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# Challenges in Cancer Control Confronting the LGBT Population in China: Health Risks, Unique Barriers, and Unmet Needs

Piper Liping Liu and Tien Ee Dominic Yeo

## Abstract

Cancer is a leading cause of death in China, which is also home to the world's largest LGBT population. Yet, the Chinese LGBT community along with their health problems, especially regarding cancer, remain largely invisible. This chapter highlights the health disparities of sexual and gender minorities in China with respect to cancer. Using the conceptual framework of minority stress, it explicates the key issues with respect to risks, barriers, and needs in the cancer control continuum vis-à-vis the LGBT population in China. A major source of minority stress identified is the lack of full acceptance for LGBT persons stemming from prevailing Confucian familial values. This minority stress, in turn, contributes to the greater prevalence of unhealthy behaviors among the Chinese LGBT population, which increases their risk for certain types of cancer. Furthermore, actual or perceived discrimination—for instance, among lesbian women with more masculine appearances—in health care settings hinder their access to cancer screening and care. The recent rise of LGBT-specific spaces and service providers in China, hitherto focused on sexual health, should be expanded to cancer control. There is also a need to formulate screening guidelines and culturally competent interventions that address the LGBT population in China.

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## 1. Introduction

China, as the most populous country on earth, is home to the world's largest lesbian, gay, bisexual, and transgender/transsexual (LGBT) population [1]. The LGBT community spans all regions, ages, and socioeconomic status in China. It has been suggested that approximately 75 million people, or 5%, of the Chinese population were LGBT [2]. Although references to homosexuality in criminal laws were removed by 1997 and homosexuality has been declassified as a mental disorder in 2001, widespread stigma and discrimination against the LGBT community persists in China [1,3]. Under these circumstances, LGBT people in China remain largely invisible and their health problems are likewise unheard, unseen, and underserved.

Cancer has been a leading cause of death in China, accounting for an estimated 4.51 million cases and 3.04 million deaths by 2020 [4]. Hitherto, in China, there are no known data sources that collect sexual orientation and gender identity information regarding health nor cancer registries that identify LGBT individuals. Yet, prior research conducted elsewhere has indicated that, compared to their non-LGBT counterparts, LGBT individuals have increased risks for being diagnosed with some forms of cancer such as anal, breast, cervical, lung, and liver cancers [5,6]. The higher prevalence and incidence of cancer among LGBT persons can be attributed to a combination of social, environmental, and behavioral factors. For instance, sexual and gender minorities are more likely to experience stressful life events and situations as they often become victims of violence, harassment and discrimination; they are also more likely to be isolated and estranged from their families [7]. Faced with varying degrees of societal oppression, there tends to be an elevated prevalence of mental health and substance use disorders among sexual and gender minorities. Much research has indicated that gay men and lesbian women are more likely to smoke than their heterosexual counterparts [8], which is likely to contribute to an increased rate of lung cancer and anal cancer. Moreover, LGBT people may also turn to other unhealthy behaviors, such as alcohol consumption and recreational drug use, which further put them at a higher risk for cancer. Despite the elevated risks, there has been a notable dearth of literature addressing cancer among LGBT population

in China. This knowledge gap is especially glaring considering that sexual and gender minorities have a disproportionate burden of cancer while are less likely to seek and benefit from healthcare. As a result, LGBT are vulnerable to both greater cancer incidence and later stage diagnosis.

The Chinese LGBT population remains largely understudied with respect to cancer. Most of the published research we have identified regarding cancer among Chinese LGBT communities has been mainly focused on the cancer risk factors and barriers that might hinder their access to health care. We currently lack a comprehensive understanding about the unique medical vulnerabilities, health disparities, unique barriers, psychological, and psychosocial needs of Chinese LGBT cancer survivors or individuals at risk for cancer. This lack of understanding could result in delays in cancer diagnosis, treatment as well as hinder the development of tailored prevention and intervention programs for the LGBT community. Drawing on the conceptual framework of minority stress, we begin by clarifying the key issues with respect to risks, barriers, and needs in the cancer control continuum vis-à-vis the LGBT population in China. Following from these discussions, we then proceed to outline the implications and recommendations for LGBT care regarding cancer in China.

## **2. Challenges in Cancer Control among Chinese LGBT People**

LGBT people often experience stressful events or situations that are rarely encountered by their heterosexual counterparts. Those stressful events that typically involve prejudice and discrimination engender minority stress, which has been defined as “a multifaceted construct that includes experiences specifically related to one’s sexual minority status such as: identity concealment and confusion; experienced and anticipated rejection, victimization and discrimination; and internalized homonegativity/sexual self-stigma” [9 p251]. While there has been much progress in recent years, LGBT individuals have yet to gain widespread acceptance in most Chinese societies including the mainland of China [3,10], Hong Kong [11,12], Taiwan [13], and Singapore [14]. The lack of full acceptance for LGBT people, particularly as family members [11], may be explained by the Confucian familial values

strongly ingrained in Chinese societies [15]. In particular, procreation is viewed as a paramount familial obligation within Confucian ideology [15,16]. Given that same-sex couples are unable to produce descendants in traditional ways, their perceived incomplete family structures are considered immoral and unfilial, contributing to the stigmatization of homosexuals [15,16]. Experienced as isolation, anti-gay stigma, sexual abuse, or abject violence, minority stress adversely affects all aspects of Chinese LGBT population's lives [12] including the presence or severity of cancer risk factors (e.g., alcohol consumption, cigarette smoking, infections of HIV and HPV), timely cancer diagnosis and screening, and administration of effective treatment [17]. There is, therefore, significant value in addressing the risks, barriers, and needs of this population throughout the cancer control continuum as well as filling the gaps in health population statistics, research, and policies.

## **2.1 Health Risks**

### **2.1.1 Substance Use**

The minority stress framework has been widely applied to explain the prevalence of substance use disorders among LGBT populations. According to the minority stress framework, Chinese sexual and gender minorities might experience minority stressors such as stigma, violence, expectations of rejection, and internalized homophobia [12,18]. In these circumstances, substance use such alcohol drinking and cigarette smoking serves as a coping mechanism in response to pervasive experiences of discrimination and violence against sexual and gender minorities [8]. Previous research found that, relative to the heterosexual cisgender populations, sexual and gender minorities exhibited higher rates of tobacco use [19], greater alcohol intake [20], higher BMI [21], high incidence of illicit drug use [22], and higher levels of cardiovascular stress [21]. In line with previous research, the LGBT population in Chinese societies reported greater hazardous alcohol use patterns and higher rates of tobacco use, which put them at elevated risks for many types of cancer. For instance, Huang and colleagues [18] conducted a national large-scale study in China and observed that young

sexual and gender minorities were more likely to report current smoking (7.4%) and current alcohol consumption (17.1%) than other young people. Likewise, Liu and Yeo [23] found that half of their lesbian, bisexual, and queer/questioning women (LBQW) survey respondents were engaged in cigarette smoking behaviors, while the vast majority of them (83.9%) consumed alcohol. Furthermore, 34.2% of the respondents practiced chest binding, which was closely related to breast diseases such as chest pain and scarring. Research suggested that chest binding is a common practice among LBQW identified as a more masculine gender role and presentation [24,25]. In addition, sexual and gender minorities are more likely to engaged in certain behaviors related to LGBT identities, which are detrimental to their health. For instance, hormone therapy adopted by transgender persons is likely to increase risk for cardiovascular conditions and damage organs, increasing risks for mental diseases and some cancers [26,27].

### **2.1.2 Sexual Risk Behaviors**

The prevalence of oncogenic human papillomavirus (HPV) has been increasing dramatically in China [28,29]. HPV infection has been found to be closely related to a variety of cancers, including cervical, vulva, vagina, penis, anus, as well as head and neck cancers [30]. In China, the top three cancer type attributable to HPV infection in total population were cervix cancer (90%), anal cancer (4%), head and neck cancer (6%) [30]. Prior research showed that anal cancer was not only more commonly found among gay and other sexually active men who have sex with men (MSM) but also the incidence rate was higher than that of cervical cancer among women [31]. In a study on MSM in Beijing, Zhang and colleagues [32] found that the prevalence of HIV, syphilis and anal HPV infection among the respondents was 9.9%, 19.2%, and 71.4%, respectively. It is suggested that sexual risk behaviors are a major factor making MSM vulnerable to HPV and other sexual transmitted infections (STIs). For instance, Yeo and Ng [33] conducted a cross-sectional research in Hong Kong and found that the majority of MSM (60.2%) did not use condoms during recent anal sex encounters with regular partners, and about half of them (45.8%) did not use condoms even with non-regular

partners. In addition, as MSM are facing stigma and social pressure to get married and have children, a significant number of them would marry a woman to protect family reputation and lineage [15,16,32]. According to one estimate, 80% of male homosexuals in China choose to hide their sexual orientation and about 16 millions of them marry heterosexual women [33]. The large presence of these married MSM further complicates targeted HPV prevention approaches that cater to their needs and those of their sexual partners.

## **2.2 Unique Barriers to Health Care Access**

Given that LGBT people are at high risks of getting cancer, research suggested that they face multiple barriers to health care access stemming from external and internal factors [34,35].

### **2.2.1 External Factors**

At the structural level, most health care providers in China are not educated or trained in cultural competencies so as to improve their awareness, receptivity, and knowledge to meet unique needs of sexual and gender minorities [35]. LGBT patients often face negative experiences with the health care system in the form of perceived or internalized stigma, such as disrespectful provider behaviors or refusal of treatment due to sexual orientation [34–37]. Feeling negatively judged by the provider or feeling that providers are not competent to respond to their unique needs would result in LGBT patients' barriers to accessing needed cares. Thus, LGBT patients may delay or forego medical care out of concerns of being ill-treated. Several studies have provided support for the unfavorable status quo that Chinese LGBT population faced in health care. For instance, Wang and colleagues found that lesbian women who had breast examination at a hospital tend to raise concerns regarding health care providers' gender, knowledge about multiple gender diversity, and their attitudes toward sexual and gender minorities [38]. They found two concerns that were significantly related to Chinese lesbian women's breast health-care behaviors and intentions: one was the concern about providers' cultural competence to communication with and provide appropriate care for

lesbian women; another one was the worry about being discriminated against by health care providers, and this issue was particularly notable among lesbian women who had a masculine appearance. For instance, some masculine looking lesbian women might be treated in a hostile manner when doing a mammogram, which deters them from future screening. Similar to other societies, more barriers inherent in the health care system that restrict LGBT people's access to quality health care include a lack of legal and social recognition of same-sex relationships, the lack of the ability of same-sex partners to involve their partner's medical decisions and access their partner's medical records as well as the inequality in visitation rights [39].

### **2.2.2 Internal Factors**

In addition to the barriers from external environments, internal factors such as internalized stigma was also found to significantly impact LGBT's access to quality healthcare [23,27,38]. Internalized stigma refers to "the internalized negative view of one's or other's sexual minority or transgender identities" [40 p330]. LGBT people with internalized stigma may have to deal with feelings of shame, and negative views of sexual minority identities as well as low self-esteem. Internalized stigma among sexual and gender minorities not only adversely impact their psychological well-being [41], but also their access to health care. For instance, research in the mainland of China [23] and Taiwan [38] revealed that many masculine looking lesbian women had negative views toward their breasts and the internalized stigma, in turn, influence their attitudes toward breast cancer and breast cancer screenings. These lesbian women had tended to practice breast binding or wear sport bras to make their breast invisible and they were less likely to practice breast self-examination and clinical breast examination [23, 38]. Internalized stigma could also negatively influence transgender people's access to health care as they tend to be highly stigmatized. However, there has been little research about transgender individuals who might face greater challenges in health care encounters in the Chinese context. In clinical settings, their gender presentation is likely to



manifest directly in relation to how other patients discuss their sexual orientation and gender identity, and how physicians treat them.

### **2.3 Unmet Needs**

The health care need of the LGBT populations in China are unique and largely unmet [42]. As mentioned above, the Chinese LGBT community experiences severe minority stress which is closely linked to their stigmatized status, substance use, elevated risk of developing a serious infection or disease, such as cancer, and low rates of cancer screening [18-20,22,23,38]. These issues are found to be largely rooted in the stress experienced as sexual and gender minorities as well as maladaptive coping owing to the internalization of social oppression and hostility [42]. Given that sexual and gender minorities are in disadvantaged health situations, the LGBT population has, for the most part, been excluded from mainstream health promotion research, policy, and practice in China. While the Chinese government provides a wide variety of social services and benefits to vulnerable groups such as the elderly, migrant workers and “left-behind” children in rural areas, scant attention has been paid to sexual and gender minorities.

Nevertheless, in recently years, coinciding with the improved development of medical and health services across the board, Chinese LGBT communities have gained some legislative ground in terms of enhancements of sexual and gender minorities’ rights in health care. Notably, same-sex marriage was legalized in Taiwan in 2019, which affords same-sex couples the legal rights to apply for family care leave and sign surgical or medical treatment consent forms for each other [43]. In the mainland of China, the National People’s Congress has amended Chinese law to ensure that all adults of full capacity are given the liberty of appointing their own guardians to act on their behalf by mutual agreement [39,44,45], which serves as the cornerstone for the next step in achieving equal rights in all aspects for sexual and gender minorities. The newly amended law permits same-sex partners to make important decisions about medical and personal care, death and funeral, property management, and maintenance of rights and interests. In case one partner loses the ability to make crucial

medical decisions (e.g., the diagnosis of terminal cancer), their guardian has the right to make decisions in the patient's best interest on their behalf.

### **3. Implications for LGBT Health Care and Cancer Control in China**

To improve the situation of the LGBT population regarding cancer in China, there is a need for more culturally competent interventions; clinical care and services that incorporate LGBT health care needs; as well as LGBT-specific spaces and service providers.

#### **3.1 Culturally Competent Interventions**

Given the complexities of LGBT health needs, a nuanced understanding of sexual orientation and gender identity is crucial in health care settings. As the majority of LGBT people in China choose not to reveal their sexual orientation and have varied skills in identity management, they are significantly less likely to access much needed health and social services owing to external (e.g., discrimination and hostility) and internal (internalized stigma and fear) barriers. Meanwhile, most mainstream health care providers in China have limited education and training on the specific needs of LGBT populations. In fact, many of them neglect to consider that their patients may be sexual and gender minorities. Greater efforts are thus warranted to improve care providers' cultural competence [46,47] as well as improve their knowledge and attitudes toward sexual and gender minority patients through training and education [48]. These efforts are particularly important for LGBT patients with a terminal diagnosis of cancer who are faced with the double whammy of severe illness and social oppression. LGBT cancer patients need frank and respectful discussions on medical decisions, health care proxies, health insurance, and hospital visitation rights.

#### **3.2 Clinical Care and Services that incorporate LGBT Health Care Needs**

While LGBT individuals have similar medical problems as with all types of patients, sexual and gender minorities are often faced with health disparities owing to clinical care and services that fail to cater to their specific needs. For instance, transgender patients often

require cross-sex hormone therapy which is not widely available in health care settings. Gay and bisexual men could have higher levels of risk in contracting HIV, HPV, and sexual transmitted infections (STIs), which increase their risk of getting anal cancer. Culturally responsive testing and preventive services should be strongly recommended to these populations. For example, clinicians should encourage MSM to undergo anal cytology screening and other relevant cancer screening. As for lesbian and bisexual women, as previous research indicated, they were less likely to be screened regularly for breast cancer and cervical cancer, even though they could be at risk for these cancers. To improve their regular screening behaviors, practitioners should develop quality assurance programs to encourage lesbian and bisexual patients practice cancer-related screening. Moreover, these programs should also include transgender men who still require regular cervical cancer screening. Taken together, there is a need to formulate a set of recommended screening guidelines that address the LGBT population in China, which is currently lacking, particularly with regards to their unique circumstances and behavioral patterns. Meanwhile, it is crucial to reduce LGBT individuals' cancer-related risks radically. Given that research has found that LGBT persons often smoke and consume alcohol at much higher rates than their heterosexual counterparts, clinicians should be aware of the need to consider cigarette product use and alcohol consumption among their LGBT patients and offer smoking and alcohol cessation counselling.

### **3.3 LGBT-specific Spaces and Service Providers**

In addition to inclusive strategies in mainstream health care settings, there is also a need for LGBT-specific spaces and care delivery [49]. To this end, LGBT non-governmental organizations and social media support groups have emerged as an important channel for sexual and gender minorities in China to not only access pertinent health information but also seek care. One notable example is the GGHC Rainbow Centre (*GGHC Tongming Jiankang Zhongxin*), which provides LGBT persons online counselling and remote testing—in addition to their physical test site in Beijing—for a range of health care issues specific to LGBT persons.

Such LGBT-specific organizations make great efforts to promote specialized care for sexual and gender minorities, enhance their well-being, provide quality health care services in a safe space, and provide sensitive and quality care that targeted LGBT population (e.g., HIV tests and anal cytology screening). In return, sexual and gender minorities would view these clinics as a safe and welcoming space and perceive a sense of community when they seek medical support. There is also the example of Blued, a Chinese gay dating app, working with local health authorities to provide HIV testing for MSM. In fact, there has been a history of health activism within Chinese LGBT communities for HIV/STI prevention and care. These efforts ought to be expanded to include cancer control in the wider Chinese LGBT population.

#### **4. Conclusion**

The LGBT population in China has increased risks for being diagnosed with some cancers than the general population. As these sexual and gender minorities remain largely invisible in China, their health problems are largely overlooked. Minority stress is a necessary framework to understand the psychosocial determinants of LGBT cancer risks, unique barriers to access health care, and unmet needs. In this chapter, we highlighted some of the approaches in which clinical settings can be more affirming toward sexual and gender minorities and deliver LGBT-specific care. Recommendations to decrease cancer risks and facilitate LGBT people's access to cancer screening and treatment include formulating screening guidelines for the LGBT population, improving LGBT cultural competency among health care providers through ongoing education and training, as well as creating an inclusive health care environment. In addition, there should be greater partnerships between LGBT organizations and mainstream health care providers to promote a more an inclusive care environment, increase access to cancer screenings, and instill positive health behaviors.

## References

1. Wang Y, Hu Z, Peng K, Rechdan J, Yang Y, Wu L, et al. Mapping out a spectrum of the Chinese public's discrimination toward the LGBT community: results from a national survey. *BMC Public Health*. 2020;20:669. <https://doi.org/10.1186/s12889-020-08834-y>
2. Honggehui. A report about Chinese sexual minority [Internet]. 2018. Available from: <http://www.szhgh.com/Article/news/society/2018-04-17/167525.html>
3. Hua B, Yang VF, Goldsen KF. LGBT Older Adults at a crossroads in mainland China: The intersections of stigma, cultural values, and structural changes within a shifting context. *Int J Aging Hum Dev*. 2019;88(4):440–56. <https://doi.org/10.1177%2F0091415019837614>
4. Feng R-M, Zong Y-N, Cao S-M, Xu R-H. Current cancer situation in China: good or bad news from the 2018 Global Cancer Statistics? *Cancer Commun*. 2019;39(1):22. <https://dx.doi.org/10.1186%2Fs40880-019-0368-6>
5. Quinn GP, Sanchez JA, Sutton SK, Vadaparampil ST, Nguyen GT, Green BL, et al. Cancer and lesbian, gay, bisexual, transgender/transsexual, and queer/questioning (LGBTQ) populations. *CA Cancer J Clin*. 2015;65(5):384–400. <https://doi.org/10.3322/caac.21288>
6. Tamargo CL, Quinn GP, Sanchez JA, Schabath MB. Cancer and the LGBTQ population: Quantitative and qualitative results from an oncology providers' survey on knowledge, attitudes, and practice behaviors. *J Clin Med*. 2017;6(10):93. <https://dx.doi.org/10.3390%2Fjcm6100093>
7. Lisy K, Peters MDJ, Schofield P, Jefford M. Experiences and unmet needs of lesbian, gay, and bisexual people with cancer care: A systematic review and meta-synthesis. *Psychooncology*. 2018;27(6):1480–9. <https://doi.org/10.1002/pon.4674>
8. Gamarel KE, Mereish EH, Manning D, Iwamoto M, Operario D, Nemoto T. Minority stress, smoking patterns, and cessation attempts: Findings from a community-sample of transgender women in the San Francisco bay area. *Nicotine Tob Res*. 2016;18(3):306–13. <https://doi.org/10.1093/ntr/ntv066>

9. Lewis RJ, Millettich RJ, Kelley ML, Woody A. Minority stress, substance use, and intimate partner violence among sexual minority women. *Aggress Violent Behav.* 2012;17(3):247–56. <https://doi.org/10.1016/j.avb.2012.02.004>
10. Wang Y, Hu Z, Peng K, Xin Y, Yang Y, Drescher J, et al. Discrimination against LGBT populations in China. *Lancet Public Health.* 2019;4(9):e440–1. [https://doi.org/10.1016/S2468-2667\(19\)30153-7](https://doi.org/10.1016/S2468-2667(19)30153-7)
11. Yeo TED, Chu TH. Beyond Homonegativity: Understanding Hong Kong people's attitudes about social acceptance of gay/lesbian people, sexual orientation discrimination protection, and same-sex marriage. *J Homosex.* 2018;65(10):1372–90. <https://doi.org/10.1080/00918369.2017.1375363>
12. Kwok DK, Wu J. Chinese attitudes towards sexual minorities in Hong Kong: Implications for mental health. *Int Rev Psychiatry.* 2015;27(5):444–54. <https://doi.org/10.3109/09540261.2015.1083950>
13. Wang FTY, Bih H-D, Brennan DJ. Have they really come out: gay men and their parents in Taiwan. *Cult Health Sex.* 2009;11(3):285–96. <https://doi.org/10.1080/13691050802572711>
14. Detenber BH, Cenite M, Zhou S, Malik S, Neo RL. Rights Versus Morality: Online debate about decriminalization of gay sex in Singapore. *J Homosex.* 2014;61(9):1313–33. <https://doi.org/10.1080/00918369.2014.926769>
15. Xie Y, Peng M. Attitudes toward homosexuality in China: Exploring the effects of religion, modernizing factors, and traditional culture. *J Homosex.* 2018;65(13):1758–87. <https://doi.org/10.1080/00918369.2017.1386025>
16. Yu Y, Xiao S, Xiang Y. Application and testing the reliability and validity of a modified version of Herek's attitudes toward lesbians and gay men scale in China. *J Homosex.* 2011;58(2):263–74. <https://doi.org/10.1080/00918369.2011.540182>
17. Obedin-Maliver J. Time to change: supporting sexual and gender minority people – an underserved understudied cancer risk population. *J Natl Compr Canc Netw.* 2017;15(11):1305–8. <https://dx.doi.org/10.6004%2Fjnccn.2017.7050>

18. Huang Y, Li P, Lai Z, Jia X, Xiao D, Wang T, et al. Association between sexual minority status and suicidal behavior among Chinese adolescents: A moderated mediation model. *J Affect Disord.* 2018;239:85–92. <https://doi.org/10.1016/j.jad.2018.07.004>
19. 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):e93–100. <https://dx.doi.org/10.2105%2FAJPH.2012.301002>
20. Case P, Austin SB, Hunter DJ, Manson JE, Malspeis S, Willett WC, et al. Sexual orientation, health risk factors, and physical functioning in the Nurses' Health Study II. *J Womens Health (Larchmt).* 2004;13(9):1033–47. <https://doi.org/10.1089/jwh.2004.13.1033>
21. Hatzenbuehler ML, McLaughlin KA, Slopen N. Sexual orientation disparities in cardiovascular biomarkers among young adults. *Am J Prev Med.* 2013;44(6):612–21. <https://doi.org/10.1016/j.amepre.2013.01.027>
22. Kecojevic A, Wong CF, Schragger SM, Silva K, Bloom JJ, Iverson E, et al. Initiation into prescription drug misuse: Differences between lesbian, gay, bisexual, transgender (LGBT) and heterosexual high-risk young adults in Los Angeles and New York. *Addict Behav.* 2012;37(11):1289–93. <https://doi.org/10.1016/j.addbeh.2012.06.006>
23. Liu PL, Yeo TED. Weak tie matters for well-being: An examination of Chinese migrant workers' personal network structure, social capital, and perceived social support. In: *Proceedings of the 9th International Conference on Social Media and Society [Internet].* New York, NY, USA: ACM; 2018 [cited 2020 May 30]. p. 128–137. (SMSociety '18). Available from: <http://doi.acm.org/10.1145/3217804.3217905>
24. Liu PL, Yeo TED. Breast health, risk factors, and cancer screening among lesbian, bisexual, and queer/questioning women in China. *Health Care Women Int.* Forthcoming. <https://doi.org/10.1080/07399332.2019.1571062>
25. Peitzmeier S, Gardner I, Weinand J, Corbet A, Acevedo K. Health impact of chest binding among transgender adults: a community-engaged, cross-sectional study. *Cult Health Sex.* 2017;19(1):64–75. <https://doi.org/10.1080/13691058.2016.1191675>

26. Chen R, Zhu X, Wright L, Drescher J, Gao Y, Wu L, et al. Suicidal ideation and attempted suicide amongst Chinese transgender persons: National population study. *J Affect Disord.* 2019;245:1126–34. <https://doi.org/10.1016/j.jad.2018.12.011>
27. Whitehead J, Shaver J, Stephenson R. Outness, stigma, and primary health care utilization among rural LGBT populations. *PLoS One.* 2016;11(1):e0146139. <https://doi.org/10.1371/journal.pone.0146139>
28. Lau JTF, Wang Z, Lau M, Lai CHY. Perceptions of HPV, genital warts, and penile/anal cancer and high-risk sexual behaviors among men who have sex with men in Hong Kong. *Arch Sex Behav.* 2014;43(4):789–800. <https://doi.org/10.1007/s10508-013-0172-3>
29. Zhang X, Yu J, Li M, Sun X, Han Q, Li M, et al. Prevalence and related risk behaviors of HIV, syphilis, and anal HPV infection among men who have sex with men from Beijing, China. *AIDS Behav.* 2013;17(3):1129–36. <https://doi.org/10.1007/s10461-011-0085-x>
30. Duan R, Qiao Y, Clifford G, Zhao F. Cancer burden attributable to human papillomavirus infection by sex, cancer site, age, and geographical area in China. *Cancer Med.* 2020;9(1):374–84. <https://doi.org/10.1002/cam4.2697>
31. Pitts MK, Fox C, Willis J, Anderson J. What do gay men know about human papillomavirus? Australian gay men’s knowledge and experience of anal cancer screening and human papillomavirus. *Sex Transm Dis.* 2007;34(3):170–3. <https://doi.org/10.1097/01.olq.0000230436.83029.ce>
32. Wang Y, Wilson A, Chen R, Hu Z, Peng K, Xu S. Behind the Rainbow, “Tongqi” Wives of Men Who Have Sex With Men in China: A Systematic Review. *Front Psychol.* 2019;10:2929. <https://dx.doi.org/10.3389%2Ffpsyg.2019.02929>
33. Yeo TED, Ng YL. Sexual risk behaviors among apps-using young men who have sex with men in Hong Kong. *AIDS Care.* 2016;28(3):314–8. <https://doi.org/10.1080/09540121.2015.1093597>
34. Dahlhamer JM, Galinsky AM, Joestl SS, Ward BW. Barriers to health care among adults identifying as sexual minorities: A US national study. *Am J Public Health.* 2016;106(6):1116–22. <https://dx.doi.org/10.2105%2FAJPH.2016.303049>



35. Rowe D, Ng YC, O'Keefe L, Crawford D. Providers' attitudes and knowledge of lesbian, gay, bisexual, and transgender health. *Fed Pract.* 2017;34(11):28–34.
36. Bowen DJ, Bradford JB, Powers D, McMorrow P, Linde R, EdD BCM, et al. Comparing women of differing sexual orientations using population-based sampling. *Women Health.* 2005;40(3):19–34. [https://doi.org/10.1300/J013v40n03\\_02](https://doi.org/10.1300/J013v40n03_02)
37. Clift JB, Kirby J. Health care access and perceptions of provider care among individuals in same-sex couples: findings from the Medical Expenditure Panel Survey (MEPS). *J Homosex.* 2012;59(6):839–50. <https://doi.org/10.1080/00918369.2012.694766>
38. Wang Y-C, Griffiths J, Grande G. Factors associated with Taiwanese lesbians' breast health-care behavior and intentions: Qualitative interview findings. *Women Health.* 2017;57(8):962–75. <https://doi.org/10.1080/03630242.2016.1222331>
39. Zuo M. Gay couple in Beijing become first to take advantage of new legal rights. *South China Morning Post* [newspaper on the Internet]. 2019 Aug 9 [cited 2020 May 30]. Available from: <https://www.scmp.com/news/china/society/article/3022181/same-sex-couple-beijing-become-first-take-advantage-new-legal>
40. Puckett JA, Levitt HM. Internalized stigma within sexual and gender minorities: Change strategies and clinical implications. *J LGBT Issues Couns.* 2015;9(4):329–49. <https://doi.org/10.1080/15538605.2015.1112336>
41. Newcomb ME, Mustanski B. Internalized homophobia and internalizing mental health problems: a meta-analytic review. *Clin Psychol Rev.* 2010;30(8):1019–29. <https://doi.org/10.1016/j.cpr.2010.07.003>
42. Qureshi RI, Zha P, Kim S, Hindin P, Naqvi Z, Holly C, et al. Health care needs and care utilization among lesbian, gay, bisexual, and transgender populations in New Jersey. *J Homosex.* 2018;65(2):167–80. <https://doi.org/10.1080/00918369.2017.1311555>
43. Liu C, Hsu E. Restriction on same-sex partnership registration to be lifted. *Focus Taiwan* [newspaper on the Internet]. 2017 Jun 21. [Cited 2020 May 30]. Available from: <https://focustaiwan.tw/society/201706210009>

44. Büchenbacher K. LGBT couples in China file for voluntary guardianship. CGTN [newspaper on the Internet]. 2019 Aug 11. [Cited 2020 May 30]. Available from: <https://news.cgtn.com/news/2019-08-09/LGBT-couples-in-China-file-for-voluntary-guardianship-J15eC8QcrC/index.html>
45. Cui F. Beijing Approves mutual guardianship for gay couple. Sixth Tone [Internet]. 2019 Aug 12. [Cited 2020 May 30]. Available from: <https://www.sixthtone.com/news/1004416/beijing-approves-mutual-guardianship-for-gay-couple>
46. Gendron T, Maddux S, Krinsky L, White J, Lockeman K, Metcalfe Y, et al. Cultural competence training for healthcare professionals working with LGBT older adults. *Educational Gerontology*. 2013;39(6):454–63. <https://doi.org/10.1080/03601277.2012.701114>
47. Kelley L, Chou CL, Dibble SL, Robertson PA. A critical intervention in lesbian, gay, bisexual, and transgender health: knowledge and attitude outcomes among second-year medical students. *Teach Learn Med*. 2008;20(3):248–53. <https://doi.org/10.1080/10401330802199567>
48. Radix A, Maingi S. LGBT cultural competence and interventions to help oncology nurses and other health care providers. *Semin Oncol Nurs*. 2018;34(1):80–9. <https://doi.org/10.1016/j.soncn.2017.12.005>
49. McClain Z, Hawkins LA, Yehia BR. Creating welcoming spaces for lesbian, gay, bisexual, and transgender (LGBT) patients: An evaluation of the health care environment. *J Homosex*. 2016;63(3):387–93. <https://doi.org/10.1080/00918369.2016.1124694>