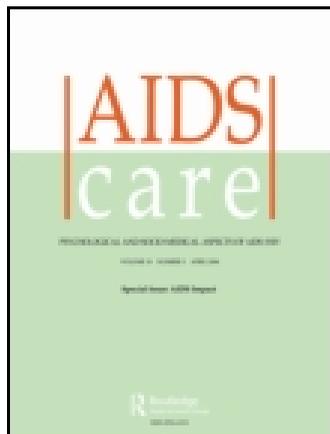


This article was downloaded by: [University of Illinois Chicago]

On: 02 January 2015, At: 05:30

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



AIDS Care: Psychological and Socio-medical Aspects of AIDS/HIV

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/caic20>

Travestis, an unexplored population at risk of HIV in a large metropolis of northeast Brazil: A respondent-driven sampling survey

Telma A. Martins^a, Ligia Regina F.S. Kerr^b, Raimunda H.M. Macena^c, Rosa S. Mota^d, Kalina L. Carneiro^b, Rogério C. Gondim^b & Carl Kendall^e

^a State Department of Health, Praia de Iracema, Fortaleza, Brasil

^b Department of Community Health, Medical School, Federal University of Ceará, Fortaleza, Brasil

^c School of Medicine, Physiotherapy Course, Federal University of Ceará, Fortaleza, Brasil

^d Department of Statistics and Applied Mathematics, Center for Sciences, Federal University of Ceará, Fortaleza, Brasil

^e Department of Global Health and Behavioral Science, Tulane University School of Public Health and Tropical Medicine, New Orleans, LA, USA

Published online: 19 Oct 2012.

To cite this article: Telma A. Martins, Ligia Regina F.S. Kerr, Raimunda H.M. Macena, Rosa S. Mota, Kalina L. Carneiro, Rogério C. Gondim & Carl Kendall (2013) Travestis, an unexplored population at risk of HIV in a large metropolis of northeast Brazil: A respondent-driven sampling survey, *AIDS Care: Psychological and Socio-medical Aspects of AIDS/HIV*, 25:5, 606-612, DOI: [10.1080/09540121.2012.726342](https://doi.org/10.1080/09540121.2012.726342)

To link to this article: <http://dx.doi.org/10.1080/09540121.2012.726342>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

Travestis, an unexplored population at risk of HIV in a large metropolis of northeast Brazil: A respondent-driven sampling survey

Telma A. Martins^a, Ligia Regina F.S. Kerr^{b*}, Raimunda H.M. Macena^c, Rosa S. Mota^d, Kalina L. Carneiro^b, Rogério C. Gondim^b and Carl Kendall^e

^aState Department of Health, Praia de Iracema, Fortaleza, Brasil; ^bDepartment of Community Health, Medical School, Federal University of Ceará, Fortaleza, Brasil; ^cSchool of Medicine, Physiotherapy Course, Federal University of Ceará, Fortaleza, Brasil; ^dDepartment of Statistics and Applied Mathematics, Center for Sciences, Federal University of Ceará, Fortaleza, Brasil; ^eDepartment of Global Health and Behavioral Science, Tulane University School of Public Health and Tropical Medicine, New Orleans, LA, USA

(Received 12 April 2012; final version received 29 August 2012)

Travestis are highly vulnerable to HIV infection in Brazil. We conducted a survey among 304 travestis using Respondent-Driven Sampling from August to December 2008. Travestis are young (49% <24 years), poorly educated (55% just elementary school), low social class (62% Class C-E), reside with families (49%) or friends/madam (22%), are victims of homophobia (91%) and violence (61%). They report early sexual debut (75% <14), many sexual partners, drug use during sex (43%), and unprotected sex (male partner, 47%, both male and female partners, 50%). Sex work is common (82%, 59% >10 partners last six months) and relatively low cost (median = US\$24). A majority report testing for HIV (69%), and report high prevalence (12% disclosed a positive result). Almost all the respondents refused to test in the study. Interventions, targeted to both travestis and to the general community about sexual discrimination, are necessary.

Keywords: transgendered; surveillance; HIV testing; risky sex; RDS

Introduction

Being a *travesti* in Fortaleza is associated with low socio-economic status, psychological adversity, stigma, and social exclusion. Travestis are a group at high risk of HIV/AIDS in Brazil and elsewhere (Bockting, Miner, & Rosser, 2007; Herbst et al., 2008; Infante, Sosa-Rubi, & Cuadra, 2009; Nemoto, Luke, Mamo, Ching, & Patria, 1999; Nemoto, Operario, Keatley, & Villegas, 2004; Pant, 2006; Passos & Figueiredo, 2004; Ratnam, 1986). Sex work and engaging in unprotected sex with all types of sexual partners is common among travestis (Hester & Donovan, 2009; Infante et al., 2009; Schulden et al., 2008). In addition, their social marginalization and lack of access to travesti-friendly health services are contributing factors for the high prevalence of HIV in this population (Herbst et al., 2008; Lima & Viana, 2009).

Despite this scenario, there are still few studies in Brazil on risk and vulnerability among travestis (Passos & Figueiredo, 2004). There is also weak institutional and public support for policies or programs addressed to this group. This biological and programmatic vulnerability belies the basic rights of individuals labeled travestis (Romano, 2008). Against this backdrop, this article describes the socio-demographic

and risk behaviors for HIV and other STDs among travestis in Fortaleza, Ceará, Brazil.

Methods

Procedures and sample

This is a cross-sectional study conducted between August and December 2008. The sample, recruited using respondent-driven sampling (RDS), was 304 self-identified travestis living in the city of Fortaleza reporting sex with another man in the past six months. RDS is a systematic and operationally rigorous method widely used that theoretically permits the calculation of indicators adjusted for recruitment bias in populations that are hard to access (Kendall et al., 2008; Magnani, Sabin, Sidel, & Heckathorn, 2005; Martzolf, Courey, Chapman, Draucker, & Mims, 2006). RDS is the best method in this case for a number of reasons. Many live in restricted living situations called *cafetinas*, but this is not universal. There are no collective gathering places, and while many are engaged in sex work in brothels and on the street, outcalls are common. For these and other reasons, the Brazilian government recommends RDS for this and all

*Corresponding author. Email: ligiakerr@gmail.com

most-at-risk-populations (Barbosa Junior, Pascom, Szwarcwald, Kendall, & McFarland, 2011).

Recruitment was conducted under the auspices of the Association of Travestis of Ceará (ATRAC). ATRAC helped us identify nine travestis for informal interviews during formative research. During these interviews we discussed the site of the study, criteria for interviewers, and level of incentive. Six seeds, all travestis, representing different social classes (Associação Brasileira de Empresas de Pesquisa, 2008) were selected to initiate the study. A seed is a member of the target community but selected by study organizers. They are not included in the final sample for analysis. Each recruiter received three coupons to distribute, and this procedure was repeated until sample size was reached. Each participant who completed the questionnaire received as incentive a coupon for the purchase of food with a value of about US\$6. For each respondent they successfully recruited, they received an incentive of about US\$3. The study included a questionnaire and HIV testing. However, with the exception of four individuals, the population rejected testing. Seroprevalence reported here was self-reported.

Data collection

Data were collected through face-to-face interviews using an adapted standard questionnaire for MSM (Hearst, Mandel, & Coates, 1995; Monzon, 1995). Interviewers were health professionals such as nurses

and social workers or members of two local NGOs focused on HIV/AIDS and MSM.

Data analysis

The study data were entered in EpiInfo 6.04 and analyzed with Respondent Driven Sampling Analysis Tool v5.6 (RDSAT) calculating the estimates of crude and adjusted prevalence, and other values. Individual weights estimated by RDSAT were transported to Stata and univariate and bivariate analyses were conducted on weighted data with Stata™ 11.0.

Ethical aspects

The study was approved by the Ethics Committee of São José Hospital for Infectious Diseases (approval # 001/2007), Fortaleza, Brazil. All participants were consented.

Results

Network characteristics of RDS

Travestis reported an average of 22 travestis (mean = 12, SD = 59) in their social network. Testing for HIV at least once in their lifetime was reported by half of the seeds and most of the sample (69%), with more than 1/3 reporting testing in the last year (38%; Figure 1). Twelve percent of the sample self-reported as seropositive (data not displayed).

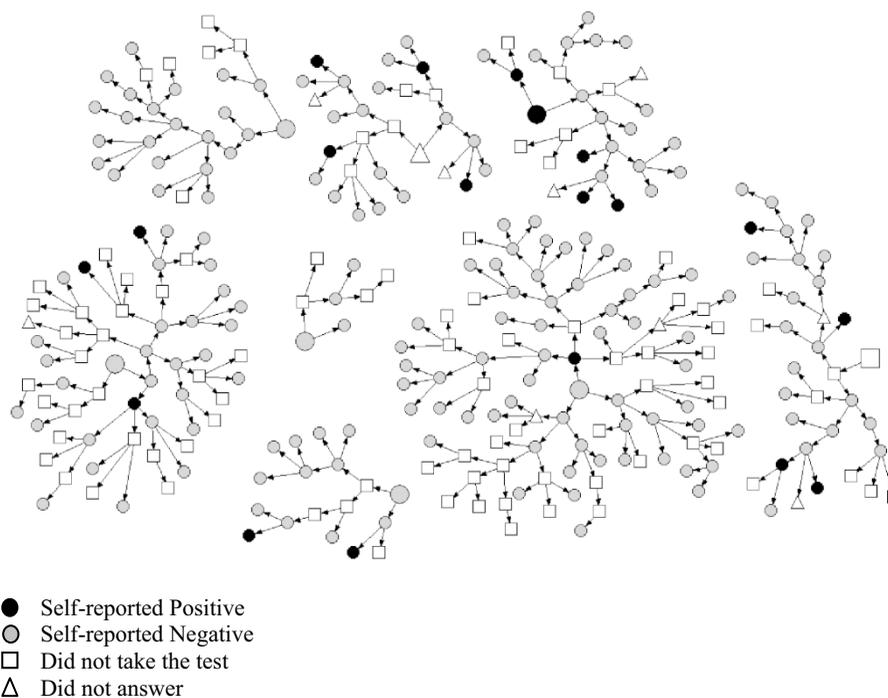


Figure 1. Network demonstrative of the level of interconnection of seeds and considering the results indicated that the HIV testing done at least once in life.

Table 1. Socio-demographic and social context of *travestis* living in Fortaleza, 2009

Socio-demographic characteristics	Crude %	Adjusted*	
		%	95% CI
Race (n = 302)			
White	26	23	17–30
Black	13	17	11–24
Parda (mulato)	60	59	50–66
Other	02	01	00–03
Age (n = 304)			
< 18 years	22	29	20–39
18–24 years	26	20	14–26
> 24 years	52	51	41–61
Education (n = 304)			
No school/3rd grade	09	08	04–13
4th to 8th grade	35	33	25–40
Elementary school complete	13	14	09–20
High school incomplete	14	18	11–25
High school complete or some university	30	26	19–34
Religion (n = 303)			
Catholic	72	66	58–74
Protestant\Evangelical	06	09	04–16
Afro-Brazilian	15	17	11–24
Other	07	08	03–12
Social class (n = 304)			
A\B	38	38	30–47
C	47	48	39–56
D\E	15	14	09–20
Employment (n = 301)			
Employed full-time	20	21	15–30
Part-time employment	31	26	20–34
Self-employed	18	20	12–29
Unemployed	09	11	06–17
Student	03	03	00–05
Retired	20	09	11–25
Income (n = 298)			
< 1 minimum wage	35	37	27–46
1–4 minimum wage	54	52	43–60
> 4 minimum wage	11	11	06–18
Residence (n = 304)			
Lives alone	19	23	25–31
Lives with partner	06	06	03–10
Family	45	49	40–58
Lives with madam/friends	30	22	14–31
Family response (n = 298)			
Fully supports/Supports financially	66	63	54–71
Supports with restrictions	30	34	26–43
Disapproves	04	03	00–05
Ever resided in another state\country (n = 303)			
Yes	35	32	24–40
No	65	68	60–76
Victim of violence (n = 296)	65	61	52–70
Victim of homophobia (n = 304)	89	91	86–95

*Adjusted with RDS Analysis Tool (RDSAT) 5.6.

Table 2. Sexual behavior and drug use among *travestis* living in Fortaleza, 2009

Behaviors	Crude %	Adjusted	
		%	95% CI
Age at first intercourse (n = 302)			
< 10 years	17	19	12–26
10–14 years	57	56	48–65
10–21 years	26	25	18–32
Pattern of sexual relationship last three months (n = 289)			
No sex last three months	03	01	00–02
Stable relationship with a man, no other sex	10	10	05–16
Stable relationship with a man, plus other sex	12	09	05–13
Sporadic relations with men and women	75	79	72–86
Stable male partner last six months (n = 304)	55	54	45–62
Casual male partner in the last three months (n = 304)	67	63	55–71
Sex with a woman ever (n = 304)	33	26	20–32
Received money in exchange for sex last 30 days (n = 303)	66	57	48–66
Received money in exchange for sex lifetime (n = 304)	87	82	76–89
No of partners paying for anal sex last six months (n = 198)			
≤ 10 partners	36	41	32–59
> 10 partners	64	59	41–68
Amount received at last sex (n = 210)			
< 50 reais	57	55	44–67
≥ 50 reais	43	45	32–56
Drug use during sex (n = 302)	48	43	36–51
Condom use at last sex in last six months by partner			
Stable partner (n = 147)	69	73	53–85
Commercial Partner (n = 226)	97	96	93–99
Casual partner (n = 177)	93	92	87–98
Female partner (n = 39)	67	48	31–86
Unprotected intercourse last six months			
Exclusively with men, except for oral sex (n = 295)	47	47	40–56
With men and/or women, except for oral sex (n = 295)	49	50	44–60

*Adjusted with RDS Analysis Tool (RDSAT) 5.6.

Social and contextual variables

Most of the sample self-identified as *Parda* (59%), 51% are older than 24 (mean = 28, SD = 10.00), poorly educated (55% only elementary school), Catholic (66%) and middle and lower class (62% Class C and D/ E). Only 21% of the sample reported a full-time job. Thirty-seven per cent of the sample earned less than US\$300 a month, and 89% earned less than US\$1200 per month. Almost half live with their natal families (49%) who provide income (63%). The majority have never lived out of the state, or Brazil (68%). A majority report being targets of violence (61%), and almost all have been the target of homophobia (91%; Table 1).

Health and sexual behavior

Sexual debut is early (mean = 13, SD = 3), 75% initiating sex by age 14. Fifty-four per cent reported a regular partner, and 63% a casual partner in the last three months.

Twenty-six per cent reported ever having a female partner. Almost all are involved in sex work (82% ever, 57%, last 30 days). Fifty-nine per cent of sex workers reported more than 10 partners in the last three months. Fifty-five percent reported charging less than US\$31.00 per sex act (range = US\$3.00–US\$ 500.00, mean = US\$37.00; median = US\$24.00). US\$24.00). Drug use (marijuana, crack, powdered cocaine, ecstasy, and inhalants) within 2 hours at the time of sex was reported by 43%. Our sample reported high rates of condom use: with steady partners (73%), commercial partners (96%), and casual partners (92%), but 50% reported unprotected sex with men and/or women (Table 2).

Discussion

With respect to HIV serostatus, self-report may often underreport true population prevalence. In a recent paper we report 100% concordance between self-report of seropositive status and positive test results

among MSM in Brazil (Salani Mota et al., 2011). For those reporting seronegative status, however, concordance is lower. Individuals who report as seronegative from a previous test may have become infected since the test. Some individuals may report seronegative status even if they have tested positive. For those who never tested, some are seropositive. Even with these caveats, the prevalence reported by travestis in Fortaleza is 20 times greater than the prevalence of HIV in the general population in Brazil (Szwarcwald & Souza Júnior, 2006). It is five times lower than Brazilian travestis living in Rome (Spizzichino et al., 2001) and half as high as Latino travestis resident in the U.S. (Nemoto, Operario, Keatley, Han, & Soma, 2004).

Travesti appear more vulnerable to HIV than FSW in Brazil, both in terms of the number of clients and condom use behaviors (Santos et al., 2009). The combination of stigma, social isolation, poverty, and commercial sex enhances vulnerability. Similar to men living with HIV in Brazil, travestis had earlier sexual debut (Nemoto, Operario, Keatley, Han, et al., 2004; Santos et al., 2009; Templeton et al., 2008), low socioeconomic status, inconsistent condom use, and higher drug use and sexual violence in their lives (Herbst et al., 2008; Nemoto et al., 1999; Nemoto, Operario, Keatley, Han, et al., 2004; Templeton et al., 2008). Stigma is widespread (Hwang & Nuttbrock, 2007; Infante et al., 2009; Lopes, Rabelo, & Pimenta, 2007), including that found in health services (Passos & Figueiredo, 2004; Romano, 2008). Harassment, exploitation, and abuse by health-care providers and police are repeated multiple times in the stories of violence suffered by travestis (Gordon & Meyer, 2008; Heintz & Melendez, 2006). With respect to the general public, harassment, exclusion, and different forms of violence against travestis have been described as commonplace (Garofalo, Deleon, Osmer, Doll, & Harper, 2006; Kenagy, 2005; Lombardi, Wilchins, Priesing, & Malouf, 2002; Odo & Hawelu, 2001), and just as in other countries (Kenagy, 2005; Kenagy & Hsieh, 2005; Lombardi et al., 2002), in Fortaleza they are constant victims of violence. Thus, the triad of social exclusion, sex work, and difficulty in accessing travesti-friendly health services interact to enhance vulnerability to HIV/AIDS among this population (Bockting et al., 2007; Clements-Nolle, Guzman, & Harris, 2008; Garofalo et al., 2006; Herbst et al., 2008; Kenagy, 2002; Kenagy & Hsieh, 2005; Odo & Hawelu, 2001; Romano, 2008).

Study limitations

Our study team has conducted Behavioral Surveillance Surveys among hard-to-reach populations,

including FSW, drug users, and MSM. We discovered that conducting this study was more difficult, due to the difficulty of accessing members of the community in this study. The other hard-to-reach communities in Brazil such as FSW and non-transgendered MSM effectively organize themselves to participate in surveillance, and see the value in participation. Our access to the travesti community, however, was via a single organization, which, it turned out, restricted access.

Conclusions

Travestis mirror the epidemiological profile of high HIV-risk communities in Brazil – and elsewhere – that falls disproportionately among the impoverished, and poorly educated members of vulnerable or stigmatized populations (Fonseca et al., 2000; Fonseca, Travassos, Bastos, Silva, & Szwarcwald, 2003).

Travestis in Fortaleza stand at the confluence of multiple HIV epidemics, a syndemic (Singer et al., 2006; Singer & Clair, 2003): epidemics among the poor with early unprotected sex, poor access to appropriate health services, and poor health-seeking behaviors; the epidemic of HIV among men who have sex with men; the epidemic among sex workers; the epidemic of HIV among drug users and injectors; and the epidemic of HIV among sexually brutalized victims of violence. Reported in this study are high levels of risk behaviors and a high self-reported prevalence of HIV infection.

Responding to this epidemic will require a coordinated response, targeting travestis, not just MSM, supporting civil society organizations that address travesti needs, working with health authorities to enhance access, and with the general population to reduce discrimination.

Acknowledgements

The authors thank the ATRAC (Associação de Travestis do Ceará) for supporting the research and the Ministry of Health – Health Surveillance through the Department of STD/AIDS and Viral hepatitis for funding the research (Project # CSV: 195/07).

References

- Associação Brasileira de Empresas de Pesquisa. (2008). Critério de Classificação Econômica Brasil. Retrieved from <http://www.abep.org/novo/Content.aspx?ContentID=139>
- Barbosa Junior, A., Pascom, A.R., Szwarcwald, C.L., Kendall, C., & McFarland, W. (2011). Transfer of

- sampling methods for studies on most-at-risk populations (MARPs) in Brazil. *Cadernos de saude publica/ Ministerio da Saude, Fundacao Oswaldo Cruz, Escola Nacional de Saude Publica*, 27(Suppl. 1), S36–S44.
- Bockting, W., Miner, M., & Rosser, B.R. (2007). Latino men's sexual behavior with transgender persons. *Archives of Sexual Behavior*, 36(6), 778–786.
- Clements-Nolle, K., Guzman, R., & Harris, S.G. (2008). Sex trade in a male-to-female transgender population: Psychosocial correlates of inconsistent condom use. *Sexual Health*, 5(1), 49–54.
- Fonseca, M.G., Bastos, F.I., Derrico, M., de Andrade, C.L.T., Travassos, C., & Szwarcwald, C.L. (2000). AIDS e grau de escolaridade no Brasil: evolução temporal de 1986 a 1996 AIDS and level of education in Brazil: Temporal evolution from 1986 to 1996. *Cadernos de Saúde Pública*, 16(Suppl. 1), 77–87.
- Fonseca, M.G.P., Travassos, C., Bastos, F.I., Silva, N.V., & Szwarcwald, C.L. (2003). Distribuição social da AIDS no Brasil, segundo participação no mercado de trabalho, ocupação e status sócio-econômico dos casos de 1987 a 1998. *Cadernos de Saúde Pública*, 19(5), 1351–1363.
- Garofalo, R., Deleon, J., Osmer, E., Doll, M., & Harper, G.W. (2006). Overlooked, misunderstood and at-risk: Exploring the lives and HIV risk of ethnic minority male-to-female transgender youth. *Journal of Adolescent Health*, 38(3), 230–236.
- Gordon, A.R., & Meyer, I.H. (2008). Gender nonconformity as a target of prejudice, discrimination, and violence against LGB individuals. *Journal of LGBT Health Research*, 3(3), 55–71.
- Hearst, N., Mandel, J.S., & Coates, T.J. (1995). Collaborative AIDS prevention research in the developing world: The CAPS experience. *AIDS*, 9(Suppl. 1), S1–S5.
- Heintz, A.J., & Melendez, R.M. (2006). Intimate partner violence and HIV/STD risk among lesbian, gay, bisexual, and transgender individuals. *Journal of Interpersonal Violence*, 21(2), 193.
- Herbst, J.H., Jacobs, E.D., Finlayson, T.J., McKleroy, V.S., Neumann, M.S., & Crepez, N. (2008). Estimating HIV prevalence and risk behaviors of transgender persons in the United States: A systematic review. *AIDS Behavior*, 12(1), 1–17.
- Hester, M., & Donovan, C. (2009). Researching domestic violence in same-sex relationships—A feminist epistemological approach to survey development. *Journal of Lesbian Studies*, 13(2), 161–173.
- Hwahng, S.J., & Nuttbrock, L. (2007). Sex workers, fem queens, and cross-dressers: Differential marginalizations and HIV vulnerabilities among three ethnocultural male-to-female transgender communities in New York City. *Sexuality Research and Social Policy*, 4(4), 36–59.
- Infante, C., Sosa-Rubi, S.G., & Cuadra, S.M. (2009). Sex work in Mexico: Vulnerability of male, travesti, transgender and transsexual sex workers. *Culture, Health & Sexuality*, 11(2), 125–137.
- Kenagy, G.P. (2002). HIV among transgendered people. *AIDS Care*, 14(1), 127–134.
- Kenagy, G.P. (2005). Transgender health: Findings from two needs assessment studies in Philadelphia. *Health and Social Work*, 30(1), 19–26.
- Kenagy, G.P., & Hsieh, C.M. (2005). The risk less known: Female-to-male transgender persons' vulnerability to HIV infection. *AIDS CARE*, 17(2), 195–207. doi: 10.1080/19540120512331325680.
- Kendall, C., Kerr, L.R.F.S., Gondim, R.C., Werneck, G.L., Macena, R.H.M., Pontes, M.K., . . .McFarland, W. (2008). An empirical comparison of respondent-driven sampling, time location sampling, and snowball sampling for behavioral surveillance in men who have sex with men, Fortaleza, Brazil. *AIDS and Behavior*, 12, 97–104.
- Lima, L.H.M., & Viana, M.C. (2009). Prevalence and risk factors for HIV, syphilis, hepatitis B, hepatitis C, and HTLV-I/II infection in low-income postpartum and pregnant women in Greater Metropolitan Vitória, Espírito Santo State, Brazil. *Cadernos de Saúde Pública*, 25(3), 668–676.
- Lombardi, E.L., Wilchins, R.A., Priesing, D., & Malouf, D. (2002). Gender violence. *Journal of Homosexuality*, 42(1), 89–101.
- Lopes, C.S., Rabelo, I.V.M., & Pimenta, R.P.B. (2007). A Bela Adormecida: estudo com profissionais do sexo que atendem à classe média alta e alta na cidade de Goiânia; Sleeping beauty: Research into sex professionals who serve the upper middle class and upper class in Goiânia. *Psicologia & Sociedade*, 19(1), 69–76.
- Magnani, R., Sabin, K., Saidel, T., & Heckathorn, D. (2005). Review of sampling hard-to-reach and hidden populations for HIV surveillance. *AIDS*, 19, S67.
- Martsof, D.S., Courey, T.J., Chapman, T.R., Draucker, C.B., & Mims, B.L. (2006). Adaptive sampling: Recruiting a diverse community sample of survivors of sexual violence. *Journal of Community Health Nursing*, 23(3), 169–182.
- Monzon, O.T. (1995). The Second National AIDS Research Forum. *NASPCP newsletter/National AIDS/STD Prevention and Control Program. National AIDS/STD Prevention and Control Program (Philippines)*, 8.
- Nemoto, T., Luke, D., Mamo, L., Ching, A., & Patria, J. (1999). HIV risk behaviours among male-to-female transgenders in comparison with homosexual or bisexual males and heterosexual females. *AIDS Care*, 11(3), 297–312.
- Nemoto, T., Operario, D., Keatley, J.A., Han, L., & Soma, T. (2004). HIV risk behaviors among male-to-female transgender persons of color in San Francisco. *American Journal of Public Health*, 94(7), 1193.
- Nemoto, T., Operario, D., Keatley, J., & Villegas, D. (2004). Social context of HIV risk behaviours among male-to-female transgenders of colour. *AIDS Care*, 16(6), 724–735.
- Odo, C., & Hawelu, A. (2001). Eo na Mahu o Hawai'i: The extraordinary health needs of Hawai'i's Mahu. [Comparative Study Evaluation Studies Research Support, Non-U.S. Gov't Research Support, U.S. Gov't, P.H.S.]. *Pacific Health Dialogue*, 8(2), 327–334.

- Pant, S. (2006). Vulnerable populations in Nepal face hostile environment. *HIV/AIDS Policy & Law Review/Canadian HIV/AIDS Legal Network*, 11(2–3), 87.
- Passos, A.D.C., & Figueiredo, J.F.C. (2004). Fatores de risco para doenças sexualmente transmissíveis entre prostitutas e travestis de Ribeirão Preto (SP), Brasil. *Revista Panamericana de Salud Pública*, 16(2), 95–101.
- Ratnam, V. (1986). Awareness of AIDS among transsexual prostitutes in Singapore. *Singapore Medical Journal*, 27(6), 519–521.
- Romano, V.F. (2008). As travestis no Programa Saúde da Família da Lapa. *Saúde e Sociedade*, 17(2), 211–219.
- Salani Mota, R.M., Sansigolo Kerr, L.R.F., Kendall, C., Pinho, A., de Mello, M.B., Dourado, I., . . . Rutherford, G. (2011). Reliability of self-report of HIV status among men who have sex with men in Brazil. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 57, S153–S156. doi: 110.1097/QAI.1090b1013e31821e31829c31810.
- Santos, N.J.S., Barbosa, R.M., Pinho, A.A., Villela, W.V., Aidar, T., & Filipe, E.M.V. (2009). Contextos de vulnerabilidade para o HIV entre mulheres brasileiras Contexts of HIV vulnerability among Brazilian women. *Cad. Saúde Pública*, 25(Suppl. 2), S321–S333.
- Schulden, J.D., Song, B., Barros, A., Mares-DelGrasso, A., Martin, C.W., Ramirez, R., . . . Sullivan, P.S. (2008). Rapid HIV testing in transgender communities by community-based organizations in three cities. *Public Health Reports*, 123(Suppl. 3), 101.
- Singer, M., & Clair, S. (2003). Syndemics and public health: Reconceptualizing disease in bio-social context. *Medical Anthropology Quarterly*, 17(4), 423–441.
- Singer, M.C., Erickson, P.I., Badiane, L., Diaz, R., Ortiz, D., Abraham, T., & Nicolaysen, A.M. (2006). Syndemics, sex and the city: Understanding sexually transmitted diseases in social and cultural context. [Research Support, U.S. Gov't, P.H.S.]. *Social Science & Medicine*, 63(8), 2010–2021. doi: 10.1016/j.socsci.med.2006.05.012.
- Spizzichino, L., Zaccarelli, M., Rezza, G., Ippolito, G., Antinori, A., & Gattari, P. (2001). HIV infection among foreign transsexual sex workers in Rome: Prevalence, behavior patterns, and seroconversion rates. *Sexually Transmitted Diseases*, 28(7), 405.
- Szwarcwald, C.L., & Souza Júnior, P.R.B. (2006). Estimativa da prevalência de HIV na população brasileira de 15 a 49 anos, 2004. *Boletim Epidemiológico AIDST*, 3, 11–15.
- Templeton, D.J., Mao, L., Prestage, G.P., Jin, F., Kaldor, J.M., & Grulich, A.E. (2008). Self-report is a valid measure of circumcision status in homosexual men. *Sexually Transmitted Infections*, 84(3), 187–188. [sti.2007.029645 pii;doi: 10.1136/sti.2007.029645].