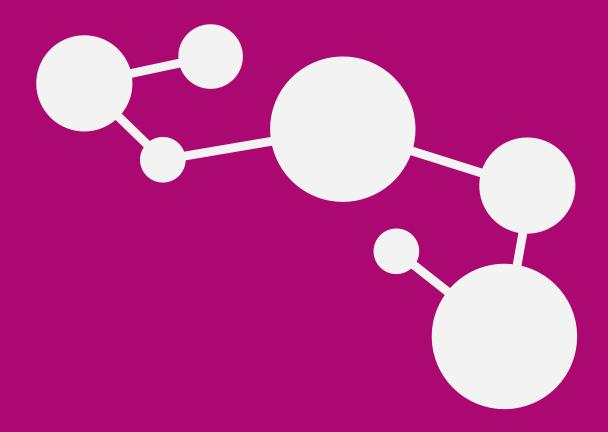


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INTRODUCTION

The right to health is fundamental to our human rights and encompasses a broad definition of physical health and (mental) wellbeing. Governments of all nations have an obligation to fulfil this right for all people, without discrimination of any kind. However, for multiple reasons, social minorities and marginalized groups, whether women, sexual and gender minorities, people living with disabilities, rural communities, the poor, the elderly, to name a few, all experience additional barriers to accessing health care, which impact their health outcomes.

LGBTI – Lesbian, Gay, Bisexual, Transgender and Intersex- is an umbrella term used to refer to many diverse groups based on people's sexual orientation, gender expression and gender identity. LGBTI individuals often face difficulties to access medical services and experience high rates of physical and mental health issues, as well as intersections with their gender, age, race, socioeconomic status etc. which may further drive ill health or exclusion. The term 'LGBTI health' is increasingly used to address these challenges and disparities, yet there is no broadly agreed concept of what LGBTI health is. Although the fact that LGBTI individuals face challenges accessing health services is fairly well established, little is known about the concept of LGBTI health itself. Nonetheless, there is growing evidence to support the idea that LGBTI people face unique health risks and global health burden, ranging from poor overall health status to heightened incidence of specific health conditions. This paper explores the concepts and dimensions of LGBTI health in order to present an understanding of LGBTI health, the risks and disparities that LGBTI people face and associated health needs. The focus is on the health risks and needs of LGBTI – as a highly heterogeneous group of varying sexual and gender identities with diverse health needs- both independently and in relation to the health of the general population.

METHODOLOGY

A scoping review was used to synthesise global literature on LGBTI health, from 2005 to present, identified using google, google scholar and the Directory of Open Access Journals. Reference lists of relevant articles were also mined for additional resources. All studies reporting on LGBTI health inequalities/burden were included, to establish what is known about LGBTI health, health inequalities and effective strategies to increase access and improve LGBTI health. To maximize the available data, all types of studies were considered, including grey literature.

A total of 43 documents were reviewed, including meta-analyses, systematic reviews, articles and reports. The majority of research available was from the United States, Australia, Canada, the UK and Europe. While this is a limitation of this study, the literature reviewed allowed for conclusions to be drawn for high-income contexts (where diverse sexual and gender identities are largely accepted). Studies which focused on Southern Africa (Malawi, Mozambique, Namibia, Zambia and Zimbabwe), Latin American and the Caribbean, and a CSO briefing paper prepared for the UN on LGBTI health and the SDGs, suggest that certain parallels can be drawn for other contexts.

In the course of researching this paper, multiple terms and identities were encountered, reflecting changes in terminology over the years. The following terms are used throughout this paper, informed by the source drawn on and/ or the specific group referred to: gay, lesbian, bisexual (men and women), LGB, LGBT, LGBTI, sexual and gender minorities (SGM), sexual minority groups (SMG) men who have sex with men (MSM), women who have sex with women (WSW), sexual minority women (SMW), transgender individuals/people, transgender women, transgender men and intersex individuals/people.



GLOSSARY

Lesbian women and gay men are attracted to individuals of the same sex and/or gender identity as themselves. The terms Men who have Sex with Men (MSM) and Women who have Sex with Women (WSW) are also sometimes used to capture those who do not define as lesbian or gay.

Bisexual people are not exclusively attracted to people of one particular gender and may be attracted to individuals of the same or different sex and/ or gender identity.

Transgender (sometimes also "trans") people are people whose sense of their own gender is different to the sex that they were assigned at birth. Trans women identify as women but were assigned as males when they were born. Trans men identify as men but were assigned female when they were born. Some transgender people seek surgery or take hormones to bring their body into alignment with their gender identity; others do not.

Intersex people are born with physical or biological sex characteristics (including sexual anatomy, reproductive organs and/ or chromosomal patterns) that do not fit the traditional definitions of male or female. These characteristics may be apparent at birth or emerge later in life, often at puberty. Intersex people may be subjected to gender assignment interventions at birth or in early life with the consent of parents though this practice is largely contested by intersex persons and has been the subject of a number of recommendations by human rights experts and bodies.

Gender is a socially constructed system of classification that ascribes qualities of femininity and masculinity to people. The attributes of gender can change over time and differ between cultures. The term gender is often conflated with 'sex' which refers to physiological and bodily attributes of individuals.

Cisgender means having a gender identity that matches one's assigned sex.

Sexual orientation refers to a person's physical, romantic, and/or emotional attraction towards other people. Sexual orientation is distinct from gender identity

Gender identity exists on a spectrum and refers to a person's deeply felt internal and individual experience of gender, which may or may not correspond with the sex assigned at birth.

Gender expression refers to the way in which an individual outwardly presents their gender. These expressions of gender are typically through the way one chooses to dress, speak, or generally conduct themselves socially. Our perceptions of gender typically align with the socially constructed binary of masculine and feminine forms of expression. The way an individual expresses their gender is not always indicative of their gender identity.

Sexual minorities or Sexual and gender minorities (SGM): Alternative terms used to refer to LGBTI people, however some LGBTI people reject these terms. Where possible LGBTI is used in this article, although sexual (and gender) minorities are referred to in cases where they were used in the original article and it was not possible to ascertain the precise alternative definition required.

Definitions extracted from: FAQ on Health and Sexual Diversity- An Introduction to Key Concepts. Geneva: World Health Organization; 2016



CONCEPT OF LGBTI HEALTH

As LGBTI is an umbrella term used to refer to a heterogeneous group of diverse identities, the concept of LGBTI health is a complex matter. For the lesbian, gay and bisexual community, the concept initially emerged through the modern LGB movement in the 1960s and 70s, coinciding with greater recognition and social acceptance. Until that point, although evidence of same-sex love and activity can be found in almost every culture, same-sex liaisons were condemned by the majority of states, religions and medical authorities as a mental condition. Several studies in the 1950s helped make a case for same-sex sexual behaviours as a normal and acceptable form of sexual expression, including Evelyn Hooker's ground-breaking study which found no mental health differences between heterosexual and homosexual men. This was used by activists in the United States in the 1970s as leverage to challenge the classification of homosexuality as a psychological condition (Martos, Wilson, & Meyer, 2017). It was finally removed from the American Psychiatric Association diagnostic manual in 1973 (Morris, 2009).

Similarly, gender variance has been pathologized throughout history and it was only in 2019 that the WHO declassified gender dysphoria as a mental disorder (BBC, 2019). Nonetheless, treatment to support transgender individuals to transition has been available since the early 20th century and is now well established as a multidisciplinary field of healthcare, from information and counselling to help explore identity to hormonal and surgical treatment options for gender-affirmation.

Intersex is a term often used to describe individuals whose biological sex (be it chromosomal, hormonal, gonadal or genital) characteristics develop atypically. Many intersex conditions are not readily visible and may not even be known to the individual themselves. Gender identity issues can arise but are not themselves part of the intersex condition. Although societies throughout history have been aware of intersex people, the term intersexuality was first used in 1917 (Intersex Human Rights Australia, 2009). With the rise of modern medicine, the condition became medicalized, particularly from the 1950s, and it became common for genital surgery to be performed on children without their consent. Although many medical experts now recognize that intersex anatomy is a psycho-social rather than medical concern, affirmative and respectful care for intersex people is often lacking, and non-consensual surgery is still common. However progress is being made towards respecting the bodily autonomy of intersex people: in 2015, Malta became the first country to outlaw non-consensual medical interventions to modify sex anatomy, including that of intersex people (Guilbert, 2015).

The diverse collective of the LGBTI people is now gaining social acceptance around the world, though there are few, if any, countries where LGBTI individuals can live free from stigma, discrimination and violence. As social acceptance increases, so too does the data and research on the health disparities faced by LGBTI individuals. Nevertheless, the majority of current research focuses on the sexual health of gay and bisexual men and other men who have sex with men, and predominantly relates to HIV and STIs. There is a risk that this skewed focus will be reflected in health budgets: in 2010, in the United States, 81.5% of the National Institute of Health's LGBT health services dealt with gay men and HIV, while only 7.7% were on cancer, 6.3% on violence, 2.7% on depression and 1.4% on suicide (Androite, 2013). Transgender women are the focus of more research than transgender men, with mental health being the most researched, and data on the dimensions of intersex health is scarce.

FINDINGS RELATED TO LGBTI HEALTH

The research findings have been grouped into the following dimensions to reflect the most commonly reported health risks: 1) General Health, 2) Sexual Health, 3) Reproductive Health, 4) Mental health, discrimination and violence, and 5) Substance Use.

GENERAL HEALTH

There is quite some evidence that LGBT individuals overall exhibit poorer health and poorer health outcomes. No data were found regarding intersex individuals. The lack of data on the health profile and cancer burden among trans and intersex people represents a clear research gap.

LESBIAN, GAY AND BISEXUAL GENERAL HEALTH

There is evidence to suggest that LGB people experience higher incidence of a range of conditions which impact their physical health, with bisexual men and women exhibiting comparatively poorer health overall. Some studies translate this into greater risk of 'disability:'1 Research into population data identified that the odds of disability were about 2 to 3 times higher for lesbians and bisexual women than for heterosexual women, and about 3 times higher among gay and bisexual men than for heterosexual men (Fredriksen-Goldsen, Kim, & Barkan, 2012). Data also suggests an earlier age of onset of disability among LGB adults, with higher prevalence among the 18-30 age group. It is assumed that this prevalence of disability is influenced by disparities in risk behaviours, and poorer physical and mental health among LGB adults.

With regard to specific health risks, one survey found thyroid disease, arthritis/ gout and asthma to be among the most commonly reported health conditions among LGBT (Henry, Perrin, Sawyer, & Pugh, 2020). Another found LGB increased incidence of musculoskeletal and spinal problems, arthritis and chronic fatigue syndrome (Zeeman et al., 2019). Gay and bisexual men are reported as more likely to experience gastrointestinal, liver and kidney problems (Zeeman et al., 2019) and lesbian women are reported as more likely to suffer from arthritis, asthma and obesity compared to their heterosexual peers (Simoni et al., 2014). The risk of obesity in women who have sex with women seems to increase with age, while gay men are more likely to have a lower BMI than heterosexual men (Lunn et al., 2017). Bisexual men may have higher odds of diabetes than gay men (Fredriksen-Goldsen et al., 2013). Although some studies indicate that LGB, especially lesbian and bisexual women, face increased cardiovascular risks, which may be assumed to correlate to increased obesity in this group, one systematic review on lesbian and bisexual women's health disparities found little evidence to support a higher prevalence of diabetes, hypertension, and high cholesterol.

The different health needs of ageing LGBTI are the focus of a growing body of academic and practitioner literature. Older LGBTI individuals have heightened risk of substance abuse, living with a disability, poorer physical and mental health, and are more likely to be living alone (Parent, Arriaga, Gobble, & Wille, 2019). One study suggests the heightened risk among older gay and bisexual men for disability and poor physical and mental health may correlate to HIV (Fredriksen-Goldsen et al., 2013). Older LGBT adults may be living with HIV contracted during the initial AIDS pandemic and may be living with long-term consequences and side effects of early medications (Parent et al., 2019).

^{1.} Defined in one study by asking participants if they are "limited in any way in any activities because of physical, mental, or emotional problems" and if they "have any health problem that requires them to use special equipment." (Fredriksen-Goldsen, Kim, & Barkan, 2012).

Some studies suggest that LGB people are at higher risk of certain types of cancer, most likely as a result of risk behaviours or treatment avoidance, although more high quality research is needed. International research trends suggest that LGB are at higher risk of contracting cancer at a younger age (Sherriff et al., 2019). Gay and bisexual men may experience higher risk of prostate, anal, testicular and colon cancer (Henry et al., 2020); with one well substantiated narrative synthesis quoting that gay and bisexual men are twice as likely to report a diagnosis of anal cancer, with the highest risk among those who are HIV-positive (Zeeman et al., 2019). This is thought to be caused by high prevalence of anal human papillomavirus (HPV) in these groups, and there is growing evidence in support of routine anal HPV screening for gay and bisexual men, especially those who are HIV-positive, as a cost-effective means of preventing anal cancer (Mayer et al., 2008). Lesbian and bisexual women may be at greater risk of breast cancer, cervical cancer and ovarian cancer, which could be related to the fact that they are less likely to make routine gynaecological visits than heterosexual women (Lampalzer et al., 2019), and less likely to have routine mammography or cervical screenings (Albuquerque et al., 2016; Takemoto et al., 2019; Henry et al., 2020; Mayer et al., 2008). One systematic literature review suggests that lesbian and bisexual women are ten times more likely not to have and/or receive the results of cervical smear tests and are four times more likely do not to undergo mammography, meanwhile those who do not experience pregnancy may have reduced protective factors for breast and ovarian cancer (Albuquerque et al., 2016). It seems a multitude of factors are at play, from risk perception (lesbian women see themselves as having lower risk of contracting cervical cancer), while treatment avoidance also seems to be a significant factor.

TRANSGENDER GENERAL HEALTH

Little research was found looking at the general, physical health of transgender people, indicating a potential research gap. However, some studies help shed light on elements of their physical health. One study into sleep quality among transgender individuals in Germany seeking transition-related health care, at different treatment stages, found that around 80% of transgender women and men reported high sleep disturbances, with a strong influence on their Quality of Life. Chronic pain was also a significant determinant of Quality of Life in transgender men but not transgender women, most commonly back pain and chronic headaches. Only a minority reported on genital-related pain (which could be linked to their gender confirmation surgery) and physical sexual discomfort (Auer et al., 2017).

Use of hormones may increase the risk of cardiovascular disease among transgender people (Mayer et al., 2008). Transgender women may be at increased risk of oestrogen induced thrombosis, although studies also show that feminising hormone therapy may offer some cardiovascular benefits (Lawrence, 2007). Further research is needed to understand these interactions and provide appropriate care to transgender individuals, while taking into account their gender identity and affirmation needs.

There is little data available about the specific cancer risks and needs of transgender individuals, despite biological factors related to transition which indicate this should be a research and policy priority. Those who have undergone gender confirmation surgery may retain pretransition organs or tissue associated with their natal sex, such as prostate, breast, cervix and ovaries, that will need to be considered in future oncological screening and treatment (Gruskin et al., 2018; Mayer et al., 2008).

SEXUAL HEALTH

The prevalence of HIV and STIs is one of the most studied areas related to LGBTI health, with data available in low- and middle-income countries as well as high-income countries. The majority of the literature focuses on gay and bisexual men and, to a lesser extent, transgender women. The sexual health of lesbian and bisexual women and transgender men is comparatively understudied, as is the sexual health of intersex individuals from a non-medical perspective. While much of the data reported here are drawn from country studies or systematic reviews, UN data on international prevalence broadly supports these findings.

LESBIAN, GAY AND BISEXUAL SEXUAL HEALTH

There is significant evidence indicating that gay and bisexual men, men who have sex with men and transgender women are at greater risk of acquiring HIV and contracting STIs, and that this risk is driven by sexual behaviours as well as by stigma, discrimination, and violence. In low- and middle-income countries, MSM are 19 times more at risk of being infected with HIV (Blondeel et al., 2016) and living with HIV, and represent approximately 10% of all new infections each year (Global Forum on MSM & HIV & OutRight Action International, 2017). In high-income countries, new cases of HIV are increasingly among MSM (Blondeel et al., 2016). Two US-based studies suggest that bisexual men are less likely to be tested for HIV than gay men (Lunn et al., 2017; Fredriksen-Goldsen et al., 2013)

Multiple studies refer to high risk of STIs among gay and bisexual men (Albuquerque, et al., 2016; Blondeel et al., 2016; Mayer et al., 2008), although the risks are often generalised without referring to specific infections. Some studies found a higher prevalence of syphilis, chlamydia and hepatitis among MSM (Blondeel et al., 2016). One global review of systematic reviews found that the incidence of acute hepatitis C was four times higher among HIV positive MSM than MSM who were HIV negative (Blondeel et al., 2016). Gay and bisexual men also seem to be at greater risk of contracting hepatitis A and B, where hepatitis B also has a coinfection risk with HIV and transgender women have a greater risk (Blondeel et al., 2016; Mayer et al., 2008). The prevalence of anal HPV has been found to be very high; possibly as high as 53% in HIV negative MSM and 89% in HIV positive MSM (Blondeel et al., 2016; Mayer et al., 2008) and, as mentioned above, is linked to a higher prevalence of anal cancer. Very limited evidence suggests that gay men may experience higher rates of erectile dysfunction than heterosexual men (Institute of Medicine, 2011).

It is often perceived that lesbian and bisexual women have a lower risk of acquiring HIV and STIs. However, lesbian women may engage in high-risk behaviours, such as using injection drugs, that place them at risk of HIV transmission. Furthermore, the high level of gender-based violence and sexual violence that lesbian women face, often in the form of corrective rape or forced sex, is a key risk factor for HIV (Takemoto et al., 2019; Global Forum on MSM & HIV & OutRight Action International, 2017). A systematic review on STIs and bacterial vaginosis in lesbian and bisexual women found that having experienced acts of (sexual) violence and discrimination increased their odds of STIs by 6.5 times, while perceived sexual stigma increased their odds by more than 2 times (Takemoto et al., 2019). Due to the lower risk association, and lack of sexual health knowledge (Muller & Hughes, 2016), women have fewer HIV and STI tests (Takemoto et al., 2019), potentially resulting in more severe morbidity due to late diagnosis. The same systematic review found that a higher number of sexual partners regardless of their sex/gender increased the risk of HPV, chlamydia, gonorrhoea, HIV, genital herpes and in fact, any history of STIs.



This review also found a high prevalence of bacterial vaginosis (BV), ranging between 25-43%, which is significantly higher than rates reported in heterosexual women (Takemoto et al., 2019). Although BV is not an STI, the chance of acquiring BV is associated with sexual activity. The data was inconclusive as to the associated risk factors, putting it down to past or current smoking (though the association remains unclear) and the number of recent or lifetime partners, with a larger number of female sex partners, possibly increasing the risk of BV.

TRANSGENDER SEXUAL HEALTH

Very little data was found in the literature reviewed for this paper on the needs of transgender people relating to gender affirmation (gender-affirming surgical and hormonal interventions, side-effects of hormonal treatment, satisfaction with genital surgery etc). The data found mostly relates to treatment and access, and the need to be treated with respect and dignity when seeking services, rather the health needs of transgender people themselves. Research on the sexual health of transgender people predominantly focuses on HIV and STIs prevalence among transgender women (assigned male at birth), with very little data available on transgender men (assigned female at birth). The data that is available shows that transgender women are disproportionately affected by HIV and STIs (Reisner et al., 2016), with one review reporting the HIV prevalence as 19% among the international sample of transgender women, making them almost 50 times more likely to be HIV positive than the general population, regardless of the context (low/middle/higher income) (Lunn et al., 2017). Transgender women sex workers are reported as having a higher HIV prevalence than cis male and female sex workers in the same neighbourhoods (Lunn et al., 2017). Although data on STIs is limited, research conducted in Latin America by the Pan American Health Organisation found that transgender women also have a higher burden of hepatitis B and C (PAHO, 2014).

INTERSEX SEXUAL HEALTH

With regard to the sexual health of intersex individuals, the medicalization of the field has led to a focus on 'normalising' surgery rather the sexual fulfilment of intersex individuals. There is very little evidence to support the sexual health needs of intersex individuals themselves, and the needs and concepts of intersex health are largely driven by society's need for conformity. A review of international research into Sexual Quality of Life of intersex individuals found that, although most studies were of low quality, the majority point to high levels of sexual dissatisfaction and dysfunction (Schönbucher, Schweizer, & Richter-Appelt, 2010). The Intersex Society of North America believes that treatment approaches focus on the preservation of fertility (for girls) and size and function of the phallus (for boys) rather than sexual sensation and satisfaction, indicating that their sexual health needs are indeed overlooked. The main research reviewed on this topic, a German study on satisfaction with genital surgery and sexual lives of intersex individuals, indicates that many individuals with differences in sex development experience sexual problems, and reported high levels of dissatisfaction with sex life. Fear of sexual contact, low sexual desire, difficulties initiating sexual contact, problems with arousal, erectile dysfunction, dyspareunia (pain during or after intercourse) and vaginism (involuntary contraction of vaginal muscles) were more often reported than by heterosexual controls. Additionally, individuals who identified as a third gender reported fear of injury during intercourse (57%) and aversion to sexual activity (85%). Many XY males were dissatisfied with the cosmetic result of genital surgery but satisfied with the function. Individuals who had feminizing surgery



were less satisfied with the functional result. Dissatisfaction with clitoral arousal was significantly higher post feminizing surgery (47%) than in those who had not undergone surgery (10%). The high rates of dissatisfaction with cosmetic and functional results of surgery (including clitoral arousal) concur with anecdotal evidence from around the world (Köhler et al., 2012).

REPRODUCTIVE HEALTH

The reproductive needs of LGBTI individuals are understudied and under valorised. The SRH needs of lesbian and bisexual women, and transgender and intersex individuals, including the need for cervical screening and mammograms, as well as their fertility and reproduction needs, are misunderstood or disregarded and greater support is needed for them to understand and explore their reproductivity. The lack of cancer screening places them at risk of premature death from reproductive cancers (Global Forum on MSM & HIV & OutRight Action International, 2017). Women in same-sex partnerships who wish to become pregnant are often referred to expensive, private services for fertility treatments (Global Forum on MSM & HIV & OutRight Action International, 2017). A narrative synthesis on LGBTI health inequalities found polycystic ovaries, which can cause fertility problems, occur at a higher rate in lesbian women compared to heterosexual women (80% vs 36%), although no cause or hypothesis was stated (Zeeman et al., 2019).

Transgender and intersex individuals have very specific reproductive challenges yet are significantly understudied. The need for reproductive cancer screening and treatment for transgender individuals is even more invisible and misunderstood than for WSW: one systematic review exploring the global health burden of transgender individuals found no data on fertility or pregnancy in any of the 116 articles reviewed (Reisner et al., 2016). The fertility needs and desires of transgender individuals are largely ignored, and little is known about the impact of hormones on fertility. A qualitative study into the needs and experiences of transgender men who had given birth reported particular frustration with regard to the lack of information on the short-term and long-term effects of testosterone on reproductive organs, ease of conception, pregnancy outcomes, mental health, and lactation. However, while the biomedical aspect was important to participants, overall they valued more acceptance and respect from health professionals regarding their gender identity (Hoffkling, Obedin-Maliver, & Sevelius, 2017). In contexts where legal gender recognition requires irreversible surgical reassignment, resulting in sterilisation, their fertility needs are severely compromised (Global Forum on MSM & HIV & OutRight Action International, 2017).

The data reviewed for intersex individuals refers to deferring medical intervention(s) and preserving fertility and reproductive potential until such a time the individual can make a free and informed choice, which reflects progress in how the medical community thinks about the bodily autonomy and reproductive health needs of intersex individuals.



MENTAL HEALTH, STIGMA, DISCRIMINATION AND VIOLENCE

The mental health burden of LGBTI individuals in comparison to the general population is well established. Concerns range from mental and psychological problems, eating disorders, stigma and discrimination, and violence against LGBTI is widely reported and negatively impacts their mental health and self-acceptance. The mental health burden among LGBT individuals is widely researched, but less so for intersex individuals. While several studies use 'LGBTI' in the title, this is not well reflected in the text itself.

LESBIAN, GAY AND BISEXUAL MENTAL HEALTH AND WELLBEING

LGB individuals are more likely to develop mental health and psychological disorders, deliberate self-harm and suicide ideation compared to heterosexuals of the same gender (Albuquerque et al., 2016; King et al., 2008; Mayer et al., 2008). Studies differ on the exact rates, but it appears that LGB individuals could be around 1.5 times more likely to have "poor mental health," at least 1.5 times more vulnerable to depression and anxiety disorders (King et al., 2008), and 2-3 times more likely to report longstanding psychological or emotional conditions (Elliott et al., 2015). Eating and body image disorders are more prevalent among gay and bisexual men compared to heterosexual men (Martos, Wilson, & Meyer, 2017; Mayer et al., 2008). LGBT youth, in particular, experience higher levels of emotional distress, mood and anxiety disorders, self-harm and self-stigma compared to heterosexual youth (Global Forum on MSM & HIV & OutRight Action International, 2017). LGB individuals appear to have increased risk, compared to their heterosexual peers, for suicide attempts and ideation throughout their lifetime, where young people, particularly girls, again show greater vulnerability (Global Forum on MSM & HIV & OutRight Action International, 2017; Blondeel et al., 2016; King et al., 2008).

Many studies look at LGB mental health together with risk and protective factors. This is significant to understanding the causal factors, rather than assuming mental health issues are inherent to being a sexual minority person (Muller & Hughes, 2016). Qualitative research in The Netherlands set out to understand why suicide and mental health issues were so prominent in a context which is perceived to be highly accepting of LGBTI individuals. The study posits that gay men internalize a degraded sense of self-worth and feelings of otherness in a society where heteronormative values still dominate (Aggarwal, & Gerrets, 2014). Poor mental health in young LGB is attributed to negative experiences of social and family acceptance (Albuquerque et al., 2016), while data from the UK demonstrates how (long-term) relationships may dramatically reduce the incidence of depression, anxiety, suicide attempts and self-harm among gay and bisexual men (Global Forum on MSM & HIV & OutRight Action International, 2017), highlighting the importance of social acceptance for LGBTI mental wellbeing. Research from Australia identified a positive influence of legal equality and civil rights on the mental health of LGBT people (Demant, Hides, White, & Kavanagh, 2018), further supporting the idea that greater social acceptance and recognition positively influence mental wellbeing.

Stigma, discrimination and violence: LGB individuals are often victims of bullying, harassment, discrimination and violence throughout their lifetime (Parent et al., 2019; Martos et al., 2017; Gruskin, et al., 2018; Albuquerque et al., 2016; Muller & Hughes, 2016) but especially at school (Parent et al., 2019). The higher levels of discrimination and marginalisation experienced by LGB individuals negatively impact their mental wellbeing, and are reportedly linked to elevated use of tobacco, alcohol and drugs (Parent et al., 2019; Demant et al., 2018).



A global review found experiences of physical assault and sexual assault are also common, at just under 30% (Blondeel et al., 2016). A systematic review on sexual minority women in Southern Africa reports that sexual minority women, especially black SMW, experience high levels of sexual violence, with one study suggesting that 31% of SMW reported forced sex, mainly by men; but about half of them also, or only, by women (Muller & Hughes, 2016). As mentioned above, sexual violence (as "corrective rape") is a high risk factor for HIV transmission for WSW (Takemoto et al., 2019), while violence, stigma and discrimination are seen as contributing to the heightened vulnerability of MSM to HIV (Global Forum on MSM & HIV & OutRight Action International, 2017). A study in Brazil with an LGBT Association found that, of the 846 members surveyed, two-thirds had experienced discrimination in some form and 59% had suffered physical violence (Albuquerque et al., 2016). Evidence from the USA suggests that there is a high prevalence of intimate partner violence in male-male partnerships (Blondeel et al., 2016).

TRANSGENDER MENTAL HEALTH, SELF-HARM AND SUICIDE IDEATION

Although the medical community has moved away from diagnosing and treating gender incongruence as a psychiatric condition, it may continue to bear a legacy on how transgender individuals are perceived, understood and treated. Mental health is one of the most studied areas of transgender health (Reisner et al., 2016), yet, as with other research areas, the focus is predominantly on transgender women.

Transgender individuals appear to be at higher risk of depression, anxiety and poor mental health, with rates of depression among transgender women possibly as high as 64% (Reisner et al., 2016), while evidence on other mental health disorders varies. A review of systematic reviews concludes that transgender women experience high rates of suicidal thoughts and lifetime suicide attempts (Blondeel et al., 2016), yet no data was found for transgender men. The vulnerability of transgender persons to poor mental health suggests a need for greater (targeted) psychosocial and mental health care to ensure that they receive the support they need. One study on transgender and autism - which appears to occur at higher rates among transgender individuals (Warrier et al., 2020; Stagg & Vincent, 2019) - reports that "transgender and gender-diverse individuals also had elevated rates of ADHD, bipolar disorder, depression, OCD, learning disorders, and schizophrenia compared to cisgender individuals." (Warrier et al., 2020). However, a literature review on mental health and transgender concludes that there is little evidence to support a higher prevalence of schizophrenia and bipolar disorder (Dhejne et al., 2016).

Researchers commonly seek to provide an explanation for the high prevalence of poor mental wellbeing of transgender persons, although obtaining a comprehensive understanding is highly complex. As with LGB individuals, it is likely that there is a close correlation between internalized stigma and levels of depression and stress (Muller & Hughes, 2016), as well as a positive correlation between mental wellbeing and gender affirmation, internally, societally, medically and legally (Reisner et al., 2016). For example, a literature review of mental health and gender dysphoria indicates that, although trans people attending services displayed higher levels of psychopathology and psychiatric disorders than the cis population, these levels improve and often reach normative values following gender-confirming medical intervention Dhejne et al. 2016). This could be linked to medical affirmation (being seen, accepted and treated by medical staff) and internal affirmation (finally feeling their body is aligned to their gender identity) (Heylens et al. (2014a), in Dhejne et al. 2016).

Furthermore, the importance of social acceptance mentioned above is again likely to play a role in positively influencing mental wellbeing.

Stigma, discrimination and violence: Transgender individuals around the world experience high levels of stigma, discrimination and violence, including extreme violence such as rape and murder (Gruskin et al., 2018). A literature review on the global health burden and needs of transgender persons estimates that 44% of transgender persons experience violence and victimisation (Reisner et al., 2016), far higher than the level experienced by the cisgender population. However, closer examination of the data shows that most of the research reviewed focuses on male-to-female transgender individuals, with little research or evidence on violence and victimisation experienced by female-tomale transgender people. It is a common assumption that transgender women face higher levels of violence - supported by the data gap on transgender men - however, no conclusive studies were found to substantiate this. For transgender women, a study in Latin America and the Caribbean found high levels of violence, including rape, coercion to engage in sexual activity against one's will and refusal to wear a condom as well as physical abuse, kidnapping, being forced to consume drugs or alcohol, and being subjected to invasive searches (Evens et al., 2019). These acts of violence were often perpetrated by family members, health workers, police as well as other community members and strangers, which highlights the risk that transgender women face in all aspects of their lives.

INTERSEX MENTAL HEALTH

Mental health is one of the few areas where evidence is available for prevalence and burden among intersex individuals. Intersex people, like LGBT people, experience stigma, discrimination and isolation, in some cases in relation to experiences with the medical community and the medicalisation of their bodies (Zeeman et al., 2019), as well as feelings of being different. An Australian study on intersex experiences suggests higher rates of mental health conditions, with possibly as many as 60% experiencing depression and 35% experiencing anxiety (Jones et al., 2016). This research, and a review on LGBTI health in EU states, both suggest that suicide and self-harm on the basis of having a congenital sex variation are common, reporting that 60% of intersex individuals have considered suicide, and 19% have attempted suicide (Zeeman et al., 2019; Jones et al., 2016).

SUBSTANCE USE

There are substantial findings to suggest higher rates of substance use by LGBT individuals, spanning youth, middle age and old age. Of the articles reviewed, 15 reported higher rates of tobacco use, while 17 articles reported higher levels of alcohol and/or drug use. Of note is the finding that past or current smoking is identified as a risk factor for an STI diagnosis (Takemoto et al., 2019), although the causality is not clear. Possibly there is a common behavioural cause between the two, such as more sexual partners and higher risk-taking.

LESBIAN, GAY AND BISEXUAL SUBSTANCE USE

Tobacco use: There is strong evidence to suggest that sexual minority groups are much more likely to smoke, starting from a young age (Parent et al., 2019; Demant et al., 2018). As is well-substantiated in international research and widely accepted, smoking causes cancer, heart disease, stroke, lung disease and diabetes, among many other conditions. Findings from the Global Drug Survey (2015)² indicate that lesbian and bisexual women have higher rates of tobacco use (lifetime, last-year, last-month) than heterosexual women. Bisexual women are more likely to smoke than lesbian women and bisexual men have higher rates of tobacco use than heterosexual and homosexual males (Demant et al., 2017). Prevalence estimates vary but studies in the United States suggest around 30% in LGB adults compared to 20% in heterosexual adults report using any tobacco product (every day, some days or rarely) (Agaku et al, 2014). Global research suggests that adolescent bisexual women were two to three times more likely to use tobacco, marijuana and other illicit substances (Parent et al., 2019), while a study on health disparities in older LGB adults (aged 50 and over) found that LGB were more likely to smoke than their heterosexual peers (Fredriksen-Goldsen et al., 2013).

Alcohol use: There is a clear pattern of higher levels of alcohol use across LGB groups, starting in adolescence and extending into older age. LGB youth appear to be more likely to binge drink and get drunk and are possibly 2 to 5 times more likely to use alcohol and other drugs than their heterosexual peers (Parent et al., 2019). Sexual minority females and young women with male and female partners have been found to be two times as likely to binge drink as young women with only male partners (Parent et al., 2019; Dermody et al., 2014). As LGB adolescents move into adulthood, overall levels of hazardous drinking remain high and the disparities between LGB and heterosexual youth appear to increase. Adult gay, lesbian and bisexual men and women all maintain higher drinking rates than their heterosexual peers (Parent et al., 2019). Data from around the world suggests that lesbian and bisexual women continue to be at greater risk (Zeeman et al., 2019; Global Forum on MSM & HIV & OutRight Action International, 2017; Przedworski et al., 2014; Institute of Medicine, 2011). Higher use of alcohol appears to intersect with other identities and experiences of discrimination: SGM individuals of colour, low socioeconomic status, gender nonconforming gender expression, immigration status and involvement in sex work or drug dealing are associated with higher rates of hazardous alcohol use (Parent et al., 2019). This suggests the use of alcohol as a coping mechanism. Research indicated that sexual minority young people considered the discrimination and marginalization they experience to be a key factor in disparities in substance use between them and their heterosexual peers (Demant et al., 2018), supporting the idea that it is used as a coping strategy.

^{2.} Responses from Australia, Brazil, France, Germany, Hungary, the Netherlands, Switzerland, the United Kingdom and the United States, predominantly urban areas.

Substance use: As with alcohol and tobacco, LGB individuals engage in higher levels of substance use, starting from a young age. Multiple surveys into youth risk behaviour indicate that LGB youth have higher levels of drug use compared to heterosexual peers (Parent et al., 2019; Demant et al., 2018; Muller & Hughes, 2016), possibly 3-4 times higher, and from an earlier age (Demant et al., 2017). A study into the health of sexual minority women in Southern Africa reported recreational drug use among half of them (Muller & Hughes, 2016). While substance use tends to decrease with age among heterosexual individuals, this trend is not echoed in LGB individuals; LGB men and women in middle age are found to maintain high and moderate use (Parent et al., 2019; Zeeman et al., 2019; Reisner et al., 2016). Few specifics are given about the types of drugs although one study reported that substances such as methamphetamine or GHB are used at higher rates among gay and bisexual men, particularly those living with HIV, for enhancing sexual pleasure (Demant et al., 2018). Finally, older LGB adults with HIV/AIDS display increased use of non-Opioid prescription medications, marijuana, and stimulants (Dermody et al., 2014). Again, other identities and dimensions of discrimination appear to intersect with and drive increased substance use (Parent et al., 2019). According to research from the United States, discrimination faced by SGM individuals of colour reinforces drug use, including hazardous alcohol use, methamphetamine, and crack cocaine use in Black sexual minority men, methamphetamine and marijuana use among Latino sexual minority men, and ecstasy/MDMA use among Asian/Pacific Islander sexual minority men (Parent et al., 2019). While the causes are unknown, this intersectionality would again point to minority stress and dependence as a coping mechanism in response to discrimination and stigma.

TRANSGENDER SUBSTANCE USE

Substance use by transgender individuals (including tobacco, alcohol, marijuana and any illicit drug use) is one of the more researched areas of transgender health (Reisner et al., 2016). Research available on transgender women suggests the use of alcohol and substances (indicated as methamphetamine, marijuana, crack cocaine, and club drugs) is associated with HIV risk (Parent et al., 2019), most likely as a result of risk-taking behaviours. Findings support elevated use of tobacco, alcohol and drugs as a coping mechanism for those who have experienced domestic violence, intimate partner violence, sexual assault, public violence and family rejection (Parent et al., 2019). As with LGB individuals, this increased use of alcohol and substances persists over time and represents a lifetime risk.

INTERSEX SUBSTANCE USE

Substance use and experiences of intersex individuals are severely understudied, however, research from Australia indicated that drug use by some intersex individuals was also used as a coping mechanism, to deal with experiences of bullying, emotional trauma or exposure to non-consensual surgical procedures when younger (Jones et al. 2016).

OVERVIEW OF KEY HEALTH RISKS

	General health/ NCD	Sexual health	Reproductive health	Mental health	Substance use
All	Ageing			Mental health burden. Bullying, harassment, discrimination & violence, including physical & sexual assault	Higher levels of tobacco, alcohol & drug use
LBG	'Disability', Musculoskeletal & back problems, arthritis, chronic fatigue syndrome. Cardiovascular risk			Mental health & psychological disorders. Deliberate self- harm & suicide ideation.	Alcohol & drug use
Gay/ Bisexual men	Gastrointestinal, liver and kidney problems. Cancer (anal, prostrate, testicular, colon).	HIV/STIs HPV Hepatitis A, B & C		Eating and body image disorders. Intimate partner violence	Methamphetamine, GHB
Lesbian/ Bisexual women	Obesity, arthritis, asthma. Cancer (breast, cervical, ovarian).	Bacterial vaginosis	Fertility and reproduction. Polycystic ovaries	Young LBW: suicide attempts & ideation. Forced sex/ Corrective rape	Tobacco & alcohol use
Bisexual specific	Diabetes	Lack of HIV testing			Higher rates of tobacco use
Transgender	Sleep problems, back pain, chronic headaches. Cardiovascular risk (potentially linked to oestrogen use). Cancer in pretransition organs	Gender Affirmation. Transgender women: HIV/STIs	Fertility & reproduction. Transgender men: Understanding impact of hormone therapy (testosterone) on fertility.	Depression, anxiety & poor mental health. Suicide ideation & attempts. Extreme violence (rape & murder). Transgender women: sexual coercion.	Tobacco, alcohol & drug use. Transgender women: methamphetamine, marijuana, crack cocaine & club drugs.
Intersex		Non- medicalisation of condition. Gender affirmation (at a later age and based on individual choice). High levels of sexual dissatisfaction.	Fertility, bodily autonomy	Depression, anxiety & poor mental health. Suicide ideation & attempts.	

CONCLUSION

There is a clear disparate health burden experienced by LGBTI individuals. As the LGBTI community is a heterogeneous group, the levels of risk are different among different groups. Key findings indicate: LGBT experience an overall feeling of 'poorer health' which is supported by data on risk factors for non-communicable diseases in specific LGBT groups, such as obesity and cardiovascular disease among lesbian and bisexual women, as well as higher risk from certain types of cancer, including ovarian, breast, and cervical cancer for women and prostate, anal, testicular and colon cancer among men. Transgender people who have undergone transition surgeries or hormonal treatment potentially have additional screening and treatment needs which require transparency with health care providers and awareness and sensitivity on the part of health professionals.

Social determinants, such as the violence, stigma, and discrimination that LGBTI people face, may impact their overall health, and may result in unhealthy behaviours and treatment avoidance. For example, the higher rates of substance use by LGBT individuals, which start in youth and continue through their lifetime, are often linked to minority stress (the idea that the distinct stress factors experienced by sexual and gender minorities have negative impacts on their mental health and wellbeing). Some of the health disparities reflect behavioural choices and increased risk-taking, which could be influenced by minority stress. Furthermore, it should be recognized that lifelong discrimination may place a "stress burden" on the mental and physical health of those affected and influence health-seeking behaviour. However, causalities and potential intersectionalities are poorly researched. Further research is needed to understand and substantiate this.

Some health disparities are little researched and understood. Research is uneven across the different health topics and identity groups. Research is biased towards men and to some extent transgender women, and towards sexual (from a 'problem' rather than 'pleasure' perspective) and mental health. The reproductive health needs and rights of the LGBTI people, and the health of intersex individuals, beyond their mental health and medical interventions, are topics severely overlooked, misunderstood or disregarded. Furthermore, research is geographically focused predominantly in the global north, although research in other contexts appears to support the findings. There is far less evidence from the global south, women, transgender men and intersex.

RECOMMENDATIONS

Some research, particularly that in Europe, pointed to promising practices that are emerging to respond to the health needs of LGBTI individuals. There are a number of steps that can be taken by Ministries of Health, Health Authorities, Service Providers, health professionals, researchers and civil society in order to better respond to the health risks, needs and increased burden faced by LGBTI individuals. The recommendations are by no means comprehensive and represent just a few critical initiatives which could, and should, be taken:

There is a need for disaggregated data from around the world. It is still common for health surveys, intake forms, insurance etc, to overlook relevant questions on sexual and gender identity.

- If Ministries of Health took the step to integrate demographic questions on sexual orientation and gender identity in national health surveys, this would give the health community a much greater understanding of any health discrepancies that LGBTI individuals face and evidence to secure support and resources for interventions. This would also give greater recognition to a significant population in our societies and represent greater social acceptance.
- Researchers also need to ensure that data they collect is sufficiently disaggregated, for example, to distinguish between transgender men and women, and make use of the disaggregated data (when available) from health authorities.

Research into specific LGBTI groups, especially transgender men and intersex, their experiences and their sexual health and pleasure, is needed to fill significant evidence gaps. The data clearly point to different health needs of LGBTI individuals, however, as yet, we do not have an in-depth understanding of the causes of these wide-ranging health risks and differences. More research is needed from around the world for all sub-groups to understand the full scope of LGBTI health, the causes and the intersectionalities. Greater recognition of LGBTI health as a concept, will make it possible to define appropriate responses.

- Researchers and health service providers can help shed light on key issues, such as:
 - Fertility and reproductivity needs of lesbian and bisexual women and transgender individuals, including the impact of testosterone use on fertility.
 - The needs of transgender people relating to gender affirmation (gender-affirming surgical and hormonal interventions, side-effects of hormonal treatment, satisfaction with genital surgery etc).
 - Understanding of the impact of oestrogen use on cardiovascular risk for transgender women in support of improved medical advice and assistance.
 - The different health, treatment and care needs of ageing LGBTI individuals need to be further explored in order to ensure the provision of appropriate care.
- Researchers need to explore this further to move beyond 'minority stress'
 and understand the multiple dimensions. While some point to medical
 needs, most of these will result from sociocultural influences and risk
 behaviours. As yet, minority stress remains a theory which should be further
 explored and substantiated in order to help ensure adequate responses are
 in place at the policy and practice levels.



LGBTI health is a social justice issue which requires changes in health policy and practice in order to improve LGBTI health and access to treatment and care. While social acceptance for the LGBTI people is growing, policy and practice often remain behind public opinion. For transgender and intersex individuals, in particular, multidisciplinary approaches need to be standard practice to provide a holistic response to their health.

- Ministries of Health, Health Authorities and Service Providers need to take this into consideration and proactively update policies, protocols and guidance to ensure equality of access and treatment for LGBTI people. National training curricula and training for health professionals need to be improved to increase awareness of sexual diversity and gender plurality among service providers in order to reduce judgemental and discriminatory attitudes, and therefore make it easier for LGBTI people to access care. This includes adapting health policy and treatment responses in order to remove barriers and stigma for ageing LGBTI people to access appropriate care, including the provision of care in residential care homes.
- Researchers can provide support by evaluating new and existing health policies for gaps and recommendations.

Reach LGBTI people with targeted public health campaigns to address specific health risks or vulnerabilities and help reduce mortality and morbidity from certain conditions.

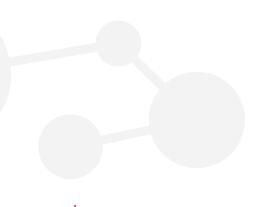
 Ministries of Health and service providers could use targeted public health campaigns for at-risk groups. For example, campaigns on the risks of alcohol use, obesity and cardiovascular disease, as well as screening and treatment needs for breast, cervical and ovarian cancers, could be targeted towards lesbian and bisexual women, and campaigns on the increased risk of prostate, anal, testicular and colon cancer could be targeted to gay and bisexual men. Furthermore, this reinforces the importance of LGBTI people being open with health professionals about their sexual and gender identity in order to ensure they receive the appropriate care.

More research is needed on LGBTI health beyond the global north.

- Researchers, development NGOs and Institutional donors, such as the
 Dutch Ministry of Foreign Affairs, can contribute to the evidence base on
 LGBTI health in the global south. In addition to formal research on LGBTI
 health, they could connect to LGBTI communities with whom they work to
 validate the relevance of the findings on LGBTI health in the global north
 and understand the dimensions of LGBTI health in those communities.
- International and bilateral lobby from the Dutch Ministry of Foreign Affairs
 contributes to the recognition of LGBTI rights around the world, while NGO
 advocacy can also advance the LGBTI agenda and secure the recognition of
 their rights in health policy and service provision.

Engage LGBTI people to represent their own health concerns.

- Service providers (doctors, nurses, mental health professionals etc) and policymakers and decision-makers (Ministries of Health, Public Health Authorities etc) should adopt inclusive, participatory decision-making approaches to LGBTI health, improvements to policy and practice, in particular service delivery, in order to ensure their views of how to improve services are reflected.
- CSOs representing and/or working with LGBTI people could help bridge this
 gap and bring the voices and priorities of LGBTI people into decision-making
 spaces. Ideally, the recommendations in this paper would be co-created and
 supplemented through discussion with LGBTI people.





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