Health disparities and communication inequalitites : the case of Switzerland

Studies in Communication Sciences 11/1 (2011) 35–49

Nicola Diviani* & Kasisomayajula Viswanath**

Health Disparities and Communication Inequalities: The Case of Switzerland

With the extraordinary developments in biomedical sciences and communication, the importance of communication in health promotion and disease prevention has been recognized by researchers in many disciplines as well as by practitioners in public health and medicine. Until now much attention to communication in health has focused on how mass and new media could be used in health interventions and understanding the challenges in communication between providers and patients. Yet much less attention has been paid to how communication, specifically, inequalities in communication, may contribute to or exacerbate health disparities. A number of social determinants such as class, race, ethnicity, occupation and geography among others have been recognized as influencing disparities in health outcomes. Given the rapid evolution of communication technologies, it is critical to understand the potential for communication to either bridge or widen existing disparities and the mechanisms behind them. This paper argues that communication inequalities are an important determinant, albeit an addressable one, in influencing the trajectories of disparities. We address this issue with a selective review of literature, illustrating how health disparities can be explained by communication inequalities in Switzerland, where in theory, in light of the organization of the Swiss healthcare system, such health disparities should be minimal.

Keywords: healthdisparities,communicationinequalities,healthcommunication.

* Università della Svizzera italiana, nicola.diviani@usi.ch

** Harvard School of Public Health & Dana-Farber Cancer Institute, Boston, USA, vish_viswanath@dfci.harvard.edu

1. Health Disparities and Communication Inequalities

The rapid diffusion of new communication technologies in the last decade has provided people with an unprecedented number of sources of information about their health. As patients, people have now the theoretical possibility to make important health-related decisions after carefully weighing different alternatives based on information (Viswanath 2005). One possible pitfall of the availability of so much information is that it can sometimes become overwhelming, putting some people at a disadvantage. The sheer amount as well as seemingly contradictory information may make it difficult for people to decide what kind of information can be essential to their health and which, on the contrary, is useless or could even be detrimental. This is particularly true for some social groups, traditionally identified as those with lower education or belonging to ethnic or racial minorities, which differ in access to information and in the ability to act on it, as well as in making sure that it is accurate, readily available and easy to use. These people, in short, suffer from communication inequalities (Viswanath 2011). One potential consequence is, we contend, that people belonging to lower SES groups may experience risk factors, prevention and screening behaviors differently leading to poorer health status. Traditionally, literature about health disparities has focused on contexts where policies to prevent them were less explicit and where there are already inequalities in other contexts such as wealth or occupation. In this essay we will draw example from a country where such inequalities should normatively not exist and where, additionally, some mechanisms have been explicitly put in place to prevent them from emerging. Our goal is to show that even in countries such as Switzerland, where the welfare state is traditionally considered being in a strong position, disparities and inequalities exist, but they may have different roots and therefore present themselves in different forms. In particular, with the help of several examples, we will argue that when dealing with disparities and inequalities in a specific context there is a need to consider all the social determinants of health, such as age, gender, ethnicity, education, income, geography or access and to assess the extent to which they are more or less prominent in the specific environment under investigation. This could allow a deeper understanding of social inequalities and their role in shaping the health of the population, and at the same time it would provide some information on how to adapt public health strategies to different contexts.

1.1. Health Disparities

Health disparities have been defined in several different ways, but they all more or less refer to the differential distribution of risk factors and the consequent disease burden leading to disproportionately premature morbidity and mortality among different groups, characterized usually by socioeconomic status (SES), race and ethnicity, and geography, but may also include other stratifiers such as gender, age, and disability (Berkman & Kawachi 2000). Disparities have been extensively documented across a range of risk factors – tobacco use, obesity, poor diet and physical activity, and prevalence in disease conditions such as cancer, HIV/AIDS, diabetes, and heart disease among others; differences in health care such as access, detection, diagnosis, and treatment; and differences in end-of-life care and survivorship (IOM 1999, 2003a, 2003b; Christian et al. 2006; Sequist & Schneider 2006; Mack et al. 2010).

No single theory or framework captures the causal conditions that lead to such inequalities, and research has generally concluded that social and structural determinants such as neighborhood or social class interact with individual factors such as stress and lifestyle across multiple levels, resulting in disparate outcomes among groups and territories (Kaplan et al. 2000; Krieger 2000; Williams & Sternthal 2010). A majority of health problems are attributable to lifestyles and behaviors that are modifiable given the right opportunity structure, access to health care (Emmons 2000), and, above all, information (Viswanath 2006). Most major chronic illnesses are preventable through appropriate health strategies such as avoiding or quitting tobacco use, pursuing an active lifestyle, proper diet and nutrition, and timely health screening (IOM 2002). Communication, both public and interpersonal (e.g., between physician and patient), can play a central role in promoting preventive behaviors (Hornik 2002; IOM 2002; Smedley et al. 2003).

1.2. Communication Inequalities

Given the powerful role of communication in shaping health (Hornik 2002; IOM 2002; Viswanath & Finnegan 2002), we argue that inequalities in communication offer one potent explanation for inequalities in

health. Communication inequality is defined as the differences among social groups in their ability to access, process, and act on information. There are several dimensions to communication inequality: (a) access to and use of information channels and services, (b) attention to and processing of health information, and (c) capacity and ability to act on information provided (Viswanath 2006). Possible communication inequalities related to access include differences in availability of communication technologies like broadband Internet or mobile phones; examples of inequalities in processing include differences in literacy or formal education; finally, inequalities in the capacity and ability to act on information provided can include for example the differential availability of health services and providers in close areas, where people could engage in interpersonal discussions about health-related topics.

2. The Case of Switzerland

The existence of health disparities across the globe and their possible reasons are widely documented (CSDH 2008). It is often assumed, though not always explicitly stated, that disparities are less likely in systems that provide universal access to basic health care (WHO 2010). This assumption is questionable, as we will show in the next few sections that they exist even in countries where universal access to health care is guaranteed by law to everyone, such as Switzerland. Always keeping in mind the comparison with the situation in the United States, a country with a similar political and economic structure but suffering from some well-known inequalities in the healthcare context, mostly due to the lack of universal access (Ayres 1996; WHO 2010), we will highlight the main disparities and make some speculations about their possible causes. The final goal of this essay is to suggest directions for future investigations to examine health disparities in the context of systems where access is guaranteed.

Switzerland is a country in Central Europe (but it is not part of the European Union) with a population of less than 8 million people. Despite the small size of the country, its population is extremely fragmented, mostly because of its three linguistic regions (German, French, and Italian) and its cantonal political organization. Switzerland is divided into 26 cantons: even if there is a central government and a federal constitution, each canton has

its own government, with its own laws, policies and regulations in different sectors. In the case of health care, although a national law grants universal access, every canton has its own regulations about financing of medical services, such as screenings. Additionally Switzerland is very diverse in terms of geographical configuration, including some highly populated urban areas (e.g., the cities of Zurich or Geneva), home to more than 75 % of the total Swiss population (ARE 2009), as well as several rural areas and mountain regions. According to the World Bank, in 2009 Switzerland was the fourth richest country in the world, with a Gross domestic product (GDP) per capita of $ 63,629 (The World Bank 2011). Given that it has long been accepted that material wellbeing cannot alone explain the broader quality of life in a country, the latter has been measured via several quality-of-life measures, e.g., the Economist Intelligence Unit's index (Unit 2005), assessing for example health, job security, family relations, and political freedom. While some countries, for instance the United States, have high material wellbeing but score lower in the quality of life index, Switzerland maintains a high position in this dimension as well, suggesting a high quality of life in every domain, including health.

2.1. Health and Health Disparities in Switzerland

The most recent data from the 2007 Swiss Health Survey (OFS 2010) show that 87 % of the Swiss population rates its own health status as "good" or "very good," confirming the general good standing of the population's health. A closer look at the prevalence and incidence of specific medical conditions, however, suggests a different picture. Take cancer for example[1]. Switzerland has around 35,000 new cases and around 16,000

[1] As it would be impossible to present data about every single disease, the focus of the next paragraphs will be on a single one: cancer. The choice of this focus resides first in the fact that in Switzerland, as in most developed countries, cancer is the second leading cause of death, preceded only by cardiovascular diseases. A second reason for the choice to focus on cancer is the fact that, unlike in the case of other diseases, very detailed data exist about its incidence, prevalence and mortality. Indeed, not only the Swiss Statistics Office systematically collects data about the cause behind every death in Switzerland, including cancer, but additionally several cantonal and regional tumor registries exist, which collect specific data about cancer and in 2010 covered almost 70 % of the Swiss population (OFS 2011a).

cancer-related deaths every year. In the case of some cancers, such as breast, testicular, prostate, melanoma and Hodgkin lymphomas, Swiss incidence rates are amongst the highest in Europe (OFS 2011a). Despite its relatively high prevalence, 5-year cancer survival rate in Switzerland is among the highest in Europe. This is arguably a good indicator of a highly functioning Swiss healthcare system that likely detects cancers early through screening and treats them effectively once they have been diagnosed. The high cancer prevalence, however, is at the same time an indicator of possible lacks concerning risk factors diffusion and prevention. Data on prevention and screening behaviors of the Swiss population seem indeed to confirm this (OFS 2010). For instance, three out of five people in Switzerland do not exercise enough (less than 3 intense or 5 moderate exercise sessions a week), only one in three people follow the "5 serving of fruits and/or vegetables a day" recommendation, almost 40 % of the population is overweight (8 % is obese), almost one-third smoke, and around 20 % of the population has an alcohol consumption that could be dangerous for its own health. Rates for participation in different cancer screening programs (OFS 2010) vary by the type of cancer. For example, only 30 % of the Swiss population above 50 (rates range from just above 20 % for people aged 50-59 to around 40 % for people 80+) has ever had a Fecal Occult Blood Test (FOBT) and only 25 % has ever had an endoscopy (rates range from a little less than 20 % for people aged 50-59 to around 40 % for people 80+). Prostate cancer screening is more common, with more than 60 % of men over 50 having already had a Prostate-Specific Antigen (PSA) exam and percentages rising to 80 % for men above 70. In the case of breast cancer, slightly less than 50 % of women above 20 have had a mammogram, but percentages rise to almost 80 % for women between 50 and 69 (the age range for which the screening is recommended), showing good adherence to screening recommendations. Similarly almost 80 % of women of all ages have already had a Pap test as a screening for cervix cancer.

A closer look into cancer incidence, risk factors prevalence and screening participation also suggests that there are some disparities between men and women and between people with different educational level. The risk of developing a cancer before the age of 70 is indeed higher for men (25 %) than for women (20 %). But this is not true for every

type of cancer: in the last 15 years, for example, the risk of developing lung cancer has increased for women, while is decreasing for men (OFS 2011a). Unfortunately there are no data describing cancer incidence by educational level.

On risk factors as well, gender plays a role. Women appear to pay more attention than men to their diet, smoke less and drink less alcohol. On the other hand, men tend to adhere more than women to physical activity recommendations. People with lower educational level pay less attention to their diet and, when it comes to participation in cancer screening, educational level plays a role in both mammogram and Pap-tests, where women with lower educational level show significantly lower participation rates (OFS 2010).

2.2. Regional Disparities in Health Outcomes

A significant social determinant of interest in the case of Switzerland is geography. Given the complex internal differentiation of Switzerland (at the geographical, political and cultural level), we suggest that the region where a person lives could play a fundamental role in predicting his/her health outcomes.

On cancer incidence and mortality, for example, epidemiological data show that the incidence of all cancers related to excessive tobacco and alcohol consumption (e.g., lung or larynx) is higher in Italian-speaking and French-speaking Switzerland. Breast cancer incidence is higher in Italian-speaking and French-speaking Switzerland but its mortality is higher in the German-speaking part. Incidence of cervical cancer in some German-speaking cantons is two times the incidence in French-speaking cantons (OFS 2011a). When it comes to risk factors, data show several regional differences: people living in the German-speaking and Italian-speaking part of Switzerland pay more attention to diet than French-speaking Swiss. The percentage of people who drink alcohol on a daily basis is higher in the Italian-speaking region, while the prevalence of problematic alcohol consumption is higher in the French-speaking part (OFS 2010). Regional differences are evident in cancer screening patterns as well, where the three linguistic region present significantly different participation rates to all the recommended tests (see Table 1).

Table 1: Cancer Screening Participation by Swiss Linguistic Region

	German-speaking	French-speaking	Italian-speaking
Fecal Occult Blood Test (Men and women 65+)	46 %	28 %	38 %
Mammogram (Women 50–69)	75 %	90 %	75 %
Pap test (Women 20+)	85 %	61 %	79 %

Source: OFS 2010

Interestingly it is not possible to identify a linguistic region where screening in general is more prevalent. French-speaking women, for example, present at the same time the highest rate of mammograms and the lowest rate of Pap tests (OFS 2010). The question arises whether the differences in cancer incidence, in the prevalence of risk factors, and in cancer screening utilization between the regions can be fully explained by underlying inequalities among them in SES and social status of their populations or if these differences have other roots that are unique to the Swiss context.

2.3. Possible Explanations

Existing publications dealing with disparities (mostly government reports) do not investigate further the reasons behind the regional disparities presented above. In the next paragraphs we offer some possible hypotheses. One, some of the disparities could be explained by differences in health-care policies in different regions. For example, the difference in rates of mammography between the French-speaking part of Switzerland and the rest of the country could possibly reside in the fact that mammograms are covered by insurance in all the six French-speaking cantons, while this is not the case elsewhere in Switzerland.

Two, there are underlying differences in SES and social status of the population of the different regions, which could at least in part explain the differences in health outcomes. Cantons and linguistic regions differ significantly on material wellbeing (GDP per capita ranges from $38,000 in Canton Jura to $ 110,000 in Canton Basel City), and some evidence

of a relationship between SES and health disparities can be found, for example, comparing data from the Italian-speaking canton and average data from the eastern cantons on unemployment (5.1 % vs. 2.5 %), percentage of foreigners in the population (25.4 % vs. 16 %) and subjective health status (80.1 % vs. 88.5 % of the population rate their health as good or very good) (OFS 2011b).

Three, ethnic variation, particularly percentage of immigrants in a given canton, may also explain regional disparities. The proportion of immigrants in cantons ranges from less than 10 % in some central and isolated cantons to above 30 % in some cantons close to the borders of the country (with a maximum of almost 40 % in the Canton of Geneva) (OFS 2011b). It is worth speculating how these differences in social formation affect health outcomes where basic access to health is guaranteed by law to everyone. The Swiss universal health insurance coverage includes a set of medical services and allows an income-based premium reduction system, thus ensuring access to everyone, in theory, eliminating any potential inequalities (Lehmann 2010). Yet, inequalities still exist. First, guarantee of access to services do not include illegal immigrants who do not leave the country after their asylum request has been rejected. Second, even if legally foreign-born residents in Switzerland have the rights to access to healthcare, they often do not fully take advantage from the services the health system has to offer. For immigrants, indeed, access to (and adequacy of) health care services is also affected by language and cultural barriers[2]. Three, the policy of insurance deductions may exclude people from access. For example people in the lower economic strata of the population, but who are not poor enough to be eligible for governmental financial assistance, tend to choose health insurance policies with high deductibles, because of cheaper monthly premiums. As a result of this higher burden put on their own finances, people tend not to use health services unless they are

[2] Personnel in health care institutions and in organizations active in health promotion and disease prevention often lack cultural sensitivity skills, and institutional, financial and administrative barriers hinder the use of cultural mediation services. Moreover, health promotion and disease-prevention programs and campaigns are rarely designed in ways that adequately address the needs of the immigrant population (OBSAN 2008; Spang & Zuppinger 2010).

really necessary. Needless to say that screenings and check-ups unrelated to actual health problems are the first things that people will most likely ignore.

2.4. The Role of Communication Inequalities

It is evident that health disparities are prevalent in Switzerland despite the guarantee of universal access. These disparities are evident across regional, linguistic/cultural, socioeconomic, gender and ethnic lines. The patterns, however, are not always clear cut and one has to take issues of ecological validity into account. For example, cantons or regions with high percentage of foreigners are not the ones whose populations report the worst health status. Or, on the other side, cantons or regions with high percentage of college graduates are not the ones whose populations report the best health outcomes (OFS 2011b).

We speculate then that some of these discrepancies could be explained by communication inequalities (Viswanath 2006). As stated in the introduction to this essay there are several dimensions to communication inequality: (a) access to and use of information channels and services, (b) attention to and processing of health information, and (c) capacity and ability to act on information provided. Social determinants play a role in particular in the attention to and the processing of health information. Access to information channels and capacity to act on the information provided, however, are also a function of the environment in which the person lives and works. Data about regional communication disparities in Switzerland (OFS 2011b) show that indeed some of them are very important and could explain differences in health outcomes.

Unlike in the United States (Viswanath 2011), there is widespread penetration of the Internet and of the mobile phone network in Switzerland. According to the major Swiss telecommunication services provider companies (which provide both Internet and mobile phone access), some forms of broadband Internet access and cell phone network coverage are available to the almost everyone in Switzerland (99 % of the population) (Swisscom 2011a, 2011b). On the other hand, while there is access to telecommunication services, there are major differences in exposure to Public Service Announcements (PSA) in form of billboards, one of the most used

channels for government public health communication in Switzerland (BAG 2011). The billboard placement only includes urban and suburban regions (SGA Affichage 2011), leaving the rural Swiss population (almost 25 %) potentially unreached.

Another dimension of communication inequality, maybe the most important one, regards the capacity and ability to act on information provided. The Swiss Federal Office of Statistics has created in 2001 a so-called "Accessibility Index" which measures the average minimal distance to 22 different basic services (e.g., public hospitals, or grocery stores). Data show that there are huge differences in accessibility between the different regions, with the central regions presenting the highest scores (indicating poor accessibility). For example, the time needed to travel by public transportation to the first medical practice is almost 5 times higher for people living in a rural area than for those living in or close to the cities (OFS 2011b). The situation is a little better if we consider the use of private vehicles. This, however, does not compensate for the inequalities, in particular because the same regions also have rates of private vehicles per inhabitants lower than the national average (less than 500 vehicles every 1,000 inhabitants).

These data suggest that, even if people living in areas with bad accessibility are actually able to have access to health information through communication technologies like the Internet and/or mobile phones, they will end up facing several barriers to the actual behavior implementation, or acting on the information, for instance being screened for cancer.

3. Conclusion

The aim of this essay was to deepen and broaden the discussion of health disparities that emerge in a country where such disparities should in theory not exist. First, it must be understood that this is a selective review that speculates why disparities may still emerge in spite of guaranteed universal access to health care warranting more systematic exploration in the future. Despite this limitation this review provides us with some insights on how to examine and approach the study of health disparities and communication inequalities in societies that are more equitable than the United States.

If we only think of the traditional determinants of health, indeed, the Swiss model of universal basic access to healthcare should prevent health disparities and inequalities to emerge. The several examples presented in the essay, however, show that when we approach the topic of health disparities and communication inequalities we cannot just apply a universal formula to every context: different inequalities can be found not only between different countries but *within* a single country as well. To make sure to take all the complexity into account when dealing with disparities, we should first of all determine which are the inequalities that could drive health disparities in the particular context under investigation. In the case of Switzerland, the traditional gender, income and ethnicity differences are not the only ones that could play a role. In second place we should try to understand on which dimensions communication inequalities could have an impact. As we have seen, inequalities can impact the access to and use of information channels and services (as in the case differences in availability of IT infrastructure, or in diffusion of PSA messages), attention to and processing of health information (as in the case of differences in education or ethnicity), or the capacity and ability to act on information provided (as in the case of differences in accessibility and public transportation infrastructure). Only then we will be able to really adapt health communication interventions to the specific contexts. Such an approach would also avoid health disparities a subject that is often not discussed based on the assumption that the system has provided universal health care access by law.

References

AYRES, S.M. (1996). Health Care in the United States: The Facts and the Choices. Chicago: American Library Association.

BERKMAN, L.F. (1986). Social Networks, Support, and Health: Taking the Next Step forward. *American Journal of Epidemiology* 123: 559–562.

CHRISTIAN, C.K. et al. (2006). A Multi-institutional Analysis of the Socioeconomic Determinants of Breast Reconstruction: A Study of the National Comprehensive Cancer Network. *Annals of Surgery* 243: 241–249.

COMMISSION ON SOCIAL DETERMINANTS OF HEALTH CSDH (2008). Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health. Final Report of the Commission on Social Determinants of Health. Geneva, World Health Organization.

DEMERS, D. (1996). The Menace of Corporate Newspaper: Fact or Fiction. Ames, IA: Iowa State University Press.

EMMONS, K.M. (2000). Behavioral and Social Science Contributions to the Health of Adults in the United States. In: B.D. SMEDLEY & S.L. SYME (eds.). Promoting Health: Intervention Strategies from Social and Behavioral Research. Washington, DC: National Academy Press: 254–321.

FRIEDLAND, L.A. & MCLEOD, J.M. (1999). Community Integration and Mass Media: A Reconsideration. In: D. DEMERS & K. VISWANATH (eds.). Mass Media, Social Control & Social Change: A Macrosocial Perspective. Ames, IA: Iowa State University Press: 197–226.

GILPIN, E.A. et al. (2003). Changes in Youth Smoking Participation in California in the 1990s. *Cancer Causes & Control* 14: 985–993.

HORNIK, R. (ed.). (2002). Public Health Communication: Evidence for Behavior Change. New York: Lawrence Erlbaum.

INSTITUTE OF MEDICINE IOM (1999). The Unequal Burden of Cancer. Washington: National Academies Press.

INSTITUTE OF MEDICINE IOM (2002). Speaking of Health: Assessing Health Communication Strategies for Diverse Populations. Washington, DC: The National Academies Press.

INSTITUTE OF MEDICINE IOM (2003a). Fulfilling the Potential of Cancer Prevention and Early Detection. Washington: National Academies Press.

INSTITUTE OF MEDICINE IOM (2003b). Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington: National Academies Press.

KAPLAN, G.A.; EVERSON, S.A. & LYNCH, J.W. (2000). The Contribution of Social and Behavioral Research to an Understanding of the Distribution of Disease: A Multilevel Approach. In: B.D. SMEDLEY & S.L. SYME (eds.). Promoting Health: Intervention Strategies from Social and Behavioral Research. Washington: National Academy Press.

KAWACHI, I. (1999). Social Capital and Community Effects on Population and Individual Health. *Annals of the New York Academy of Science* 896: 120–130.

KAWACHI, I. & BERKMAN, L. (2000). Social Cohesion, Social Capital, and Health. In: L. BERKMAN & I. KAWACHI (eds.). Social Epidemiology. New York: Oxford University Press: 174–190.

KAWACHI, I.; KENNEDY, B.P. & GLASS, R. (1999). Social Capital and Self-rated Health: A Contextual Analysis. *American Journal of Public Health* 89: 187–193.

KRIEGER, N. (2000). Discrimination and Health. In: L.F. BERKMAN & I. KAWACHI (eds.). Social Epidemiology. New York: Oxford University Press.

LEHMANN, P. (2010). Inégalités sociales et santé en Suisse – Analyse des actions concrètes menées par et dans les cantons visant à diminuer les inégalités sociales face à la santé. Lausanne: HECV-Santé.

MACK, J.W. et al. (2010). Racial Disparities in the Outcomes of Communication on Medical Care Received Near Death. *Archives of Internal Medicine* 170: 1533–1540.

PUTNAM, R. (2000). Bowling Alone: The Collapse and Revival of the American Community. New York: Simon & Schuster.

SEQUIST, T.D. & SCHNEIDER, E.C. (2006). Addressing Racial and Ethnic Disparities in Health Care: Using Federal Data to support Local Programs to eliminate Disparities. *Health Services Research* 41: 1451–1468.

SGA AFFICHAGE (2011). SGA / Planification / Zones cibles (last retrieved on 23.05.2011 from: http://www.apg.ch/fr/planification/zones-cibles).

SMEDLEY, B.; STITH, A. & NELSON, A. (eds.). (2003). Unequal Treatment: Confronting Racial and Ethnic Disparities in Health. Washington, DC: The National Academies Press.

SPANG, T. & ZUPPINGER, B. (2010). Switzerland: Immigrants facing Poverty and Social Exclusion – The Migration and Public Health Strategy. In: T. KOLLER (ed.). Poverty and Social Exclusion in the WHO European Region: Health Systems Respond. Copenhagen: WHO Regional Office for Europe.

STAMM, K.R. (1985). Newspaper Use and Community Ties: Toward a Dynamic Theory. Norwood, NJ: Ablex Publishing.

SWISS FEDERAL OFFICE OF PUBLIC HEALTH BAG (2011). Federal Office of Public Health in Brief. Bern: Office fédéral de la santé publique.

SWISS HEALTH OBSERVATORY OBSAN (2008). La santé en Suisse – Rapport national sur la santé 2008. Neuchâtel: Observatoire suisse de la santé.

SWISS STATISTICAL OFFICE OFS (2002). Soziale Ungleichheit und Gesundheit in der Schweiz. Neuchâtel: Office fédéral de la statistique.

SWISS STATISTICAL OFFICE OFS (2010). Santé et comportements vis-à-vis de la santé en Suisse 2007. Enquête suisse sur la santé. Neuchâtel: Office fédéral de la statistique.

SWISS STATISTICAL OFFICE OFS (2011a). I tumori in Svizzera. Situazione e sviluppi dal 1983 al 2007. Neuchâtel: Office fédéral de la statistique.

SWISS STATISTICAL OFFICE OFS (2011b). Disparités régionales en Suisse – Indicateurs clés. Neuchâtel: Office fédéral de la statistique.

SWISSCOM (2011a). Internet a banda larga per voi. In tutta la Svizzera (last retrieved on 23.05.2011 from: http://www.swisscom.ch/fxres/files/infrastruktur/Grundversorgung_it.pdf).

SWISSCOM (2011b). Mobile Network Coverage (last retrieved on 23.05.2011 from: http://www.swisscom.ch/res/beratung-service/infrastruktur/mobilnetz/index.htm).

THE WORLD BANK (2011). GDP per capita (current US$) (last retrieved on 23.05.2011 from: http://data.worldbank.org/indicator/NY.GDP.PCAP.CD/countries).

TICHENOR, P.J.; DONOHUE, G.A. & OLIEN, C.N. (1980). Community Conflict and the Press. Newbury Park, CA: Sage Publications.

UFFICIO FEDERALE DELLO SVILUPPO TERRITORIALE ARE (2009). Monitoraggio dello spazio urbano svizzero – Analisi delle città e degli agglomerati. Bern: Ufficio federale dello sviluppo territoriale.

UNIT, T.E.I. (2005). The Economist Intelligence Unit's Quality-of-Life Index. *The Economist*: 1–4.

VISWANATH, K. (2005). The Communication Revolutions and Cancer Control. *Nature Reviews Cancer* 5: 828–835.

VISWANATH, K. (2006). Public Communications and its Role in reducing and eliminating Health Disparities. In: G.E. THOMSON; F. MITCHELL & M.B. WILLIAMS (eds.). Examining the Health Disparities Research Plan of the National Institute of Health: Unfinished Business. Washington, DC: The National Academies Press: 215–253.

VISWANATH K. (2011). Cyberinfrastructure: An Extraordinary Opportunity to bridge Health and Communication Inequalities? *American Journal of Preventive Medicine* 40: 245–248.

VISWANATH, K. & DEMERS, D. (1999). Mass Media from a Macrosocial Perspective. In: D. DEMERS & K. VISWANATH (eds.). Mass Media, Social Control and Social Change: A Macrosocial Perspective. Ames, IA: Iowa State University Press: 3–28.

VISWANATH, K. & FINNEGAN, J.R. (2002). Community Health Campaigns and Secular Trends: Insights from the Minnesota Heart Health Program and Community Trials in Heart Disease Prevention. In: R. HORNIK (ed.). Public Health Communication: Evidence for Behavior Change. New York: Lawrence Erlbaum: 289–312.

VISWANATH, K.; RANDOLPH, W. & FINNEGAN, J.R. (2006). Social Capital and Health: Civic Engagement, Community Size, and Recall of Health Messages. *American Journal of Public Health* 96: 1456–1461.

WECHSLER, H. et al. (2003). Perception and Reality: A National Evaluation of Social Norms Marketing Interventions to reduce College Students' Heavy Alcohol Use. *Journal of Studies on Alcohol* 64: 484–494.

WILLIAMS, D.R. & STERNTHAL, M. (2010). Understanding Racial-ethnic Disparities in Health: Sociological Contributions. *Journal of Health and Social Behavior* 51: 15–27.

WORLD HEALTH ORGANIZATION WHO (2010). Health Systems Financing: The Path to Universal Coverage. Geneva: WHO (last retrieved on 23.05.2011 from: http://www.who.int/whr/2010/en/index.html).

Submitted: 22 February 2011. Resubmitted: 9 May 2011. Resubmitted: 17 May 2011. Accepted: 18 May 2011. Refereed anonymously.