



Vrije
Universiteit
Brussel



Transgender and gender-nonconforming persons and sexual risk

A critical review of 10 years of literature from a feminist intersectional perspective

Academisch artikel

Masterproef voorgelegd tot het behalen van de graad van Master in de Gender en Diversiteit

Academiejaar 2015 - 2016

Judith Van Schuylenbergh

00801501

promotor: dr. Joz Motmans

co-promotor: prof. dr. Gily Coene

24/05/2016

word count: 8935

Dankwoord

Graag had ik prof. Gily Coene bedankt voor het begeleiden van mijn masterproef, alsook Joz Motmans van het Transgender Infopunt voor de ongelooflijk leerrijke stage, die mij inspireerde om deze masterproef te schrijven, het begeleiden van mijn masterproef en de kansen die ik kreeg. Ik kan me geen betere stageplaats voorstellen, het Infopunt en haar missie zijn mij zeer nauw aan het hart komen te liggen. Daarnaast had ik ook graag Emma en Christof bedankt voor het samen reflecteren over deze masterproef en aanverwante onderwerpen, waaraan ik veel heb gehad tijdens het rijpingsproces van mijn artikel. Een speciaal dankwoord ook aan mijn ouders die het voor mij mogelijk hebben gemaakt om 8 jaar lang te studeren en 3 masters te behalen, en mij hier steeds hebben in gesteund. Ik denk dat ik er nu eens mee ga ophouden, mama en papa. Speciale dank aan Ben om er steeds voor mij te zijn en ook aan Foekoo, mijn kat maar ook trouwste onderzoeksassistent: ik zie jullie graag. Bedankt ook aan Renske, Pieter-Jan, Astrid en alle andere vrienden waarmee ik de laatste maanden in de bib zat en die mij steeds hebben gesteund tijdens het schrijven van deze masterproef.

Content

Abstract.....	5
1. Introduction.....	6
2. Methods.....	7
2.1. Data collection and selection	7
2.2. Analysing the literature through a feminist intersectional lens	7
3. Results.....	8
3.1. 10 years of research: who is studied (and who is not)?	8
3.1.1. HIV prevalence and risk behaviour: general findings	8
3.1.2. Inclusion criteria.....	9
3.2. An intersectional experience of discrimination	10
3.2.1. Intersections with class, ethnicity and citizenship status	10
3.3. Society's binary perspective.....	12
3.3.1. Definitions and categorisation in current research.....	12
3.3.2. Normative gender roles.....	13
3.3.3. Knowledge, education and health care	13
4. Discussion and conclusion.....	14
5. Reference list.....	15
6. Tables	19
Table 1: total sample of articles included in the review (n=43)	19
Table 2: HIV prevalence data.....	21

Abstract

Research shows that HIV prevalence in transgender women is extremely high (e.g. Herbst et al, 2008; Operario et al, 2008; Operario et al., 2011). For transgender women, rates range from 2,4% (Hawkes et al., 2009) to 52,4% (Edwards, Fisher & Reynolds, 2007), and for transgender women of color HIV prevalence rates are even higher (Nuttbrock, 2009; Herbst et al., 2008). In contrast, HIV prevalence appears to be rather low among transgender men. Although these studies have sometimes been limited in several ways, these prevalence rates indicate that transgender women in particular are at risk for HIV. This high risk is associated with a number of (trans specific) factors, such as a lack of (trans specific) knowledge about safe sex, a wrong perception of risk, stigma, discrimination, normative gender roles and involvement in sex work. There appears to be an interweaving of different factors in which discrimination and stigmatisation of transgender and gender-nonconforming (TGNC) persons is central. In this review, the last 10 years of research on TGNC persons and sexual risk is summarized in a gender perspective that focuses on the intersectionality of gender identity, class, ethnicity and other axes of difference that contribute to the high risk for HIV for (some) TGNC persons. An extensive review of literature on HIV and other STI prevalence rates in TGNC populations worldwide and trans specific factors and risk behaviour associated with the high HIV prevalence rate for transgender persons is carried out. Some limitations and pitfalls of current research are pointed out, as possible research directions and suggestions for sexual health interventions targeting TGNC persons.

Key words: transgender, HIV, sexual risk, sex work, intersectionality

1. Introduction

Over the last decades, there has been extensive attention for the AIDS epidemic within a lot of research areas, and there has been a lot of research on sexual risk taking. Despite decades of intervention, a lot of people still engage in some sort of sexual risk behaviour, which puts them at risk for HIV or other STIs. The main way of contracting STIs is by having unprotected sexual intercourse, but other risk behaviours are also associated with sexually transmitted diseases, such as having multiple sex partners, having a sex partner who is HIV+, having sex while under the influence of alcohol or drugs and engaging in sex work (Scott et al., 2011). Especially having unprotected receptive anal intercourse (URAI) puts people at heightened risk for contracting HIV (Baggaley, White & Boily, 2010).

Though the impact of the HIV virus has been somewhat reduced, focussing on reducing sexual risk remains important, especially for some high risk groups. In their 'Consolidated Guidelines on HIV Prevention, Diagnosis, Treatment and Care for Key Populations', the World Health Organisation (WHO) states that transgender people¹ are one of the five key target populations that are disproportionately affected by HIV, along with men who have sex with men (MSM), people in prisons or other closed settings, people who inject drugs and sex workers (WHO, 2014). Indeed, research shows that a lot of TGNC persons engage in some form of sexual risk behaviour, and HIV prevalence among transgender women appears to be high (e.g. Herbst et al., 2007; Operario et al., 2008; Operario et al., 2011; Melendez & Pinto, 2007; Baral et al., 2013). The current average adult HIV prevalence in West and Central Europe and North America is 0,3% (UNAIDS, 2014). For transgender women, rates range from 2,4% (Hawkes et al., 2009) to 52,4% (Edwards, Fisher & Reynolds, 2007), and for transgender women of color HIV prevalence rates are estimated to be even higher (Nuttbrock et al., 2009; Herbst et al., 2008). In contrast, HIV prevalence appears to be much lower among transgender men (Herbst et al., 2008).

Research focussing on transgender sexual risk behaviour is not that extensive and mainly focused on HIV prevalence. At the beginning of the AIDS epidemic, research focussing on transgender persons was non-existent. During the 1990s, the first notions of HIV among transgender persons have been made in some articles about 'transvestite prostitutes' (e.g. Galli et al., 1991; Elifson et al., 1993). Since then, the amount of articles on the topic has been slowly growing, as well as the understanding of transgender and gender-nonconformity. However, current research on sexual risk among transgender and gender-nonconforming (TGNC) persons still holds some sharp limitations. This review aims at critically revisiting the last 10 years of research in this area, using a feminist framework that focuses on intersectionality, normative gender roles and gender as a social construct. Following the World Professional Association for Transgender Healthcare (WPATH), the term 'transgender and gender-nonconforming (TGNC) persons' is used to describe the highly diverse group of individuals who cross or transcend culturally defined categories of gender ('transgender') or whose gender identity and expression differs from what is normative for their assigned sex in a given culture and historical period ('gender-nonconformity') (WPATH, 2012). Because most literature uses a binary perspective on gender, the term 'transgender man' ('female-to-male' or FtM) will be used in this article to describe persons who identify as more male than female but were assigned female at birth, and 'transgender woman' ('male-to-female' or MtF) to describe persons who identify as more female than male but were assigned male at birth, as well as 'gender-nonconforming person' to describe persons who identify with neither male or female gender or identify with both.

¹ The term 'transgender people' is used as an umbrella term in these guidelines, and is defined as 'people whose gender identity and expression does not conform to the norms and expectations traditionally associated with the sex assigned to them at birth' (WHO, 2014). This group is highly diverse and terminology is evolving rapidly (WPATH, 2012).

2. Methods

Recently, there have been some attempts to review current literature on a topic in an intersectionality perspective, thereby pointing out important limitations and suggestions for policy and further research (e.g. Koehn et al., 2012; Özbilgin et al., 2011). Data collection and selection for this kind of review is more or less analogue to methods used for systematic reviews, but research findings are analysed and presented using an intersectionality perspective.

2.1. Data collection and selection

For this article all available literature about transgender sexual risk behaviour and HIV or other STI prevalence published from 2005 to 2015 was screened. Since the 1990s there has been some research about transgender persons and risk of HIV, but reason to take up articles published within the last 10 years is because older research might be less relevant as knowledge and treatment options for HIV/AIDS, as well as knowledge and understanding of TGNC persons have been evolving rapidly.

Searches for peer-reviewed articles in English or Dutch were repeatedly carried out between October 2015 and May 2016 on Web of Science and Google Scholar. Terms used were 'transgender', 'gender non-conforming', 'Male-to-Female (MtF)', 'Female-to-Male (FtM)', 'crossdresser', '(gender)queer', 'transsexual', 'transvestite' and 'HIV', 'Sexually Transmitted Disease/Infection (STD/STI)', 'sexual health', 'sexual risk taking', 'sex work', 'condom use'. To further extend the amount of articles used for this review, reference lists of all articles already obtained were consulted and all relevant cited articles published within the 10 year time frame were checked.

Studies included were articles on prevalence and risk-behaviours (self-report data (n=9) as well as test result data (n=11)), contextual factors associated with sexual risk behaviour (n=17), needs assessments aimed at developing interventions (n=1), (systematic) reviews (n=4) and meta-analyses (n=2). All articles initially obtained were screened by the author and articles (n=6) were excluded if one of the following criteria applied: Articles providing prevalence data that did not differ between TGNC persons and other populations (eg. male sex workers or LGB populations), articles about persons having sex with TGNC persons that do not include data on TGNC persons themselves, articles using data obtained more than 15 years ago (n=1) and articles with samples that contained less than 5 TGNC persons in their analysis. The final amount of articles included in this review is 41 (see also table 1).

2.2. Analysing the literature through a feminist intersectional lens

Traditional HIV risk behaviour research has been mainly based on individual cognitive-behavioural approaches stressing factors such as knowledge, self-efficacy and perceived risk (Amaro & Raj, 2000). A feminist perspective on health behaviour acknowledges that sexuality and behaviour are embedded in a specific social context shaped by gender roles and power structures, which is often overlooked in research on sexual risk taking (Amaro, Raj & Reed, 2001). Gender is a social construct that structures daily life by normative gender roles and power imbalances. However, experiences are never structured by gender alone, and this is where the concept 'intersectionality' comes in.

'Intersectionality' is a concept rooted in Black feminist scholarship of activists and scholars such as bell hooks, Kimberley Crenshaw, Patricia Hill Collins and the Combahee River Collective (Näre, 2005). Arguing that racism and sexism influenced their lives simultaneously, they stressed that classical theories about racism or sexism were inadequate to study their experience of combined oppression. The concept

'intersectionality' is used to point out that every individual is positioned in society on a range of axes of difference such as gender, ethnicity, class and sexuality, and the combination of positions on these different axes is linked to a certain amount of power. The intersection of these axes will determine a person's opportunities in society and experience of discrimination. Sexism, racism, but also discrimination based on social class, sexual orientation or gender identity thus should not be viewed as self-contained forms of discrimination, but are always interwoven. They do not just add up to each other: it is the intersection of all of these that determines the experience of discrimination. These intersecting axes cause some methodological complexities² and a clearly elaborated method for intersectional research still lacks.

This feminist analysis serves as a critical review of current literature on TGNC persons and sexual risk taking, focusing on normative gender roles, gender as a social construct and intersectionality. First, prevalence and risk behaviour data will be summarized and the selective focus of current research will be questioned. An intersectional approach is then used to better understand involvement of TGNC persons in sex work and their heightened risk for HIV and STIs. The last part further investigates the binary gender perspective that is used in most literature on transgender sexual risk taking, which is limiting in several ways.

3. Results

3.1. 10 years of research: who is studied (and who is not)?

3.1.1. HIV prevalence and risk behaviour: general findings

As summarized in table 2, HIV prevalence among transgender women is found to be high, while HIV prevalence rates appear to be low among transgender men (Herbst et al., 2008), but studies including transgender men are scarce. A meta-analysis of 29 studies (published between 1994 and 2006) focusing on HIV status among transgender women in the USA (of which five studies also included data on transgender men) indicated that 27,7% of transgender women tested HIV positive, while 11,8% self-reported being HIV positive (Herbst et al., 2008). A systematic review of 39 studies resulted in a global³ HIV prevalence rate of 19,1% in transgender women (Baral et al., 2013). Prevalence rates in this study are higher for high income countries (21,6%) than for low income countries (17,7%). Furthermore, prevalence rates are higher for transgender women of color (Garofalo et al. 2006; Nuttbrock et al., 2009; Herbst et al., 2007). In the sample of Nuttbrock and colleagues (2006), one of the largest samples included in this review (n=517), the HIV prevalence rate for white transgender women was only 3,5%, whereas the prevalence rates for Hispanic and African-American transgender women were respectively 49,6% and 48,1%.

Various sexual risk behaviours appear to be high among transgender women (e.g. Herbst et al., 2008; Operario et al., 2011, Operario & Nemoto, 2005). Condom use appears to be inconsistent with primary as well as non-primary and commercial partners (Kosenko, 2011; Wilson et al., 2010). 35% of the transgender women in the sample of Operario et al (2011) report unprotected sex in serodiscordant relationships⁴, and drug use and sex work are also frequently reported (Operario, Soma & Underhill, 2008; Sausa, Keatley & Operario, 2007; De Santis, 2009; Guadamuz et al., 2011, Nemoto et al., 2012). An added

² The theoretical and methodological strengths and weaknesses of the concept 'intersectionality' have been widely discussed elsewhere (e.g. Yuval-Davis, 2006; Näre, 2005).

³ Systematic review of 39 studies (published between 2000 and 2012) situated in 15 countries over the world: Argentina, Brazil, El Salvador, Peru, Uruguay, Australia, India, Indonesia, Pakistan, Thailand, Vietnam, Italy, Netherlands, Spain and USA.

⁴ Relationships in which one of the partners is HIV+.

risk factor for transgender persons to contract HIV is sharing needles to inject hormones (Crosby & Pitts, 2007). Transgender women sometimes use the injection of hormones or silicone to make their body look more feminine. Hormones themselves could also influence sexual decisionmaking. Participants that started hormone therapy in the study of Kosenko (2011) reported taking more impulsive sexual decisions, in which passion frequently prevails over protection. Furthermore, hormone use sometimes makes maintaining an erection during sexual activity difficult, which leads transgender women who did not had genital surgery to engage more frequently in receptive anal intercourse, which puts them at greater risk for HIV (Herbst et al., 2008).

3.1.2. Inclusion criteria

The above summary shows that the prevalence rates for transgender persons vary widely. Some research has already pointed out the limiting sample and data collection methods, mostly using interviews, focus groups, self-assessment of HIV status and non-representative convenience or snowball sampling (Herbst et al., 2007; Baral et al., 2013; Giami & Le Bail, 2010). There has been some improvement in sample sizes: sample sizes now are ranging from 67 to 559 participants. However, participants are still mostly recruited in community centres, health clinics or AIDS service organisations that seek to promote safer sex within TGNC, LGBT or sex worker communities, which may lead to overrepresentation of persons who are at high risk for HIV. Often, studies on HIV in TGNC populations focus on transgender female sex workers (n=18), and though there may be a link between TGNC persons and sex work, the results from these studies cannot be generalized to the broader TGNC population. This selective focus and the non-random recruitment methods frequently used could partially explain these very high and varied prevalence data. In the 'Injustice in every turn' report, one of the most extensive surveys on transgender discrimination ever undertaken (n=6456), the overall HIV prevalence rate for TGNC persons is 2,64%, which is still 4 times the national average prevalence rate in the US (Grant, Mottet & Tanis, 2011). Rates in this sample are higher for transgender women (4,28%), unemployed TGNC persons (4,67%) and transgender sex workers (15,32%). Because of the large and diverse sample, these rates could be more reliable when estimating HIV risk for TGNC persons.

Most of the studies about TGNC persons and sexual risk tend to focus only on transgender women (n=32), mostly because the HIV prevalence rates and engagement in sex work seem to be so high within this group. Research including (n=8) or focusing specifically on transgender men (n=1) is scarce. Yet, one study comparing risk behaviour and prevalence rates of transgender women with transgender men (conducted in an STD clinic) states that they might be having different sexual risk behaviours, but similar rates of HIV and other STIs (Stephens, Bernstein & Philip, 2011). HIV prevalence rates in this study were respectively 11,2% and 10,1%. Other studies found lower HIV prevalence rates for transgender men, ranging from 0% to 3%, although transgender men also engage in sexual risk behaviour (Schulden et al., 2008; Kenagy, 2005; Stephens, Bernstein & Philip, 2011). Research focussing on gender-nonconforming persons that do not fit within the male/female gender binary is even more scarce, as will be discussed later in this review (see section 3.1.).

A lot of research is US-based (n=28) (mainly situated in New York, Los Angeles and San Francisco). There have also been some studies stemming from the Asian-pacific area (n=7) and South-America (n=4), mostly focusing on transgender female sex workers, but European peer-reviewed articles are almost non-existent (n=1). There have been some European reports indicating that European TGNC persons engage in sexual risk behaviour and need accurate and trans-inclusive information about safe sex (e.g. Rutgers, 2013 or RFSL Ungdom, 2012), but academic research in this area is absent.

A few systematic reviews and meta-analyses exist (Herbst et al., 2008; Baral et al., 2013; Operario, Soma & Underhill, 2008), but these tend to throw a wide range of respondents together, aggregating data that cannot be compared. The context in one sample can be very different from the context in another sample.

For example, some studies used in the systematic review of Herbst et al (2008) only focus on sex workers, others focus on transgender women more broadly, while research shows that prevalence rates for sex workers are usually higher than in other populations. In the global review of Baral and colleagues (2013), studies situated in Western societies are compared to samples situated in Asian societies, but the attitudes towards transgender persons and their position in society in Western versus Asian societies are very different and thus not at all comparable.

There has thus been no peer-reviewed research using a large random sample that could provide generalisations for the TGNC population as a whole (which is highly diverse), although generalisations based on current data are frequently made. The focus of current research has been highly selective, focusing mainly on transgender women and transgender sex workers in North America.

3.2. An intersectional experience of discrimination

A lot of research acknowledges the role of discrimination in the sexual risk behaviour of transgender persons (mainly transgender women). The stigma on TGNC people is still high, and a lot of transgender persons feel discriminated because of their gender identity (FRA, 2014; Grant, Motett & Janis, 2011). Perceived discrimination and exposure to transphobia are associated with sexual risk behaviour in transgender persons (Operario et al., 2011; Kosenko, 2011; Sugano, Nemoto & Operario, 2006; Khan et al., 2008). Discrimination and stigma may lead to lower self-esteem, mental health issues, suicidal thoughts, a fatalistic attitude and the need for acceptance and approval from others, that appear to be high among transgender persons and may in turn lead to lower self-efficacy⁵ to use condoms and negotiate safe sex (Williamson, 2010). Transgender persons also face discrimination and social exclusion in health care settings, which leads to exclusion from HIV prevention and treatment services (Baral et al., 2013). Furthermore, because of stigma and discrimination, some transgender women have a heightened need to feel safe and loved and to be affirmed in their female gender identity, which they think is more important than their sexual health (Melendez & Pinto, 2007; Crosby & Pitts, 2007). A protective factor for the negative influence of discrimination on the sexual risk behaviour of transgender persons is social support (Golub et al., 2010; Wilson et al. 2012). However, for transgender persons, social support often lacks: 57% of the TGNC persons in the 'Injustice in every turn' sample experienced family rejection (Grant, Mottet & Tanis, 2011). However, TGNC persons tend to turn more towards their friends in situations of need than cisgender persons. Social networks among TGNC persons play an important role in their lives (Reisner et al., 2009; Wilson et al., 2012) and transgender communities appear to be more densely connected than for instance the LGB community (Barrington et al., 2011).

TGNC persons' experiences of discrimination are complex and varied, and at the same time influenced by other intersecting social positions (de Vries, 2015; Hines, 2010). The intersection of transgender identity with ethnicity, social class and citizenship status becomes clear when we look at the link between transgender persons and sex work⁶, that has been most documented in research on transgender sexual risk taking.

3.2.1. Intersections with class, ethnicity and citizenship status

As discussed above, research on transgender persons and sexual risk taking frequently focuses on transgender sex workers. This is no coincidence: transgender persons frequently face discrimination in housing, employment and access to social services, which may lead to economic marginalisation, which in

⁵ the feeling of being able to demand safe sex in sexual situations.

⁶ Defined as exchanging sex for money, drugs, housing or other services.

turn facilitates the engagement of transgender persons in sex work (Herbst et al., 2008; Kosenko, 2011; Sausa, Keatley & Operario, 2007; Crosby & Pitts, 2007) and forces people into risky sexual situations, because this creates an imbalance in power to effectively negotiate safe sex (Kosenko, 2011). Prevalence rates for sex work among transgender women range from 15% (Bauer & Hammond, 2015) up to 67% (Wilson et al., 2009). These data might not reflect involvement in sex work within the broader transgender community, as has been discussed above, but reports using a more representative sample, such as a Dutch LGBT study on sexual health (n=393) and the 'Injustice in every turn' sample (n=6456), show rates of 11% of transgender women being involved in sex work, while rates for cisgender women are much lower (Rutgers WPF, 2013; Grant, Mottet & Tanis, 2011). This indicates that there might indeed be disproportionately more transgender women engaged in sex work. The involvement of transgender men in the sex industry seems to be much lower, but is also largely undocumented. Some notions of TGNC men engaged in sex work are made (Sevelius, 2009; Stephens, Bernstein & Philip, 2011), but more research in this area is needed.

Engagement in sex work significantly heightens risk of HIV, for male and female as well as for transgender sex workers (WHO, 2014). A systematic review of HIV prevalence rates among transgender sex workers indicates that 27,3% of the transgender sex workers over all samples was HIV+, whereas 14,7% of transgender women not involved in sex work, 4,5% of the female sex workers and 15,1% of the male sex workers over all samples appeared to be HIV+ (Operario, Soma & Underhill, 2008). However, other studies claim that sexual risk behaviour is higher with primary than commercial partners, for instance because of fear of losing intimacy or negative attitudes towards condoms from the primary partner (Operario et al., 2011; Wilson et al., 2010). Some transgender sex workers endorsed a 100% condom rule for customers, but financial hardship may lead them to engage in unsafe sex with commercial partners too (Nemoto et al., 2012).

Economic hardship caused by discrimination is frequently cited as the reason why transgender women engage in sex work, although there could also be other reasons, such as for instance social support from the transgender sex worker community (Wilson et al., 2009). Sometimes sex work is even seen as a cultural norm that opens the door to the community for young transgender women at the beginning of their transition (Sausa, Keatley & Operario, 2007). Sex work could also allow transgender women to express their gender identity in a way that is highly symbolic in terms of gendered acts and social roles (Nuttbrock et al., 2009). Furthermore, the eroticisation of transgender bodies creates a large market for transgender women within the sex industry, and this sexual stereotyping of transgender persons may lead to stereotype confirming behaviour (Kosenko, 2011). This is even more so for transgender women of color (Sausa et al., 2007), who experience a double exotification and eroticisation of their bodies, and face even more discrimination on the labour market.

From an intersectional perspective, the study of Whahng & Nuttbrock (2007) shows interestingly the connection between transgender sex workers and ethnical context. In their NYC sample, African-American transgender sex workers are found, who are usually streetwalking, which is the riskiest form of sex work. Having a very low SES, their main reason for sex work is survival, which gives them the lowest negotiation power for safe sex, and poses them at highest risk for HIV. The Asian sex workers in their sample appear naturally more feminine without costly body modifications, and thus are more desirable. They can be found in hotel based and online sex work and though the main reason for sex work is still survival, the risk is much lower since they see less clients and are able to screen them. A third group of sex workers are white cross-dressers, who are non-migrant, white, middle-class persons, often living a double life to be able to retain their legal daytime white-collar job. They often do not transition because they do not want to sacrifice economic and social security, and their engagement in sex work is mainly recreational: it becomes an erotic experience while dressing female, and this gives them high safe sex negotiation power. Even within the group of 'transgender sex workers' large differences thus exist, that are shaped by the intersection of different positions in society and lead to different outcomes with regard to sexual risk. The assumption that transgender sex work has only one face (low class, street based sex work) should be questioned, and more research is needed in this area.

Ethnicity thus plays an important role in engagement in sex work for transgender women, but another factor that is important is citizenship status. The Latina transgender sex workers in the sample of Sausa, Keatley & Operario (2007) for example migrated to the USA looking for a more liberal society, leaving their conservative culture that did not accept their gender identity behind. However, they are also confronted with multiple barriers to social inclusion, such as lack of access to the mainstream job market, health care and insurance. Undocumented transgender migrants are even more pushed towards the sex industry for survival, and as such are especially vulnerable to HIV.

Furthermore, 'passability'⁷ as a woman seems to have influence on engagement in sex work as well: more 'passable' transgender persons experience less discrimination on the labour market, which makes them less likely to experience social exclusion and enter sex work (Sausa, Keatley & Operario, 2007). Hormone therapy and surgeries which make the body appear more feminine are costly and a lot of transgender women cannot pay these, especially transgender persons who are already discriminated. Even for transgender women who have a regular job, sex work is sometimes also seen as a way to save up for gender reassignment therapy.

It is the intersection of transgender identity with gender, ethnicity, class, passability and citizenship status that will lead to this particular experience of discrimination which puts transgender persons at high risk for HIV. These axes of difference do not each on their own add up to the experience of discrimination, but instead are dynamically influenced by each other. As de Vries (2015) notes: "labor markets are not solely divided by gender or race or sexuality. Rather, these blend together creating economic barriers for some and opportunities for others". The combination of these different axes of difference lead to differences in power, which provide persons with more or less capability to enforce safe sex, and differences in the experience of discrimination, that might ultimately push people into sex work in order to survive. The notion of power is thus crucial in linking discrimination to sexual risk.

3.3. Society's binary perspective

Feminist scholarship reasons from the idea that gender is a social construct, but western societies today still largely see gender as a given binary structure that shapes the world⁸. As such, TGNC persons are marginalised and defined as deviant or pathological, which leads to further imbalances in power and greater cisgender privilege⁹, which in turn leads to the experiences of discrimination elaborated above. This binary gender structure is accompanied by normative gender roles that further shape behaviour.

3.3.1. Definitions and categorisation in current research

A lot of studies use a rather broad, in some cases even non-binary definition of 'transgender persons'. However, looking closer at the samples, most of the studies only focus on MtF or FtM transgender persons, often without defining these concepts or taking the uniqueness of bodies and experiences in account, assuming 'standard' male or female anatomy. This does not reflect the diversity of bodies and identities found within the TGNC population. Furthermore, this kind of research serves to maintain the limited

⁷ The ability of being regarded ('passing') as a cisgender man or woman.

⁸ This is not necessarily the case for some other societies: in countries like India or Pakistan, some TGNC persons have a distinct (not necessarily desirable) status within societal structure. However, either two or three genders, these are always accompanied by normative gender roles that shape behaviour.

⁹ Peggy McIntosh (1988) introduced the concepts 'white privilege' and 'male privilege' to refer to invisible advantages that make whites or men feel confident, comfortable and oblivious about race or gender and protect them from hostility and distress, but in turn makes non-white groups or women feel unconfident, uncomfortable and alienated. 'Cisgender privilege' serves as an extension of these concepts for cisgender persons.

binary gender perspective of western societies. A lot of TGNC persons do not identify with one of the two available categories (FtM or MtF). In a study of the European Union Agency for Fundamental Rights (FRA, 2014) for example, up to half of the respondents identified as 'gender variant', 'queer' or something else than 'transgender', 'transgender male' or 'transgender female'. However, persons who do not fit within this male/female gender binary remain excluded from most current research. Some exceptions are the studies of for example Kosenko (2011) and Hwahng & Nuttbrock (2007) who also included persons specifically identifying as genderqueer, crossdresser and other 'individuals representing a spectrum of transgender identities'.

Binary categorisation of gender identity is thus very limiting, but this is also true for sexual orientation, especially for TGNC persons (for whom labelling their identity might already be complicated) and their partners (Operario et al., 2007). Up to now, research on transgender sexual risk taking remains highly heteronormative: most studies only take transgender women who have sexual relationships with men and engage in receptive anal intercourse in account. Like gender identities however, TGNC persons identify with a variety of sexual identities, and engage in a variety of sexual behaviours (Bauer & Hammond, 2015; Sevelius, 2009). Gender identity and sexual orientation thus should be viewed as more fluid and complex when studying sexuality and sexual health.

3.3.2. Normative gender roles

The binary sex/gender structure is accompanied by normative gender roles that shape behaviour and expression. Some research has taken these normative gender roles in account. Sex acts, sexual scripts and even protection methods are gendered, and this could also have an influence on the sexual risk behaviour of transgender persons (Kosenko, 2011). The social construction of 'the feminine' has a strong impact on how TGNC persons perceive and construct their bodies and sexual behaviour (Rodriguez-Madara & Toro-Alfonso, 2005; Bauer & Hammond, 2015). As such, using a condom could be seen as a contradiction to their feminine identity, and receptive anal intercourse could serve as an affirmation of a female gender identity for transgender women (Rodriguez-Madara & Toro-Alfonso, 2005; Herbst et al., 2008). Sex work gives transgender women the chance to express a social role that symbolizes their gender identity and as such also serves as an affirmation of their female gender role (Nuttbrock et al., 2009).

3.3.3. Knowledge, education and health care

Mainstream knowledge and education about sexual health remain highly cisnormative today. Engaging in unsafe sex could be related to a lack of knowledge about HIV and safe sex, or a wrong perception of risk. In the study of Barrington and colleagues (2011), TGNC persons show the lowest level of HIV-related knowledge compared to homosexual and heterosexual men. Furthermore, HIV prevention needs of TGNC persons differ from those of MSM, but especially transgender women are sometimes seen as part of the MSM community (Crosby & Pitts, 2007). A lot of transgender persons seem to hold misconceptions about HIV and feel that safe sex information does not apply to them (Kosenko, 2011; Rodriguez-Madara & Toro-Alfonso, 2005). This lack of knowledge is not only apparent in transgender persons themselves. Herbst and colleagues (2008) indicate that there are a lot of misperceptions of risk for HIV for transgender persons and an insensitivity to transgender specific health care needs in a lot of health care settings.

Today, trans-inclusive and trans-specific sexual health education remain scarce, although efforts have been made¹⁰, and the impact of informal exchange of information within the transgender community (e.g.

¹⁰ See for instance the transgender targeted safe sex guides of the Terrence Higgins Trust in the UK, Gender Dynamix in South Africa or RFSL Ungdom in Sweden.

via youtube, forums and blogs) cannot be underestimated. Studies have shown that the need for trans-specific and -inclusive education and information about sexuality and sexual health is high (Rutgers WPF, 2013; RFSL Ungdom, 2012). However, knowledge does not necessary translate into safer sex behaviour. As pointed out in this review, much more factors are at play than knowledge alone, and these should also be addressed when trying to improve TGNC persons' sexual health.

4. Discussion and conclusion

There has thus been a disproportionate focus on HIV prevalence and sexual risk taking of North American and Asian transgender women and transgender female sex workers. Research including transgender men or gender-nonconforming persons has been scarce. Research situated in Europe, Africa or other parts of the world except the USA, South-East Asia or South America almost completely lacks. Yet, conclusions of this existing research are frequently generalized for the global transgender population as a whole and transferred to other contexts and localities.

The influence of discrimination on sexual risk behaviour has been acknowledged in almost every article included in this review. Stigmatisation and discrimination of TGNC persons remains highly prevalent worldwide, and this greatly influences their vulnerability to HIV risk. However, transgender persons' experiences of discrimination are influenced by other intersecting social positions, such as ethnicity, social class, citizenship status and passability. The intersection of these axes of difference determines economic barriers and opportunities and leads to differences in power, which provide persons with more or less capability to enforce safe sex, and differences in the experience of discrimination, which might ultimately push people into sex work in order to survive.

This intersectionality perspective could explain why some TGNC persons might have an elevated risk of getting HIV. However, a focus on specific risk populations within the transgender population is not enough. Taking the broader TGNC population in account, some other problems emerge: society's binary perspective and normative gender roles also influence sexual risk behaviour. There is still a lack of knowledge about trans-specific safe sex behaviour and trans-inclusive as well as trans-specific sex education remain largely non-existent. This cisnormativity contributes to the discrimination of TGNC persons, as they are still defined as deviant to the cisgender norm and their bodies and experiences are erased.

This review has shown that discrimination is a central mechanism shaping sexual risk for TGNC persons. Therefore, in order to reduce sexual risk, stigmatisation and discrimination should be addressed. Non-binary sexual education and safe sex interventions targeting the general population that account for TGNC experiences and bodies could not only reduce HIV risk for transgender persons, but also reduce stigmatisation and discrimination and ultimately make society less cisnormative. This education should aim at disconnecting sexual acts from gender roles and physical characteristics from gender identities. As for women (Amaro, Raj & Reed, 2001), interventions for TGNC persons should take power relations in account. An extensive list of suggestions for sexuality research, sex education and clinical care can be found in the article of Bauer & Hammond (2015). Trans-specific safe sex interventions specifically targeted to (parts of) the transgender population should also be developed or further elaborated, as targeted prevention for risk populations remains important and trans-specific sexual knowledge is highly needed. More research should be done using random controlled samples focussing on the broader transgender community and taking the highly diverse nature of the transgender population in account.

5. Reference list

- Amaro, Hortensia, and Anita Raj. "On the Margin: Power and Women's HIV Risk Reduction Strategies." *Sex Roles* 42, no. 7/8 (2000).
- Amaro, Hortensia, Anita Raj, and Elizabeth Reed. "Women's Sexual Health: The Need for Feminist Analyses in Public Health in the Decade of Behavior." *Psychology of Women Quarterly* 25 (2001): 324–34.
- Baggaley, R.F., R.G. White, and M-C. Boily. "HIV Transmission Risk through Anal Intercourse: Systematic Review, Meta-Analysis and Implications for HIV Prevention." *International Journal of Epidemiology*, no. 39 (2010): 1048–63.
- Baral, Stefan D., Tonia Poteat, Susanne Strömdahl, Andrea L. Wirtz, Thomas E. Guadamuz, and Chris Beyrer. "Worldwide Burden of HIV in Transgender Women: A Systematic Review and Meta-Analysis." *Lancet Infect Dis* 13 (2013): 214–22.
- Barrington, Clare, Cyprian Wejnert, Maria Elena Guardado, Ana Isabel Nieto, and Gabriela Paz Bailey. "Social Network Characteristics and HIV Vulnerability Among Transgender Persons in San Salvador: Identifying Opportunities for HIV Prevention Strategies." *AIDS Behavior* 16 (2012): 214–24.
- Bauer, Greta R., and Rebecca Hammond. "Toward a Broader Conceptualization of Trans Women and Sexual Health." *The Canadian Journal of Human Sexuality* 24, no. 1 (2015): 1–11.
- Chariyalertsak, Suwat, Natthapol Kosachunhanan, Pongpun Saokhieu, Radchanok Songsupa, Antika Wongthanee, Chonlisa Chariyalertsak, Surasing Visarutratana, and Chris Beyrer. "HIV Incidence, Risk Factors, and Motivation for Biomedical Intervention among Gay, Bisexual Men and Transgender Persons in Northern Thailand." *PLoS One* 6, no. 9 (n.d.): 2011.
- Collumbien, M., A. A. Qureshi, S. H. Mayhew, N. Rizvi, A. Rabbani, B. Rolfe, R. K. Verma, H. Rehman, and Naveed-i-Rahat. "Understanding the Context of Male and Transgender Sex Work Using Peer Ethnography." *Sexual Transmitted Infections* 85, no. 2 (2009).
- Crosby, Richard, and Nicole Pitts. "Caught Between Different Worlds: How Transgendered Women May Be 'Forced' Into Risky Sex." *The Journal of Sex Research* 44, no. 1 (2007): 43–48.
- De Santis, Joseph. "HIV Infection Risk Factors among Male-to-Female Transgender Persons: A Review of the Literature." *Journal of the Association of Nurses in Aids Care* 20, no. 5 (2009): 362–72.
- De Vries, Matthias Kylan. "Transgender People of Color at the Center: Conceptualizing a New Intersectional Model." *Ethnicities* 15, no. 1 (2015): 3–27.
- Edwards, Jordan W., Dennis G. Fisher, and Grace L. Reynolds. "Male-to- Female Transgender and Transsexual Clients of HIV Service Programs in Los Angeles County, California." *American Journal of Public Health* 97, no. 6 (2007).
- Elifson, K.W., J. Boles, E. Posey, W. Darrow, and W. Elsea. "Male Transvestite Prostitutes and HIV Risk." *American Journal of Public Health* 83 (1993): 260–62.
- European Union Agency for Fundamental Rights. (2014). *Being Trans in the European Union. Comparative analysis of EU LGBT survey data.* Luxembourg: EC.
- Garofalo, R., Joanne Deleon, Elizabeth Osmer, Mary Doll, and Gary W. Harper. "Overlooked, Misunderstood and at-Risk: Exploring the Lives and HIV Risk of Ethnic Minority Male-to-Female Transgender Youth." *Journal of Adolescent Health* 38 (2006): 230–36.
- Golub, Sarit A., Ja'Nina J. Walker, Buffie Longmire-Avital, David S. Bimbi, and Jeffrey T. Parsons. "The Role of Religiosity, Social Support, and Stress-Related Growth in Protecting Against HIV Risk Among Transgender Women." *Journal of Health Psychology* 15, no. 8 (2010): 1135–44.

Grant, J. M., Mottet, L. A., Tanis, J., Harrison, J., Herman, J. L., & Keisling, M. (2011). Injustice at every turn: A report of the National Transgender Discrimination Survey. Retrieved from Washington, DC:

Guadamuz, Thomas E., Wipas Wimonsate, Anchalee Varangrat, Praphan Phanuphak, Rapeepun Jommaroeng, Janet M. McNicholl, Philip A. Mock, Jordan W. Tappero, and Frits van Griensven. "HIV Prevalence, Risk Behavior, Hormone Use and Surgical History among Transgender Persons in Thailand." *AIDS Behavior* 15 (2011): 650–58.

Hawkes, S., M. Collumbien, L. Platt, N. Lalji, N. Rizvi, A. Andreasen, J. Chow, et al. "HIV and Other Sexually Transmitted Infections among Men, Transgenders and Women Selling Sex in Two Cities in Pakistan: A Cross-Sectional Prevalence Survey." *Sexual Transmitted Infections* 85 (2009): 8–16.

Herbst, J.H., E.D. Jacobs, T.J. Finlayson, V.S. McKleroy, M.S. Neumann, and N. Crepaz. "Estimating HIV Prevalence and Risk Behaviors of Transgender Persons in the United States: A Systematic Review." *AIDS Behavior*, no. 12 (2008): 1 – 17.

Hines, Sally. "Sexing Gender, Gendering Sex: Towards an Intersectional Analysis of Transgender." In *Theorizing Intersectionality and Sexuality*, 140–64, 2010.

Hwahng, S., and L. Nuttbrock. "Sex Workers, Fem Queens, and Cross-Dressers: Differential Marginalisations and HIV Vulnerabilities Among Three Ethnocultural Male-to-Female Transgender Communities in New York City." *Sexuality Research and Social Policy: Journal of NSRC* 4, no. 4 (2007): 36–59.

Islam Khan, Sharful, Mohammed Iftekher Hussain, Gorkey Gourab, Shaila Parveen, Mahbulul Islam Bhuiyan, and Joya Sikder. "Not to Stigmatize But to Humanize Sexual Lives of the Transgender (Hijra) in Bangladesh: Condom Chat in the AIDS Era." *Journal of LGBT Health Research* 4, no. 2–3 (2008).

Kenagy, Gretchen P. "Transgender Health: Findings from Two Needs Assessment Studies in Philadelphia." *Health and Social Work* 30, no. 1 (2005).

Koehn, Sharon, Sheila Neysmith, Karen Kobayashi, and Hamish Khamisa. "Revealing the Shape of Knowledge Using an Intersectionality Lens: Results of a Scoping Review on the Health and Health Care of Ethnocultural Minority Older Adults." *Aging & Society* 33, no. 437–64 (n.d.): 2013.

Kosenko, K.A. "Contextual Influences on Sexual Risk-Taking in the Transgender Community." *Journal of Sex Research*, no. 48 (2011): 285 – 296.

Melendez, R.M., and R. Pinto. "'It's a Really Hard Life': Love, Gender and HIV Risk among Male-to-Female Transgender Persons." *Culture, Health and Sexuality* 9, no. 3 (2007): 233 – 245.

Nadal, Kevin L., Kristin Davidoff C., and Whitney Fujii-Doe. "Transgender Women and the Sex Work Industry: Roots in Systemic, Institutional and Interpersonal Discrimination." *Journal of Trauma and Dissociation* 15 (2014): 169–83.

Näre, Lena. "Intersectionality as a Theoretical and Methodological Concept." Helsinki, 2005.

Nemoto, Tooru, M. Iwamoto, Usaneya Perngparn, Chitlada Areesantichai, Emiko Kamitani, and Maria Sakata. "HIV-Related Risk Behaviors among Kathoey (Male-to-Female Transgender) Sex Workers in Bangkok, Thailand." *AIDS Care* 24, no. 2 (2012): 210–19.

Nuttbrock, L., S. Hwahng, W. Bockting, A. Rosenblum, M. Mason, M. Macri, and J. Becker. "Lifetime Risk Factors for HIV/Sexually Transmitted Infections among Male-to-Female Transgender Persons." *Journal of Acquired Immune Deficiency Syndrome* 52, no. 3 (2009).

Operario, D., T. Nemoto, T. Moore, and M. Iwamoto. "Unprotected Sexual Behavior and HIV Risk in the Context of Primary Relationships for Transgender Women." *AIDS Behavior* 15, no. 3 (2011): 674 – 682.

- Operario, D., T. Soma, and K. Underhill. "Sex Work and HIV Status among Transgender Women: Systematic Review and Meta-Analysis." *Journal of Acquired Immune Deficiency Syndrome* 48, no. 1 (2008).
- Operario, Don, and Tooru Nemoto. "Sexual Risk Behavior and Substance Use among a Sample of Asian Pacific Islander Transgendered Women." *AIDS Education and Prevention* 17, no. 5 (2005): 430–43.
- Özbilgin, Mustafa, Alexandra Beauregard, Ahu Tatli, and Myrtle Bell. "Work-Life, Diversity and Intersectionality: A Critical Review and Research Agenda." *International Journal of Management Reviews* 13 (2011): 177–98.
- Prabawanti, Ciptasari, Liesbeth Bollen, Rini Palupy, Guy Morineau, Philippe Girault, Dyah Erti Mustikawati, Nurholis Majid, Erlian Rista Aditya, Atiek Sulistyarni Anartati, and Robert Magnani. "HIV, Sexually Transmitted Infections and Sexual Risk Behavior Among Transgenders in Indonesia." *AIDS Behavior* 15 (2011): 663–73.
- Reisner, Sari L., Matthew J. Mimiaga, Sean Bland, Kenneth H. Mayer, Brandon Perkovich, and Steven A. Safren. "HIV Risk and Social Networks Among Male-to-Female Transgender Sex Workers in Boston, Massachusetts." *Journal of the Association of Nurses in Aids Care* 20, no. 5 (2009): 373–86.
- RFSL Ungdom. "Feeling Safe Turns Me On!" 2012.
- Rodriguez-Madera, Sheilla, and José Toro-Alfonso. "Gender as an Obstacle in HIV/AIDS Prevention: Considerations for the Development of HIV/AIDS Prevention Efforts for Male-to-Female Transgenders." *International Journal of Transgenderism* 8, no. 2/3 (2005): 113–22.
- Rutgers WPF. *Wat Maakt Het Verschil? Diversiteit in de Seksuele Gezondheid van LHBT's*. Utrechts: Rutgers WPF, 2013.
- Saleri, Nuccia, Severo Graifemberghi, Issa El Hamad, Alice Minelli, Silvia Magri, and Alberto Matteelu. "Prevalence and Incidence of Syphilis among South American Transgender Sex Workers in Northern Italy." *Sexually Transmitted Diseases* 33, no. 5 (2006): 334–35.
- Sausa, L.A., J. Keatley, and D. Operario. "Perceived Risks and Benefits of Sex Work among Transgender Women of Color in San Francisco." *Archives of Sexual Behavior*, no. 36 (2007): 768 – 777.
- Schulden, Jeffrey D., Binwei Song, Alex Barros, Azul Mares-DelGrasso, Charles W. Martin, Ramon Ramirez, Linney C. Smith, et al. "Rapid HIV Testing in Transgender Communities by Community-Based Organisations in Three Cities." *Public Health Reports* 123 (2008): 101–14.
- Scott, M. E., Wildsmith, E., Welti, K., Ryan, S., Schelar, E., & Steward-Streng, N. R. (2011). Risky Adolescent Sexual Behaviors and Reproductive Health in Young Adulthood. *Perspectives on Sexual and Reproductive Health*, 43, 110-118.
- Sevelius, Jae M. "'There's No Pamphlet for the Kind of Sex I Have': HIV-Related Risk Factors and Protective Behaviors Among Transgender Men Who Have Sex With Nontransgender Men." *Journal of the Association of Nurses in Aids Care* 20, no. 5 (2009): 398–410.
- Sevelius, Jae M., Olga Grinstead Reznick, Stacey L. Hart, and Sandy Schwarz. "Informing Interventions: The Importance of Contextual Factors in the Prediction of Sexual Risk Behaviors among Transgender Women." *AIDS Education and Prevention* 21, no. 1 (2009): 113–27.
- Shrestha, Ram K., Stephanie L. Sansom, Jeffrey D. Schulden, Binwei Song, Linney C. Smith, Ramon Ramirez, Azul Mares-DelGrasso, and James D. Heffelfinger. "Costs and Effectiveness of Finding New HIV Diagnoses by Using Rapid Testing in Transgender Communities." *AIDS Education and Prevention* 23, no. 3 (2011): 49–57.
- Silva-Santisteban, Alfonso, H. Fisher Raymond, Ximena Salazar, Jana Villayzan, Segundo Leon, Willi McFarland, and Carlos F. Caceres. "Understanding the HIV/AIDS Epidemic in Transgender Women of

Lima, Peru: Results from a Sero-Epidemiologic Study Using Respondent Driven Sampling." *AIDS Behavior* 16 (2012): 872–81.

Sol dos Ramos Farias, Maria, Maria Noe Garcia, Elena Reynaga, Marcela Romero, Maria Lucia Gallo Vaulet, Marcelo Rodriguez Fermepin, Mauro Fernandez Toscano, et al. "First Report on Sexually Transmitted Infections among Trans (male to Female Transvestites, Transsexuals or Transgender) and Male Sex Workers in Argentina: High HIV, HPV, HBV and Syphilis Prevalence." *International Journal of Infectious Diseases* 15 (2011): 645–640.

Stephens, Sally C., Kyle T. Bernstein, and Susan S. Philip. "Male to Female and Female to Male Transgender Persons Have Different Sexual Behaviors Yet Similar Rates of STDs and HIV." *AIDS Behavior* 15 (2011): 683–86.

Sugano, Eiko, Tooru Nemoto, and Don Operario. "The Impact of Exposure to Transphobia on HIV Risk Behavior in a Sample of Transgendered Women of Color in San Francisco." *Aids and Behavior* 10, no. 2 (2006).

WHO (2014). Consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations.

Williamson, Catherine. "Providing Care to Transgender Persons: A Clinical Approach to Primary Care, Hormones and HIV Management." *Journal of the Association of Nurses in Aids Care* 21, no. 3 (2010): 221–29.

Wilson, E.C., R. Garofalo, R. Harris, and M. Belzer. "Sexual Risk Taking among Transgender Male-to-Female Youths with Different Partner Types." *American Journal of Public Health* 100, no. 8 (2010).

Wilson, E.C., R. Garofalo, R. Harris, A. Herrick, M. Martinez, J. Martinez, and M. Belzer. "Transgender Female Youth and Sex Work: HIV Risk and a Comparison of Life Factors Related to Engagement in Sex Work." *AIDS Behavior* 13 (2009): 902–13.

Wilson, E.C., E. Iverson, R. Garofalo, and M. Belzer. "Parental Support and Condom Use among Transgender Female Youth." *Journal of the Association of Nurses in Aids Care* 23, no. 4 (2012): 306–17.

WPATH (2012). Standards of Care for Transgender and Gender-Nonconforming Persons. *International Journal of Transgenderism*, 13(4), 165–232.

Yuval-Davis, Nira. "Intersectionality and Feminist Politics." *European Journal of Women's Studies* 13, no. 3 (2006): 193–209.

6. Tables

Table 1: total sample of articles included in the review (n=41)

Author	Year	Type	Place	Method	MtF/FtM/other
Kenagy	2005	Prevalence data	Philadelphia, USA	Survey	MtF + FtM
Operario & Nemoto	2005	Prevalence data Risk behaviours	San Francisco, USA	Survey	MtF°
Rodriguez-Madera & Toro-Alfonso	2005	Contextual factors	Puerto Rico	Interview	MtF°
Garofalo et al.	2006	Prevalence data Risk behaviours	Chicago, USA	Survey	MtF
Saleri et al.	2006	Prevalence data	Brescia, Italy	Clinical testing	MtF°
Sugano, Nemoto & Operario	2006	Contextual factors	San Francisco, USA	Survey	MtF°
Crosby & Pitts	2007	Contextual factors	USA	Interview	MtF
Edwards, Fisher & Reynolds	2007	Prevalence data Risk behaviours	Los Angeles, USA	Survey	MtF
Hwahng & Nuttbrock	2007	Contextual factors	NYC, USA	Observation Interview	MtF, queer, crossdresser°
Melendez & Pinto	2007	Contextual factors	USA	Interview	MtF
Sausa, Keatley & Operario	2007	Contextual factors	San Francisco, USA	Focusgroup	MtF°
Collumbien et al.	2008	Contextual factors	Pakistan	Interview	MtF°
Herbst et al.	2008	Systematic review	USA	Data from 29 studies	MtF + FtM
Islam Khan et al.	2008	Risk behaviours Contextual factors	Bangladesh, India	Interview Focusgroup Observation	MtF°
Operario, Soma & Underhill	2008	Systematic review Meta-analysis	14 countries worldwide	Data from 25 studies	MtF°
Schulden et al.	2008	Prevalence data Risk behaviours	Miami Beach, Florida, NYC and San Francisco, USA	Clinical testing and survey	MtF + FtM
De Santis	2009	Review	USA	-	MtF
Hawkes et al.	2009	Prevalence data	Rawalpindi and Abbottabad, Pakistan	Clinical testing and survey	MtF°
Nuttbrock et al.	2009	Prevalence data Risk behaviours	New York, USA	Survey	MtF
Reisner et al.	2009	Contextual factors Risk behaviours	Boston, USA	Interview Survey	MtF°
Sevelius	2009	Prevalence data Risk behaviours	USA	Interviews Survey	FtM
Sevelius et al.	2009	Contextual factors	San Francisco, USA	Survey	MtF
Wilson et al.	2009	Prevalence data Risk behaviours Contextual factors	LA and Chicago, USA	Survey	MtF°
Golub et al.	2010	Contextual factors	NYC and Northern New Jersey, USA	survey	MtF
Williamson	2010	Needs assessment for health care	USA	-	MtF + FtM
Wilson et al.	2010	Risk behaviours	LA and Chicago, USA	Survey	MtF
Chariyalertsak et	2011	Prevalence data	Chiang Mai, Thailand	Clinical testing	MtF

al.		Risk Behaviors		Survey	
Guadamuz et al.	2011	Prevalence data	Bankok, Chiang Mai and Phuket, Thailand	Clinical testing	MtF°
Kosenko	2011	Risk Behaviours	USA	Survey	
		Contextual factors		Interview	MtF, FtM, queer, crossdresser
Operario et al.	2011	Prevalence data	San Francisco, USA	Survey	MtF
		Risk behaviours			
Prabawanti et al.	2011	Prevalence data	Java, Indonesia	Clinical testing	MtF°
		Risk Behaviours		Survey	
Shrestha et al.	2011	Prevalence data	San Francisco and NYC, USA	Clinical testing	MtF + FtM
Stephens, Bernstein & Philip	2011	Prevalence data	San Francisco, USA	Clinical testing	MtF + FtM
				Survey	
Sol dos Ramos Farias et al.	2011	Prevalence data	Argentina	Survey	MtF°
Barrington et al.	2012	Prevalence data	San Salvador	Clinical testing	MtF
		Contextual factors			
Nemoto et al.	2012	Risk behaviors	Bangkok, Thailand	Survey	MtF°
Silva-Santisteban et al.	2012	Prevalence data	Lima, Peru	Clinical testing	MtF°
		Risk behaviours		Survey	
Wilson et al.	2012	Contextual factors	Los Angeles and Chicago, USA	Interview	MtF
Baral et al.	2013	Systematic review	USA	Data from 39 studies	MtF
		Meta-analysis			
Nadal et al.	2014	Contextual factors	USA	-	MtF°
Bauer & Hammond	2015	Contextual factors	Ontario, Canada	Survey	MtF

Table 1: total sample of studies included in the review.

° focus on sex work (more than 60% of the sample has a history of sex work).

Table 2: HIV prevalence data

Author	Year	Method	Data collection	Sample	Place	Participant criteria	HIV prevalence
Kenagy	2005	Survey	Snowball	133 MtF 169 FtM	USA	Persons who identify as transgender	MtF: 10% * FtM: 0% *
Operario & Nemoto	2005	Survey	Venue-based (transgender venues and AIDS service organisations)	110 MtF	USA	Asian Pacific-Islander transgender women with a history of selling sex	13% *
Garofalo et al.	2006	Survey	Venue-based (community organisations serving transgender youth)	51 MtF	USA	Ethnic minority transgender youth (age 16-25)	Overall: 22% * Afr-Am MtF: 34% *
Saleri et al.	2006	Clinical testing	Venue-based (STD clinic)	86 MtF	Italy	South-American transgender sex workers	27,1%
Sugano, Nemoto & Operario	2006	Survey	Venue- and street-based (Aids service organisations and transgender venues)	332 MtF	USA	African American, Latina or API trans women with a history of sex work	26%*
Edwards, Fisher & Reynolds	2007	survey	Venue-based (HIV prevention organisations)	107 MtF	USA	Male-to-female transgenders or transsexuals	52,44%
Schulden et al.	2008	Clinical testing Survey	Venue- and internet based	559 MtF 42 FtM	USA	Persons self-identifying as TG who are not known to be HIV+	MtF: 12% FtM: 0%
Hawkes et al.	2009	Clinical testing Survey	Snowball	269 MtF	Pakistan	Transgender persons who had sold sex within the last 30 days (khusra/hijra)	2,4%
Nuttbrock et al.	2009	Survey	Snowball and venue-based (community spaces and transgender organisations)	517 MtF	USA	Male-to-Female transgenders	white MtF: 3,5% * Hispanic MtF: 49,6% * Afr-Am MtF: 48,1% *
Sevelius et al.	2009	Survey	Venue and street-based	153 MtF	USA	Persons who were assigned male at birth but identify as female or transgender	22% *

Wilson et al.	2009	Survey	Venue-based (health clinics and community-based organisations)	151 MtF	USA	Transgender female youth (age 15-24)	Overall: 19% * SWers: 32% *
Chariyalertsak et al.	2011	Clinical testing Survey	Venue-based (MSM-friendly STI Service clinic)	140 MtF	Thailand	Transgender persons (Katoey)	9,3%
Guadamuz et al.	2011	Clinical testing Survey	Venue-based (day-time)	474 MtF	Thailand	Transgender women who report anal, oral or neovaginal sex with a man in the past 6 months	13,5%*
Operario et al.	2011	Survey	Snowball and venue-based (community spaces)	174 MtF	USA	Transgender women with a male primary partner	41% *
Prabawanti et al.	2011	Clinical testing Survey	Venue-based	748 MtF	Indonesia	Male-to-female transgenders (waria)	24,4%
Shrestha et al.	2011	Clinical testing Survey	Snowball and venue-based	301 MtF + FtM	USA		NYC: 18,2% SF: 7,3%
Sol dos Ramos Farias et al.	2011	Clinical testing Survey	Snowball	273 MtF	Argentina	Male-to-Female sex workers	34,1%
Stephens, Bernstein & Philip	2011	Clinical testing Survey	Venue-based (STD Clinic)	223 MtF 69 FtM	USA	Self-identified MtF and FtM persons	MtF: 11,2% FtM: 10,1%
Barrington et al.	2012	Clinical testing	Snowball	67 MtF	El Salvador	MtF who had engaged in anal sex with a cisgender male in the previous year	19%
Silva-Santisteban et al.	2012	Clinical testing Survey	Snowball	450 MtF	Peru	persons born male and identifying as a female	30%

Table 2: HIV and other STI prevalence data for transgender persons.

* self-reported HIV status (not clinically tested and possibly unaware of HIV+ status).

