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The Mental Health of Older LGBT Adults

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Abstract There are approximately one million older lesbian, gay, bisexual, and transgender (LGBT) adults in the USA. Their mental health issues result from interactions between genetic factors and stress associated with membership in a sexual minority group. Although advancements in acceptance and equal treatment of LGBT individuals have been occurring, sexual minority status remains associated with risks to physical and mental well-being. Older LGBT adults are more likely to have experienced mistreatment and discrimination due to living a majority of their lives prior to recent advancements in acceptance and equal treatment. All LGBT adults experience one common developmental challenge: deciding if, when, and how to reveal to others their gender identity and/or sexual orientation. LGBT individuals have higher rates of anxiety, depression, and substance use disorders and also are at increased risk for certain medical conditions like obesity, breast cancer, and human immunodeficiency virus (HIV). Improved education and training of clinicians, coupled with clinical research efforts, holds the promise of improved overall health and life quality for older LGBT adults.

Keywords Bisexual · Gay · Lesbian · Mental health · Older adults · Transgender

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Introduction

The Demographics of the Older LGBT Population

Historically, the lesbian, gay, bisexual, and transgender (LGBT) population in the USA has been largely understudied from a demographic research perspective. Until very recently, studies did not include sexual orientation as a baseline demographic characteristic which has led to a paucity of information about members of these sexual minorities. Clearly, the invariable inclusion of sexual orientation and gender identity in future large-scale surveys will lead to a more detailed and accurate understanding of the older LGBT population.

In 1990, the U.S. Census started collecting data on same-sex households for the first time, measuring one subset of the LGBT population. Since then, the U.S. Census has continued to measure same-sex households and in 2010 added a measure of married versus unmarried households. Other than the U.S. Census, prior to 2000, information about LGBT adults came from a number of small research studies, all of which employed self-selected samples [1].

The first large-scale study to include a question about sexual orientation was the inaugural California Health Interview Survey (CHIS) of 2001 [2, 3] and, for the very first time, the 2015 CHIS survey added a question on gender identity. The

American Community Survey (ACS), a U.S. Census project, included same-sex households in the 2005 survey [4, 5]. The following year, scholars at The Williams Institute at the UCLA College of Law began publishing analyses of the data from the 2000 census and the ACS. Subsequently, The Williams Institute has become the epicenter of LGBT demographic research. In 2012, when the nationwide Gallup Poll added a question about sexual orientation ("Do you personally identify as lesbian, gay, bisexual or transgender?"), 3.4 % of the over 120,000 individuals responded that they were LGBT [6••]. Among those respondents who were 65 years old or older, 2 % answered this question "yes" and 91.5 % answered "no." The U.S. Census estimates that in 2015 the total number of individuals who are 65 years old or older was approximately 48,000,000 [7]. Assuming that 2 % of this population identifies as LGBT, then the current population of older LGBT adults in the USA numbers close to one million.

Self-identification depends on the perception that answering honestly is safe and will have no negative consequences [8]. Of the individuals aged 65+ who responded to the Gallup Poll, 6.5 % either refused to answer the question about sexual orientation or stated that they did not know [6••]. With this in mind, it seems likely that the 2 % response rate in the Gallup Poll may be lower than the actual percentage of older LGBT individuals. As more people believe that it is safe to answer questions about sexual orientation and gender identity on large surveys, the percentage will likely increase. One recent study points to an increasing willingness among older adults to self-identify as LGBT on surveys [9]. To date, no nationwide survey has attempted to enumerate the older transgender community [10].

Research that extends beyond just the quantification of the size of the LGBT community, and includes information about sexual behaviors, has the potential to amplify our understanding of the lives of older LGBT individuals. Beginning in 2005 with The National Social Life, Health and Aging Project (NSHAP) [11–13], some reasonably sound scientific data about the lives of older LGBT individuals have been published, including information from the National Health Interview Survey [14••], the National Survey of Sexual Health and Behavior (NSSHB) [15, 16], and the Aging and Health Report (also known as The Caring and Aging Project) which was launched in 2010 and has yielded the largest sample to date of older LGBT adults ($N = 2560$, aged 50–95) [17].

Generational Differences and a Brief Review of the LGBT Equality Movement

People are shaped, in part, by the defining cultural mores and social climate of their formative years. The current population of older LGBT adults is composed of three generational groups, and each of these groups experienced distinctly different cultural conditions. Those born between 1910 and 1925 (currently age 90 years and older), the "Greatest Generation," grew up in a world where public or private same-sex behaviors could result in being arrested and sent to prison, and the decision to hide one's sexual orientation was considered self-protective. Those born between 1926 and 1945 (currently age 70–89 years old), the "Silent Generation," came of age in that same repressive environment but witnessed and participated in the social upheavals of the 1960s and 1970s [18]. In 1948, Alfred Kinsey and his associates published *Sexual Behavior in the Human Male*, which was widely discussed by the public, and purported that 10 % of adult males in the USA were exclusively homosexual [19]. Those born between 1946 and 1950 (currently 65 to 69 years old), the leading edge of the "Baby Boom" generation, reached young adulthood at the same time as the "Gay Rights Movement" was born. The Aging and Health Report provides examples of how age/generation impacts the experience of older LGBT adults. For example, data from this study indicates that, among older LGBT adults, the rate of victimization increases with increasing age and the rate of internalized stigma for those 80 and older is higher than those 50–64 and 65–79 [17].

The "Sexual Revolution" of the mid-1960s to 1970s affected both heterosexuals and those who were not heterosexual. The Gay Rights Movement began in the early 1970s and grew into a powerful force pushing for civil protections. One result of this push was the decision in 1973 by the American Psychiatric Association (APA) to remove "homosexuality" from its list of mental disorders [20, 21].

Social attitudes toward LGBT people began to evolve with unprecedented speed in the early 2000s. In 2003, the U.S. Supreme Court struck down the remaining laws against sodomy in 14 states (Lawrence v. Texas), decriminalizing male same-sex behaviors. Subsequently, one-by-one, states began to legalize same-sex marriage or civil unions. The rapid shift in attitudes toward same-sex marriage resulted in landmark decisions by the U.S. Supreme Court in 2013 (USA v. Windsor) and 2015 (Obergfell v. Hodges) which made same-sex marriage legal throughout the USA.

Sex, Gender, and Sexual Orientation

Sex is assigned at birth and refers to the individual's biological status as either male or female. An individual's *sex* is associated with physical attributes such as chromosomes, the prevalence of various hormones, and external and internal anatomy [22]. *Gender* refers to the socially constructed roles, behaviors, activities, and attributes that a given society considers appropriate for boys and men or girls and women. These influence the ways people act, interact, and feel about themselves. While aspects of biological sex are similar across different cultures, aspects of gender may differ [22]. *Gender identity* refers to an individual's sense of being male, female, or something else [22]. *Gender expression* refers to the way a person communicates gender identity to others through behavior, clothing, hairstyles, voice, or body characteristics [22].

Cisgender is the term used to describe an individual whose sex, gender identity, and gender expression are the same. For some individuals, their sense of being a male or a female (*gender identity*) conflicts with their sex. When an individual begins to express the gender opposite of their sex, the individual is considered to be a transgender person. *Transgender* is a general term that includes cross-dressers and transsexuals. *Cross-dressers* are individuals who wear clothing of the opposite sex but still identify as a member of their biological sex [22]. *Transsexuals* are individuals who feel that they were assigned the incorrect sex at birth and that the factors that determined this assignment (e.g., chromosomes) do not match with their inner awareness of their sex. Some transsexuals take steps to shed the outward appearance of their biological sex and then transition to becoming a member of their non-assigned sex. For some, but not all, this may involve taking hormones or surgical alterations of the genitalia. A person who was born female but who transitions, or wishes to transition to being a man, is a *trans-man* [22]. A person who was born male but who transitions, or wishes to transition, to being a woman is a *trans-woman* [22]. Eventually, transsexuals self-identify as the sex to which they have transitioned. Transsexual individuals may consider themselves to be heterosexual, gay/lesbian, or bisexual depending on their attractions to others.

Sexual orientation refers to the nature of emotional and sexual attractions to others [23]. Individuals who are exclusively or primarily attracted to members of the opposite sex are heterosexual (straight). Individuals who are exclusively or primarily attracted to members of the same sex are homosexual. Individuals who have attractions to members of both sexes are bisexual. Some people who have sex with members of both sexes do not self-identify as bisexual but rather as heterosexual or gay/lesbian. These individuals are classified as behaviorally bisexual. Identification by behavior is more accurate than self-identification but requires a higher level of disclosure by individuals.

Another important term is "men who have sex with men" (MSM). This term is frequently used in research, especially research regarding human immunodeficiency virus (HIV) transmission risk, because someone with a history of a single same-sex act, or even multiple same-sex acts, does not invariably identify as being bisexual or homosexual [24]. Using the term MSM has gained favor due to the hope that the use of this term yields more accurate information about how the act of sex between men contributes to HIV infection risk, regardless of whether a male research study participant self-identifies as heterosexual, bisexual, or homosexual [24].

Coming Out, a Defining Developmental Process

All people who identify as LGBT experience one common developmental challenge, deciding if, when, and how to reveal to others their gender identities and/or sexual orientations. This process is commonly referred to as "coming out" which represents a shortened version of "coming out of the closet." Coming out has an initial internal phase, during which an individual becomes aware of his/her sense of being male or female and his/her emotional and physical attractions. Afterwards, there is an external phase, where an individual openly declares to at least one other person this awareness. The timing and sequencing of the events involved in coming out are totally unique to each individual [25]. For a variety of reasons, some members of the LGBT community choose never to come out. This is sometimes described as "remaining in the closet." A person who is thinking through the decision to come out to another person will first discern the level of safety in the environment before deciding to speak. At times, this decision-making process may be disrupted when an individual is involuntarily "outed" and information about gender identify and/or sexual attraction is made public by someone else.

At any age, coming out, either by choice or by being "outed," is almost always a vulnerable and stressful time. Coming out may be met with acceptance, but rejection, confusion, and hostility still remain distinct possibilities. Although societal attitudes regarding the LGBT community have recently been changing, most older LGBT individuals, especially those who came out when much younger, have experienced one or more forms of personal victimization directly attributable to their gender identity or sexual orientation. Eight-two percent of the older LGBT individuals who participated in the initial phase of the Caring and Aging Study reported experiencing at least one lifetime episode of victimization because of actual or perceived sexual and/or gender identity and 64 % reported experiencing at least three or more episodes. This report found that the most common forms of victimization were verbal insults (68 %), threats of physical violence (43 %), being hassled or ignored by the police (27 %), having an object thrown at them (23 %), damage or destruction of personal property (20 %), physical assault including being punched, kicked, or beaten (19 %), and being threatened with a weapon (14 %). Although the majority of older LGBT individuals have experienced some form of personal victimization over the course of life due to their sexual minority membership, most have also found ways to cope or even thrive [26].

Coming out or returning to the closet is a lifelong, and sometimes oscillating, process influenced by new or changing social situations such as a move into residential care or the home of an adult child. Some individuals experience same-sex attractions as so distressing or so ego-dystonic that they continuously strive to repress them. It is not uncommon for individuals who have pushed away this awareness to choose a life of celibacy or to enter into relationships with members of the opposite sex, marry, and have children. Later in life, these individuals, perhaps due to death of a spouse or divorce, may discover or rediscover their same-sex attractions and/or true gender identify and choose to act

on them, even in very old age, in a setting of greater perceived safety and acceptance.

The decision to come out or remain out in any new social setting or circumstance will almost always be based on the perception of safety in that new setting or circumstance [27]. The authors were unable to find any scientific publications which specifically address the reasons for, and related issues associated with, coming out in later life. The popular media, however, does contain a number of published articles and broadcast news reports about this [28, 29]. The ability to make and keep new friends is considered key to maintaining physical health and emotional well-being as one ages [30], so it seems reasonable to assume that older LGBTs are challenged by the need to keep coming out as they continue to age. Conversely, older LGBT individuals who have been completely out in their younger adult lives may perceive danger in being fully open as they age and become more physically debilitated and dependent or as they become caregivers for a spouse or life partner who is a member of a sexual minority [31]. As people develop needs for personal care, they become more vulnerable. If the care is delivered by family members or strangers, who do not understand or approve of the sexual orientation or gender identity of the older person, the person receiving the care may feel the need to go back into the closet [31].

Health Disparities for Older LGBT Adults

The Institute of Medicine report *The Health of Lesbian, Gay, Bisexual and Transgender People: Building a Foundation for Better Understanding* points out that the LGBT population of the USA has been poorly understood by the medical profession and underserved by the health care delivery system and calls for research and education [32]. Similarly, the Joint Commission report *Advancing Effective Communication, Cultural Competence, and Patient- and Family-Centered Care for the Lesbian, Gay, Bisexual, and Transgender (LGBT) Community: A Field Guide* (2011) offers guidance to institutions and clinical practitioners on how to begin addressing these problems [33].

Historically, LGBT individuals have had more difficulty obtaining appropriate health care than the general population [34]. Poor access to health care services for LGBT individuals can be partially explained by lower income [32]. Although recent health care reforms have resulted in a reduction in the number of uninsured individuals in the USA, historically, lower income meant not having any health insurance or being underinsured [35]. Many older LGBT people had to postpone seeking medical attention due to lack of insurance coverage, which resulted in untreated or undertreated chronic medical conditions. In many stable partnerships, one partner had insurance but the employer did not offer partner benefits, so the other partner may have gone uninsured. Medicare does not cover unmarried partners and did not recognize married same-sex couples until 2015.

Research reports show that, in general, older LGBT adults have higher rates of certain physical illnesses and undesirable psychosocial circumstances than the general population of older adults [36••] and many of these have clear psychiatric associations. For example, older lesbian and bisexual women have higher rates of obesity and cardiovascular risk than the general population of older females [36••]. This is especially worrisome given the growing body of scientific evidence which correlates poor vascular health with increased risk of certain specific types of dementia including Alzheimer's and vascular dementia [37–39]. Other examples of less favorable social factors and physical illnesses over-represented in the LGBT community include (1) older gay or bisexual men are more likely to live alone and experience poor physical health, including infection with HIV, than the general population of older males [3]; (2) gay, bisexual, and transgender cancer survivors have been found to have higher rates of depression and relationship difficulties compared to heterosexual men [40]; (3) older lesbian women appear to have more risk factors for breast cancer than their heterosexual counterparts, including fewer pregnancies, fewer total breastfeeding months, and higher body mass indices [41]; and (4) a particularly alarming recent research finding is that HIV-infected individuals are 28 times more likely than HIV-seronegative individuals to develop anal cancer [42, 43].

Even within the group of sexual minorities, important differences are beginning to be identified. For example, older transgender adults are more likely to experience poor physical health, disability, obesity, and mental distress than their lesbian, gay, and bisexual peers [44]. In addition, transgender adults face the greatest financial and emotional barriers to seeking health care among older LGBTs [44].

In addition to issues surrounding payment for care and differing risks for certain medical conditions, older LGBT adults have faced frank discrimination by health care providers, at both the individual provider level and the institutional level, including refusal of care or inferior care [33]. Many older LGBT adults have postponed or refused to seek care due to fear of being judged or mistreated by a health care provider. Medical education has largely ignored LGBT health issues resulting in most physicians being poorly trained to provide culturally sensitive, competent care to this population [33]. Table 1 contains guidelines for how to conduct a mental health interview with a member of the LGBT community.

Mental Disorders and the LGBT Community

The mental health issues that older LGBT adults face are thought to be the result of an interaction of possible genetic

Table 1 Providing an optimal mental health evaluation of an older LGBT adult

- Create a safe and welcoming environment for LGBT patients/clients and staff. Achieving this will almost always require education and training of staff members, as well as establishing and maintaining clear rules about confidentiality and respect for privacy [45].
- Develop and use standardized intake forms, templates and procedures that include questions about sexual orientation [45, 46], gender identity [10], current relationship status, current living situation, the presence or absence of a proxy health care decision maker, relationships with members of the family of origin, prior long-term relationships or marriages, children, family of choice, friends, and caregivers.
- Recent research by Cahill et al. [47] found that integrating questions about sexual orientation and gender identify into a patient registration form was both feasible and acceptable to a diverse sample of patients. This group used a two-step gender identity question (current gender and birth sex) which is the method endorsed by leading transgender researchers both in the USA [10] as well as globally [48].
- Foster awareness among both administrative and clinical staff members of their feelings, attitudes, and prejudices. Reminds them not to make assumptions about the patient/client and encourage them to actively convey their willingness and desire to learn. A relatively common indication of either potential prejudice or insufficient training or both is not using the name or personal pronoun preferred by a transgender person. If you do not know this information, then politely inquire [49].
- Discover whether the individual was ever coerced or forced into psychiatric treatment or subjected to some form of conversion therapy.
- Determine whether the individual has experienced losses of family or friends due to HIV or to other causes.
- Explore if, when, and how the person came out, including, if appropriate, the current degree of "outness" (i.e., who knows and who does not know) as well as whether concerns or fears exist regarding being out and aging.
- Obtain sexual history including current and past sexual partners, a preference for sex exclusively with one person, or more than one person and use of contraception and/or safe sex practices [50].
- Identify risk factors for poorer physical and mental health including lifetime episodes of victimization, internalized stigma, sexual identity concealment, the existence of multiple potential sources of stigma, social isolation/small social networks, poor self-efficacy, lack of connection to LGBT community, lack of connection to larger community, income insecurity, the existence of health insurance or underinsurance, and chronic undertreated medical conditions due to lack of primary care [36••, 44].
- Assess for other sources of stress and vulnerability.
- Search for and/or reinforce protective factors for better physical and mental health including perceived social support, larger social networks, high self-efficacy, sexual orientation disclosure, positive sense of sexual identity, connection to LGBT community, connection to larger community, religious/spiritual activity, adequate financial resources, adequate health insurance coverage, the existence or absence of stable primary care, other sources of resilience, and predictors of successful aging [36••, 44].

risk with exposure to multiple, negative, stressful experiences over the life course. Recent research has demonstrated that, in addition to potential genetic vulnerability, risk factors for depression include more frequent experiences of discrimination and victimization over a lifetime, higher levels of internalized stigma, greater identity concealment, more numerous comorbid medical conditions resulting in excess disability in HIV+ men, and belonging to multiple stigmatized groups (i.e., simultaneously being older and belonging to both a racial and sexual minority group) [36••]. This same research has demonstrated that there are multiple protective factors against depression including higher perceived social support, larger social network size, higher sense of self-efficacy in HIV+ men, more active religious and spiritual life, greater community connectedness/sense of belonging, more positive sense of sexual identity, and greater sexual identity disclosure. It is important to note that, in general, bisexual and transgendered persons have lower levels of community connectedness in the LGBT community.

Mood and Anxiety Disorders

Until recently, very little empirical evidence existed on the prevalence of mood and anxiety disorders and rates of suicidal ideation, behaviors, and attempts specifically in the older LGBT population. The Institute of Medicine Report, *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding*, summarized the available data regarding these topics prior to 2011 [32]. Table 2 lists the best research done to date on the epidemiology of mood and anxiety disorders in the LGBT population.

Two recent large-scale studies have begun to illuminate important mental health issues in the older LGBT population [17, 51]. In one of these studies, 31 % of LGBT individuals surveyed had current depression [17], which is two to three times Center for Disease Control (CDC) estimates of the prevalence of depression among all older Americans [59]. Transgender rates were even higher, with 48 % of transgender participants screening positive for depression [17].

Several smaller studies have been conducted to investigate depression and suicide rates in subgroups of the LGBT population [55, 56, 58]. When a convenience sample of 571 transgender women in New York City was divided into older (40–59) and younger (age 19–39) cohorts, the lifetime depression rates were 52.4 % in the older group and 54.7 % in the younger group [58]. Suicidal ideation had occurred in 53.5 % of the older group, suicide planning in 34.9 %, and suicide attempts in 28 % [58].

Substance Use Disorders

Substance use disorders (SUD) decline in prevalence with increasing age, but this trend is somewhat offset among older LGBT adults as LGBT persons have higher SUD rates compared to age-matched heterosexuals [60]. The National Epidemiologic Study on Alcohol and Related Conditions (NESARC) found SUD prevalence approximately two times higher among lesbian, gay, or bisexual persons than among

Table 2 Epidemiological studies of depression and anxiety in LGBT individuals

Study/authors	Sample	Methods	Results
Caring and Aging with Pride, Fredriksen-Goldsen et al. [17]	*N* = 2560 SO, 61 % gay men; 33 % lesbian; 3 % bisexual women; 2 % bisexual men; 7 % transgender Age, 44 % 50–64; 46 % 65–79; 10 % 80+	Population-based survey Depression: CESD-10	31 % LGBT with current depression by CESD-10; 24 % LGBT reported lifetime diagnosis of anxiety disorder; 39 % lifetime prevalence of suicidal ideation
The Stonewall Report, Guasp [51]	*N* = 1036 LGBT compared to 1050 heterosexual SO: LGB Age, 55+	Online interviews administered to members of the YouGov Plc GB panel of 320,000 individuals	Depression in the last year: lesbian/bisexual women 7 %, gay/bisexual men 5 %. Lifetime prevalence of depression: lesbian/bisexual women 40 %, gay/bisexual men 34 %. Anxiety in the past year: lesbian, gay, bisexual men/women 4 %. Lifetime prevalence of anxiety: lesbian/bisexual women 33 %, gay/bisexual men 29 %
Urban Men's Health Study, Mills et al. [52]	*N* = 2881 SO: gay/bisexual men Age: analysis included 4.6 % 60–69, 1.5 % 70+	Household-based probability sample Depression: CESD-10	Depression by CESD-10, 17 % age 60–69; 5 % age 70+
Urban Men's Health Study, Paul et al. [53]	*N* = 2881 SO: gay/bisexual men Age: analysis included participants 55+	Household-based probability sample History of suicide attempt: self-report	12 % of participants age 55+ reported a history of suicide attempt
Women's Health Initiative, Valanis et al. [54]	*N* = 93,311 SO: heterosexual women, bisexual women, lifetime lesbians, adult lesbians, those who never had sex as an adult Age, 50–79	Depression: self-report	15–17 % lifetime prevalence of depression
National Lesbian Health Care Survey, Bradford et al. [55]	*N* = 1925 SO, 94.5 % lesbian Age, 3.1 % of participants were 55+	Survey Depression: self-report	24 % lifetime prevalence of depression
Shippy et al. [56]	*N* = 233 SO: gay men Age, 50–87	Depression: self-report	30 % current depression
D'Augelli et al. [57]	*N* = 416 SO: LGBT Age, 60–91	Suicide attempt: self-report	13 % reported history of suicide attempt
Nuttbrock et al. [58]	*N* = 571 SO: transgender women Age, 19–39 group and 40–59 group	Convenience sample Depression/suicidal ideation/suicide planning/suicide attempts: self-report	In the older group: lifetime depression rate was 52.4 %; 53.5 % had a history of suicidal ideation, 34.9 % suicidal planning, 28 % suicide attempts

CESD-10 The Center for Epidemiologic Studies Short Depression Scale

Table 3 Substance use epidemiology in LGB populations

Substance	Population studied	Findings
Alcohol	Lesbians (NESARC)	3.6 times more likely to have past-year alcohol dependence, compared to age-matched heterosexual women [60]
	Gay men (NESARC)	2.9 times more likely to have past-year alcohol dependence, compared to age-matched heterosexual men [60]
	Bisexual women (NESARC)	2.9 times more likely to have past-year alcohol dependence, compared to age-matched heterosexual women [60]
	Bisexual men (NESARC)	4.2 times more likely to have past-year alcohol dependence, compared to age-matched heterosexual men [60]
	Lesbians (2000 National Alcohol Survey)	7 times more likely to have alcohol dependence and 11 times more likely to have ≥2 negative social consequences from drinking compared to heterosexual women [61]
	Bisexual women (2000 National Alcohol Survey)	6.5 times more likely to have alcohol dependence and 8 times more likely to have ≥2 negative social consequences from drinking compared to heterosexual women [61]
	Gay and bisexual men (2000 National Alcohol Survey)	No difference on most alcohol-related measures, compared to heterosexual men, with exception of gay men being 3 times more likely to have been drunk ≥2 times in the past year [61]
Drugs	Lesbians (NESARC)	11–12 times more likely to have past-year drug dependence, compared to age-matched heterosexual women [60]
	Gay men (NESARC)	4.2 times more likely to have past-year drug dependence, compared to age-matched heterosexual men [60]
	Bisexual women (NESARC)	No statistically significant difference in past-year drug dependence, compared to age-matched heterosexual women [60]
	Bisexual men (NESARC)	6.3 times more likely to have past-year drug dependence, compared to age-matched heterosexual men [60]
Nicotine (tobacco)	LGB persons (National Adult Tobacco Survey)	Higher rates of tobacco use among LBG persons than among heterosexuals (38.5 vs. 25.3 %, respectively); rates of use declined with increasing age among LGB persons [62]
	Lesbians (Multisite Women's Health Study)	Higher rates of lifetime (but not current) tobacco use among lesbians than heterosexual women (61 vs. 54 %); no differences in current or lifetime use by age groups among lesbians [63]

NESARC National Epidemiologic Study of Alcohol and Related Conditions

heterosexuals [60]. Findings related to the epidemiology of specific substances of abuse among LGB individuals are summarized in Table 3. Less is known about SUD among transgender persons, but available evidence points to elevated risk among this population as well [60]. Although members of the Baby Boomer Generation have different attitudes and substance use histories than members of the Silent Generation or members of the Greatest Generation, research on substance use among any generation of older LGBT adults lags behind that of younger LGBT adults. With the burgeoning number of older adults, in general, and older members of the LGBT community, in particular, the need for SUD research among older LGBT adults will only increase [64].

"Club drug" use has long been discussed as a common practice among men who have sex with men (MSM) attending gay nightlife venues, but their use is also elevated in lesbian/bisexual women [65, 66, 67•]. Club drugs include methamphetamine, cocaine, 3,4-methylenedioxy-methamphetamine (ecstasy), ketamine, and gamma-hydroxybutyric acid (GHB). Many investigations have linked club drugs, especially methamphetamine, to increased risky sexual behaviors (RSB) and HIV transmission in MSM. These drugs, like alcohol, can lower inhibitions, impair decision-making, and elevate libido [60]. Additionally, substance use impairs immune function and decreases adherence to antiretroviral medications, further increasing HIV transmission risk [68, 69•, 70]. Although older MSM have better antiretroviral adherence and engage in less RSB than younger MSM, substance use, nonetheless, decreases medication adherence and increases RSB in older MSM as well [69•].

Another unintended consequence of club drug use is erectile dysfunction resulting in misuse of phosphodiesterase inhibitors (PDIs), such as sildenafil (Viagra©), in combination with club drugs. This practice is also linked to increased RSB among MSM [71]. Older MSM are more likely to report recreational use of PDIs than younger MSM, perhaps reflecting

elevated rates of erectile dysfunction with increasing age [72]. Misuse of other prescription drugs, most notably opioids, is also associated with RSB among MSM, and older age predicted increased nonmedical use of opioids [73, 74]. This may relate to high rates of chronic pain and associated opioid exposure among older adults. Prescription opioid abuse, along with subsequent conversion to heroin use, is a national health crisis in the USA [75]. Although not recognized as a formal diagnosis in DSM-5, some patients and clinicians conceptualize compulsive sexual acts (with or without substances) that cause personal distress or psychosocial dysfunction as a behavioral addiction, akin to gambling disorder. A measure of sexual compulsivity in MSM predicted RSB, even controlling for drug use, HIV status, and age [76]. Increased age was associated with lower sexual compulsivity scores [76].

Several factors may explain increased SUD among the LGBT community, including stress due to stigma/minority status, decreased social support, internalized homophobia, early integration of clubs and bars into LGBT neighborhoods, and increased peer acceptance of substance use [77]. Additional racial/ethnic minority status may further increase risk of SUD among LGBT individuals [78•, 79]. The NESARC reported that lesbian, gay, and bisexual adults had double the risk of victimization (primarily domestic violence and childhood abuse) compared to heterosexuals and that such victimization increased risk of SUD [60]. Other risk factors for SUD salient to older LGBT adults include co-occurring anxiety and depressive disorders.

Few SUD treatments designed for either older adults or for LGBT persons have been tested empirically. Nonetheless, a large U.S. study indicated that, among persons with SUD, LGBT persons were more likely than heterosexuals to have sought treatment for SUD (21 vs. 7 % for professional treatment and 22 vs. 11 % for 12-step meetings) [80]. Wong and colleagues demonstrated that an intervention using cognitive-behavior therapy (CBT) decreased substance use among persons with HIV, of which 50 % were MSM and 45 % were aged ≥40 [81]. Another trial tested CBT culturally adapted for MSM with and without contingency management (CM) and reported that CBT + CM decreased RSB and methamphetamine use [82]. Similarly, a therapy incorporating motivational interviewing decreased alcohol use and RSB for HIV-positive MSM (mean age 38) [83].

Dementia

The Alzheimer's Association estimated there were 350,000 LGBT individuals living with dementia in the USA as of 2012 [84••]. Once again, it is very important to acknowledge that little empirical research has been conducted on this unique population. A recent clinical review article points out that stigma and marginalization, as well as community care policy based on "heterosexist norms," lead to more social isolation, anxiety, confusion, and distress among lesbian and bisexual women with dementia [85•]. In her "narrative review" [86] of the literature, McGovern [84••] points to a cohort effect with unique challenges and perspectives of aging LGBT Baby Boomers (individuals born between 1946 and 1964) compared to those of the Greatest Generation (individuals born before 1946) and also points to the need for sensitivity of health care providers and long-term care facilities to the specific needs of LGBT individuals suffering from dementia, particularly a loss of self.

Qualitative research with LGBT caregivers of individuals living with dementia identifies loss of an LGBT identity and the lack of cultural competence of health care service providers as a major concern [87]. Another qualitative study on the experiences of LGBT caregivers in coming out to health care providers found that attitudes from health care providers were "at worst, heterosexist and, in some cases, overtly homophobic to, at best, a pervasive disregard of the needs of this group of people [88]." The Alzheimer's Association produced its first brochure on LGBT caregiving and dementia in 2012 [89], and specialized LGBT caregiver support groups have been suggested to meet the psychosocial needs of LGBT caregivers [90, 87].

Conclusions

The current population of LGBT older adults numbers approximately one million and is composed of three generational groups. Because people are shaped, in part, by the defining cultural mores and social climate of their formative years, one should remember that, based on this distinction alone, the members of the older LGBT community are not necessarily a homogenous group.

The Gay Rights Movement began in the early 1970s, grew into a powerful force pushing for complete freedom from discrimination and equal treatment under the laws, as well as identification of effective methods to reduce health care disparities impacting members of the LGBT community. The shift in social attitudes toward LGBT people which began to emerge in the early 2000s achieved its greatest success to date in 2015 when the U.S. Supreme Court established that same-sex marriages were legal throughout the USA.

Currently available research results show that older LGBT adults have higher rates of certain physical and mental illness, as well as higher rates of disability, than the general population of older adults [36••]. All people who identify as LGBT experience one common developmental challenge, deciding if, when, and how to negotiate the process of "coming out."

The challenges associated with this process, as well as other factors related to living in a heterosexist world, have been offered as reasons for this difference in vulnerability to serious mental illnesses [32]. Depression rates in the LGBT community may be as much as two to three times higher [17], and a study of older trans-women identified the rate of suicidal ideation to be over 50 % [57].

Although SUD decline in prevalence with increasing age in the general population, this trend is less pronounced among LGBT older adults. NESARC found that the prevalence of SUD was approximately two times higher among lesbian, gay, or bisexual persons than among heterosexuals [60]. Given the rapidly increasing number of older adults, in general, and members of the LGBT community, in particular, more research on the nature and treatment of SUD among LGBT adults is greatly needed [64].

The Alzheimer's Association estimated there were 350,000 LGBT individuals living with dementia in the USA as of 2012 [80]. Qualitative research with LGBT caregivers of individuals living with dementia identifies loss of an LGBT identity in response to the lack of cultural competence of health care service providers as a current unfortunate occurrence [88]. In an effort to help reduce the frequency of this outcome, as well as to improve all aspects of the health care of older members of the LGBT community, this paper included important definitions of key terms that clinicians caring for members of the LGBT community should understand and recommendations for providing an optimal mental health evaluation of an older LGBT adult including being aware of and using a transgender individual's preferred name and personal pronoun.

Recent improvements in research methodology have been occurring which hold the promise of improved diagnosis and treatment of mental disorders in older members of the LGBT community, but expansion in the funding and completion of this clinical research remains an urgent yet unfulfilled need.

Compliance with Ethical Standards

Conflict of Interest Brandon C. Yarns, Janet M. Abrams, and Thomas W. Meeks declare that they have no conflict of interest.

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Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

References

Papers of particular interest, published recently, have been highlighted as:
- • Of importance
- •• Of major importance

1. Fredriksen-Goldsen KI, Muraco A. Aging and sexual orientation; a 25-year review of the literature. Res Aging. 2010;32(3):372–413.
2. California Health Interview Survey. CHIS 2001 questionnaire topics. 2001, UCLA Center for Health Policy Research: Los Angeles, CA. www.chis.ucla.edu
3. Wallace SP, Cochran SD, Durazo EM, Ford CL. The health of aging lesbian, gay and bisexual adults in California. Los Angeles, CA: UCLA Center for Health Policy Research; 2011.
4. Gates GJ. Same-sex couples and the gay, lesbian, bisexual population: new estimates from the American community survey. Los Angeles: The Williams Institute at UCLA College of Law; 2006.
5. Gates GJ. Same-sex and different-sex couples in the American community survey: 2005-2011. Los Angeles: The Williams Institute at UCLA College of Law; 2012.
6. •• Gates GJ, Newport F. Special report: 3.4% of U.S. adults identify as LGBT. 2012. www.gallup.com/poll/158066. **The addition of a question on LGBT self-identification to this national survey (N = 120,000+) provides the most accurate estimate of the LGBT population in the U.S. to date (3.4%), and demonstrates that LGBT individuals are willing to self-identify. The estimate of the population of older LGBT individuals (65+) at 2% is likely an undercount**.
7. Ortman JM, Velkoff VA, Hogan H. An aging nation: the older population in the United States. Current population reports. Washington, DC: U.S. Census Bureau; 2014. p. 25–1140.
8. Gates GJ. Demographics and LGBT health. J Health Soc Behav. 2013;54(1):72–4.
9. Fredriksen-Goldsen KI, Kim H. Count me in: response to sexual orientation measures among older adults. Res Aging. 2014; Published on-line roa.sagepub.com.
10. The GeniUSS Group. Best practices for asking questions to identify transgender and other gender minority responders in population-based surveys. Los Angeles: The Williams Institute at UCLA College of Law; 2014.
11. Suzman R. The national social life, health, and aging project: an introduction. J Gerontol B Psychol Sci Soc Sci. 2009;64B Suppl 1: 5–11.
12. Lindau ST, Schrumm LP, Laumann EO, Levinson W, O'Muircheartaigh CA, Waite LJ. A study of sexuality and health among older adults in the United States. N Engl J Med. 2007;357: 762–74.
13. Waite LJ, Laumann EO, Das A, Schumm LP. Sexuality: measures of partnerships, practices, attitudes, and problems in the National Social Life, Health, and Aging Study. J Gerontol B Psychol Sci Soc Sci. 2009;64B(S1):56–66.
14. •• Ward BW, Dahlhamer JM, Galinsky AM, Joestl SS. Sexual orientation and health among U.S. adults: National Health Interview Survey, 2013. National health statistics reports no. 77. Hyattsville: National Center for Health Statistics; 2014. **The 2013 NHIS, which included 34,557 adults age 18+, was the first large health survey that asked a question about sexual orientation. While the number of individuals in the LGB group was too small (N = 795, 2.3%) to obtain statistically significant results, the LGB group members did show greater rates of cigarette smoking and**

alcohol consumption and higher levels of psychological distress than their straight peers.

15. Reece M et al. Background and considerations on the National Survey of Sexual Health and Behavior (NSSHB) from the investigators. J Sex Med. 2010;7 suppl 5:243–45.
16. Herbenick D, Reece M, Schick V, Sanders SA, Dodge B, Fortenberry D. Sexual behavior in the United States: results from a national probability sample of men and women ages 14-94. J Sex Med. 2010;7 suppl 5:255–65.
17. Fredriksen-Goldsen KI, Kim HJ, Emlet CA, Muraco A, Erosheva EA, Hoy-Ellis CP. The aging and health report: disparities and resilience among lesbian, gay, bisexual, and transgender older adults. Seattle: Institute for Multigenerational Health; 2011. >http://CaringAndAging.org.
18. Strauss W, Howe N. Generations: the history of America's future, 1854-2069. New York: Morrow; 1991.
19. Kinsey AC, Pomeroy WB, Martin CE. Sexual behavior in the human male. Philadelphia, PA: W.B. Sunders Co.; 1948.
20. Drescher J. Queer diagnoses: parallels and contrasts in the history of homosexuality, gender variance and the Diagnostic and Statistical Manual. Arch Sex Behav. 2010;39:427–60.
21. Drescher J. Out of DSM: depathologizing homosexuality. Behav Sci. 2015;5:565–75.
22. American Psychological Association. Answers to your questions about transgender people, gender identity and gender expression. 2011, www.apa.org/topics/lgbt/transgender.
23. American Psychological Association. Answers to your questions for a better understanding of sexual orientation and homosexuality. 2008, www.apa.org/topics/lgbt/orientation.
24. Boellstorff T. But do not identify as gay: a proleptic genealogy of the MSM category. Cult Anthropol. 2011;26(2):287–312.
25. Floyd FJ, Bakeman R. Coming-out across the life course: implications of age and historical context. Arch Sex Behav. 2006;35(3):287–96.
26. Fredriksen-Goldsen KI et al. Successful aging among LGBT older adults: physical and mental health-related quality of life by age group. Gerontologist. 2015;55(1):154–68.
27. National Senior Citizens Law Center. LGBT older adults in long-term care facilities: stories from the field. 2011, Washington, DC.
28. CBS News. Coming out of the closet, in retirement—CBS News www.cbsnews.com/news/coming-out-of-the-closet-in-retirement/ March 15, 2010.
29. Landau E. Coming out late in life complex but not unusual. CNN.com
30. Reichstadt J, Sengupta G, Depp CA, Palinkas LA, Jeste DV. Older adults' perspectives on successful aging: qualitative interviews. Am J Geriatr Psychiatry. 2010;18(7):567–75.
31. Brotman S, Ryan B, Collins S, Chamberland L, Cormier R, Julien D, et al. Coming out to care: caregivers of gay and lesbian seniors in Canada. Gerontologist. 2007;47(4):490–503.
32. Institute of Medicine. The health of lesbian, gay, bisexual, and transgender people: building a foundation for better understanding. Washington, DC: The National Academies Press; 2011.
33. Joint Commission Report: Advancing effective communication, cultural competence, and patient- and family-centered care for the lesbian, gay, bisexual, and transgender (LGBT) community: a field guide. 2011.
34. Buchmueller T, Carpenter CS. Disparities in health insurance coverage, access, and outcomes for individuals in same-sex versus different-sex relationships, 2000-2007. Am J Public Health. 2010;100(3):489–95.
35. Gates GJ. In U.S., LGBT more likely than non-LGBT to be uninsured. Gallup Poll. 2014;175445. www.gallup.com/poll/175445
36.•• Fredriksen-Goldsen KI, Emlet CA, Kim HJ, Muraco A, Erosheva EA, Goldsen J, et al. The physical and mental health of lesbian, gay male, and bisexual (LGB) older adults: the role of key health indicators and risk and protective factors. Gerontologist. 2013;54(4):664–75. **The Caring and Aging with Pride Study followed 2560 self-identified LGBT older adults (age 50 and above) in multiple sites across the U.S. Results from this study indicate that for older LGB adults, poor general health, physical disability and depression are increased by multiple episodes of lifetime victimization, financial barriers to health care, internalized stigma, obesity and physical inactivity. Social support and social network size were found to be protective factors that decreased the likelihood of poor general health, physical disability and depression**.
37. Luchsinger J, Reitz C, Honig LS, Tang M-X, Shea S, Mayeux R. Aggregation of vascular risk factors and risk of incident Alzheimer's disease. Neurology. 2005;65(4):545–51.
38. Li J, Wang YJ, Zhang M, Xu ZQ, Gao CY, Fang CQ, et al. Vascular risk factors promote conversion from mild cognitive impairment to Alzheimer's disease. Neurology. 2011;76:1485–91.
39. Akinyemi RO, Mukaetova-Ladinska EB, Attems J, Ihara M, Kalaria RN. Vascular risk factors and neurodegeneration in ageing related dementias: Alzheimer's disease and vascular dementia. Curr Alzheimer Res. 2013;10(6):642–53.
40. Kamen C, Palesh O, Gerry AA, Andrykowski MA, Heckler C, Supriva M, et al. Disparities in health risk behavior and psychological distress among gay versus heterosexual male cancer survivors. LGBT Health. 2014;1:86–92.
41. Zaritsky E, Dibble SL. Risk factors for reproductive and breast cancers among older lesbians. J Women's Health. 2010;19:125–31.
42. Grulich AE, Poynten IM, Machalek DA, Jin F, Templeton DJ, Hillman RJ. The epidemiology of anal cancer. Sex Health. 2012;9:504–8.
43. Palefsky JM, Giuliano AR, Goldstone S, Moreira Jr ED, Aranda C, Jessen H, et al. HPV vaccine against anal HPV infection and anal intraepithelial neoplasia. N Engl J Med. 2011;365:1576–85.
44. Fredriksen-Goldsen KI, Cook-Daniles L, Kim HJ, Erosheva EA, Emlet CA, Hoy-Ellis CP, et al. Physical and mental health of transgender older adults: an at-risk and underserved population. Gerontologist. 2013;54(3):488–500.
45. National Resource Center on LGBT Aging. Inclusive services for LGBT older adults: a practical guide to creating welcoming agencies. SAGE: New York, NY.
46. Sexual Minority Assessment Research Team of the Williams Institute. Best practices for asking questions for sexual orientation on surveys. Los Angeles: The Williams Institute Reports; 2009.
47. Cahill S et al. Do ask, do tell: high levels of acceptability by patients of routine collection of sexual orientation and gender identity data in four diverse American community health centers. PLoS One. 2014;9(9):e107104.
48. Deutsch M, Green J, Keatley J, Mayer G, Hastings J, et al. Electronic medical records and the transgender patient: recommendations from the World Professional Association of Transgender Health EMR Working Group. J Am Med Inform. 2013;20(4):700–3.
49. American Psychological Association. Guidelines for psychological practice with lesbian, gay, and bisexual clients. Am Psychol. 2012;67(1):10–42.
50. Ports KA et al. Sexual health discussion with older adult patients during periodic health exams. J Sex Med. 2014;11:901–08.
51. Guasp A. Lesbian, gay and bisexual people in later life. London: Stonewall; 2011.
52. Mills TC, Paul J, Stall R, Pollack L, Canchola J, Chang YJ, et al. Distress and depression in men who have sex with men: the Urban Men's Health Study. Am J Psychiatry. 2004;161(2):278–85.
53. Paul JP, Catania J, Pollack L, Moskowitz J, Canchola J, Mills T, et al. Suicide attempts among gay and bisexual men: lifetime prevalence and antecedents. Am J Public Health. 2002;92(8):1338–45.

54. Valanis BG, Bowen DJ, Bassford T, Whilock E, Charney P, Carter RA. Sexual orientation and health: comparisons in the women's health initiative sample. Arch Fam Med. 2000;9(9):843–53.
55. Bradford J, Ryan C, Rothblum ED. National lesbian health care survey: implications for mental health care. J Consult Clin Psychol. 1993;62(2):228–42.
56. Shippy R, Cantor MH, Brennan M. Social networks of aging gay men. J Mens Stud. 2004;13(1):107–20.
57. D'Augelli A, Grossman A. Disclosure of sexual orientation, victimization, and mental health among lesbian, gay, and bisexual older adults. J Interpers Violence. 2001;16(10):1008–27.
58. Nuttbrock L, Hwahng S, Bockting W, Rosenblum A, Mason M, Macri M, et al. Psychiatric impact of gender-related abuse across the life course of male-to-female transgender populations. J Sex Res. 2010;47(1):12.
59. Centers for Disease Control and Prevention. The state of aging and health in America. Atlanta, GA: US Department of Health and Human Services; 2013.
60. McCabe SE, Hughes TL, Bostwick WB, West BT, Boyd CJ. Sexual orientation, substance use behaviors and substance dependence in the United States. Addiction. 2009;104(8):1333–45.
61. Drabble L, Midanik LT, Trocki K. Reports of alcohol consumption and alcohol-related problems among homosexual, bisexual and heterosexual respondents: results from the 2000 National Alcohol Survey. J Stud Alcohol. 2005;66(1):111–20.
62. King BA, Dube SR, Tynan MA. Current tobacco use among adults in the United States: findings from the National Adult Tobacco Survey. Am J Public Health. 2012;102(11):e93–e100.
63. Hughes TL, Johnson TP, Matthews AK. Sexual orientation and smoking: results from a multisite women's health study. Subst Use Misuse. 2008;43(8-9):1218–39.
64. Savage C. The baby boomers and substance use: are we prepared? J Addict Nurs. 2014;25(1):1–3.
65. Halkitis PN, Palamar JJ, Mukherjee PP. Poly-club-drug use among gay and bisexual men: a longitudinal analysis. Drug Alcohol Depend. 2007;89(2-3):153–60.
66. Parsons JT, Kelly BC, Wells BE. Differences in club drug use between heterosexual and lesbian/bisexual females. Addict Behav. 2006;31(12):2344–9.
67.• Fendrich M, Avci O, Johnson TP, Mackesy-Amiti ME. Depression, substance use and HIV risk in a probability sample of men who have sex with men. Addict Behav. 2013;38(3):1715–8. doi:10.1016/j.addbeh.2012.09.005. **Among men who have sex with men, both substance use and depressive symptoms were independently associated with risky sexual behaviors**.
68. Halkitis PN, Kutnick AH, Slater S. The social realities of adherence to protease inhibitor regimens: substance use, health care and psychological states. J Health Psychol. 2005;10(4):545–58.
69.• Parsons JT, Starks TJ, Millar BM, Boonrai K, Marcotte D. Patterns of substance use among HIV-positive adults over 50: implications for treatment and medication adherence. Drug Alcohol Depend. 2014;139:33–40. **Among older adults living with HIV, substance use (especially combined alcohol and drug use or polysubstance use) was associated with poorer antiretroviral adherence**.
70. Woolf-King SE, Neilands TB, Dilworth SE, Carrico AW, Johnson MO. Alcohol use and HIV disease management: the impact of individual and partner-level alcohol use among HIV-positive men who have sex with men. AIDS Care. 2014;26(6):702–8.
71. Lim SH, Christen CL, Marshal MP, Stall RD, Markovic N, Kim KH, et al. Middle-aged and older men who have sex with men exhibit multiple trajectories with respect to the number of sexual partners. AIDS Behav. 2012;16(3):590–8.
72. Pantalone DW, Bimbi DS, Parsons JT. Motivations for the recreational use of erectile enhancing medications in urban gay and bisexual men. Sex Transm Infect. 2008;84(6):458–62.
73. Benotsch EG, Martin AM, Koester S, Cejka A, Luckman D. Nonmedical use of prescription drugs and HIV risk behavior in gay and bisexual men. Sex Transm Dis. 2011;38(2):105–10.
74. Kecojevic A, Wong CF, Corliss HL, Lankenau SE. Risk factors for high levels of prescription drug misuse and illicit drug use among substance-using young men who have sex with men (YMSM). Drug Alcohol Depend. 2015;150:156–63.
75. Maxwell J. The pain reliever and heroin epidemic in the United States: shifting winds in the perfect storm. J Addict Dis. 2015;34(2-3):127–40.
76. Grov C, Parsons JT, Bimbi DS. Sexual compulsivity and sexual risk in gay and bisexual men. Arch Sex Behav. 2010;39(4):940–9.
77. Cochran SD, Grella CE, Mays VM. Do substance use norms and perceived drug availability mediate sexual orientation differences in patterns of substance use? Results from the California Quality of Life Survey II. J Stud Alcohol Drugs. 2012;73(4):675–85.
78.• Mereish EH, Bradford JB. Intersecting identities and substance use problems: sexual orientation, gender, race, and lifetime substance use problems. J Stud Alcohol Drugs. 2014;75(1):179–88. **Sexual minorities were found to be at higher risk for substance use compared to heterosexuals. Among lesbians and bisexual women, racial/ethnic minority status conferred additive risk**.
79. Siegel K, Schrimshaw EW, Karus D. Racial disparities in sexual risk behaviors and drug use among older gay/bisexual and heterosexual men living with HIV/AIDS. J Natl Med Assoc. 2004;96(2):215–23.
80. McCabe SE, West BT, Hughes TL, Boyd CJ. Sexual orientation and substance abuse treatment utilization in the United States: results from a national survey. J Subst Abus Treat. 2013;44(1):4–12.
81. Wong FL, Rotheram-Borus MJ, Lightfoot M, Pequegnat W, Comulada WS, Cumberland W, et al. Effects of behavioral intervention on substance use among people living with HIV: the Healthy Living Project randomized controlled study. Addiction. 2008;103(7):1206–14.
82. Shoptaw S, Reback CJ, Peck JA, Yang X, Rotheram-Fuller E, Larkins S, et al. Behavioral treatment approaches for methamphetamine dependence and HIV-related sexual risk behaviors among urban gay and bisexual men. Drug Alcohol Depen. 2005;78:125–34.
83. Velasquez MM, von Sternberg K, Johnson DH, Green C, Carbonari JP, Parsons JT. Reducing sexual risk behaviors and alcohol use among HIV-positive men who have sex with men: a randomized clinical trial. J Consult Clin Psychol. 2009;77(4):657–67.
84.•• McGovern J. The forgotten: dementia and the aging LGBT community. J Gerontol Soc Work. 2014;57(8):845–57. **The article reviews the scientific literature on the experience of dementia for LGBT older adults and highlights areas where further research is needed**.
85.• Westwood S. Dementia, women, and sexuality: how the intersection of ageing, gender and sexuality magnify dementia concerns among lesbian and bisexual women. Dementia. 2014. doi:10.1177/1471301214564446. **This article uses mixed methods to highlight the special needs in the diagnosis and treatment of lesbian and bisexual women with dementia**.
86. Cronin P, Ryan F, Coughlan M. Undertaking a literature review: a step-by-step approach. Br J Nursing. 2008;17(1):38–43.
87. Price E. Gay and lesbian cares: in the shadow of dementia. Ageing Soc. 2012;32:526–32.
88. Price E. Coming out to care: gay and lesbian carers' experiences of dementia services. Health Soc Care Community. 2010;18(2):160–8.
89. Alzheimer's Association. LGBT caregiver concerns. Washington, DC: Alzheimer's Association; 2012.
90. Ward R, Rivers I, Sutherland M, editors. Lesbian, gay, bisexual and transgender aging: biographical approaches for inclusive care and support. London: Jessica Kingsley; 2012.