health Organization Composite International Diagnostic Interview Short-Form (CIDI-SF). *Int J Methods Psychiatr Res* 1998;7:171-185.

King M, Semlyen J, Tai SS, Killaspy H, Osborn D, Popelyuk D, Nazareth I. A systematic review of mental disorder, suicide, and deliberate self-harm in lesbian, gay and bisexual people. *BMC Psychiatry* 2008;8:70.

Lauber C, Falcato L, Nordt C, Rössler W. Lay beliefs about the causes of depression. *Acta Psychiatr Scand* 2003;108:96-99. [A]

Lauber C, Nordt C, Falcato L, Rössler W. Lay recommendations on how to treat mental disorders. *Social Psychiatry and Psychiatric Epidemiology* 2001;36:553-556.

Lauber C, Nordt C, Falcato L, Rössler W. Do people recognise mental illness? Factors influencing mental health literacy. *Eur Arch Psychiatry Clin Neurosci* 2003;253:248-251. [B]

MacKellar D, Valleroy L, Karon J, Lemp G, Janssen R. The Young Men's Survey: methods for estimating HIV prevalence and risk factors among young men who have sex with men. *Public Health Rep* 1996;111(Suppl):138-144.

Mayock P, Bryan A, Carr N, Kitching K. *Supporting LGBT Lives: A Study of the Mental Health and Well-Being of Lesbian, Gay, Bisexual and Transgender people. Dublin: National Office of Suicide Prevention.* Dublin: Gay and Lesbian Equality Network and BeLonG To Youth Service, 2009.

McFarlane L. *Diagnosis: Homophobic – The experiences of lesbians, gay men and bisexuals in mental health services.* London: PACE, 1998.

Nosikov A and Gudex C. *EUROHIS: Developing Common Instruments for Health Surveys.* Amsterdam: IOS Press, 2003.

Parkar SR, Dawani V, Weiss MG. Gender, suicide, and the sociocultural context of deliberate self-harm in an urban general hospital in Mumbai, India. *Cult Med Psychiatry* 2008;32:492-515.

Pollack LM, Osmond DH, Paul JP, Catania JA. Evaluation of the Center for Disease Control and Prevention's HIV behavioral surveillance for men who have sex with men: sampling issues. *Sexually Transmitted Diseases* 2005;32:581-589.

Raguram R, Weiss MG, Channabasavanna SM, Devins GM. Stigma, depression, and somatization in South India. *Am J Psychiatry* 1996;153:1043-1049.

Reavley NJ, Jorm AF. *National Survey of Mental Health Literacy and Stigma.* Barton, ACT: Commonwealth of Australia, 2011.

Stueve A, O'Donnell LN, Duran R, San Doval A, Blome J. Time-space sampling in minority communities: results with young Latino men who have sex with men. *Am J Public Health* 2001;91:922-926.

Wang J, Häusermann M, Rias A. *Santé gaie Project: First-round focus group discussions among gay men in Geneva on health, needs, and strategies.* Geneva: Dialogai, 2001.

Wang J, Häusermann M, Ajdacic-Gross V, Aggleton P, Weiss MG. High prevalence of mental disorders and comorbidity in the Geneva Gay Men's Health Survey. *Social Psychiatry and Psychiatric Epidemiology* 2007;42:414-420. [A]

Wang J, Häusermann M, Vounatsou P, Aggleton P, Weiss MG. Health status, behavior, and care utilization in the Geneva Gay Men's Health Survey. *Preventive Medicine* 2007;44:70-75. [B]

Wang J, Häusermann M, Berrut S, Weiss MG. The impact of a depression awareness campaign on mental health literacy and mental morbidity among gay men. *Journal of Affective Disorders* 2013;150(2):306-312.

Wang J, Plöderl M, Häusermann M, Weiss M. Understanding suicide attempts among gay men from their self-perceived causes. Submitted for publication.

Wang J, Schmid MR. Mental health literacy and health literacy in the Swiss general population. Oral presentation at the Swiss Public Health Conference, 21-22 June 2007, in Olten, Switzerland.

Wang J, Adair C, Fick G, Lai D, Evans B, Waye Perry B, Jorm A, Addington D. Depression literacy in Alberta: findings from a general population sample. *Canadian Journal of Psychiatry* 2007;52(7):442-449. [C]

Weiss M. Explanatory Model Interview Catalogue (EMIC): framework for the comparative study of illness. *Transcultural Psychiatry* 1997;34(2):235-263.

Weiss M. Cultural epidemiology: an introduction and overview. *Anthropology & Medicine* 2001;8(1):5.29.

Part III

Impact of an evidence-based intervention addressing depression and suicidality among gay men

Chapter 6

The impact of a depression awareness campaign on mental health literacy and mental morbidity among gay men

Jen Wang[1,5,*], Michael Häusermann[2], Sylvie Berrut[3,4], Mitchell G. Weiss[5,6]

1 Institute for Social and Preventive Medicine, University of Zurich, Switzerland
2 Dialogai, Geneva, Switzerland
3 Lestime, Geneva, Switzerland
4 Swiss Statistical Office, Neuchâtel, Switzerland
5 Swiss Tropical and Public Health Institute, Basel, Switzerland
6 University of Basel, Switzerland

Published in *Journal of Affective Disorders* 2013;150(2):306-312.

Abstract

Background: High prevalences of depression and suicidality have been found among gay men. This paper assesses the possible impact of Blues-out, a depression awareness campaign based on the European Alliance Against Depression targeting the gay/lesbian community in Geneva, Switzerland.

Methods: In 2007 and 2011, pre- and post-intervention surveys were conducted among two distinct samples of gay men in Geneva, recruited by probability-based time-space sampling. Effect sizes and net percent changes are reported for mental health literacy and mental health outcomes in 2007 and 2011 as well as among men aware and unaware of Blues-out in 2011.

Results: 43% of the respondents correctly recognized depression in 2011 with no change vis-à-vis 2007. Despite small effect sizes, significant net decreases (-18% – -28%) were seen in lifetime suicide plans, 12-month suicidal ideation, lifetime depression, and 4-week psychological distress between 2007 and 2011. These decreases were not accompanied by changes in any of the numerous items on attitudes/knowledge, found only when comparing men aware and unaware of Blues-out in 2011. More men aware of Blues-out found specialists and psychological therapies helpful than their counterparts and correctly identified depression and gay men's greater risk for depression.

Limitations: Community-level assessment with no control.

Conclusions: Although improvement in depression recognition and decrease in suicide attempts could not be replicated unequivocally in this adapted intervention among gay men, there are indications that this evidence-based depression awareness campaign may be associated with improvements in suicidality and mental morbidity as well as mental health literacy and help-seeking.

Keywords: intervention, depression, suicidality, mental health literacy, homosexuality

6.1 Introduction

Reviews of mental health and sexual orientation have provided a clear picture of increased prevalence and risk of depression and suicidality among sexual minorities, particularly gay men [King et al., 2008; Marshal et al., 2011]. A series of health surveys has confirmed high prevalences of depression (lifetime self-report 40%, 12-month diagnosis 19%) and suicide attempts (lifetime 19%, 12-month 4%) among gay men in Geneva, with young homo/bisexual men in Switzerland 2-5 times more likely to attempt suicide than their heterosexual counterparts [Wang et al., 2007b; Wang et al., 2012]. Of note, both depression and suicidality appear to be characterized by high levels of chronicity and relapse.

Within the framework of the Geneva Gay Men's Health Project [Häusermann et al., 2010], the University of Zurich and Dialogai—a gay community-based organization and AIDS service organization in Geneva—continued their successful community-research collaboration in response to the challenges in mental health identified above. In 2006, work began on designing a multi-phase intervention project in mental health with the over-arching goal to prevent mental disorders and promote mental health in the gay community. The first phase consisted of a depression awareness campaign to improve mental health (depression) literacy [Jorm, 2000; Jorm 2012]—e.g., access to health information, knowledge about condition/ treatment, recognition of symptoms, and mental health first aid—and help-seeking in a population characterized by high prevalence of both depression and suicidality as well as challenged by stigma against both mental illness and homosexuality. Given common interests in mental health, Dialogai invited the organization Lestime to carry out the campaign activities for the lesbian community.

As no depression campaigns targeting gay men and/or lesbians could be found in the mid-2000s, the decision was taken to adapt effective general population campaigns for sexual minorities. In a pre-/post-test design, Jorm and colleagues demonstrated that the Australian depression initiative *beyondblue* was associated with a large increase in the correct recognition of depression (from 39.0% in 1995 to 67.3% in 2003/04) and the percentage of people considering specialists and antidepressants helpful [Jorm et al., 2006a]. In a pre-/post-test design with a control group, the Nuremberg Alliance Against Depression (NAD) resulted in significant net percent decreases (-19% – -32%) in the number of suicide cases (completed and attempted suicides) [Hegerl et al., 2006; Hegerl et al., 2010]. A quarter of the population in Nuremberg, Germany, became aware of the campaign, and such people were also more aware of depression in the media and held more favorable attitudes towards treatment medication [Dietrich et al., 2010].

The initial phase Blues-out is based on the Nuremberg (and then European) Alliance Against Depression (NAD/EAAD) [Hegerl and Schäfer, 2007; Hegerl et al., 2008]. Like NAD, Blues-out covers several levels of activity, including 1) cooperation with primary care physicians, 2) a depression awareness campaign, and 3) establishing a network of institutional partnerships as support for those affected [Häusermann et al., 2010]. The EAAD campaign materials were adapted for gay men and lesbians (e.g., new images featuring only men or women and the addition of gay-specific content relevant to depression, including local data), while maintaining the core elements (i.e., three key messages on the generalizability, variability, and treatability of depression as well as the brochure/poster layout). The campaign was launched publicly in March 2009, with a brochure and website offering basic information on depression, a symptoms checklist, and a list of gay-friendly providers and institutions for consultation constituting the key intervention. Subsequently, additional topics

(e.g., coming-out, suicide, and violence) were covered on the website, along with a hotline and emergency cards.

As a long-standing AIDS service organization, Dialogai has an established outreach team and network for distributing health-related posters, brochures, and cards in physical venues as well as banners in virtual meeting points frequented by gay men. All materials were developed in male and female versions. Two campaign waves took place between spring 2009 and spring 2011, with 15'000 brochures for men and 10'000 brochures for women being printed and distributed, and the website averaging 80 daily visits in the first year and 140 daily visits in the second year.

As the first large-scale depression campaign targeting a gay/lesbian community (and the first EAAD project adapted for this sub-population), the activities are assessed with qualitative and quantitative process and outcome evaluations. In this paper, we present the findings from the quantitative outcome evaluation to assess the possible impact of Blues-out on key indicators of mental health literacy—i.e., recognition of symptoms and knowledge/beliefs about condition/treatment—and mental health outcomes (including suicidality) among gay men.

6.2 Methods

Samples

As in 2002 [Wang et al., 2007a], the 2007 and 2011 surveys employed time-space sampling, a multi-stage randomized sampling scheme developed by the Centers for Disease Control and Prevention (CDC) involving mapping of meeting points, enumeration of visits, and random selection of both venues and participants [MacKellar et al., 1996; Stueve et al., 2001]. The target population consisted of gay-

identified men and other men who have sex with men who access meeting points—both real and virtual—in and around Geneva, Switzerland. Twenty distinct meeting points were included in the sampling scheme in 2007 and 24 in 2011. Nearly all of them are served by Dialogai's usual outreach activities, including those for Blues-out. According to the sampling scheme, men were randomly selected and invited to complete the anonymous survey in French directly on-site at laptops provided.

Originally, the study design was conceived as a pre- and post-intervention evaluation with a control city—i.e., sample sizes of 250 in Geneva vs. 250 in Zurich at T1, and 250 in Geneva vs. 250 in Zurich at T2. Zurich was originally conceived as an ideal wait-list control community, given its three-hour distance and language barrier. Due to the lack of support by a key stakeholder, Zurich could not be used as a control as envisaged, and the study design was modified to pre- and post-intervention assessments in Geneva alone. The sample size was modified to 500 in Geneva at T2. A total sample size of 750 would still be sufficient to yield 100 men with major depression and power of 0.70 (two-tailed) to assess an effect size of 0.5 in this sub-group. At T1 (2007), 276 gay men participated in the survey (response rate 44%). At T2 (2011), 486 gay men participated in the survey (response rate 38%). In both years, lack of interest constituted the main reason for refusal. In order to counter lack of time as grounds for refusal, men who declined completing the questionnaire on-site were given the option to complete it later online via a unique access code. Including the respondents recruited at virtual meeting points, half the samples—48.9% in 2007 and 54.1% in 2011—completed the questionnaire later on their own online.

The socio-demographic characteristics of the 2007 and 2011 samples are summarized in Table 6-1. Comparing the two samples, the 2011 sample is

somewhat older, with a lower proportion of residents in the canton of Geneva and a higher proportion of men who live with others. However, when the 2002 sample is added for statistical comparisons, only the higher prevalence of cohabitation remains distinctive in 2011. As already demonstrated in Geneva [Wang et al., 2007a] and elsewhere, gay male samples are younger, more educated, more urbanized, and more likely to be single than the general male population, even after controlling for age.

Table 6-1. Descriptive characteristics of gay men in GGMHS, 2007-11

	2007 (N=276)		2011 (N=486)		
	n	%	n	%	*P* value
Age					0.02
≤24 years	53	20.9	60	14.0	
25-34 years	66	26.1	128	29.9	
35-44 years	80	31.6	111	25.9	
45-54 years	37	14.6	91	21.3	
≥55 years	17	6.7	38	8.9	
Education					0.56
Mandatory education	16	6.3	31	7.2	
Apprenticeship	54	21.3	78	18.2	
Gymnasium	19	7.5	22	5.1	
Other prof. training	50	19.8	88	20.6	
University	114	45.1	209	48.8	
Employment status					0.66
Paid employment	192	75.9	333	77.8	
In school	35	13.8	48	11.2	
Other situation	16	6.3	33	7.7	
Unemployed	10	4.0	14	3.3	
Place of residence					0.02
Geneva (canton)	142	55.7	190	44.5	
Vaud	52	20.4	93	21.8	
Ain or Haute-Savoie	36	14.1	79	18.5	
Other	25	9.8	65	15.2	
Urbanicity					0.48
<20,000 inhabitants	94	37.0	176	41.4	
20,000-99,999 inhabitants	39	15.4	68	15.9	
≥100,000 inhabitants	121	47.6	184	43.0	
Cohabitation					0.04
Lives alone	142	55.9	207	48.4	
Lives with others	112	44.1	221	51.6	

Survey questions

During recruitment in 2007 and 2011, men were invited to participate in a health survey, although the instrument focused on only three major sections: 1) mental health literacy, 2) mental health status, and 3) project evaluation.

The first section was constructed based on research interests in both mental health literacy and cultural epidemiology [Weiss, 2001]. Both fields share in-depth assessment of symptoms, causes, and help-seeking from the patient's (or citizen's) perspective. Jorm and colleagues have researched the issue of mental health literacy for well over a decade and kindly permitted use of their detailed instruments in assessing aspects of mental health literacy and evaluating depression campaigns [Jorm et al., 2006a]. Based on a case vignette of a man with depression, respondents were then asked a series of questions about the vignette: recognition of depression, perceived risk, first-aid response, help-seeking beliefs about people and professionals, help-seeking beliefs about substances (incl. medications), and help-seeking beliefs about activities (incl. therapies). For the sub-section on perceived risk of various groups for depression, we created a new question on the relative susceptibility of gay men vs. heterosexual men patterned after the existing questions.

The second section is made up of instruments assessing mental health status. As in 2002, we used a series of questions recommended by the EUROHIS project on harmonizing indicators for health interview surveys in Europe [Nosikov and Gudex, 2003]: psychological distress (in the past 4 weeks) as assessed by the Medical Outcomes Study (MOS) 36-Item Short-Form Health Survey (SF-36) with cut-off point at 52 [Ware and Gandek, 1998], self-reported chronic depression and anxiety (in the past 12 months and lifetime), and major depression (in the past 12 months) as assessed by the WHO Composite International Diagnostic Interview Short Form

(CIDI-SF) [Kessler et al., 1998]. Additionally, we included items assessing non-specific serious mental illness (in the past 4 weeks) using the K6 with cut-off point at 13 [Kessler et al., 2002] and suicidality (in the past 12 months and lifetime) [Paykel et al., 1974].

Finally, there was a brief section with questions evaluating exposure to and satisfaction with Blues-out and other gay men's health projects at Dialogai. The question assessing awareness of Blues-out was: "Have you heard of Blues-out?" If a respondent responded "no", the same question was repeated with an image of the Blues-out poster/brochure cover as a visual prompt.

Statistical analysis

As the main goal of the study reported here is to assess changes in mental health literacy and psychiatric morbidity / suicidality before and after the launch of Blues-out, we merged the 2007 and 2011 datasets and made direct statistical comparisons using survey year as the independent variable. Supplementing these findings, we also assessed possible differences in mental health literacy and psychiatric morbidity / suicidality between men aware of Blues-out and men unaware in the 2011 survey.

Data analysis was performed using IBM SPSS Statistics for Macintosh version 19.0 (Chicago, IL, USA). Nominal and ordinal variables were analyzed using contingency tables and the chi-squared test. For normally distributed continuous variables, the t-test was used. In the tables, the p-values are reported together with phi (ϕ) as an indicator of effect size. According to Cohen [1988], 0.10 indicates a small effect size, 0.30 a medium effect size, and 0.50 a large effect size.

6.3 Results

Differences between T1 and T2

Table 6-2 shows the percentage of respondents who correctly identified depression in an open question about the case vignette in 2007 and 2011. In French, one must take a linguistic peculiarity into account: “dépression / dépressif” refers to depression / depressed, and the lexically similar term “déprime / déprimé” refers to depressed mood / down. As some French speakers use the two terms interchangeably, the findings for “déprime” are also shown in Table 6-2. Taken together, 56% of the respondents identified either depression and/or “déprime” in both 2007 and 2011.

Table 6-2. Identification of depression or depressed mood “déprime” in a case vignette*, among gay men in GGMHS, 2007-11

	2007 %	2011 %	Phi	*P* value
depression	45.7	43.2	0.02	0.51
“déprime” (depressed mood)	12.0	15.0	0.04	0.24

* open question, multiple responses possible

Similarly, no change in the numerous items on attitudes or knowledge about help-seeking, depression, or suicidality was evidenced between T1 and T2, not even in the main messages of the EAAD—e.g., 88% agree that “depression can affect anyone”, and 88% agree that “depression can be treated”. As such, the datasets were combined for a detailed presentation of mental health literacy among gay men described elsewhere [Wang et al., in press].

Levels of suicidality in 2007 and 2011 are shown in Table 6-3. While no changes are seen in the prevalence of suicide attempts, significant declines are evidenced in lifetime prevalences of suicidal ideation (net change of -18%) and suicide plans (net change of -29%). The decline in lifetime suicidal ideation can be attributed in part to a declining trend in the past 12 months. These differences are even more interesting

when viewed against the fact that the prevalences for these three forms of suicidality remained stable between 2002 and 2007 [Wang et al., 2012].

Table 6-3 also contains findings on lifetime, 12-month, and 4-week mental morbidity at T1 and T2. While there is a significant decline in prevalences of self-reported lifetime chronic depression (net change of -18%) between 2007 and 2011, decreases in 12-month depression—as oneself having a problem similar to the one described in the case vignette without explicit mention of depression (net change of -24%) and as diagnosed by CIDI-SF (net change of -25%)—do not reach statistical significance. Upon closer inspection, the prevalence of men screen-positive in the past 12 months remained stable between 2002 and 2011—37.3% in 2002, 38.1% in 2007, 36.5% in 2011. As such, the decline in 12-month major depression in 2011 is due to decreased severity (i.e., duration) of the two main symptoms and not to a decrease in prevalence of depressed mood and anhedonia overall. Among those diagnosed with major depression in the past 12 months by the CIDI-SF, a higher percentage of cases in 2011 was aware of their own depression (55.9% vs. 41.3%, p=0.33; phi=0.15, net increase of 35.4%) or spoke to a doctor about their (depression) problems (53.1% vs. 38.5%, p=0.12; phi=0.15, net increase of 37.9%), although they do not reach statistical significance.

The data also suggest declines in 4-week mental morbidity—i.e., high psychological distress (net change of -28%) and serious mental illness (net change of -23%). These declines are also evidenced by significant changes in mean scores for MHI-5—mean score 62.5 (95% CI 60.4-64.7) in 2007 and 66.1 (95% CI 64.5-67.7) in 2011, p=0.009—and K6—mean score 8.6 (95% CI 8.1-9.2) in 2007 and 7.8 (95% CI 7.3-8.2), p=0.009. For psychological distress, only the symptom feeling down in the dumps saw a small decline in prevalence, so the changes here can also be largely

ascribed to decreased severity (i.e., duration). For serious mental illness, however, four of the six composite symptoms were actually less prevalent in 2011, but the decline did not reach statistical significance.

Table 6-3. Suicidality and psychiatric morbidity by age group, among gay men in GGMHS, 2007-11

	2007 %	2011 %	Phi	*P* value
Suicidality				
Suicidal ideation				
≤12 months	21.3	16.6	0.05	0.13
ever	55.8	47.8	0.08	0.04
Suicide plans				
≤12 months	10.1	8.7	0.02	0.59
ever	38.5	27.5	0.11	0.003
Suicide attempts				
≤12 months	1.6	2.2	0.02	0.78
ever	17.1	16.3	0.01	0.83
Depression				
Problem in the case vignette				
≤12 months	25.7	19.6	0.07	0.06
ever	61.1	53.9	0.07	0.06
Chronic depression (self-report)				
≤12 months	13.2	13.3	0.002	1.00
ever	57.0	46.9	0.10	0.01
Major depression (CIDI-SF)				
≤12 months	17.5	13.1	0.06	0.13
Mental heath symptoms <4 weeks				
High psychological distress (MHI-5)	29.2	21.0	0.09	0.015
Serious mental illness (K6)	18.7	14.4	0.06	0.13

Awareness of Blues-out at T2

Among the respondents in 2011, 24.5% reported having heard of Blues-out. An additional 8.4% recognized Blues-out with a visual prompt. All summed, a third of the respondents (32.9%) recognized Blues-out in 2011.

Differences between those aware and unaware of Blues-out at T2

In order to further assess the possible impact Blues-out on the community, men who were aware of Blues-out (32.9%) are compared with men who were not (67.1%). A few differences in key indicators of mental health literacy between the two groups can

be seen in Table 6-4. Over half of the men aware of Blues-out (55.1%) correctly identified depression in the case vignette. Both the open question on mental health first aid and the individual items assessing attitudes towards therapists showed that more men aware of Blues-out found specialists such as psychiatrists to be helpful for the case vignette. Similarly, more men aware of Blues-out found psychological therapies such as counselling, psychotherapy, and cognitive behavioral therapy (CBT) to be helpful. Men aware of Blues-out were also less likely to reply "don't know" when queried about the utility of professionals—e.g., psychologist 2.1% vs. 5.2% and psychiatrist 5.0% vs. 11.5%—and therapies—e.g., psychotherapy 9.2% vs. 16.0%, counselling 13.5% vs. 18.5%, and CBT 27.7% vs. 38.0%. Significantly more men aware of Blues-out understood the greater risk of gay men in encountering the condition described in the case vignette.

Table 6-4. Mental health literacy by awareness of Blues-out, among gay men in GGMHS, 2011

	aware %	unaware %	Phi	*P* value
Identification of case vignette*				
depression	55.1	41.5	0.09	0.06
"déprime" (depressed mood)	17.0	15.3	0.02	0.65
Help proposed for case vignette*				
listen/talk to him	51.8	50.9	0.01	0.86
tell him to see a doctor	23.4	27.9	0.05	0.32
tell him to see a specialist	21.3	12.2	0.12	0.01
tell him to see a professional	16.3	7.3	0.14	0.004
Helpful people for case vignette				
close friend	91.5	91.3	0.003	0.95
psychologist	82.3	76.7	0.06	0.21
general practitioner	72.3	73.5	0.01	0.82
psychiatrist	59.6	48.1	0.11	0.03
Helpful therapies for case vignette				
relaxation / meditation	85.8	83.6	0.03	0.67
counselling	72.3	58.2	0.14	0.006
psychotherapy	67.4	58.2	0.09	0.07
CBT	45.4	32.4	0.13	0.01
anti-depressants	35.4	31.0	0.05	0.38
Relative group risk for case vignette				
women greater than men	9.9	13.6	0.05	0.35
singles greater than coupled	46.1	36.6	0.09	0.07
gay men greater than straight men	63.8	46.7	0.16	0.001

* open question, multiple responses possible

Analogous to Table 6-2, Table 6-5 presents comparisons along suicidality and psychiatric morbidity. No statistically significant differences are evidenced, except for the trend that men aware of Blues-out appear to demonstrate higher levels of suicidal ideation and self-reported lifetime depression.

Table 6-5. Suicidality and psychiatric morbidity by awareness of Blues-out, among gay men in GGMHS, 2011

	aware %	unaware %	Phi	*P* value
Suicidality				
Suicidal ideation				
≤12 months	20.6	14.6	0.08	0.13
ever	55.4	44.9	0.10	0.05
Suicide plans				
≤12 months	9.9	7.7	0.04	0.46
ever	31.2	25.8	0.06	0.25
Suicide attempts				
≤12 months	2.1	1.7	0.01	0.72
ever	18.4	14.9	0.04	0.40
Depression				
Problem in the case vignette				
≤12 months	20.6	18.8	0.02	0.70
ever	59.6	51.6	0.08	0.12
Chronic depression (self-report)				
≤12 months	14.2	12.5	0.02	0.65
ever	52.5	44.3	0.16	0.12
Major depression (CIDI-SF)				
≤12 months	13.5	12.9	0.02	0.65
Mental heath symptoms <4 weeks				
High psychological distress (MHI-5)	22.0	20.6	0.02	0.80
Serious mental illness (K6)	15.6	12.9	0.04	0.45

6.4 Discussion

Blues-out is the first depression awareness campaign modelled after successful general population campaigns adapted by and for the gay/lesbian community. We assessed its impact along campaign exposure, mental health literacy, and mental morbidity/suicidality. A third of the respondents (32.9%) recognized Blues-out in 2011. Such men were more likely to find specialists and psychological therapies

helpful and correctly identify depression and gay men's greater risk for depression. Despite small effect sizes, significant net decreases (-18% – -28%) were seen in lifetime suicide plans, 12-month suicidal ideation, self-reported lifetime depression, and 4-week psychological distress between 2007 and 2011. It is informative to discuss these findings within the context of the current evidence base for general populations.

Campaign exposure

The Blues-out campaign has achieved a comparable degree of recognition in the gay community of Geneva as *beyondblue* had among the general population in Australia [Jorm et al., 2005] and the original Alliance Against Depression among the general population in Nuremberg [Dietrich et al., 2010].

Evaluation findings for Dialogai's other health-related interventions provide additional context and grounds for comparison [Häusermann et al., 2010]. The Geneva Gay Men's Health Project (launched publically in 2001), the Geneva Gay Men's Health Survey brochure (launched publically in 2003), and the program Être gai ensemble (Being gay together, launched publically in 2004) all enjoyed comparable rates of recognition among men in 2007. The sole exception is Checkpoint, the first HIV and STI (sexually transmitted infections) service for gay men in Switzerland (launched publically in 2005), which was recognized by two-thirds of the respondents in 2007. Although using similar targeted media, the most obvious reason for the discrepancy is that HIV projects enjoy significantly greater funding and manpower than others resulting in greater visibility. At the same time, Checkpoint also shows the considerable potential reach of targeted projects using targeted media.

Mental health literacy

The level of recognition of depression symptoms is also comparable to those seen in the general populations of Switzerland [Lauber et al., 2003; Wang and Schmid, 2007] and Australia before *beyondblue* [Jorm et al., 2005]. But unlike Australia, no increase in the recognition of depression has been demonstrated post-intervention among gay men in Geneva.

In addition to recognition, there were also many similarities in general attitudes and help-seeking beliefs with general populations, as described in detail elsewhere [Wang et al., in press]. However, they remained unchanged at the community level between 2007 and 2011. The comparisons of men aware and unaware of Blues-out did uncover some interesting differences in attitudes and knowledge. More men aware of Blues-out considered specialists and psychological therapies helpful than their counterparts, and accordingly recommended specialists and professionals for the case vignette. Importantly, more men aware of Blues-out correctly identified depression and gay men's (and single people's) greater risk for depression. Studies have repeatedly demonstrated important differences in socio-demographics between gay and heterosexual men, including the fact that gay men are more likely to be single and living alone [Sandfort et al., 2001].

It must be noted that with few exceptions, changes in attitudes or knowledge were also modest or non-existent in general populations pre- and post-intervention [Paykel et al., 1998; Jorm et al., 2006a; Dietrich et al., 2010]. These consistent findings question the actual mechanisms between knowledge and attitudes on the one hand and suicidality and mental morbidity on the other. They also underscore the challenges in pinning down single mechanisms in such broad-based campaigns with multiple interventions at multiple levels. However, recent follow-up from Australia

suggests that changes in attitudes may actually become more pronounced over time in light of a sustained and growing campaign [Reavley and Jorm, 2012]. As such, the two-year follow-up period in this evaluation might be too short.

Mental morbidity and suicidality

Reported suicide cases (completed and attempted suicides) constituted the main outcome in Nuremberg, but such data could not be collected for gay men in Geneva. Instead, self-reported lifetime and 12-month suicidality were assessed in this high prevalence population [Wang et al., 2012]. While no significant changes between T1 and T2 were seen for suicide attempts, significant declines were found for lifetime suicide plans (net change of -29%) and 12-month suicidal ideation (net change of -22%) at levels comparable to those evidenced in NAD [Hegerl et al., 2006; Hegerl et al., 2010].

As an innovation over the existing evaluation studies, mental health status was assessed in this population with high levels of mental morbidity [Wang et al., 2007b]. Multiple indicators point to a decrease in 12-month depression and 4-week psychological distress between 2007 and 2011. These changes were of comparable magnitude (net changes of -18% – -28%) as the net declines in suicide cases reported by NAD [Hegerl et al., 2006; Hegerl et al., 2010]. While there were decreases in both self-reported depression and actual major depression in this study, depression literacy campaigns have coincided with increased levels in self-reported lifetime depression in general populations in both the UK [Paykel et al., 1998] and Australia [Jorm et al., 2006b]. As the National Surveys on Mental Health and Wellbeing in Australia cannot confirm actual increases in 12-month prevalence of major depression or mood disorders between 1997 and 2007 [Andrews et al., 2001; Slade et al., 2009], the increase in self-report appears to be due to increased

sensitization and/or recognition. Furthermore, there were no significant changes in 4-week symptoms of depression in the Australian general population between T1 and T2 nor any differences between groups with high and low exposure to *beyondblue* [Jorm et al., 2006b]. These discrepancies in findings may suggest differential impact of a campaign in high vs. low prevalence populations.

Finally, men aware of Blues-out were more likely to report lifetime suicidal ideation and depression, suggesting that campaign exposure may increase willingness to acknowledge these conditions or that personal experience may account in part for exposure to Blues-out and/or the changes in attitudes and knowledge above.

Limitations

The findings need to be viewed against certain methodological limitations. First, this intervention study has no control group even though one was originally envisioned in the study plan. Attempts to include the gay community in Zurich as a wait-list control proved unsuccessful. Lack of a control as does the use of two independent samples—though standard practice in community-wide evaluations—means that the differences observed in Geneva between T1 and T2 may be due to causes other than the campaign. National campaigns such as the Defeat Depression Campaign and *beyondblue* were not evaluated with control groups either, but the NAD used a pre-test/post-test design with a control to great success.

Second, most of the significant changes reported in this paper have small effect sizes ranging between 0.10 and 0.20. According to reviews, small effect sizes are typical of many community-based and community-level health interventions generally [Sorensen et al., 1998; Merzel and D'Afflitti, 2003], but also mental health literacy campaigns like Blues-out specifically [Francis et al., 2002; Jané-Llopis et al., 2003].

Additional findings on exposure to the campaign (data not shown) reveal that exposure to Blues-out varied strongly by geography, venue type, and media. Similarly, the degree of exposure amongst the respondents could range from a cursory view of the poster or banner to having read all the sections of the brochure or website. Only 11.1% of the respondents in 2011 (or a third of the 32.9% of men who were aware of Blues-out) saw the brochure or website. Such men were also much more likely to consider the campaign useful (70%) and recommend it to others (92%). As such, the true impact of the campaign tools may be diluted by differential exposure to the core elements of the intervention.

Third, recruitment was conducted at different times of the year—October-November in 2007 and from mid-May through mid-July in 2011. As such, seasonality may account in part for some of the changes in mental morbidity observed between T1 and T2. Although there was a decreasing trend in 12-month prevalence of major depression between 2007 and 2011, the total prevalence of men who suffered the two main symptoms for at least two continuous weeks remained stable, suggesting that seasonality may account at least in part for lower severity (i.e., duration).

Finally, the total number of participants is smaller than originally planned due to the lack of control in 2007 and recruitment problems in 2011. Statistical power appears to be an issue for some of the findings, and especially for the sub-group of men with depression, as the effect sizes did not turn out to be as large as originally hypothesized. Although the same recruitment strategy has been used for the GGMHS since 2002, the response rate has dropped from 50% in 2002 to 38% in 2011. The decline may be attributed to the growing proportion of Internet recruits, a weak recruitment team in 2011, and a certain survey fatigue given the increased frequency of HIV monitor surveys. Even so, the socio-demographic profile appears

comparable between 2002 and 2011, with the possible exception of cohabitation in 2011. However, cohabitation was not significantly associated with any of the outcomes of interest. While the generalizability of these findings is limited to gay men within the sampling scheme of meeting points, confirmation studies have shown that time-space sampling provides robust coverage of gay men living in urban areas [Pollack et al., 2005]. For targeted health campaign activities, such meeting points constitute crucial vectors for communication. In this intervention study, there was actually consistent overlap between the meeting points used to distribute targeted media for Blues-out and to recruit representative community samples.

Conclusions

Despite the lifetime prevalence of depression and its high health burden in the general population [Moussavi et al., 2007], there are relatively few public health interventions targeting the condition and even fewer targeting the condition in high prevalence groups. Strengthening the evidence base for original and adapted interventions for high prevalence groups needs to be a priority in public mental health. Testing interventions in high prevalence populations facilitates the assessment of program impact, but the potential benefit may also extend more broadly. Blues-out preceded the Geneva Alliance Against Depression, and the work for the former facilitated and informed the latter.

Although the main outcome indicators in the literature to date—i.e., improvement in depression recognition and decrease in suicide attempts—could not be replicated unequivocally in this intervention study among gay men, there are indications that this evidence-based depression awareness campaign may have lessened suicidality and mental morbidity and improved mental health literacy and help-seeking. However, since the changes in mental morbidity are not accompanied by changes in

mental health literacy nor are they concordant with differences among those aware of Blues-out, it appears that the actual pathways of multi-faceted campaigns may be rather complex and worthy of greater elucidation.

Role of funding source

The Blues-out campaign was financed by grants from the canton of Geneva and the Swiss AIDS Foundation. The process and outcome evaluations were financed by an anonymous private grant to the University of Zurich.

Conflict of interest

None

Acknowledgements

The authors wish to thank Richard Zahno, recruitment coordinator for the 2007 survey, and Fabien Bertrand, recruitment coordinator for the 2011 survey, and their recruitment teams. Special acknowledgement goes to project leader Guillaume Mandicourt and Blues-out alliance partners such as Trajectoires and Pro Mente Sana for their collaboration.

The authors wish to thank Regula Rička, the contact person of the Alliance Against Depression at the Swiss Federal Office of Public Health for her helpful coordination efforts, Ulrich Hegerl's coordination team of the European Alliance Against Depression for their support in providing standard materials for the campaign and the assessment, and Anthony Jorm for introducing us to Australia's mental health projects and kindly permitting us to use his instruments to assess mental health literacy.

References

Andrews G, Henderson G, Hall W. Prevalence, comorbidity, disability and service utilisation: overview of the Australian National Mental Health Survey. *Br J Psychiatry* 2001;178:145-153.

Cohen J. *Statistical Power Analyses for the Behavioral Sciences.* Hillsdale, NJ: Lawrence Erlbaum, 1988.

Dietrich S, Mergl R, Freudenberg P, Althaus D, Hegerl U. Impact of a campaign on the public's attitudes towards depression. *Health Education Research* 2010;25(1):135-150.

Francis C, Pirkis J, Dunt, D, Warwick Blood R, Davis C. *Improving Mental Health Literacy: A Review of the Literature.* Melbourne: Center for Health Program Evaluation, 2002.

Häusermann M, Wang J, Mandicourt G. Le projet santé gaie de Dialogai: de la recherche à l'action. In Jablonski O, Le Talec J-Y, Sidéris G (eds). *Santé gaie.* Paris: Editions Pepper – L'Harmattan, 2010.

Hegerl U, Althaus D, Schmidtke A, Niklewski G. The alliance against depression: 2-year evaluation of a community-based intervention to reduce suicidality. *Psychological Medicine* 2006;36:1225-1233.

Hegerl U, Mergl R, Havers I, Schmidtke A, Lehfeld H, Niklewski G, Althaus D. Sustainable effects on suicidality were found for the Nuremberg alliance against depression. *Eur Arch Psychiatry Clin Neurosci* 2010;260:401-406.

Hegerl U and Schäfer R. Vom Nürnberger Bündnis gegen Depression zur European Alliance Against Depression (EAAD)—Gemeindebasierte Awareness-Kampagnen in Deutschland und Europa. *Psychiat Prax* 2007;34(Supp):S261-S265.

Hegerl U, Wittmann M, Arensman E, van Audenhove C, Bouleau J-H, van der Feltz-Cornelis C, Gusmão R, Kopp M, Löhr C, Maxwell M, Meise U, Mirjanič M, Óskarsson H, Pérez Sola V, Pull C, Pycha R, Rička R, Tuulari J, Värnik A, Pfeiffer-Gerschel T. The 'European Alliance Against Depression (EAAD)': A multifaceted community-based action programme against depression and suicidality. *The World Journal of Biological Psychiatry* 2008;9:51-59.

Jané-Llopis E, Hosman C, Jenkins R, Anderson P. Predictors of efficacy in depression prevention programmes. *British Journal of Psychiatry* 2003;183:384-397.

Jorm AF. Mental health literacy: public knowledge and beliefs about mental disorders. *British Journal of Psychiatry* 2000;177: 396-401.

Jorm AF. Mental health literacy: empowering the community to take action for better mental health. *American Psychologist* 2012;67:231-243.

Jorm AF, Christensen H, Griffiths KM. The impact of *beyondblue: the national depression initiative* on the Australian public's recognition of depression and beliefs about treatments. *Australian and New Zealand Journal of Psychiatry* 2005;39:248-254.

Jorm AF, Christensen H, Griffiths KM. The public's ability to recognize mental disorders and their beliefs about treatment: changes in Australia over 8 years. *Australian and New Zealand Journal of Psychiatry* 2006;40:36-41. [A]

Jorm AF, Christensen H, Griffiths KM. Changes in depression awareness and attitudes in Australia: the impact of *beyondblue: the national depression initiative*. *Australian and New Zealand Journal of Psychiatry* 2006;40:42-46. [B]

Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand S-LT, Walters EE, Zaslavsky AM. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine* 2002;32:959-976.

Kessler RC, Andrews G, Mroczek D, Üstün B, Wittchen H-U. The World Health Organization Composite International Diagnostic Interview Short-Form (CIDI-SF). *Int J Methods Psychiatr Res* 1998;7:171-185.

King M, Semlyen J, Tai SS, Killaspy H, Osborn D, Popelyuk D, Nazareth I. A systematic review of mental disorder, suicide, and deliberate self-harm in lesbian, gay and bisexual people. *BMC Psychiatry* 2008;8:70.

Lauber C, Nordt C, Falcato L, Rössler W. Do people recognise mental illness? Factors influencing mental health literacy. *Eur Arch Psychiatry Clin Neurosci* 2003;253:248-251.

MacKellar D, Valleroy L, Karon J, Lemp G, Janssen R. The Young Men's Survey: methods for estimating HIV prevalence and risk factors among young men who have sex with men. *Public Health Rep* 1996;111(Suppl):138-144.

Marshal MP, Dietz LJ, Friedman MS, Stall R, Smith HA, McGinley J, Thoma BC, Murray PJ, D'Augelli AR, Brent DA. Suicidality and depression disparities between sexual minority and heterosexual youth. *Journal of Adolescent Health* 2011;49:115-123.

Merzel C and D'Afflitti J. Reconsidering community-based health promotion: promise, performance, and potential. *Am J Public Health* 2003;93:557-574.

Moussavi S, Chatterji S, Verdes E, Tandon A, Patel V, Ustun B. Depression, chronic diseases, and decrements in health: results from the World Health Surveys. *Lancet* 2007;370:851-858.

Nosikov A and Gudex C. *EUROHIS: Developing Common Instruments for Health Surveys.* Amsterdam: IOS Press, 2003.

Paykel ES, Myers JK, Lindenthal JJ, Tanner J. Suicidal feelings in the general population: a prevalence study. *British Journal of Psychiatry* 1974;124:460–469.

Paykel ES, Hart D, Priest RG. Changes in public attitudes to depression during the Defeat Depression Campaign. *British Journal of Psychiatry* 1998;173:519-522.

Pollack LM, Osmond DH, Paul JP, Catania JA. Evaluation of the Center for Disease Control and Prevention's HIV Behavioral Surveillance for men who have sex with men: sampling issues. *Sexually Transmitted Diseases* 2005;32:581-589.

Reavley NJ and Jorm AF. Public recognition of mental disorders and beliefs about treatment: changes in Australia over 16 years. *Br J Psychiatry* 2012;200:419-425.

Sandfort TGM, de Graaf R, Bijl RV, Schnabel P. Same-sex sexual behavior and psychiatric disorders: Findings from the Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Arch Gen Psychiatry* 2001;58:85-91.

Slade T, Johnston A, Teesson M, Whiteford H, Burgess P, Pirkis J, Saw S. *The Mental Health of Australians 2: Report on the 2007 National Survey of Mental Health and Wellbeing.* Canberra: Department of Health and Ageing, 2009.

Sorensen G, Emmons K, Hunt MK, Johnston D. Implications of the results of community intervention trials. *Annu Rev Public Health* 1998;19:379-416.

Stueve A, O'Donnell LN, Duran R, San Doval A, Blome J. Time-space sampling in minority communities: results with young Latino men who have sex with men. *Am J Public Health* 2001;91:922-926.

Wang J, Häusermann M, Ajdacic-Gross V, Aggleton P, Weiss MG. High prevalence of mental disorders and comorbidity in the Geneva Gay Men's Health Survey. *Social Psychiatry and Psychiatric Epidemiology* 2007;42:414-420. [A]

Wang J, Häusermann M, Vounatsou P, Aggleton P, Weiss MG. Health status, behavior, and care utilization in the Geneva Gay Men's Health Survey. *Preventive Medicine* 2007;44:70-75. [B]

Wang J, Häusermann M, Weiss MG. Mental health literacy and the experience of depression in a community sample of gay men. *Journal of Affective Disorders* 2014;155:200-207.

Wang J, Häusermann M, Wydler H, Mohler-Kuo M, Weiss MG. Suicidality and sexual orientation among men in Switzerland: Findings from 3 probability surveys. *Journal of Psychiatric Research* 2012;46:980-986.

Wang J and Schmid MR. Mental health literacy and health literacy in the Swiss general population. Oral presentation at the Swiss Public Health Conference, 21-22 June 2007, in Olten, Switzerland.

Ware JE and Gandek B. Overview of the SF-36 Heath Survey and the International Quality of Life Assessment (IQOLA) Project. *J Clin Epidemiol* 1998;51(11):903-912.

Weiss M. Cultural epidemiology: an introduction and overview. *Anthropology & Medicine* 2001;8(1):5-29.

Chapter 7

Discussion: overview and implications

7.1 Introduction

The issue of gay men's health was born in the late 1990s as a response of a vocal minority of gay AIDS service organizations to the HIV endemic and a call to action to address other health needs of the gay community. Within the framework of a close community-research collaboration, the Geneva Gay Men's Health Project has responded to this call with many firsts: Dialogai was the first gay community organization and AIDS service organization in Europe to take up gay men's health in 2000, the 2002 Geneva Gay Men's Health Survey (GGMHS) was the first comprehensive health survey carried out among a community-based probabilistic sample of gay men in the world, and Blues-out was the first evidence-based depression awareness campaign for gay men and lesbians in the world. The research findings reported herein come from 6 different datasets—i.e., 3 original health surveys among gay men in Geneva and 3 national health surveys.

7.2 Overview of findings

7.2.1 Summary of major findings from GGMHS

The findings in Chapter 2 present a health overview for gay men across many domains as measured by standard health indicators in a post-hoc comparison with matched general population controls from the 2002 Swiss Health Survey. Gay men reported significantly more and severe physical symptoms (AOR=1.72-9.21), short-term disability (AOR=2.56), risk factors for chronic disease—i.e., high cholesterol, high blood pressure, high glucose, and smoking—(AOR=1.67-3.89), and greater health services utilization (AOR=1.62-4.28), even after adjustment for socio-demographic characteristics and health behaviors. It was not all bad news as gay men did report paying greater attention to food choices (AOR=1.66) and less obesity (AOR=0.54).

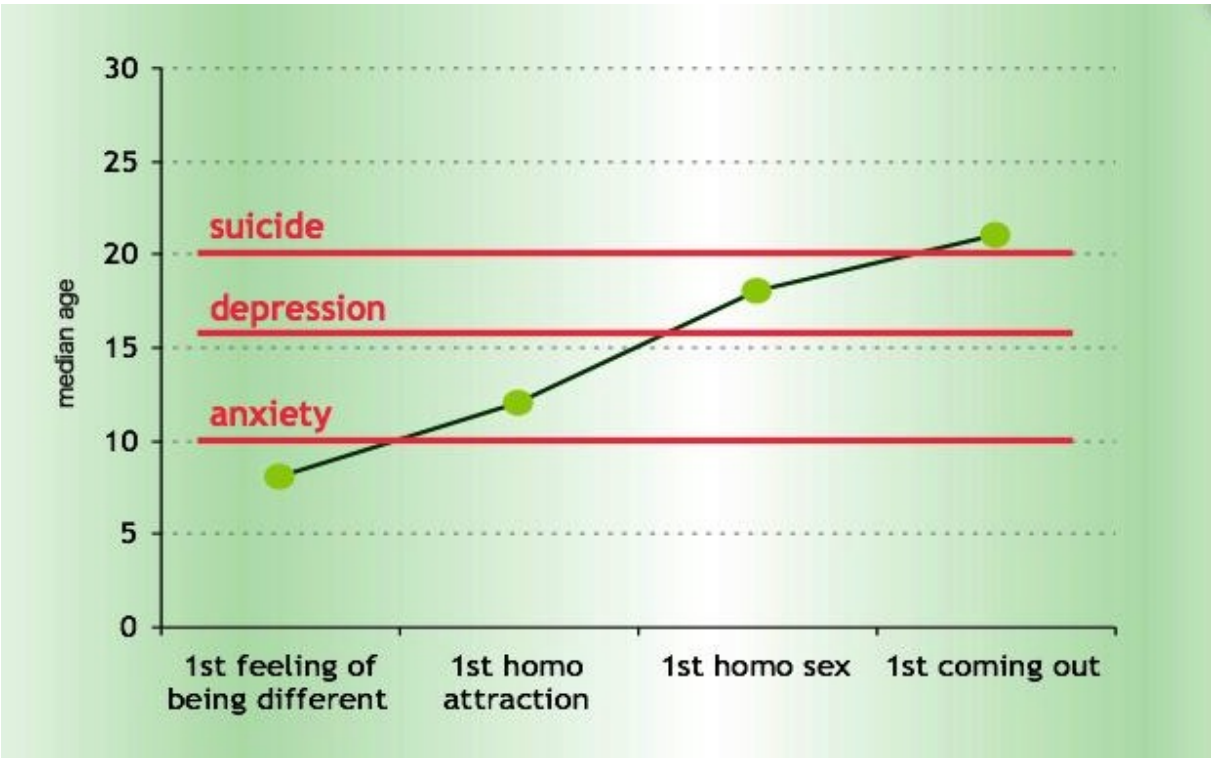
In terms of mental health, gay men were significantly more likely to report recent depressive or anxious symptoms as well as substance use than their matched general population controls. Chapter 3 presents a psychiatric epidemiological profile of men in the GGMHS. Nearly half (43.7%) of the sample fulfilled diagnostic criteria for at least one of five DSM-IV disorders in the past 12 months: major depression 19.2%, specific and/or social phobia 21.9%, and alcohol and/or drug dependence disorder 16.7%. Over one quarter of cases were comorbid with another kind of disorder, with the onset of the phobias (median age 11 years) preceding the onset of major depression (median age 16 years). Despite chronicity, half the men with major depression and a third of the men with social and/or specific phobia actually self-reported the condition. Such men were 5 times more likely to have sought treatment, underscoring the importance of recognition in help-seeking. In all, only 35.7% of cases consulted a health care professional in the past 12 months for mental health.

Chapter 4 focuses on the issue of suicidality. In GGMHS, suicidal ideation (12 months/lifetime) was reported by 22%/55%, suicide plans 12%/38%, and suicide attempts 4%/19%. While lifetime prevalences and ratios are similar across age groups, men under 25 years reported the highest 12-month prevalences for suicidal ideation (35.4%) and suicide attempts (11.5%) and the lowest attempt ratio (1:3.1 for attempt to ideation). In order to bolster the findings for the youngest age group, we performed secondary analyses of two national adolescent health surveys, comparing homo- and bisexually attracted young men directly with their heterosexual counterparts. The lifetime prevalence of suicide attempts among homo/bisexual men aged 16-20 years ranged from 5.1% to 22.0% between the three survey samples, but homo/bisexual men were significantly more likely to report 12-month suicidal ideation, plans, and attempts (OR=2.09-2.26) and lifetime suicidal ideation (OR=2.15) and suicide attempts (OR=4.68-5.36).

The 2007 and 2011 waves of the GGMHS focus on mental health, and Chapter 5 presents the mental health literacy and cultural epidemiology of depression of a gay population for the first time, together with the experience of gay men diagnosed with major depression in the past 12 months. A depression vignette was labelled as such by 44.1% of the entire sample, and 61.9% of the men with major depression. Discrimination (33.2%), acceptance or rejection by others (21.4%), and loneliness (24.9%) were the most common reasons given for greater susceptibility among gay men, yet men with major depression reported problems with love/relationship (32.5%) and work (28.9%) as the most common perceived causes of recent depression, and problems with love/relationship (21.9%), accepting one's homosexuality (21.1%), and family (20.2%) at initial outset. The highest proportions of gay men rated non-medical options such as a close friend (91.6%), relaxation exercises or meditation (84.4%), and physical activity (83.5%) as being helpful for the depression vignette, and more men rated medications as harmful rather than helpful. Indeed, seeing friends (17.2%) and doing sports (17.2%) were the most common non-professional activities mentioned spontaneously by men with major depression. Access to gay-friendly therapists would promote presentation and communication. While gay men share many commonalities in labelling, perceived causes, and help-seeking with general populations, specificities in understanding and experience were identified.

Taken together, these findings suggest that the higher prevalence of depression among gay men may be due to both a higher prevalence of common causes and the existence of gay-specific causes. Furthermore, the median age at initial onset for those diagnosed with a mood or anxiety disorder in the past 12 months or ever reporting a suicide attempt interweave with the median ages for gay developmental milestones (see Figure 7-1), suggesting that psycho-social challenges encountered during such phases may trigger psychiatric disorders and/or suicidality among some gay men during childhood, adolescence, and young adulthood.

Figure 7-1. Gay developmental milestones and debut of mental health problems



As seen in Chapter 6, the 2007 and 2011 waves of GGMHS on mental health status, mental health literacy, and intervention exposure also served as an outcome evaluation of the depression awareness campaign Blues-out. 43% of the respondents correctly recognized depression in 2011 with no change vis-à-vis 2007. Despite small effect sizes, significant net decreases (18-28%) were seen in lifetime suicide plans, 12-month suicidal ideation, self-reported lifetime depression, and 4-week psychological distress between 2007 and 2011. They were not accompanied by changes in any of the numerous items on attitudes/knowledge. A third of the respondents (32.9%) recognized Blues-out in 2011. Such men were more likely to find specialists and psychological therapies helpful and correctly identify depression and gay men's greater risk for depression. This project shows that public mental health interventions can be adapted and tested successfully in a population with high levels of chronic/recurrent depression and suicidality.

7.2.2 Overview of other studies in gay/lesbian health

Since the initial conception of the Geneva Gay Men's Health Project in 2000, several initiatives have been launched to bolster the evidence basis for gay men's health and LGBT health generally. What follows is an overview of those activities which can be grouped broadly into two categories: 1) health needs assessments in LGBT communities and 2) secondary analyses of large health interview surveys by sexual orientation.

Health departments have conducted their own needs assessments among LGBT in Wirral, England [Mellor, 2012], or commissioned consulting firms in Tasmania, Australia [Blanch Consulting, 2003], and Barking and Dagenham, England [Luby, 2009]. More commonly, however, health departments have partnered with and/or commissioned gay/lesbian organizations to conduct needs assessments among their local LGBT populations in Santa Clara County, Calif., USA [Billy DeFrank LGBT Community Center, 2000], Kansas City, Mo., USA [Take the PULSE project team, 2004], and at the state/provincial level in Scotland [INCLUSION Project, 2003], Arizona, USA [Nyitray et al., 2006], Massachusetts, USA [Bigby and Auerbach, 2009], and California, USA [Mikalson et al., 2012]. Gay/lesbian organizations have also carried out their own health needs assessments in Ottawa, Ont., Canada [Pink Triangle Services, 2001], Bradford, West Yorkshire, England [Williams, 2007], and at the national level in the UK [Hunt and Fish, 2008; Guasp, 2012]. In some places, gay AIDS service organizations have carried out health needs assessments among gay men in Montréal, Qué., Canada [Dumas et al., 2000] and Southampton, England, UK [Dacombe, 2003]. Generally, the aforementioned surveys tend to be brief and focus more on health and social services than on assessing health status per se.

A more thorough assessment of health and well-being can be found in the groundbreaking National Lesbian Health Care Survey in the US from the mid-1980s

[Ryan and Bradford, 1999] and the New Zealand National Lesbian Health Survey [Saphira et al., 2000] which was patterned on its American counterpart. National surveys in Australia [Pitts et al., 2006; Leonard et al., 2012] have covered the health both gay men and lesbians.

Besides the routine HIV behavioral surveillance surveys among gay men [Balthasar et al., 2007], health data on gay men and/or lesbians in Switzerland have come from a number of academic theses/dissertations, most of which focus on discrimination in various settings—e.g., the workplace [Schneeberger et al., 2002] and healthcare [Kämpfer and Fluri, 2001; Ermler, 2001]. More recently, a survey among lesbian/bisexual women in French-speaking Switzerland using respondent-driven sampling found higher levels of alcohol, cannabis, and tobacco use than in the general populations in both the 2002 Swiss Health Survey and the 2006 Tabakmonitoring Schweiz (TMS) [Berrut, 2007].

While the aforementioned surveys provide very useful and often first-time data for their localities, most suffer from methodological limitations due to sampling (convenience samples with limited generalizability), the choice of indicators (use of non-standardized questions limiting comparability with general population data), and the lack of comparison groups. These limitations often hamper their inclusion as evidence of sufficient quality in scientific and policy reviews. However, the availability of higher quality data remains limited due to the fact that most health interview surveys in the general population do not routinely include questions on sexual orientation, rendering this minority invisible in the data and reporting.

Since the new millenium, some major health interview surveys in Europe and North America have started including questions on sexual orientation, and they are providing some of the strongest evidence to date of health inequalities among sexual

minorities. Many of these differences—greater (>) or less (<) than their heterosexual counterparts—are summarized in Table 7-1. With few exceptions, they usually point to greater morbidity among gay men and lesbians and are statistically significant with adjusted odd ratios (AOR) on the magnitude of 2 or more. There are also some interesting differences between gay men and lesbians—e.g., obesity and consulting a general practitioner.

These population surveys also confirm the specificities of gay men and lesbians along several of the key social determinants of health: more gay men and lesbians report younger age, higher education, higher urbanicity, and lower cohabitation [Sandfort et al., 2001; Mays and Cochran, 2001; Carpenter, 2008; Gates and Ramos, 2008]. Some surveys suggest that gay men and lesbians have lower incomes, especially when controlled for their higher education [Carpenter, 2007; Carpenter, 2008]. Although same-sex civil unions/marriage is beginning to appear as a response category for civil status in many countries, only a small minority of gay men and lesbians live in such relationships, making it a weak indicator of the whole group.

The findings on mental health can be supplemented by data from the US National Comorbidity Survey (NCS) [Gilman et al., 2001], US National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) [Hatzenbuehler et al., 2009], and the Netherlands Mental Health Survey and Incidence Study (NEMESIS) [Sandfort et al., 2001], the only national psychiatric epidemiological surveys to measure sexual orientation. The Dutch survey pointed to an increased risk of lifetime and 12-month bipolar disorder, agoraphobia, simple phobia, and obsessive-compulsive disorder among gay men; increased risk of lifetime disorders for major depression, panic disorder, and social phobia among gay men; and increased risk of lifetime disorders for major depression, alcohol dependence, and drug dependence among lesbians.

Table 7-1. Health specificities among gay men (G) and lesbians (L) identified in health interview surveys

Health conditions	Pop.	Diff.	Source
self-rated health	GL	<	Bakker et al., 2006; Deputy and Boehmer, 2010
disability	L	>	Diamant et al., 2003
chronic condition	GL	>	Bakker et al., 2006
diabetes	GL	<	Whybrow et al., 2012
digestive/intestinal problems	G	>	Sandfort et al., 2006; Cochran and Mays, 2007
urinary problems	G	>	Sandfort et al., 2006; Cochran and Mays, 2007
migraines/headaches	G	>	Sandfort et al., 2006; Cochran and Mays, 2007
heart disease	L	>	Diamant et al., 2003
respiratory problems	GL	>	Sandfort et al., 2006
cancer	G	>	Boehmer et al., 2011
sexually transmitted infections	G	>	Brennan et al., 2010
Itching	GL	>	Sandfort et al., 2006
neck/shoulder pain	GL	>	Sandfort et al., 2006
mood disorders	G	>	Cochran and Mays, 2000; Brennan et al., 2010
suicidality	G	>	Cochran and Mays, 2000; Brennan et al., 2010; Grant et al., 2012
psychological distress	GL	>	Bakker et al, 2006; Cochran and Mays, 2007

Health behaviors / risk factors	Pop.	<>	Source
smoking	GL	>	Diamant et al., 2000; Tang et al., 2004; Steele et al., 2009; Boehmer et al., 2012; Whybrow et al., 2012
alcohol	GL	>	Diamant et al., 2000; Steele et al., 2009; Boehmer et al., 2012; Whybrow et al., 2012
obesity	G	<	Carpenter, 2003; Brennan et al., 2010; Deputy and Boehmer, 2010
obesity	L	>	Carpenter, 2003
muscle strengthening	G	>	Boehmer et al., 2012

Services use	Pop.	<>	Source
consult a general practitioner	G	>	Bakker et al, 2006; Boehmer et al., 2012
consult a general practitioner	L	<	Diamant et al., 2000; Tjepkema, 2008
consult a psychologist	GL	>	Bakker et al., 2006; Tjepkema, 2008
emergency room visit	L	>	Boehmer et al., 2012
mental health or substance abuse treatment	GL	>	Grella et al., 2009
prescription medications	G	>	Bakker et al., 2006
depression medications	L	>	Diamant et al., 2003
PAP smear	L	<	Clermont and Lacouture, 2000; Diamant et al., 2000; Tjepkema, 2008
clinical breast exam	L	<	Diamant et al., 2000
cancer screening	G	>	Heslin et al., 2008; Boehmer et al., 2012

Environmental stressors	Pop.	<>	Source
domestic violence	G	>	Goldberg and Meyer, 2012

While these results confirm findings from other studies, many are substantiated by only a single survey as seen in Table 7-1, and some important health topics have not yet been collected nor analyzed to date for this population. Since 2-3% of the samples can be identified as homo/bisexuals, sample size and statistical power become important considerations, and sub-group analyses are not usually feasible. Finally, mainstream health surveys may be limited in their explanatory power to account for health inequalities, since gay-specific variables such as coming out, internalized homophobia, and stigma against homosexuality are not collected in these surveys.

As such, there is still an important role for well-designed studies among community samples of gay men and lesbians. One such example is the Urban Men's Health Study (UMHS) which used random-digit dialing to recruit gay men in four metropolitan areas of the US [Catania et al., 2001]. Although the thematic emphasis was HIV, the survey also yielded findings of very high rates of psychological distress and depression [Mills et al., 2004], suicidality [Paul et al., 2002], and substance abuse [Stall et al., 2001] along with stressors such as childhood sexual abuse [Paul et al., 2002] and domestic violence [Greenwood et al., 2002]. The primary drawback of HIV-centric studies, however, is that other health issues are often chosen and assessed only as possible risk factors for HIV rather as full-fledged issues in and of themselves.

Since the call made by the American Public Health Association (APHA) for greater research in 2001, findings in sexual minority health have multiplied manifold, and sexual minority health has gained recognition in some quarters as a public health issue. The LGBT caucus has become a large, active group within the APHA. Their members have compiled books which summarize and highlight the research on gay

men's health [Wolitski et al., 2008] and sexual minority health [Meyer and Northridge, 2007]. In 2011, the US Institute of Medicine published a report on LGBT health in the US which includes an overview of LGBT health issues over the life course and recommendations for future research [Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities et al., 2011].

7.3 Implications for action, policy, and research

7.3.1 Implications for action

Since the issue of gay men's health was originally chosen by the community-based organization (CBO) and this project has been carried out as a community-research collaboration, research findings have played a decisive role for the project team's choice and design of new interventions. Although several priorities became immediately apparent upon review of the initial findings in 2003, a step-wise approach has been taken to implement new interventions, addressing gaps by revamping 1) community activities and 2) HIV work and 3) embarking on a new health priority mental health.

Impact on community activities

The very first follow-up activity for GGMHS was to provide feedback to the local gay community by presenting them with a community health profile in the form of an attractive 25-page brochure in 2003. Just as the project team saw most data for the first time, many in the community would also be seeing many findings for gay men across a broad cross-section of health domains for the very first time. The brochure—available as both paper copy and online pdf—proved to be very popular, and outreach workers confirmed great community interest in the two printings.

During the focus groups, many participants expressed tremendous benefit in listening and talking with other gay men about their lives and concerns. Most spaces for gay

men are sexualized, and the gay press tends to emphasize lifestyle over actual lives. In 2004, Dialogai reorganized their community activities around a new program “Être gai ensemble” (Being gay together) which consciously strives to create events for gay men to share socially with one another about their lives and experiences. The formats include discussion groups, workshops, talk shows, and lectures, with different thresholds of moderation and participation.

As a response to the long-standing demand for gay-friendly care providers and GGMHS data on communication and coming-out between gay patients and their doctors, Dialogai launched a community-wide call to gather names of trusted providers from gay men in Geneva. Dialogai then interviewed each provider personally, and 130 gay and gay-friendly providers in 30 areas of expertise were included in the mapping for Geneva. Between 2004 and 2009, 150 requests were made annually. Since 2009, the list has been available online with a modern Google maps application.

Revamping HIV work within the context of sexual health

The GGMHS confirmed deficiencies in HIV counselling uncovered in the Zürich Men’s Survey in 1998: nearly half of gay men (44%) did not receive any counselling at all during their last HIV test. As a response to this missed opportunity, the project team decided to open the first gay HIV and STI testing service in Switzerland which would guarantee best practice in counselling and facilitate the introduction of rapid HIV testing (Determine HIV-1/2) into Switzerland. A counselling manual was created based on state-of-the-art recommendations, and a new computer-assisted self-completed intake form provided a personal and behavioral profile for use in the patient-centered consultation lasting 30 minutes on average.

Checkpoint was a revolutionary re-thinking of HIV services in Switzerland. Until its inception, there had been a strict separation between HIV prevention and HIV testing/care, with the medical health services dominating the latter. Bringing a medical service into a community organization setting was highly innovative in a country with almost no tradition in community health. Furthermore, services targeting a certain sub-population rubs against the French Republican and medical principles of one model (or doctor) fits all. Checkpoint Geneva opened its doors in 2005, and the evaluations have shown high levels of recognition, uptake, and patient satisfaction with the combination of high medical professionalism and open communication with gay and gay-friendly providers. Based on its success, the model was adopted by the Swiss Federal Office of Public Health and has been actively replicated in other major cities like Zurich, Lausanne, and Basel. Checkpoints for gay men have also spread to other European cities like Barcelona, Cologne, and Munich.

Based on their first-hand observations, the outreach workers in the gay venues and the staff at Checkpoint have been able to confirm additional health concerns as evidenced in the GGMHS. HIV is simply not the main health concern for most gay men. Rather than using HIV as the vector to explore other health issues, outreach workers and staff have found that men are more responsive to other health issues, with HIV messages being tacked on as needed. As such, outreach workers—whose main mandate is HIV prevention—have been approaching gay men with other materials from the gay men's health project. This development confirms the utility of a gay men's health approach for HIV prevention.

Embarking on a new health issue: mental health

It was already apparent in 2003 from reviewing the initial findings that mental health would constitute a major priority, leading to the in-depth analyses and reports in Chapters 3-5. However, at that time, the project team—all with long-standing

experience in HIV—did not have the competencies necessary to conceptualize and launch activities in the new priority area of mental health. As such, the aforementioned activities were launched in areas closer to available competencies. During this time, however, the core members of the project team received training in mental health—e.g., psychology, psychotherapy, buddhist psychology, and psychiatric epidemiology. Whereas the topic of HIV was not particularly relevant to lesbians, mental health touched on issues important to both gay men and lesbians and offered a possibility to engage lesbian organizations in health and collaborate jointly on a community intervention.

No community-based interventions in mental health for gay men (and lesbians) was found. As such, the decision was taken to select evidence-based interventions for the general population and adapt them for gay men and lesbians. Australia proved to be a particularly innovative source of research and interventions [Jorm, 2012], and online interventions (including therapies) have been growing worldwide. The mental health project would begin with a depression campaign based on the Alliance Against Depression [Hegerl et al., 2008] model which had been shown to be effective in suicide prevention in Germany and rolled out across Europe. The elements of the depression campaign resembled HIV campaigns which Dialogai was already familiar with and facilitated the transition to a new health issue. After a three-year preparation, Blues-out—the first evidence-based gay/lesbian depression awareness campaign in the world—was launched in 2009. Blues-out was so well conceived that it actually served as a template for the roll out of the mainstream Alliance Against Depression in the canton of Geneva. Chapter 6 presents the scientific outcome evaluation for Blues-out, and although the campaign accomplished comparable levels of recognition as the general population campaigns, there was no improvement in recognition of depression. Dialogai is capable of achieving much higher

penetration as evidenced by Checkpoint, so the campaign can be scaled up in order to improve its reach, recognition, and impact.

7.3.2 Implications for policy / policy dialog

Based on actual experience in the Geneva Gay Men's Health Project, this section highlights two crucial policy areas: 1) the adoption of gay men's health or LGBT health by community-based organizations and 2) the recognition of sexual minority health in policy and data collection by government.

Making the transition to gay men's health or LGBT health

Dialogai serves as an informative case study of a gay community-based organization and AIDS service organization making the transition to gay men's health, and the Geneva Gay Men's Health Project has been hailed as a model by national and regional agencies in Switzerland, France, and Canada. In Switzerland, the project team has communicated the GGMHS findings to local stakeholders, and gay men's health and lesbian health have since become familiar terms. Public health and health professionals have responded well to the findings. The cantonal health department has recognized Dialogai for its work in gay men's health financially; however, Dialogai's grants still come from the AIDS budget which has remained stable at best at a time when the organization seeks to expand its activities in health. This is the double-edged sword of AIDS financing which once enabled institutional growth and professionalization for AIDS work, but is now proving limiting for thematic expansion in this target group. The project has also influenced the future direction of HIV prevention in Switzerland. In Sept. 2009, the evaluation of the last national HIV/AIDS strategy by an international expert panel recommended the creation of a community-based gay health organization in Switzerland [Plüss et al., 2009].

As for the prospects of spreading the Geneva Gay Men's Health Project in other cities in Switzerland, the institutional framework has proven decisive. Dialogai is the only gay organization in Switzerland which did HIV prevention work. The AIDS-Hilfen are no longer gay organizations, and given their disease-centered mandate, they have not taken up gay men's health. The project team has organized regional seminars for gay organizations in both French- and German-speaking Switzerland to introduce the issue of gay men's health as a future area of activity for gay organizations. However, gay organizations in Switzerland remain small and poorly funded and are suffering the same drop of volunteerism seen in community organizations everywhere. Lacking experience in HIV prevention, many do not feel they have the professionalism to engage with health, nor do many gay organizations view health as a political issue for advocacy. In fact, some actors have reacted negatively to the study findings which they fear may be used by conservative elements against the gay community. Although GGMHS did inspire the creation of Santé pluriELLE, a working group for lesbian health at the national lesbian organization LOS, the role of gay organizations requires more attention.

Internationally to date, it is possible to identify three main development pathways towards gay men's health or LGBT health. The first type is a gay community health clinic from the 1970s which expands and professionalizes in the 1980s and 1990s in response to the AIDS epidemic and then expands its services to address other health needs of the LGBT community. The Fenway Community Health Center (now known as Fenway Health) in Boston, Mass., USA, is a model example [Mayer et al., 2001; Martorelli, 2012]. The second type is a gay or gay/lesbian organization which offers services to the gay community which expands and professionalizes with HIV prevention/care work in the 1980s and 1990s and expands into gay men's health or LGBT health in the 2000s. Schorer Stichting in Amsterdam, Netherlands, as well as Dialogai in Geneva, Switzerland, fall into this category. The third type is a gay AIDS

service organization founded during the HIV epidemic which expands into gay men's health or LGBT health in the 2000s. Examples include Action Séro Zéro (now known as RÉZO santé et bien-être) in Montréal, Que., Canada, and ACON in Sydney, NSW, Australia. However, there have also been several AIDS service organizations which have taken up the moniker of gay men's health without actually changing their mission or expanding their services. This conflation of classical HIV prevention with gay men's health is highly unfortunate for members of the gay community who are led to believe that HIV remains their main and sole health issue when their lived experience and the growing evidence base suggest otherwise.

Recognition of sexual minority health in policy and data collection

In most industrialized countries, gay men and lesbian women are visible minorities with their own organizations and communities. There is often legislation that specifically addresses the needs of this group. As such, sexual orientation is a legitimate socio-demographic indicator with a high degree of social and legislative relevance.

As of 1999, the Swiss constitution prohibits discrimination along lifestyle (which is a coded reference to sexual orientation). As the Equal Treatment Directives of the European Union (EU) prohibit workplace discrimination based on ethnic origin, age, disability, sexual orientation, gender, and religion/belief, the European Commission has carried out several Eurobarometer surveys to monitor the attitudes and experiences of the general population in terms of equality and discrimination vis-à-vis these 6 groups [Marsh and Sahin-Dikmen, 2003; TNS Opinion and Social, 2007; TNS Opinion and Social, 2008; TNS Opinion and Social, 2009; TNS Opinion and Social, 2012]. While most of the target groups are usually covered in the socio-demographic section of major surveys, sexual orientation is clearly the indicator with lowest uptake.

In 2010, the Council of Europe published Recommendation CM/Rec(2010)5 for fighting discrimination based on sexual orientation and gender identity. Here is one of the four items for the health sector:

> "33. Member states should take appropriate legislative and other measures to ensure that the highest attainable standard of health can be effectively enjoyed without discrimination on grounds of sexual orientation or gender identity; in particular, they should take into account the specific needs of lesbian, gay, bisexual and transgender persons in the development of national health plans including suicide prevention measures, health surveys, medical curricula, training courses and materials, and when monitoring and evaluating the quality of health-care services."

Canada was ahead of the curve in placing sexual minority health on the policy agenda and ensuring data collection. In 2000, Health Canada commissioned a discussion paper on fitting gay men's health into its national population health framework [Ryan and Chervin, 2000]. The paper recommended adding "conditions that affirm choices of coming out" as a determinant of health unique to gay men. In 2001, Health Canada included sexual minorities as a specific population group in a report on access to health care [Health Canada, 2001]. In 2003, Health Canada approved a multi-million dollar grant to the Canadian Rainbow Health Coalition to foster networks and research in LGBT health. In that same year, Statistics Canada introduced a question on sexual identity to all of their surveys, including the national health interview survey. However, a change in government since has frozen or undone some of these gains.

Data collection constitutes a cornerstone of monitoring, and particularly with regards to discrimination legislation, monitoring inequalities and disparities. It is necessary to monitor the health of sexual minorities and identify possible disparities in large national and regional health interview surveys. To date, there have been only 9 national and 4 regional comprehensive health surveys which have included an indicator of sexual orientation (see Table 7-2). Among the 13 surveys, 6 are European, and data by sexual orientation have been analyzed and reported for the

Netherlands [Bakker et al., 2006; Sandfort et al., 2006], France [Jouvin et al., 2007], Sweden [Statens Folkhälsoinstitut, 2005], and Scotland [Whybrow et al., 2012].

Table 7-2. General population health interview surveys which include an indicator for sexual orientation

	Area	Year(s)	Indicator
National Health and Nutrition Examination Survey (NHANES)	USA	1988-94, 1999-2012	Sexual behavior
National Health Interview Survey (NHIS)	USA	1988-2012	Sexual behavior
Dutch National Survey of General Practice (NS2)	Netherlands	2001	Sexual attraction
Canadian Community Health Survey (CCHS)	Canada	2003, 2005, 2007-2012	Sexual identity
Health Barometer	France	2005	Sexual behavior
Danish Health and Morbidity Survey (SUSY)	Denmark	2005	Sexual identity, sexual attraction, sexual behavior
"Health on Equal Terms" National Health Survey	Sweden	2005, 2008-2012	Sexual identity (08-12), sexual attraction (05)
Swiss Health Survey (SGB/ESS)	Switzerland	2007, 2012	Sexual behavior
Scottish Health Survey	Scotland (UK)	2008-2012	Sexual identity
Enquête sociale et de santé (ESS)	Québec (CAN)	1998	Sexual behavior
California Health Interview Survey (CHIS)	California (USA)	2003, 2005, 2007, 2009, 2011/12	Sexual identity, sexual behavior
Skåne Public Health Survey	Skåne (SWE)	2008	Sexual identity
Los Angeles County Health Survey (LACHS)	Los Angeles County (USA)	1999, 2002, 2005, 2007, 2011	Sexual identity, sexual behavior
Southeastern Pennsylvania Household Health Survey (SEPAHHS)	SE Pennsylvania (USA)	2004, 2006	Sexual identity, sexual behavior

Table 7-2 highlights several issues in the collection of data on sexual orientation. First, as NHANES, NHIS, and the many risk behavior surveillance surveys among adults [Dilley et al., 2010] and adolescents [Kann et al., 2011] in American states have demonstrated, sexual orientation was initially included in such surveys primarily due to interests in HIV epidemiology. This has also been the case in Switzerland in 2007 and 2012, whereby homosexual behavior was measured in a new section on HIV. Second, only half of these surveys collect data on sexual orientation routinely. Third, sexual orientation can be considered an umbrella concept with three usual

dimensions—i.e., sexual attraction, sexual behavior, and sexual identity—corresponding to three developmental milestones. Ideally, all three dimensions should be captured as they do not overlap completely, and one dimension may be more appropriate for a particular issue than another. As evidenced in Table 7-2, different dimensions of sexual orientation are measured in different surveys, with only the 2005 Danish Health and Morbidity Survey measuring all three dimensions.

The dimension of sexual identity is closest to being a socio-demographic indicator and appears to be most relevant in terms of equality/diversity, discrimination, and sexual minority health. The project team has attempted to convince the Swiss Federal Statistical Office to include a question on sexual identity in the 2007 and 2012 Swiss Health Surveys. The objections have been: (homo)sexual behavior is already collected in the HIV section and a question on sexual identity poses methodological problems. The current situation is unsatisfactory. First, when a measure of sexual orientation is linked to the HIV section, sexual orientation will disappear when the HIV section is stricken from the Swiss Health Survey. Second, the question on sexual behavior focuses on the sex/gender of partners with whom one practices penetration. Gay men and lesbians who do not practice vaginal/anal penetration are not correctly identified as homosexual. Third, the issue of methodology reflects both legitimate concerns as well as echoes of stigma. There are common concerns that a question on sexual identity might 1) incite non-response or interruption of the interview due to stigma of homosexuality or 2) be misconstrued due to the lack of a properly validated question.

In order to address these concerns head-on, the Office for National Statistics (ONS) in the UK developed and tested a question for sexual orientation between 2006-2008 for inclusion in all ONS surveys as of 2009 [Joloza et al., 2010]. As for the issue of non-response, both qualitative and quantitative evaluation of the ONS project showed

that a question on sexual orientation is both acceptable to respondents and does not affect participation rates. "The final design and administration has been informed by feedback from interviewers and field managers, which was predominantly positive. Focus groups and cognitive/in-depth interviews have also been conducted with members of the public (including participants of different sexual identity groups, ages, ethnic backgrounds and faith groups). Again the feedback from these focus groups and interviews was positive. ... Please be reassured that the vast majority of respondents find the question as acceptable as others such as ethnicity, nationality and religion. No one dropped out immediately after being asked the question and household response rates were not affected." [Haseldon and Joloza, 2009]

After rigorous development and testing, the ONS has recommended the best question for use in both face-to-face administration and CATI, together with an untested recommendation for self-completed written questionnaires [Haseldon and Joloza, 2009; see Appendix A]. The ONS proposes a single question on sexual identity for use in the demographic core of surveys as a basis for data collection and monitoring for the Equality Act 2010 which harmonized UK anti-discrimination statutes with those of the EU.

The experience of the ONS has also informed the activities of the New Zealand Official Statistics System (OSS). Statistics New Zealand received submissions to include sexual orientation in the 2006 census and has been exploring the issue since 2003 [Statistics New Zealand, 2003] and most recently within the Review of Culture and Identity Statistics [Statistics New Zealand, 2008]. In response to sexual orientation being made a priority, the Ministry of Social Development launched the Seuxal Orientation Data Collection Study in 2009 to establish a conceptual and measurement framework for the OSS. The reports recommend collecting data on sexual identity, sexual attraction, and sexual behavior, prioritizing the immediate

inclusion of sexual identity in the demographic core questions [Pega et al., 2010]. The study even developed models to adjust for misreporting and non-response.

Thanks to momentum in both research and advocacy, US President Barack Obama asked the Department of Health & Human Services (HHS) in 2010 to identify areas of action to improve LGBT health. HHS has expressed the following vision "to promote equal treatment of LGBT Americans, provide enhanced resources for LGBT health issues, and develop better information regarding LGBT health needs" [HHS LGBT Issues Coordinating Committee, 2012]. In 2010, HHS formed a working group to examine the scientific evidence in LGBT health and included LGBT health in the US national health plan Healthy People 2020 with science-based objectives. The key objective formulated concerns data collection:

> LGBT-1 (Developmental) Increase the number of population-based data systems used to monitor Healthy People 2020 objectives that include in their core a standardized set of questions that identify lesbian, gay, bisexual, and transgender (LGBT) populations.

This objective overlaps with its 2011-12 objective of "increasing the number of federally-funded health and demographic surveys that collect and report sexual orientation and gender identity data" [HHS LGBT Issues Coordinating Committee, 2012]. In 2011-12, the CDC's National Center for Health Statistics (NCHS) developed and performed qualitative and quantitative testing of a question on sexual identity for use in the National Health Interview Survey as of 2013. Both the ONS and NCHS proposals are very similar to the question on sexual identity recommended by Prof. Randy Sell who has been compiling a database of such questions used in major surveys for over a decade [Sell et al., 1997, with updates on his website www.lgbtdata.com]. Such a question on sexual identity has been adopted successfully for routine use in the Canadian, Swedish, Scottish, and Californian health interview surveys.

The lessons above suggest that the most compelling framework for data collection lies in legislative protection against discrimination and a legislative demand or requirement to monitor the actual experiences of the populations concerned. In this regard, the Scottish Government has provided an example of best practice, including sexual orientation within an overall diversity framework for health [Gordon et al., 2010] as well as issuing a report on Scottish Health Survey data analyzed for each of these equality groups [Whybrow et al., 2012]. Similarly, the US Agency for Healthcare Research and Quality (AHRQ) included LGBT along with its legally mandated priority populations for the first time in their 2011 National Healthcare Disparities Report. In most places, gay/lesbian advocacy groups need to support this development by helping to foster demand for such data and to exert pressure that such data be collected and reported. LGBT organizations must understand that modern advocacy requires good data and that health is, in fact, also an issue of policy and equality/discrimination.

GGMHS and other surveys now provide compelling evidence that gay men suffer disproportionately from several long-standing public health priorities. There are now health information pages for LGBT users on websites of the Centers for Disease Control and Prevention (CDC) in the US and the National Health Service (NHS) in the UK. The visibility provides important recognition of LGBT health. However, issue-specific endeavours like health leagues and patient organizations also need to address gay men and lesbians with dedicated resources, culturally adapted materials, and engagement with community organizations. Progress on this front has been slow, as most issue-based campaigns do not even name gay men and/or lesbians as a population at greater risk or with specific needs much less dedicate any resources to serving this population. There have been a few notable developments such as the inclusion of LGBT in the work of Stop Suicide in Geneva, as a result of

the GGMHS, and tobacco control by HHS in the US giving the preponderence of existing evidence [HHS LGBT Issues Coordinating Committee, 2012].

7.3.3 Implications for research

The main thrust of the research done in the Geneva Gay Men's Health Surveys to date has been to document the state of gay men's health with particular attention to health disparities and mental health. Echoing the recommendations in the previous section, it is necessary to document health disparities with routine data collection and continued research in this population. As seen in other groups with distinctive health needs (e.g., women, racial/ethnic minorities, etc...), it is one thing to document health inequalities, but it is quite another to explain them. The concepts of syndemics, social status, and stigma appear to offer the most promising explanatory models. Finally, the development and testing of mental health interventions among gay men and lesbians should constitute a research priority.

Documenting health disparities

Although consistent with GGMHS, many of the findings in Table 7-1 are substantiated by only a single health interview survey, and some important health topics have not yet been analyzed or reported to date for this population. It is possible to exploit existing datasets to perform and report on key outcomes for both gay men and lesbians. Since 2-3% of the samples can be identified as homo/bisexuals, sample size and statistical power become important considerations, and sub-group analyses are usually not feasible. However, as repeated surveys include questions on sexual orientation, datasets can be combined to overcome the limitation of small group sizes as seen in recent pubilcations from the US [Fredricksen-Goldsen et al., 2012; Jesdale and Mitchell, 2012].

In the Swiss context, it will be useful to analyze the recent Swiss Health Surveys by sexual orientation in order to validate findings from the GGMHS at the national level. Although sexual identity, as recommended and used in most other health interview surveys, needs to be adopted in future surveys, such analyses will provide initial confirmation of findings on health inequalities among homosexual men at the national level, and a comprehensive health profile for homosexual women in Switzerland for the very first time. Since women's health issues such as pre-menstrual symptoms and cancer screening are covered in detail in the 2007 Swiss Health Survey, they can be analyzed for differences along sexual orientation. It will also be possible to determine to what extent the health inequalities observed in homosexual men are also found among homosexual women.

Since most health interview surveys rely almost exclusively on self-reported health outcomes, stronger evidence may come paired sibling studies of homosexuals and their sex-matched heterosexual siblings [Rothblum et al., 2004] using a written health survey, biographic and psychiatric interviews (life course and psychiatric epidemiology), physical exam and biological markers—e.g., cholesterol, glucose, blood pressure, cortisol, immune response, and neuroimaging (psycho-somatic stress and morbidity). Whilst sibling studies have been most common in the mental health sciences and increasingly in genetics, the current evidence for mental morbidity among gay men and lesbians needs to be bolstered by full psychiatric epidemiological assessments in this population together with EMIC to help elucidate the meaning and experience of psychiatric disorders, psychological problems/distress [Weiss, 1997], including the gay-specific issues of coming-out, social acceptance/rejection, and stigma against homosexuality. By controlling for certain biological, genetic, and environmental factors, sibling studies would strengthen the evidence for health disparities as well as permit deeper understanding of these differences along axes of sex/gender, sexual orientation, and life course.

A gender health approach in assessing sexual minority health may prove illuminating for both fields. First, strong associations between sexism and homophobia have been established in multi-country comparisons [Beckers, 2008], suggesting that misogyny may lie at the root of both phenomena. Second, gender roles (masculinity/femininity) have been shown to differ by both sex and sexual orientation [Meyer et al., 2001; Lippa, 2002] and have an impact on health behaviors [Sandfort et al., 2009] and health outcomes [Annandale and Hunt, 1990]. In particular, the issue of (childhood) gender nonconformity has been shown to be relevant for both sexual orientation [Rieger et al., 2008] and health [Roberts et al., 2012]. Performing multi-group comparisons with attention to both sexual orientation and sex may clarify health issues where the effect of sexual orientation is predominant and others where the effect of sex and/or gender roles appears to be predominant. Such findings may further understanding of both men's health and women's health.

Explaining health disparities with syndemics, social status, and stigma

Findings from the GGMHS suggest that as a group, gay men appear to suffer disproportionately from a wide range of mental and physical health problems, score low on psycho-social resources, report poor communication and low satisfaction with health care providers, and be over-exposed to socio-environmental stressors such as violence. This comprehensive health profile suggests possible clustering of multiple risk factors and poor health outcomes, but the complexity of multi-morbidity also poses a challenge to further analyses as well as interventions.

One approach which shows promise in informing both further research and interventions is "syndemics" which occur "when health-related problems cluster by person, place or time" which may then "interact synergistically, contributing to excess burden of disease in a population" [Milstein, 2002] "because of harmful social

conditions and injurious social connections" [Singer and Clair, 2003]. The term was originally coined in medical anthropology in the 1990s around the AIDS epidemic and then developed at the US Centers for Disease Control and Prevention (CDC), integrating concepts such as comorbidity, community health, and health promotion into a single model appropriate for groups hit simultaneously by numerous inter-related health problems. Through the CDC, the term has already been shown to be relevant to gay men's health [Stall et al., 2003]. However, the challenge in moving ahead is to examine larger clusters of variables at the macro level, making use of more sophisticated methods in analyzing multiple factors and outcomes, such as network analyses. Are the clusters merely co-occuring or synergistic? Do the health problems share "common social, environmental, behavioral, or biological determinants" [Milstein, 2002]? Consistent with the syndemic orientation, the methods of systems thinking and system dynamics also take a macro view of linkages and synergies inherent to complex systems into account [de Savigny and Adam, 2009].

Conceptualizing gay men as a population suffering concurrently from numerous health problems which may reinforce one another and placing further research and intervention in a syndemic framework will involve an important paradigm shift away from the single disease model which remains predominant in public health activities generally but especially for this population. While the concept of syndemics accomodates multiplicity in morbidity (and if appropriate, in determinants), it does not include a mechanism to explain multi-morbidity.

As a group, gay men and lesbians present an interesting paradox. Higher education is usually strongly indicative of better health, yet despite a considerable education advantage, they demonstrate surprisingly high levels of morbidity, risk, and stress. The eminent social epidemiologist Richard Wilkinson has documented the impact of

relative inequality and social status on numerous health and social outcomes [Wilkinson, 1999; Wilkinson and Pickett, 2009]. In particular, he notes our biologic sensitivity to relative social status and social evaluation and the primacy of psycho-social factors as pathways to health and social outcomes. Indeed, GGMHS data confirm that gay men demonstrate many of the physiological health outcomes typical of low social status in humans, non-human primates, and other animals [Wilkinson, 1999; Sapolsky, 2005]—e.g., hypertension and hypercholestoremia—as well as the psycho-social resources and mental morbidity accompanying social evaluation anxiety [Wilkinson, 1999]—e.g., low self-esteem, weak social connections, depression, and social phobia. As such, this population may present interesting clues on the relative importance of socio-environmental stressors and psycho-social resources in determining good health. Future work should attempt to validate the salience of this model in understanding health disparities among sexual minorities by including subjective social status, self-conscious emotions such as shame, and clinical assessment of physiological indicators such as cortisol, hypertension, and HDL:LDL ratios.

How are members of sexual minorities pushed into low social status? The concept of stigma provides a highly pertinent framework for understanding the process whereby homosexuality becomes “an attribute [that] is deeply discredited… by which the reactions of others spoils normal identity…, [thereby reducing a bearer] from a whole and usual person to a tainted, discounted one” [Goffman, 1963]. When a labeled difference is linked to negative attributes, the person bearing that difference loses social status [Link and Phelan, 2001]. Indeed, this concept fits homosexuality particularly well, accounting for both societal prejudice and internalized stigma [Herek, 2007]. In accordance with the evidence on stigma’s health impact [Link and Phelan, 2006; Hatzenbuehler et al., 2013], GGMHS findings confirm that gay men suffer from poor quality of life, poor mental health—e.g., depression—demonstrate

poor psycho-social resources—e.g., low self-esteem, social isolation, and internalized homophobia. There appears to be considerable overlap in the poor health profile of those with low social status and those who belong to a stigmatized group as well as in the dynamic of the stress of low status.

Intervention studies in mental health

Sexual minorities constitute high prevalence communities for depression, anxiety, substance abuse, and suicidality, yet the evidence base for original and adapted interventions for high prevalence groups such as gay men and lesbians is extremely limited and needs to be expanded urgently. Our research to date has revealed many commonalities in the understanding of depression with general populations, suggesting that evidence-based interventions developed for general populations may be implemented in gay populations and vice versa. However, specificities in mental health (e.g., high prevalence and high levels of chronicity) and mental health literacy (e.g., gay-specific causes) suggest that mainstream interventions need to be adapted accordingly for the gay community.

Besides public health and therapeutic imperatives, testing interventions in a high prevalence populations facilitates the assessment of program impact on people with or at high risk of mental health disorders and/or suicidality. Given the high prevalence of mental morbidity, a long history of successful health interventions in HIV, and a highly educated and highly wired community, gay populations constitute an ideal group in which to develop and test mental health interventions in prevention and care. The effectiveness of awareness campaigns such as Blues-out needs further assessment, and skills- and evidence-based tools for core disorders (e.g., Mental Health First Aid), including the growing number of online interventions and therapies (e.g., MoodGYM), should be tested among gay men and lesbians and rendered accessible through culturally appropriate gateways and signposting.

7.4 Conclusions

HIV/AIDS has dominated public health efforts among gay men since the 1980s, and calls for a shift to gay men's health or LGBT health or sexual minority health at the turn of the millenium were hampered by a lack of quality evidence on the health of this population. The Geneva Gay Men's Health Surveys have contributed to the growing evidence basis by erecting a comprehensive health profile and identifying health inequalities across physical, mental, and social health domains. Indeed, HIV has existed within the context of multi-morbidity and has been just one of many health issues affecting gay men disproportionately. Given these health disparities, gay men—and sexual minorities generally—deserve recognition and concerted action as one of the "equality groups" in public health.

Despite the flurry of additional evidence in the past decade coinciding with the Geneva Gay Men's Health Surveys, the recommendations call for systematic collection of health data on gay men and lesbians. This means that sexual orientation needs to adopted as a standard socio-demographic indicator in large national and regional surveys. Only in this way can health inequalities as measured by standard health indicators be documented in probability samples with comparison groups. Large health interview surveys with indicators of sexual orientation will still need to be complemented with in-depth analyses and specially designed studies to understand potential causes of increased morbidity in this population, in particular the role of gay-specific variables which are not collected in general population surveys.

The Geneva Gay Men's Health Project has been carried out successfully as a community-research collaboration, turning Switzerland into one of the few centers of excellence in sexual minority health. As such, the research component has fulfilled

its initial goal of delivering a profile of gay men's health to researchers and practitioners alike and providing an evidence base for priority-setting and informing concrete initiatives. Future work will need to bolster findings of health disparities with clinical assessments as well as assess the causes for increased morbidity. The community-based organization has engaged in both advocacy and service provision for gay men's health, thereby serving as a model of a 21st century gay organization. Future work will need to consolidate efforts in gay men's health by the creation of a full-fledged gay health clinic, better synergy with community campaigns and activities, and establishing sexual minority health as an issue on the regional and national agendas.

References

Annandale E and Hunt K. Masculinity, femininity and sex: an exploration of their relative contribution to explaining gender differences in health. *Sociology of Health and Illness* 1990;12(1):24-46.

Beckers T. *Homosexualität und Humanentwicklung. Genese, Struktur und Wandel der Ablehnung und Akzeptanz gleichgeschlechtlicher Sexualkontakte in einer international vergleichenden Kontextanalyse.* Dissertation. Köln: Universität zu Köln, 2008.

Berrut S. *La consommation de tabac, d'alcool et de drogues chez les lesbiennes et les femmes bisexuelles de Suisse romande : une utilisation de la méthode Respondent-Driven Sampling.* mémoire de diplôme postgrade en statistique. Neuchâtel: Université de Neuchâtel, 2007.

Bigby J and Murray TP. *The health of lesbian, gay, bisexual and transgender (LGBT) persons in Massachusetts: A survey of health issues comparing LGBT persons with their heterosexual and non-transgender counterparts.* Boston: Massachusetts Department of Public Health, 2009.

Billy DeFrank LGBT Community Center. *County of Santa Clara Lesbian, Gay, Bisexual, and Transgender Needs Assessment.* San Jose: Billy DeFrank LGBT Community Center, 2000.

Blanch Consulting. *Gay, Lesbian, Bisexual and Transgender Health and Wellbeing Needs Assessment.* Hobart: Blanch Consulting, 2003.

Boehmer U, Miao X, Linkletter C, Clark MA. Adult health behaviors over the life course by sexual orientation. *Am J Public Health* 2012;102:292-300.

Boehmer U, Miao X, Ozonoff A. Cancer survivorship and sexual orientation. *Cancer* 2011;117:3796-3804.

Brennan DJ, Ross LE, Dobinson C, Veldhuizen S, Veldhuizen S, Steele LS. Men's sexual orientation and health in Canada. *Canadian Journal of Public Health* 2010;101(3):255-258.

Carpenter CS. Revisiting the income penalty for behaviorally gay men: evidence from NHANES III. *Labour Economics* 2007;14:25-34.

Carpenter C. Sexual orientation and body weight: evidence from multiple surveys. *Gender Issues* 2003;21(3):60-74.

Carpenter CS. Sexual orientation, work, and income in Canada. *Canadian Journal of Economics* 2010;41(4):1239-1261.

Catania JA, Osmond D, Stall RD, Pollack L, Paul JP, Blower S, Binson D, Canchola JA, Mills TC, Fisher L, Choi K-H, Porco R, Turner C, Blair J, Henne J, Bye LL, Coates TC. The continuing HIV epidemic among men who have sex with men. *Am J Public Health* 2001;91:907-914.

Clermont M and Lacouture Y. *Orientation sexuelle : santé et portrait social. Enquête sociale et de santé 1998.* Québec: Bureau de la statistique, Gouvernement du Québec, 2000.

Cochran SD and Mays V.M. Relation between psychiatric syndromes and behaviorally defined sexual orientation in a sample of the US population. *American Journal of Epidemiology* 2000;151(5):516-523.

Cochran SD and Mays VM. Physical health complaints among lesbians, gay men, and bisexual and homosexually experienced heterosexual individuals: Results from the California Quality of Life Survey. *Am J Public Health* 2007;97(11):2048-2055.

Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities; Board on the Health of Select Populations; Institute of Medicine. *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding.* Washington, DC: Institute of Medicine, 2011.

Dacombe N. *A third survey of the health needs of gay and bisexual men in Southampton and South West Hampshire.* Southampton: Gay Community Health Service, 2003.

de Savigny D and Adam T (eds). *Systems thinking for health systems strengthening.* Geneva: Alliance for Health Policy Systems Research, WHO, 2009.

Deputy NP and Boehmer U. Determinants of body weight among men of different sexual orientation. *Preventive Medicine* 2010;51:129-131.

Diamant AL and Wold C. Sexual orientation and variation in physical and mental health status among women. *Journal of Women's Health* 2003;12(1):41-49.

Dilley JA, Wynkoop Simmons K, Boysun MJ, Pizacani BA, Stark MJ. Demostrating the importance and feasibility of including sexual orientation in public health surveys: health disparities in the Pacific Northwest. *Am J Public Health* 2010;100:460-467.

Ermler A. *"Und wie verhüten Sie?" Lesbische Frauen und ihre Erfahrungen mit ÄrztInnen im schweizerischen Gesundheitswesen.* Aarau: Fachhochschule Aargau, 2001.

Fredriksen-Goldsen KI, Kim H-J, Barkan SE. Disability among lesbian, gay, and bisexual adults: disparities in prevalence and risk. *Am J Public Health* 2012;102:e16-e21.

Gates GJ and Ramos C. *Census snapshot: California lesbian, gay, and bisexual population.* Los Angeles: The Williams Institute, 2008.

Gilman SE, Cochran SD, Mays VM, Hughes M, Ostrow D, Kessler RC. Prevalences of DSM-III-R disorders among individuals reporting same-gender sexual partners in the National Comorbidity Survey. *Am J Public Health* 2001;91:933-939.

Goffman E. *Stigma: Notes on the Management of Spoiled Identity.* Englewood Cliffs, NJ: Prentice Hall, 1963.

Goldberg NG and Meyer IH. Sexual orientation disparities in history of intimate partner violence: results from the California Health Interview Survey. *Journal of Interpersonal Violence* published online 24 Sept 2012 DOI: 10.1177/0886260512459384

Gordon DS, Graham L, Robinson M, Taulbut M. *Dimensions of Diversity: Population Differences and Health Improvement Opportunities.* Glasgow: NHS Health Scotland, 2010.

Grant D, Caldwell J, Padilla-Frausto DI, Axdin M, Aguilar-Gaxiola S. *More than half a million California adults seriously thought about suicide in the past year.* Los Angeles: UCLA Center for Health Policy Research, 2012.

Grella CE, Greenwell L, 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.

Greenwood GL, Relf MV, Huang B, Pollack L, Canchola JA, Catania JA. Battering victimization among a probability-based sample of men who have sex with men. *Am J Public Health* 2002;92:1964-1969.

Guasp A. *Gay and Bisexual Men's Health Survey.* London: Stonewall, 2012.

Haseldon L and Joloza R. *Measuring sexual identity: A guide for researchers.* Newport: Office for National Statistics, 2010.

Hatzenbuehler ML, Keyes KM, Hasin DS. State-level policies and psychiatric morbidity in lesbian, gay, and bisexual populations. *Am J Public Health* 2009;99:2275-2281.

Hatzenbuehler ML, Phelan JC, Link BG. Stigma as a fundamental cause of population health inequalities. *Am J Public Health* 2013;103(5):813-821.

Health Canada. *"Certain Circumstances" – Issues in Equity and Responsiveness in Access to Health Care in Canada.* Ottawa: Health Canada, 2001.

Hegerl U, Wittmann M, Arensman E, van Audenhove C, Bouleau J-H, van der Feltz-Cornelis C, Gusmão R, Kopp M, Löhr C, Maxwell M, Meise U, Mirjanič M, Óskarsson H, Pérez Sola V, Pull C, Pycha R, Rička R, Tuulari J, Värnik A, Pfeiffer-Gerschel T. The 'European Alliance Against Depression (EAAD)': A multifaceted community-based action programme against depression and suicidality. *The World Journal of Biological Psychiatry* 2008;9:51-59.

Herek GM. Confronting sexual stigma and prejudice: theory and practice. *Journal of Social Issues* 2007;63(4):905-925.

Heslin KC, Gore JL, King WD, Fox SA. Sexual orientation and testing for prostate and colorectal cancers among men in California. *Medical Care* 2008;46(12):1240-1248.

HHS LGBT Issues Coordinating Committee. *2012 Report.* Washington, DC: Department of Health & Human Services, 2012.

Hunt R and Fish J. *Prescription for Change: Lesbian and bisexual women's health check 2008.* London: Stonewall, 2012.

INCLUSION Project. *Towards a Healthier LGBT Scotland.* Edinburgh: Stonewall Scotland, 2003.

Jesdale BM and Mitchell JW. Reported excellent health among men in same-sex and mixed-sex couples: Behavioral Risk Factor Surveillance System, 1993-2010. *Journal of Homosexuality* 2012;59:788-807.

Joloza R, Evans J, O'Brien R. *Measuring Sexual Identity: An Evaluation Report.* Newport: Office for National Statistics, 2010.

Jorm AF. Mental health literacy: empowering the community to take action for better mental health. *American Psychologist* 2012;67:231-243.

Kämpfer N and Fluri P. *unbeachtet mittendrin: Diskriminierung von schwulen und lesbischen KlientInnen in der ambulanten Beratung.* Bern: Edition Soziothek, 2001.

Kann L, O'Malley Olsen E, McManus T, Kinchen S, Chyen D, Harris WA, Wechsler H. Sexual identity, sex of sexual contacts, and health-risk behaviors among students in grades 9-12 - youth risk behavior surveillance, selected sites, United States, 2001-2009. *MMWR* 2011;60(7):1-133.

Leonard W, Pitts M, Mitchell A, Lyons A, Smith A, Patel S, Couch M, Barrett A. *Private Lives 2: The second national survey of the health and wellbeing of GLBT Australians.* Melbourne: La Trobe University, 2012.

Link BG and Phelan JC. Conceptualizing stigma. *Annu Rev Sociol* 2001;27:363-385.

Link BG and Phelan JC. Stigma and its public health implications. *Lancet* 2006;367:528-529.

Lippa RA. Gender-related traits of heterosexual and homosexual men and women. *Arch Sex Behav* 2002;31(1):83-98.

Luby J. *LGBT Health and Social Care Needs Assessment.* Bristol: Tribal, 2009.

Marsh A and Sahin-Dikmen S. *Discrimination in Europe.* Eurobarometer 57. Brussels: European Commission, 2003.

Martorelli T. *For People, Not for Profit: A History of Fenway Health's First Forty Years.* Bloomington, Ind.: AuthorHouse, 2012.

Mayer K, Appelbaum J, Rogers T, Lo W, Bradford J, Boswell S. The evolution of the Fenway Community Health Model. *Am J of Public Health* 2001;91(6):892-894.

Mellor R. *Wirral's Lesbian, Gay, Bisexual and Transgender Needs Assessment.* NHS: Wirral, 2012.

Meyer C, Blissett J, Oldfield C. Sexual orientation and eating psychopathology: The role of masculinity and femininity. *International Journal of Eating Disorders* 2001;29(3):314-318.

Meyer IH and Northridge ME. *The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual and Transgender Populations.* New York: Springer, 2007.

Mikalson P, Pardo S, Green J. *First, Do No Harm: Reducing Disparities for Lesbian, Gay, Bisexual, Transgender, Queer and Questioning Populations in California.* Sacremento: Mental Health America of Northern California, 2012.

Mills TC, Paul J, Stall R, Pollack L, Canchola J, Chang YJ, Moskowitz JT, Catania JA. Distress and depression in men who have sex with men: the Urban Men's Health Study. *Am J Psychiatry* 2004;161:278-285.

Nyitray A, Altman K, Corran R. *Arizona Lesbian, Gay, Bisexual and Transgender Health Needs Assessment.* Phoenix: Wingspan, 2006.

Paul J, Catania JA, Pollack L, Moskowitz J, Canchola J, Mills TC, Binson D, Stall R. Suicide attempts among gay and bisexual men: lifetime prevalence and antecedents. *Am J of Public Health* 2002;92(8):1338-1345.

Pega F, Gray A, Veale J. *Sexual orientation data in probability surveys: improving data quality and estimating core population measures from existing New Zealand survey data.* Wellington: Statistics New Zealand, 2010.

Pink Triangle Services. *How well are we doing? A Survey of the GLBT Population of Ottawa. Ottawa:* Pink Triangle Services, 2001.

Pitts M, Smith A, Mitchell A, Patel S. Private Lives: *A Report on the Health and Wellbeing of GLBTI Australians.* Melbourne: La Trobe University, 2006.

Rieger G, Linsenmeier JAW, Gygax L, Bailey JM. Sexual orientation and childhood gender nonconformity: evidence from home videos. *Developmental Psychology* 2008;44(1):46-58.

Roberts AL, Rosario M, Corliss HL, Koenen KC, Austin SB. Childhood gender nonconformity: a risk indicator for childhood abuse and posttraumatic stress in youth. *Pediatrics* 2012;129:410–417.

Rothblum ED, Balsam KF, Mickey RM. Brothers and sisters of lesbians, gay men, and bisexuals as a demographic comparison group: an innovative research methodology to examine social change. *The Journal of Applied Behavioral Science* 2004;40(3):283-301.

Ryan B and Chervin M. *Framing gay men's health in a population health discourse.* Saskatoon: Gay and Lesbian Health Services, 2001.

Ryan C and Bradford J. Conducting the National Lesbian Health Care Survey: first of its kind. *Journal of the Gay and Lesbian Medical Association* 1999;3(3):91-97.

Sandfort TG, Bakker FC, Schellevis FG, Vanwesenbeeck I. Sexual orientation and mental and physical health status: findings from a Dutch population survey. *Am J Public Health* 2006;96(6):1119-1125.

Sandfort TGM, Bakker FC, Schellevis FG, Vanwesenbeeck I. Coping styles as mediator of sexual orientation-related health differences. *Arch Sex Behav* 2009;38:253-263.

Sandfort TGM, de Graaf R, Bijl RV, Schnabel P. Same-sex sexual behavior and psychiatric disorders: Findings from the Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Arch Gen Psychiatry* 2001;58:85-91.

Saphira M and Glover M. New Zealand National Lesbian Health Survey. *Journal of the Gay and Lesbian Medical Association* 2000;4(2):49-56.

Sapolsky RM. The influence of social hierarchy on primate health. *Science* 2005;308:648-652.

Schneeberger A, Rauchfleisch U, Battegay R. Psychosomatische Folgen und Begleitphäenomene der Diskriminierung am Arbeitsplatz bei homosexuellen Menschen. *Schweizer Archiv für Neurologie und Psychiatrie* 2002;153(3):137-143.

Sell RL. Defining and measuring sexual orientation: a review. *Archives of Sexual Behavior* 1997;26(6):643-658.

Singer M and Clair S. Syndemics and public health: reconceptualizing disease in a bio-social context. *Medical Anthropology Quarterly* 2003;17(4):423-441.

Stall R, Mills TC, Williamson J, Hart T, Greenwood G, Paul J, Pollack L, Binson D, Osmond D, Catania JA. Association of co-occurring psychosocial health problems and increased vulnerability to HIV/AIDS among urban men who have sex with men. *Am J of Public Health* 2003;93:939-942.

Statistics New Zealand. *Considering sexual orientation as a potential official statistic: discussion paper.* Wellington: Statistics New Zealand, 2008.

Statistics New Zealand. *Sexual orientation focus group research: a qualitative study.* Wellington: Statistics New Zealand, 2003.

Steele LS, Ross LE, Dobinson C, Veldhuizen S, Tinmouth JM. Women's sexual orientation and health: results from a Canadian population-based survey. *Women & Health* 2009;49(5):353-367.

Take the PULSE project team. *The Pulse: the Kansas City/LGBT Community Health Assessment.* Kansas City, Missouri: Kansas City Health Department and the Lesbian & Gay Community Center of Greater Kansas City, 2004.

Tang H, Greenwood GL, Cowling DW, Lloyd JC, Roeseler AG, Bal DG. Cigarette smoking among lesbians, gays, and bisexuals: how serious a problem? *Cancer Causes Control* 2004;15(8):797-803.

Tjekema M. Health care use among gay, lesbian and bisexual Canadians. *Health Reports* 2008;19(1):53-64.

TNS Opinion and Social. *Discrimination in the European Union.* Special Eurobarometer 263. Brussels: European Commission, 2007.

TNS Opinion and Social. *Discrimination in the European Union: Perceptions, Experiences, and Attitudes.* Special Eurobarometer 296. Brussels: European Commission, 2008.

TNS Opinion and Social. *Discrimination in the EU in 2009.* Special Eurobarometer 317. Brussels: European Commission, 2009.

TNS Opinion and Social. *Discrimination in the EU in 2012.* Special Eurobarometer 393. Brussels: European Commission, 2012.

Weiss M. Explanatory Model Interview Catalogue (EMIC): framework for the comparative study of illness. *Transcultural Psychiatry* 1997;34(2):235-263.

Wilkinson RG. Health, hierarchy, and social anxiety. *Annals New York Academy of Sciences* 1999;896:48-63.

Wilkinson RG and Pickett K. *The Spirit Level: Why More Equal Societies Almost Always Do Better.* London: Allen Lane, 2009.

Whybrow P, Ramsay J, MacNee K. *The Scottish Health Survey: Equality Groups.* Edinburgh: The Scottish Government, 2012.

Williams S. *Bradford & District LGB Health Needs Assessment.* Bradford: Equity Partnership, 2007.

Wolitski RJ, Stall R, Valdiserri RO. *Unequal Opportunity: Health Disparities Affecting Gay and Bisexual Men in the United States.* Oxford: Oxford University Press, 2007.