

Supplemental Table 1
Rural LGBT Health Literature Review

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
1	Austin (2013)	Sexual Orientation Disclosure to Health Care Providers Among Urban and Nonurban Southern Lesbians	934 lesbian women living in urban and nonurban areas of the Southern United States (33%; 309 nonurban)	13 Southern United States (states not specified)	Not specific: A “nonurban” area; less than 100,000; an area where people share common values and lifestyles; and the lack of anonymity in rural areas makes digressions from community norms quite visible	Quantitative: online survey; recruitment took place through ads in local newspapers and magazines targeting LGBT populations; flyers distributed at LGBT events, LGBT community centers (including university-based centers), support groups, bookstores, and religious organizations; and lesbian-oriented websites and message boards	1: Lesbians living in nonurban areas were significantly less likely to have disclosed to health care providers than women in urban areas, suggesting that disclosure may present a special concern for populations in non-urban areas 2: In the current study, the experience of discrimination was not significantly associated with the decision to disclose to health care providers, nor did the experience of discrimination appear to vary by location of residence	Urban advantage	1: Nonrandom sampling techniques—it is impossible to assess the representativeness of the results presented	Health outcomes and risk behaviors

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Supplemental Table 1 (continued)

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2	Barefoot, Warren, and Snalley (2015)	An Examination of Past and Current Influences of Rurality on Lesbians' Overweight/Obesity Risks	895 lesbians (31.1%; n = 278 current rural residence)	U.S. national sample (specific states not specified)	Respondents asked question on current and past living in rural area, whether they consider themselves "from" rural area; current location used for analyses	Quantitative; online study; recruitment and survey completion was entirely online (emails to LGBT-related organizations, advertisement in Craigslist)	1: Lesbians currently living in rural areas were on average obese, with significantly higher (body mass indexes) BMIs than urban-residing lesbians 2: More rural-residing lesbians reported they never engage in exercise in comparison to their urban-residing counterparts	Urban advantage	1: Online data collection; may not be representative of the general population of rural and urban lesbians 2: The current data is based on participant self-reports and may not provide exact measurements of BMI and diet/exercise patterns	Health outcomes and risk behaviors
							3: Findings suggest that current rather than past influences of rurality may have a significant impact on lesbians' weight and diet/exercise behaviors and highlight significant obesity-related health disparities for rural residing lesbians		3% to 70% White sample; these results may not be generalizable to lesbians who are racial/ethnic minorities	

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3	Barefoot, Rickard, Smalley, and Warren (2015)	Rural Lesbians: Unique Challenges and Implications for Mental Health Providers	Review article	United States	Not specific: reference to U.S. census	Conceptual paper: comprehensive review of the existing literature regarding the mental health of rural lesbians, summarizing current findings of the literature, highlighting additional areas of research need, and providing recommendations for mental health practitioners	This review explores studies published that address the following themes: 1: Vulnerabilities and risk factors 2: Youth developmental issues 3: Partnering and parenting among rural lesbian adulthood 4: Aging among rural lesbians 5: Mental health 6: Lesbian strengths and resiliency in rural communities 7: Recommendations for clinicians	N/A	1: Authors did not provide a methodology 2: Most studies are small-scale, qualitative, and highly regionally bound. 3: Lack of a national (or even regional) examination of rural lesbian mental health	Health outcomes and risk behaviors
4	Barefoot, Smalley, and Warren (2015)	Psychological Distress and Perceived Barriers to Care for Rural Lesbians	716 lesbians (38.8%; n = 278 rural)	U.S. national sample	Self-identified as "being from a rural background"	Quantitative: online recruitment through various LGBTQ community organizations, Listservs, social media groups, and Craigslist advertisements	1: Compared with their nonrural counterparts, rural lesbians experience higher levels of psychological distress 2: Rural lesbians were also more likely to report the following barriers to needed mental healthcare: (a) a lack of coverage/financial limitations, (b) a limited availability of providers in their area, and (c) avoidance of care due to fears of discrimination/unfair treatment by a provider	Urban advantage	1: Convenience sampling and online sample- may not be representative of all of the lesbians in the general population 2: The current data are based solely on participants' perception and self-report of barriers to mental health services- not sufficiently capture the actual availability of mental health providers in general and LGBTQ-affirming providers in rural areas	Health outcomes and risk behaviors Sociocultural intersection

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
5	Bennett, Ricks, and Howell (2014)	"It's Just a Way of Fitting In:" Tobacco Use and the Lived Experience of Lesbian, Gay, and Bisexual Appalachians	19 LGB-identified Appalachian residents	Appalachian region of eastern Kentucky	Not specific: Rural Appalachian region, a 205,000-square-mile area along the mountains from southern New York to northern Mississippi, where 42% of the population is rural	Qualitative: Study participants were recruited in the Appalachian region of Eastern Kentucky from Kentucky Area Development District (ADD); Semi-structured interviews lasting approximately 25 to 100 minutes each were audio-taped and professionally transcribed	Five themes emerged; those pertaining directly to health 1: Culture and tobacco use. Most participants perceived a strong Appalachian tobacco culture, stating or implying that individual use was rampant and that support for controls on smoking was low 2: Perceived associations with tobacco use, social implications, stress (with an emphasis on minority stress), and "fitting in" 3: Health beliefs and health care skepticism and fatalism, and lack of engagement with health care	N/A	1: Interviewee responses cannot be generalized to represent all rural or Appalachian LGB persons 2: Purposive sampling-those who participated are also assumed to be more open and vocal about their LGB identity and related opinions than those who remain more closeted	Health outcomes and risk behaviors Sociocultural intersection
6	Bennett, McElroy, Johnson, Munk, and Everett (2015)	A Persistent Disparity: Smoking in Rural Sexual and Gender Minorities	4280 sexual and gender minorities (10%; n = 428 rural)	Missouri	ZIP codes classified into rural urban community area codes (RUCA) Codes 1-3 defined as urban, and codes 4-9 as rural	Quantitative: Self-administered surveys were collected from attendees at Pride Festivals (Columbia, Joplin, Kansas City, Springfield, St. Louis, Black Pride St. Louis) and through a link to an Internet survey via emails or listserves of Missouri SGM organizations	1: SGM had higher smoking proportion than the non-SGM recruited from these settings 2: Rural residence was not independently significant, demonstrating the persistence of the smoking disparity in rural SGM	No clear difference	1: Selection bias inherent in purposive sampling 2: The high proportion of current smoking among non-SGM in our sample that these participants are not representative of the general population 3: Response bias may limit the ability to generalize to those unwilling or unable to participate	Health outcomes and risk behaviors

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
7	Bockting, Miner, and Rosser (2007)	Latino Men's Sexual Behavior with Transgender Persons	44 (4% of the larger study sample) Latino participants who reported having had sex with a transgender partner (compared with 200 selected randomly from the remaining 982 participants) (34% of the 44; $n = 15$ rural or small town)	National sample- data collected from www.gay.com , a gay community Web site popular in the United States	Living in a community with fewer than 5,000 people defined as rural; 5,000 up to an undefined number as small town	Quantitative: online survey during November and December of 2002 through banner advertisements placed on gay.com , a gay community Web site popular in the United States; Gay.com includes chat rooms in both English and Spanish (e.g., Latinogay.com)	1: Compared with a randomly selected sub-sample of 200 men who did not report sex with a transgender person, sexual partners of transgender persons were almost three times more likely to have had unprotected sexual intercourse in the last 3 months 2: Those who reported having had sex with a transgender person were more likely to live in a rural area or small town, were more likely to be sexually compulsive and HIV-positive, reported a higher number of sexual partners, and were more likely to report unprotected sex than were Latino men who had not had sex with a transgender person	N/A	1: Generalizability—The application of our findings to the overall population of men who have sex with transgender persons is limited 2: Men recruited via the Internet may differ in some important ways from men recruited in conventional, offline venues	Health outcomes and risk behaviors
8	Bowen, Williams, and Horvath (2004)	Using the Internet to Recruit Rural MSM for HIV Risk Assessment: Sampling Issues	327 men who have sex with men (MSM); all living in rural area	Conventional sampling: North central region of the United States and adjacent states; Internet sampling- Northern Rocky Mountain and several adjacent states	Living in town of 75,000 or less and more than 60 min from an urban area. (Size of town divided into 0–20,000; 20,000 to 50,000; and 50,000 to 75,000)	Quantitative survey: two sampling methods- face-to-face (referral by friends, advertisements displayed in community places, clubs, and events) and Internet (banner ads placed on the home page of gay.com)	1: Demographic characteristics of the two groups were similar 2: Patterns of sexual risk were similar across the city sizes but varied by recruitment approach, with the Internet group presenting a somewhat higher HIV sexual risk profile 3: Internet provides a useful and low cost approach to recruiting and assessing HIV sexual risks for rural White MSM	N/A	1: Limited geography. 2: Lack of minority MSM 3: Retrospective self-report. 4: Small sample size	Health outcomes and risk behaviors

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Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
10	Cain (2001)	Quality of Life Issues Among a Small Sample of Persons Living with HIV Disease in a Rural Area	39 persons living with HIV (11 homosexuals and 5 bisexuals), all rural	Pennsylvania	Not provided.	Mix-method: quantitative survey instrument supplemented with semi-structured interviews; interviewees came from amongst survey participants. Recruitment through handing out survey at local AIDS service organizations	1: Homosexual respondents reported greater mental health than did those who identified as heterosexual and had better perceptions of their overall health 2: Four primary themes developed as a result of the interview data: (a) experiences of stigma from the medical community, (b) perceptions of physician knowledge, (c) noncompliance to HIV treatment, and (d) experiences with family and friends	N/A	1: Small response rate in both quantitative and qualitative data collection 2: Convenience sampling	Health outcomes and risk behaviors Healthcare experiences Sociocultural intersection
11	Cohn and Leake (2012)	Affective Distress Among Adolescents Who Endorse Same-Sex Sexual Attraction: Urban versus Rural Differences and the Role of Protective Factors	469 same-sex attracted adolescents, rural adolescents compared with subset of 423 heterosexual rural adolescents; participants were a subset of ADD health data collected from 1994 to 2002	U.S. national sample	Staff interviewers answered a question on whether the interviewee appeared to live in urban, suburban, or rural areas	Quantitative: adolescents residing in a rural setting were selected for the subsample of the present study if they endorsed experiencing same-sex attractions or having a same-sex relationship in Wave I, Wave II as adolescents, or Wave III when the majority were youth	1: Rural sexual minority adolescents reported higher levels of affective distress than their heterosexual counterparts 2: Higher levels of school and family belonging were associated with lower levels of distress for these rural LGB youth	N/A	1: Self-report measures 2: Despite the title, rural and urban not compared; in fact there is no reporting of urban subjects in this study	Health outcomes and risk behaviors

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Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
12	Cohn and Hastings (2010)	Resilience Among Rural Lesbian Youth	Review article	Overview of overall U.S. rural areas	Not specific: environments that tend to be characterized as patriarchal, conservative, religiously fundamental, and adherence to traditional gender roles	Review: paper examines the overall experiences of rural lesbian youth, with primary attention to stressors, obstacles, and barriers that impede positive-self-concept; illustrate how resources accessed by rural lesbian youth can promote mental health	1: Rural lesbian youth experienced implied physical threats, abuse, and mental health concerns as a result of attempting to define within a context that emphasizes women as heterosexual caretakers of the community 2: Factors that affect their ability to cope include having a supportive family network, a larger network of friends, supportive mentors and teachers, and access to a Gay Straight Alliance chapter	N/A	1: Potential bias in expressing how move forward in conceptualizing the experiences of rural lesbians	Health outcomes and risk behaviors

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
13	Coleman, Irwin, Wilson, and Miller (2014)	The South Carolina LGBT Needs Assessment: A Descriptive Overview	715 LGBT people (unclear how many rural)	South Carolina	2000 U.S. Census: South Carolina (SC) was the 13th highest ranking state in the nation for persons living in rural areas, with 39.5% of the population residing in a rural area	Quantitative: The anonymous survey was administered in two waves. The first wave was a pen-and-paper survey given at the SC Pride Festival in September 2009; The day after the festival, the second wave was launched as an online survey, with recruitment at the festival, through social media, and through organization Listservs	<p>1: Findings suggest that a diverse LGBT community exists in SC and needs include increased programming for community members as well as efforts to provide policy-level support and increased acceptability and understanding of LGBT persons in South Carolina</p> <p>2: Most respondents (73.7%, <i>n</i> = 482) reported having a primary health care provider (e.g., doctor, nurse practitioner), while others reported using an urgent care facility (10.1%, <i>n</i> = 66) or emergency room (4.6%, <i>n</i> = 30) for primary health care. Most respondents (75.1%, <i>n</i> = 531) reported that they had health insurance.</p> <p>3: Nearly half of respondents (45.4%, <i>n</i> = 315) reported that they consumed between one and five alcoholic beverages in a typical week. 3 to 27.5 smoked between 1 to 10+ packs a week.</p> <p>4: 7.4% (<i>n</i> = 328) reported that they disclose their sexual orientation to their health care provider “some of the time” or “never”</p>	N/A	<p>1: Participants’ home region defined but rural not truly differentiated</p> <p>2: Convenience sample- those the SC Pride Festival were likely already engaged in the LGBT community and may differ from those who are not.</p>	Health outcomes and risk behaviors

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Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
14	Einbinder, Fischer, Sheridan, and Miller (2012)	Social Work Educators' Attitudes Toward Gay Men and Lesbians: A National Assessment	927 social work educators (21%; n = 183 rural)	U.S. national sample	Not clear: Appears participants asked whether working in rural, suburban, or urban setting	Quantitative: e-mail sent out to 3,674 social work educators in CSWE-accredited or "in process" bachelor of social work and master of social work programs in the 50 United States	1: Faculty most likely to express negative attitudes toward lesbians included those employed at a religiously affiliated university, identifying as African American and male, working in an urban or suburban setting, and having probationary tenure-track status	Urban advantage	1: Social desirability bias 2: Nonrandom sampling-limits generalizability of these findings 3: E-mail solicitation to recruit- it may have been overlooked or lost amid competing demands of the academic year and/or faculty. 4: No questions were asked to find out whether, and to what degree, each respondent incorporated LGBT content into curricular material in syllabi and readings.	Sociocultural intersection

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Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
15	Eliason and Hughes (2004)	Treatment Counselor's Attitudes About Lesbian, Gay, Bisexual, and Transgendered Clients: Urban vs. Rural Settings	109 urban substance abuse counselors and 242 rural counselors	Chicago and Iowa	Self report: current residence (rural area, small town, small city, large urban area	Quantitative: questionnaires were sent to the directors of all community- and hospital-based treatment agencies in Iowa and surveys were sent to a randomly selected sample of 20 treatment agencies in metropolitan Chicago; The questionnaire was organized into three sections: (1) attitudes about LGBT people; (2) experience, knowledge, and familiarity with LGBT people and related issues; and (3) demographic variables	1: Experiences working with LGBT clients 2: Urban providers with more contact with LGBT people, but attitudes and knowledge same in both groups 3: Overall very little formal education in LGBT issues, especially legal issues.	No clear difference	1: The response rate, although fairly typical for a mail survey, was quite low. 2: Convenience (volunteer); possible biased findings 3: Need for cross-cultural comparisons of attitudes.	Sociocultural intersection

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
16	Farmer, Blossnich, Jabson, and Matthews (2015)	Gay Acres: Sexual Orientation Differences in Health Indicators Among Rural and Nonrural Individuals	139,534 LBG and heterosexual persons; 615 lesbians, 654 gay, 683 bisexual; (18%, 25,106 rural)	10 states: Alaska, Arizona, California, Maine, Massachusetts, Montana, New Mexico, North Dakota, Washington, and Wisconsin	Not specific: not in a metropolitan statistical area	Quantitative: secondary data analysis from individual state Behavioral Risk Factor Surveillance Surveys (BRFSS) data which contained sexual orientation in the 2010 survey	1: There were fewer differences on key health indicators between rural LGB persons and their rural heterosexual counterparts than among nonrural LGB participants and their nonrural heterosexual counterparts 2: Poorer health for LGB persons; however, gay and bisexual men had a lower prevalence of being overweight/obese than heterosexual men in both rural and nonrural settings 3: Bisexual men and women had more negative health indicators than gay men and lesbian women, regardless of rural/nonrural status	No clear difference	1: Use of only sexual orientation self-identification (not sexual behavior or attraction) 2: Only 10 states; missing states from the U.S. South, where rural areas may be qualitatively different 3: LGB subgroups still too small to reliably detect significant within-group differences.	Health outcomes and risk behaviors
17	Fisher, Irwin, and Coleman (2014)	LGBT Health in the Midlands: A Rural/Urban Comparison of Basic Health Indicators	Survey 770 LGBT; though only 717 included in this analysis (10.5%, n = 75, rural)	Nebraska	Non-metropolitan by U.S. Census Bureau definitions; includes all areas in Nebraska except Omaha and Lincoln	Quantitative: online survey; recruitment via community-based participatory research (CBPR) approach	1: High smoking and drinking overall 2: Rural/urban differences: less health insurance, less social engagement, less out, less self-acceptance	Urban advantage	1: Convenience sampling. 2: Multiple comparisons; some of the borderline significances may be chance. 3: All measures self-report	Health outcomes and risk behaviors Sociocultural intersection

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
18	Gallagher, Rostovsky, and Hughes (2004)	School Belonging, Self-Esteem, and Depressive Symptoms in Adolescents: An Examination of Sex, Sexual Attraction Status, and Urbanicity	7,613 adolescents from Wave II of the National Longitudinal Study of Adolescent Health (Add Health); Same-sex only 1.5%, both-sex attracted 3.8%, (26%, $n = 1981$ rural overall; $n = 87$ rural sexual minority students; 4.4% of rural sample); participants interviewed at two time points in 1996	U.S. national, population-based representative sample	Staff interviewers answered a question on whether the interviewee appeared to live in urban, suburban, or rural areas	Qualitative; In-home interviews; all students registered at participating schools were eligible for selection; The interviews covered a range of topics, including health status, health related behaviors, psychological health, peer and family relationships, education, risk behaviors, etc. Interviews were completed in 1 to 2 hr, depending on participant age and experience	1: Sexual minorities (SM) with lower school belonging than heterosexual; SM females (particularly rural) lowest school belonging; males overall highest belonging 2: Hetero > same > both attracted in self esteem; rural males highest self-esteem 3: SM more depression than hetero, again rural males most protected while urban same sex males had high depression 4: Overall rural male privilege, hetero less risk, rural SM women worst off	N/A	1: The actual number of sexual minority youth available for analyses was very small, especially when divided among the three community environments and two sexes 2: Authors felt they could not control for enough socio-demographic factors to reasonable guard against confounding	Health outcomes and risk behaviors

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
19	Gilbert and Rhodes (2014)	Immigrant Sexual Minority Latino Men in Rural North Carolina: An Exploration of Social Context, Social Behaviors, and Sexual Outcomes	190 sexual minority Latino men (mostly Mexican; all rural)	North Carolina (7 rural counties)	Not provided	Quantitative: community-based participatory research; respondent-driven sampling (RDS) to recruit participants; completed an in-depth psychosocial and behavioral assessment	1: Participants reported limited English-language use; predominantly Latino close friends; middle levels of social support despite numerous social ties, and frequent experiences of discrimination 2: Equal use of Spanish and English was negatively associated with consistent condom use for anal intercourse	N/A	1: In-depth assessment is cross-sectional and precludes any causal inferences 2: Findings may be subject to measurement constraints; it is possible that relevant social variables were omitted from the assessment 3: Respondent driven sampling- not representative of the larger population of immigrant Latino MSM in North Carolina 4: Sample size is modest	Health outcomes and risk behaviors

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Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
20	Hancock (2008)	Doing Justice: A Typology of Helping Attitudes Toward Sexual Groups	56 undergraduate students in a rural-based bachelor of social work program; All presumed straight/cisgender	Not specific; Southeast U.S. rural-based bachelor of social work program	Not specific: "small towns"	Qualitative: drawing on observations of students who were enrolled in a CSWE-accredited bachelor of social work program through analysis of class assignments and discussion	1: More than half indicated that they would have difficulty providing services with which they disagreed on moral grounds (including counseling of sexual minorities) 2: Three orientations in terms of attitudes of the students were grouped and defined as: an ethic of conformity (supporting the religious and cultural norms of the region without question), an ethic of individualism (recognizing discrimination but not linking to systematic oppression or privilege), and an ethic of care (sense of responsibility to provide all available services for vulnerable populations)	N/A	1: Based on the observed responses of students in one setting- no ability to generalize 2: Interpretation by single author based on pre-determined typology models	Sociocultural intersection
21	Heckman, Somlai, Oito-salaj, and Davantes (1998)	Health-related quality of Life Among People Living with HIV Disease in Small Communities and Rural Areas	278 persons living with HIV-mostly gay-identified, all rural	Wisconsin	Population of less than 25,000	Quantitative: survey packets were sent through 9 AIDS service organizations (ASOs) that provided services to people living with HIV	1: Many respondents reported decreased social, emotional, functional, and physical well-being 2: Participants' emotional well-being and the quality of their relationship with their doctor were related to their overall quality of life 3: The majority of participants expressed interest in participating in a telephone-linked support group involving other people living with HIV designed to improve quality of life	N/A	1: Single, Midwestern state; not generalizable 2: Only HIV-infected persons associated with a state AIDS service organization, more engaged in care than whole HIV population	Health outcomes and risk behaviors Healthcare experiences

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
24	Hubach et al. (2015)	Loneliness, HIV-Related Stigma, and Condom Use Among a Predominantly Rural Sample of HIV-Positive Men Who Have Sex With Men (MSM)	100 HIV-positive MSM (unclear how many truly rural)	23 counties throughout south central Indiana	Authors describe the region as "relatively rural." They state use of the Index of Relative Rurality (IRR) but no report on how IRR used in methods or results	Quantitative: Internet-based questionnaire; collaboration with a local HIV community-based organization (CBO); voluntary sampling to identify participants and recruit a more homogenous sample	1: Negative attitudes towards safer sex were positively correlated with total HIV stigma 2: HIV stigma was highly correlated with loneliness 3: Loneliness negatively predicted condom use with the most recent partner of unknown status	N/A	1: Convenience sampling. 2: Participants did not report the residency of their most recent sexual partner- it is unknown if these partners were from a more isolated rural area or from peri-urban areas within the region 3: Possible response bias given very sensitive questions 4: Very few participants of color	Health outcomes and risk behaviors Sociocultural intersection
25	Hubach, Dodge, Cola, Battani, and Reece (2014)	Assessing the Sexual Health Needs of Men Who Have Sex With Men (MSM) Residing in Rural Areas	282 MSM; all residing in a rural or "mixed rural" county	South Central Indiana	Countries of residence of participants classified as 15 mixed rural (15) or rural (5) based on Index of Relative Rurality	Quantitative: Purposeful, voluntary sampling; participants were recruited via advertisements placed on social and sexual networking sites geared toward MSM (e.g., via flyers, and college/university student groups where MSM congregate	1: Within the past year, 66.9% (162) of participants reported interacting sexually in person with someone they met online, 51.2% interacted sexually via the Internet (e.g., chat room sex, web cam sex), and 36.8% (89) reported engaging in threesomes or group sex 2: 35.5% (86) reporting sexual behavior with a female partner in the last year 3: Marginal endorsement of adopting community labels as an indicator of feeling close in terms of ideas and feelings (community identity) and as part of overall self-image (community self-concept)	N/A	1: Convenience sampling; findings cannot be generalized to all rural MSM 2: Focused on the sexual behaviors of men and their male sexual partners; fewer questions regarding female partners	Health outcomes and risk behaviors

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Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
26	Irwin, Coleman, Fisher, and Marasco (2014)	Correlates of Suicide Ideation Among LGBT Nebraskans	770 LGBT (all rural)	Nebraska	Not specific: Individuals who provided a ZIP code outside of the major urban areas of Omaha and Lincoln were recorded as rural individuals	Quantitative: community-based participatory research approach; online survey	1: The alarming rate of suicidal ideation in this study is worthy of note with close to 50% of respondents reporting a lifetime history of serious suicidal thinking 2: Correlates of increased suicide risk are older age, being female, being transgender, having an income less than \$25,000, having a high Centers for Epidemiological Studies-Depression (CES-D) Scale (Radloff, 1977) score indicative of probable clinical depression, and high levels of discrimination events as a result of one's LGBT status	N/A	1: Convenience sampling; authors argue that the deliberate variation and diversity in recruitment strategies strengthen generalizability 2: Lack of minority participation 3: Online survey; may not reach most rural or marginalized	Health outcomes and risk behaviors Sociocultural intersection
27	Kalkietek, Sullivan, and Hefelfinger (2011)	You've got Male: Internet Use, Rural Residence, and Risky Sex in Men Who Have Sex With Men Recruited in 12 U.S. Cities	1,243 male identified individuals with at least 2 male sexual partners and at least one experience of anal intercourse in the last year (n = 1243; 27% rural)	12 U.S. cities: Iowa City, Des Moines, Indianapolis, Milwaukee, Salt Lake City, Portland, (Maine and Oregon) Manchester (NH), Minneapolis, Bismarck, Raleigh-Durham, Wichita	Lowest quartile of population density: 750 or fewer persons per square mile (ppsm)	Quantitative: Rapid HIV Behavioral Assessment (RHBA) surveys conducted in 2004 and 2005 during Gay Pride events in twelve US cities classified as low-to moderate HIV prevalence areas	1: In rural areas, men who had met partners online were 1.87 times more likely to report any unprotected anal intercourse (UAI) and 2.1 times more likely to report insertive UAI than men who had met their sex partners in other venues 2: In urban areas, there was no difference between men who did and did not meet their partners online	Mixed or uncertain comparison	1: RBHA asked whether any partners met online rather than last partner 2: Recall bias 3: Data were collected 4 to 5 years before study was published-many changes in technology (e.g., Grindr mobile application)	Health outcomes and risk behaviors

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28	King and Dabelko-Schoeny (2009)	"Quite Frankly, I Have Doubts About Remaining": Aging-In-Place and Health Care Access for Rural Midlife and Older Lesbian, Gay, and Bisexual Individuals	20 LGB: adults over age 40. (all rural)	13 states- California, Texas, Ohio, Wyoming, Minnesota, Tennessee, West Virginia	Town population with less than 11,000 and not close to a city	Qualitative: online interviewing; participants for this study were solicited from three existing online groups specifically for LGBT individuals who live in rural areas	1: Access to health care: facilitators and barriers, family/friend support, disclosure to providers 2: Barriers of transportation, lack of choices/insurance discrimination, worries of debt or home loss, lack of close social support 3: 7/20 not out to provider	N/A	1: Small sample size 2: Online sample bias, in older rural people especially; those of lower income and racial/ethnic minorities may have less access 3: Lack of prolonged engagement reduces trustworthiness.	Healthcare experiences Sociocultural intersection
29	Pelster, Fisher, Irwin, Coleman, and McCarthy (2015)	Tobacco Use and Its Relationship to Social Determinants of Health in LGBT Populations of a Midwestern State	763 LGBT respondents (76, 10% rural)	Nebraska	Not specific; classified by researchers using zip-code designations	Quantitative: online survey- hosted through a university website; community-based participatory research approach	1: Higher smoking rates for LGBT who live, work, or play in Nebraska than in overall smoking rates for the state and country 2: LGBT-specific social determinants of health had significant relationships to smoking status 3: Significant relationship between smoking and several general social determinants of health, including employment status, education, and income as well as binge drinking	N/A	1: Lack of adequate survey respondents to divide subgroups of LGBT individuals 2: Convenience sampling 3: LGBT-specific determinants of health used in the survey may not be exhaustive, and there may be additional factors facing LGBT individuals	Health outcomes and risk behaviors Sociocultural intersection
30	Lee, Goldstein, Ranney, Crist, and McCullough (2011)	High Tobacco Use among Lesbian, Gay, and Bisexual Populations in West Virginia	386 LGBT adults (unclear how many rural residents)	West Virginia	Not provided; qualifying through identification as an Appalachian state	Quantitative; electronic and paper surveys at gay bars and events	1: 45% current tobacco user, 41% current smoker 2: 44% prior year quit attempt (lower than state average 50%) 3: 57% prefer LGBT specific program; 42% remembered a recent LGB targeted anti-tobacco public service announcement	N/A	1: Convenience sample- prevents data from being generalizable 2: Sampling bias largely from bars that always have high smoking prevalence 3: Disaggregated gender and sexual orientation- some group sample sizes are small and may thus be unreliable.	Health outcomes and risk behaviors

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
31	Mathey, Carol, and Schillace (2003)	The Impact of Community Size on Lesbian and Bisexual Women's Psychosocial Development: Child Maltreatment, Suicide Attempts, and Self-Disclosure	174 lesbian and bisexual women- 82 from a public Internet chat room and 92 from a community-owned coffee house sample (41%; n = 39 from town under 50,000) Note: 8 participants from outside the US or Canada	Two sources- first set of data from an online US national sample and second set from Minnesota, Twin Cities	Applied to city or town where respondent spent most of childhood/ adolescence U.S. Census 2000 definitions: "rural area" = population of 50,000 or fewer and "smaller communities" with 10,000 or fewer	Quantitative: researchers used data from an initial Internet study (from chat rooms) and replicated this study with an offline sample at community-owned coffee house; participants completed a 76 survey	1: No differences in suicidality by size of participants' communities of origin 2: Participants raised in rural areas disclosed their sexuality at an older age than those from urban cities 3: Participants in rural communities disclosed their sexual orientation to family members at a greater rate 4: Childhood maltreatment by paternal figure was lower among rural-raised participants 5: Maternal abuse was greater among rural-raised participants 6: No significant differences by community size with respect to rejection and victimization (verbal abuse, assaults, threats)	Mixed or uncertain comparison	1: Self-report. 2: Convenience sampling. low generalizability 3: Mixture of sampling from local coffeehouse and widespread internet, including international 4: Data collection in 1999	Health outcomes and risk behaviors
32	Mendoza, Hamer, Haseley, and Leedy (2015)	The Physical Self-Perceptions of Rural Lesbians and Heterosexual Women	114 self-identified heterosexual women and 67 self-identified lesbians. (All rural)	Wyoming	Towns that had populations of 20,000 or fewer	Quantitative: convenience sampling methods; Surveys were distributed at various businesses (mainly grocery stores); at a social gathering of the lesbian and gay community held annually in a national forest in Southeast Wyoming	1: Both groups of women are significantly overweight 2: Lesbians exercised more times per week than heterosexual women 3: Lesbians with college educations had more positive body image and fitness self-perceptions, whereas highly educated heterosexual women had less positive body image and fitness self-perceptions	N/A	1: Small sample sizes 2: Convenience sampling 3: Weight self-report 4: Authors argue that a limitation is lacking social network analysis	Health outcomes and risk behaviors

(table continues)

Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
33	Miller, Solomon, Bunn, Varni, and Hodge (2015)	Psychological Symptoms are Associated with Both Abstinence and Risky Sex Among Men with HIV	140 men with HIV (all from Vermont, New Hampshire and "neighboring states"	New England	Not provided: unclear	Quantitative: Participants completed the study protocol at project research spaces; Data were collected in sessions lasting approximately two hours using computer assisted survey software; analysis via latent class analysis method	1: Psychological symptom profile of sexually abstinent people places them at risk for inconsistent condom use should they engage in sexual behavior 2: Mental health may shape whether people rebound back to risky behavior after initially reducing risk following a diagnosis of HIV 3: Psychological symptoms that are untreated or do not improve may interfere with the ability to implement safer sex practices	N/A	1: Homogeneous with respect to race/ethnicity 2: Sexual behavior and condom use assessed by self-report 3: Unclear if participants truly rural 4: Complicated analysis could be strength or limitation	Health outcomes and risk behaviors

(table continues)

Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
34	Moore (2002)	Lesbian and Gay Elders: Connecting Care Providers Through a Telephone Support Group	Five lesbian and two gay male caregivers who were engaged in caring directly for their partners with Alzheimers and similar conditions (all living in a "rural area")	Northwestern North Carolina	Not specific: 11 county area of western North Carolina.	Recruitment stemmed from a request for a support group from a caregiver to the author; this work done from the established support group Qualitative: a semi-structured psycho-educational framework for analysis	Group themes included the following: 1: Uncertainty and discomfort about attending a traditional support group and feeling hesitant to disclose L or G identity 2: Feeling betrayed by the healthcare system- all of the telephone participants had at least one story illustrating the sensitivity and concern by medical and human service personnel—or lack thereof—which they had experienced. 3: Limited social and community support (emotional and physical) due to hesitance to disclose identity 4: Experienced difficulties getting help from attorneys or financial planners 5: Struggles with anxiety, anger, and anticipatory grief 6: Struggles with forgiveness and closure	N/A	1: Sampling and recruitment bias from highly engaged members of an existing support group 2: Unclear rurality and years of data collection	Health outcomes and risk behaviors Healthcare experiences Sociocultural Intersection

(table continues)

Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
35	Petroll and Mosak (2011)	Physician Awareness of Sexual Orientation and Preventive Health Recommendations to Men Who Have Sex With Men	271 HIV negative gay or bisexual men (8.6% rural, 21.4% suburban, 69.9% urban)	Milwaukee, WI	No basis or specific definition given for 3 categories.	Quantitative; cross-sectional survey; recruitment at an urban gay pride festival	1: 72% thought PCP knew orientation, more likely disclosure if physician female, younger, or gay 2: Less likely if patient rural, black or low income 3: PCP knowledge was a/w HIV screening and hepatitis vaccination	Urban advantage	1: Convenience sampling, single city 2: Small % rural and unclear definition 3: Patient perception and self-report only 4: Some survey items involved activities that may be viewed as undesirable, causing underreporting	Healthcare experiences
36	Preston, D'Augelli, Kassab, and Starks (2007)	The relationship of stigma to the sexual risk behavior of rural men who have sex with men	414 rural MSM	Pennsylvania	According to 2000 U.S. Census-based on living in a Pennsylvania county designated as rural (fewer than 274 persons per square mile)	Quantitative; all men on the mailing lists who resided in rural counties were sent questionnaire packets that included a cover letter, an informed consent form; The participants sent the surveys back to the political group or the social group that had done the mailing	1: 22% classified as high sexual risk 2: 43% of participants engaging in receptive and intercourse with inconsistent condom use 3: Self-esteem high, homophobia low; stigma from family and HCPs low while general community stigma higher 4: Perceived community stigma predicted sensation seeking and higher risk behavior	N/A	1: Convenience sampling 2: Sampling bias of more engaged participants 3: Not longitudinal	Health outcomes and risk behaviors Sociocultural intersection

(table continues)

Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
37	Preston, D'Augelli, Kassab, Cain, Schulze, and Starks (2004)	The Influence of Stigma on the Sexual Risk Behavior of Rural Men Who Have Sex with Men	93 rural adult MSM	Pennsylvania	Based on the U.S. Census Data (2000), zip-code, population density, and distance from Metropolitan area (specifics not provided)	Quantitative; recruited through local social networks, from social gatherings for rural, gay, lesbian and bisexual individuals, and pride festival held in an urban area	1: Most participants with good mental health, low depression, low homophobia 2: 47% moderate to high sexual risk 3: sources of stigma community > family > HCPs 4: Highest risk category associated with low self esteem, mod risk associated with lower stigma from family and younger age	N/A	1: Convenience sampling 2: Modest sample size 3: Recruitment bias toward gay/bisexual identified and engaged in community	Health outcomes and risk behaviors Healthcare experiences
38	Rhodes et al. (2012)	Prevalence Estimates of Health Risk Behaviors of Immigrant Latino Men Who Have Sex With Men	190 rural Latino MSM	North Carolina	Counties with a population density of less than 1,000 per square mile	Quantitative; assessment was administered face-to-face; Most items had predefined response options with binary, categorical, or Likert-scale response options	1: Smoking and binge drinking low (6.5%) but higher THC 2: High prevalence sexual risk taking; 89% multiple partners and 54% inconsistent condoms use	N/A	1: Door-to-door sampling more random than convenience but not representative 2: Did not explore differences among Latino immigrants from different countries or regions	Health outcomes and risk behaviors
39	Rhodes et al. (2010)	Latino MSM and HIV in the rural south-eastern USA: findings from ethnographic in-depth interviews	21 rural Latino immigrant MSM	North Carolina	Counties with a population density of less than 1,000 per square mile	Qualitative; community-based participatory; Series of 3 ethnographic interviews over 3 weeks with each subject; grounded theory	1: General lack of accurate HIV information, influence of cultural/social/political contexts (chiefly masculinity issues) 2: Barriers include lack of trust in health system, lack of knowledge of services, lack of knowledge/cultural competency of health care providers, lack of health insurance, few options for social networking outside of sex	N/A	1: Snowball sampling	Health outcomes and risk behaviors Healthcare experiences Sociocultural intersection

(table continues)

Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
40	Rosenberger, Schick, Schnars, Novak, and Reece (2014)	Sexual Behaviors, Sexual Health Practices, and Community Engagement Among Gay and Bisexually Identified Men Living in Rural Areas of the U.S.	5,357 participants living in rural settings	U.S. national sample	Self report of living in a category described as “rural area” or “small town not near a city.”	Quantitative survey: recruitment via large social networking/dating website for MSM	1: Participants have a diverse sexual repertoire and engage in multiple sexual health practices 2: Vast majority of respondents had participated in oral semen exchange at some point during their lives 3: (92.0% reported having interacted in person with someone met online, 45.1% in the past month 4: Prevalence of always using a condom for insertive (26.4%) and receptive (29.2%) sex 5: Prevalence of never using a condom (insertive 24.5%; receptive 25.5%) 6: 78.6% have been screened for HIV and 51.5% for STIs in the past year 7: Men living in the Midwest reporting lower rates of HIV testing than other regions	N/A	1: Convenience sample 2: Sampling bias from internet dating site recruitment and use	Health outcomes and risk behaviors
41	Rostovsky, Owens, Zimmerman, and Riggle (2003)	Associations among sexual attraction status, school belonging, and alcohol and marijuana use in rural high school students	1,725 9th graders from 25 rural high schools (5.7%; n = 99 sexual minorities)	Appalachian region of Eastern Kentucky	Not specifically defined; Appalachia assumed rural	Quantitative; Surveys were administered in group settings (e.g. classrooms, cafeterias, auditoriums) during a regular class period to all students who returned signed parental consent forms and individual assent forms.	1: Students reporting same-sex attraction or uncertainty about their attraction status associated with significantly lower grade point averages, lower school belonging, and higher marijuana and alcohol use	N/A	1: Sample not large enough to allow for testing gender differences and other within-sexual minority group differences 2: Small percentage of sexual minority adolescents 3: Self report of grades, grade point averages	Health outcomes and risk behaviors

(table continues)

Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
42	Rosenberger, Satinsky, Brinegar, Stowers, Dodge, and Reece (2010)	Sexual Compulsivity, the Internet, and Sexual Behaviors Among Men in a Rural Area of the U.S.	309 MSM	Seven rural counties in Indiana	Not specific- Population less than 69,291 persons	Quantitative: community-based participatory research; online survey; recruitment, included face-to-face, Internet-based, and distribution of flyer and palm cards at community events and through existing online for a catering to G/B men	1: 66% had engaged in sexual activity with men in the last 30 days 2: 24% (n = 75) had had sex with a woman 3: Those scoring higher than the sample mean (1.65 [SD4.66]) on the sexual compulsivity measure reported patterns of having sex with partners met online and having unprotected anal intercourse	N/A	1: Convenience sampling 2: Sampling bias for those engaged in community 3: Response bias risk given high sensitivity questions	Health outcomes and risk behaviors
43	Sirota (2013)	Attitudes Among Nurse Educators Toward Homosexuality	1,282 nurse educators (12.1%; n = 153 rural)	U.S. national sample	Not defined: appears to be self-defined teaching in "urban," "suburban," or "rural"	Quantitative: survey; recruitment via contacts for nurse educators employed full time or part time in Commission on Collegiate Nursing Education-accredited colleges of nursing	1: Outcomes based on the Attitudes Toward Lesbians and Gay Men Scale (ATLG; higher scores = more negative attitudes); Each unit increase in geographic location of employment (1 = urban, 2 = suburban, 3 = rural) resulted in a significant increase in ATLG scores from 2.721 (p. 01) to 3.689 (p. 000) for three models 2: Most participants believe it is important to teach nursing students about homosexuality, but they consider themselves unprepared to teach this content.	Urban advantage	1: Excluded faculty in associate degree and diploma schools of nursing, which imposes limitations on the generalizability 2: Regional differences not explored	Sociocultural intersection

(table continues)

Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
44	Stotzer, Ka'opua, and Diaz (2014)	Is Healthcare Caring in Hawaii? Preliminary Results from a Health Assessment of Lesbian, Gay, Bisexual, Transgender, Questioning, and Intersex People in Four Counties	710 LGBTQI-identified people (34%, n = 241) living in rural counties	Hawaii	2010 U.S. Census: 3 counties that are designated by the Census as rural (Kauai, Maui, and Hawaii Counties)	A variety of recruitment methods were utilized, including (1) snowball sampling by asking key community contacts to refer likely participants, (2) e-mails sent through a LGBTQI-serving community agency's listserv, (3) attendance at Pride events in Honolulu, Hilo, and Kauai, and (4) use of social media websites related to LGBTQI services, functions, or events in Hawaii communities	1: Majority self-assessed health as "very good" or "excellent" 2: Slightly higher rates of smoking and less health insurance coverage than the general population of Hawaii 3: Many respondents reported challenges to their health, and negative experiences with healthcare 4: Hawaii's counties did not have a clear rural disadvantage 5: Honolulu and Kauai Counties demonstrated better health indicators and lower percentages of people who had delayed care due to gender identity concerns	No clear difference	1: Convenience and snowball sampling 2: Self report	Health outcomes and risk behaviors Healthcare experiences Sociocultural intersection

(table continues)

Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
45	Strafford, Ellerbrock, and Chamblee (2007)	Social Organization of Sexual-Economic Networks and the Persistence of HIV in a Rural Area in the USA	205 men and women (all rural)	Southern Florida community-Palm Beach County/Everglades	People living in close proximity or in a farming county of around 35,000 people	Convenience, purposive and snowball sampling via churches, schools, bars, social events, treatment centers and correctional system Qualitative; most were individual interviews with field notes; some were focus groups with gay men; content analysis	1: Elucidation of sexual networks and risk taking 2: Crack cocaine was an important feature of some networks and qualitatively linked to HIV transmission 3: Sexual reciprocity may contribute to the rise in HIV transmission among women in rural southern communities that have depressed economies	N/A	1: Lack of racial diversity (most African American) 2: Self-report 3: Data from 1995 to 1997	Health outcomes and risk behaviors
46	Swank, Frost, and Fahs (2012)	Rural location and exposure to minority stress among sexual minorities in the US	285 Self-identified LGBs	U.S. national sample (Midwestern and Mid-Atlantic states)	Population density; self-report of current residence in rural, small town, midsize city, suburban metropolitan and city-center metropolitan	Quantitative: online survey; participants were recruited through 10 e-mail Listservs Qualitative: rural contexts and small towns often resulted in experiences of higher levels of felt stigma and enacted discrimination 2: Small town inhabitants displayed some similar patterns, but reported lower levels of enacted discrimination than expected 3: Living in Southern states subjected LGBs to more discrimination and less satisfactory connections to LGB communities	1: Rural contexts and small towns often resulted in experiences of higher levels of felt stigma and enacted discrimination 2: Small town inhabitants displayed some similar patterns, but reported lower levels of enacted discrimination than expected 3: Living in Southern states subjected LGBs to more discrimination and less satisfactory connections to LGB communities	Urban advantage	1: Convenience sampling 2: Recall bias in ability to detect, label and remember discriminatory experiences 3: Rural by self-report without objective measure for participant 4: Most respondents from two states (Kentucky and Ohio), few people of color 5: The β coefficients of the location and regional differences in minority stress are small to moderate	Healthcare experiences Sociocultural intersection

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
47	Téllez, Ramos, Umland, Palley, and Skipper (1999)	Attitudes of Physicians in New Mexico Toward Gay Men and Lesbians	991 physicians (15.7%; $n = 156$ in towns under 25,000; another 9.8%, $n = 97$ in towns of 25–50,000)	New Mexico - survey of all actively practicing state physicians with over 50% response rate	Stratified into practicing in communities of population under 25,000; 25,000–50,000; or more than 50,000	Quantitative; surveys were mailed out with a cover letter requesting participation in a study designed to assess physician attitudes toward homosexuality and toward gay and lesbian patients and colleagues	1: Highest prevalence (20.6%) of homophobic attitudes from physicians practicing in communities of 25 to 50,000, versus 4.5% of those practicing in larger cities and 6.4% of those in more rural areas 2: 26.6% of all respondents sometimes felt uncomfortable treating lesbian or gay patients	Urban advantage	1: Data from 1996 2: Response rate of 53.6% (though high end for a physician survey) 3: Respondents from the 25,000 to 50,000 towns in one quadrant of the state; may be regional rather than population difference 4: Did not inquire about respondents' sexual orientation	Sociocultural intersection
48	Tiemann, Kennedy, and Haga (1998)	Rural Lesbians' Strategies for Coming Out to Health Care Professionals	Eight rural lesbians	state and or city not specified though all researchers from North Dakota	Five participants lived in towns of population under 8000, within 80 miles of a large town of 50,000 The other 3 lived in the town of 50,000	Recruitment via personal contacts of researchers; in-depth qualitative interviews; content analysis	1: Protective strategies included screening providers for acceptance; getting referrals from friends and other health providers; unplanned disclosure, planned disclosure, non-disclosure 2: Prominent themes of limited access (few providers and long travel distances), social isolation, inappropriate responses by even well-meaning providers (coming out to female providers generally positive and to males negative), importance of clinic environment	N/A	1: Very small convenience sample 2: Homogeneous group- high education, same race (not specified) 3: All participants personally known to researchers; risk for high level of bias in interviewing	Healthcare experiences Sociocultural intersection

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
49	Ullrich, Lutendorf, and Stapleton (2002)	Social constraints in HIV infection: Effects of sexual orientation and area of residence	121 HIV-positive persons (39.7%, n = 48 nonmetropolitan; 60%, n = 60 gay or bisexual)	Iowa	Divided into metropolitan and non-metropolitan as defined by U.S. Census (over 50,000 metropolitan)	Recruitment via surveys sent to all patients treated for HIV at one major health center; Quantitative; descriptive and bivariate analyses of scores on social constraints, depression, and HIV-related health status (CD4 and viral load)	1: Neither area of residence nor sexual orientation appeared to be directly related to poor: r mental health 2: Respondents in nonmetropolitan areas had worse HIV-related health status 3: Gay men in non-metropolitan areas were more likely to experience both depression and social constraints with respect to talking about HIV 4: Social constraints appeared to account for the association between non-metropolitan residence and depression among gay male participants	Mixed or uncertain comparison	1: Cross-sectional-association rather than causal 2: Under 60% response rate 3: Small sample size 4: Data from 1996 to 1998	Health outcomes and risk behaviors Sociocultural intersection

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
51	Vissman, Bloom, Leichter, Bachmann, Montano, Topmiller, and Rhodes (2011)	Exploring the Use of Nonmedical Sources of Prescription Drugs Among Immigrant Latinos in the Rural Southeastern United States	36 community members, including 2 male-to-female transgender participants and 7 gay men (all rural)	North Carolina (5 counties)	Participants living in counties defined as rural by the RUCAs designation	CBPR approach; recruitment via community based organizations and snowball sampling; Qualitative; semi-structured 1:1 interviews; grounded theory based analysis.	1: Participants described the roles of local Latino stores (<i>tiendas</i>), family, and social networks in accessing treatment advice and prescription drugs 2: Among transgender Latinos seeking to initiate or maintain gender transition, and Latino men experiencing erectile dysfunction or seeking sexual enhancement, nonmedical sources were described as the “only” way to receive medical treatments 3: “Sexual silence” is common; meaning Latino patients do not feel comfortable discussing most sexually-related topics with health providers	N/A	1: Convenience sampling 2: Small sample size	Sociocultural intersection

(table continues)

Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
52	Waldo, Hesson-McInnis, and D'Augelli (1998)	Antecedents and consequences of victimization of lesbian, gay, and Bisexual Young People: A Structural Model Comparing Rural University and Urban Samples	54 LGB age 16 to 21 (all rural); comparison to earlier study of 194 urban youth	Mid-Atlantic university (not specified; researchers include one from Pennsylvania)	Town population 50K and 90 minutes from larger city.	Measures were distributed to LGB young people at meetings and social events of various university organizations; Quantitative description and comparison of scales, and structural modeling	1: High suicide attempt prevalence 32% 2: Gender atypical more likely targeted for harassment and violence, victimization relationship to psychological distress mediated via self-esteem, effects of role models 3: Support of both family/friends and the local community mitigates psychological distress 4: Resources and role models operate through increasing comfort with orientation rather than direct effect on distress level	No clear difference	1: Differences between the two samples confounded the distinction between community size and the participant recruitment strategy (i.e., university campus vs. community youth centers) 2: Several of the constructs yielded low reliability estimates	Health outcomes and risk behaviors

(table continues)

Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
53	Walinsky and Whitcomb (2010)	Using the ACA Competencies for Counseling with Transgender Clients to Increase Rural Transgender Well-Being	Seven transgender participants in rural areas (six in focus groups and one in-person interview)	Participants from four different states; not specified (researchers from North Dakota)	Rural region containing two small metropolitan areas of 50,000 to 100,000; "federal definition" without specifications; region's population density is 70/square mile	Recruited from a single transgender support group; Qualitative; Focus groups; Grounded theory analysis.	1: Prominent theme of vocation related to identity disclosure, the impact of limited access to work, or vocational choices, feeling safe or unsafe in workplace relationships, increasing autonomy through self-employment, the potential impact of being a transgender person working with transgender clients, and the ways in which coming out and transgender visibility may change as people come closer to retirement 2: Theme of personal change and coming out which was varied but described as an ongoing process 3: Theme of self-acceptance involved relationship to unhealthy coping as well as positive psychological aspects 4: Theme of identity in terms of variable ways in which trans people identify 5: Well-being is situation and context dependent as well as dynamic/changing	N/A	1: Very small sample	Health outcomes and risk behaviors

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
54	Whitehead, Shaver, and Stephenson (2016)	Oumess, Stigma, and Primary Health Care Utilization among Rural LGBT Populations	946 LGBTQ, including 155 transgender and non-binary gender individuals (all rural)	U.S. national sample	U.S. Census Bureau's definition of areas with a population density of < 1,000 people per square mile	Recruitment primarily via banner ads on Facebook targeted towards age 18+ with LGBT-related interests who reported residence in rural zip codes; Quantitative online survey; descriptive and comparative analyses	1: Higher scores on stigma scales were associated with lower utilization of health services for the transgender and non-binary group 2: Higher levels of disclosure of sexual orientation were associated with greater utilization of health services for cisgender men	N/A	1: recruitment bias of relatively young and engaged sample 2: Still lacked the expected racial and ethnic diversity in the target rural population 3: Did not collect data on gender expression or how others perceived respondents' gender	Health outcomes and risk behaviors Healthcare experiences
55	Wienke and Hill (2013)	Does Place of Residence Matter? Rural–Urban Differences and the Wellbeing of Gay Men and Lesbians	632 G/L adults (defined as those with only same-sex partners in last 5 years) taken from National Health and Social Life Survey (NHSL), CHSL, GSS (% rural or small city not directly quantified)	U.S. sampling	Categories based 2000 U.S. Census: largest cities, midsize cities, suburbs, small cities over 10,000, and rural areas under 10,000 (survey also had variables for migration and rural past residence).	Quantitative: 1992 NHSL, the 1996 through 1997 Chicago Health and Social Life Survey (CHSL), and 11 waves (1988–2006) of the repeated cross-sectional General Social Survey (GSS), all conducted by the National Opinion Research Center (NORC)	1: Rural residents happier than those in large and small cities 2: Those in largest cities report worst health (especially lesbians) 3: Lesbians in largest cities least satisfied with work 4: Migrants to largest cities worst health and migrants to rural best work satisfaction.	Rural advantage	1: Sample of GL respondents in rural and urban areas was relatively small 2: Behavior-based classification rather than both identity and behavior 3: Did not explore the possibility of sociodemographic group variations 4: Many variables and analysis higher type I error risk 5: Data collection range from 1988 to 2006	Health outcomes and risk behaviors

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Supplemental Table 1 (continued)

Article	Authors/date	Title	Population	Location	Definition of rural	Method	Topics/main findings	Urban/rural comparison	Limitations	Themes
57	Willging, Salvador, and Kano (2006b)	Pragmatic Help Seeking: How Sexual and Gender Minority Groups Access Mental Health Care in a Rural State	38 rural LGBT mental health clients	New Mexico	Not specific; "Majority lived in two counties that were vast in size (5,449 and 5,858 square miles); rates of poverty exceeded the national average in each county (20.5 percent and 36.1 percent)"	Recruitment via advertisements in clinical settings, through online community fora, and snowball sampling; Qualitative: in-person interviews; open-coding content analysis	1: Decision-making concerning mental health care, included using even non-friendly sources of care to achieve basic needs and using multiple and even contradictory approaches 2: Stigma of both mental illness and LGBT status influenced help-seeking 3: Financial barriers, and lack of or hidden social networks influenced mental health and help-seeking 4: Participants had strong reliance on family, strong distrust of local providers, cultural beliefs of mental illness as weakness contrasting with rural self-reliance healers. 3: Some use of indigenous healers. 4: Predominance of religiously based mental health services	N/A	1: Unclear definition of rural or diversity in location 2: Sampling bias	Healthcare experiences Sociocultural intersection

(table continues)

