

Intimate Partner Violence Victimization among Non-heterosexuals: Prevalence and  
Associations with Mental and Sexual Well-being

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## Abstract

This study focused on intimate partner violence (IPV) among non-heterosexuals in Flanders. Prevalence rates for IPV were explored and compared with heterosexual IPV using a first representative sample consisting of 1690 heterosexuals and non-heterosexuals. A second convenience sample consisting of 2401 non-heterosexuals was used to determine differences between non-heterosexual women and men and to explore associations between IPV and victims' mental and sexual well-being. Physical and psychological IPV inflicted by the current/former partner were reported by 14.5% and 57.9% of the non-heterosexuals, respectively. Non-heterosexuals and heterosexuals were equally likely to report physical and psychological IPV and no differences were observed in the frequency of these acts. Furthermore, non-heterosexual women and men reported similar physical, sexual, and psychological IPV. However, compared to male victims, female victims experienced more frequent acts of psychological IPV. Psychological IPV was negatively associated with mental and sexual well-being. Sexual IPV was negatively associated with mental health but only among men.

*Keywords:* intimate partner violence, non-heterosexual and heterosexual relationships, mental health, sexual satisfaction, and sexual dysfunctions

## Intimate Partner Violence Victimization among Non-heterosexuals: Prevalence and Associations with Mental and Sexual Well-being

Intimate partner violence (IPV) is defined as “behaviour within an intimate relationship that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviours” (WHO, 2010, p.11). Saltzman, Fanslow, McMahon, and Shelley (2002) elaborated on this definition and explained that this type of violence can occur in heterosexual as well as non-heterosexual relationships. However, since research on IPV began in the 1970s, the majority of studies have focused almost exclusively on heterosexual dyads (i.e., male-against-female violence). Recently, a growing body of research has been gathered on IPV estimates within non-heterosexual dyads, demonstrating substantial prevalence of IPV among non-heterosexuals (see further). In order to work towards providing appropriate services for non-heterosexual victims of IPV, further empirical data on the prevalence and health correlates of IPV in this population is needed. Despite a sizable studies that have been published on this topic (for a review, see Murray & Mobley, 2009), some fundamental issues regarding IPV in non-heterosexual relationships remain unresolved. To date, studies discussing IPV in this population have mostly used convenience samples that make it difficult to draw conclusions that can be used for the general population (Balsam & Szymanski, 2005; Murray & Mobley, 2009). Furthermore, unlike physical and sexual IPV, psychological violence has received far less research attention. Last, compared to lesbian women, few available studies have documented information on IPV among gay men (e.g., Merrill & Wolfe, 2000). With these gaps in mind, the present study’s primary objective consisted of exploring physical as well as psychological IPV prevalence rates among non-heterosexual women and men in a large representative and population-based sample of Flemish (non-) heterosexuals. Using a second large-scale convenient sample consisting of predominantly non-heterosexuals, this study was

developed to elaborate on IPV differences between non-heterosexual women and men, and to explore its health correlates. Bringing together both data sources enabled us to explore differences between a heterosexual and a non-heterosexual population as well as within a non-heterosexual population.

### **Prevalence Research**

Most of the studies discussing aggression in non-heterosexual relationships, have primarily focused on prevalence rates. Similar to in research on IPV among heterosexuals, differences in sample design and IPV conceptualization have led to large discrepancies in the prevalence estimates between the various studies (Krahé, Bieneck, & Möller, 2005). Additionally, among non-heterosexuals, the conceptualization of sexual orientation influences the IPV prevalence rates recorded by different studies. Most studies on sexual minorities have only assessed sexual self-identification (Priebe & Svedin, 2012). However, defining sexual orientation as a multidimensional construct (i.e., including identity, attraction, and behavior) may provide a more accurate indication of human sexuality and is therefore recommended in research (Laumann, Gagnon, Michael, & Michaels, 1994; Murray & Mobley, 2009; Priebe & Svedin, 2012). For example, a study by Stefansen, Hegna, Valset, von Soest, and Mossige (2009) on violence against young homosexuals revealed that for girls, same-sex attraction was associated with physical aggression and harassment whereas for boys, same-sex behavior *without* same-sex attraction was more likely to be associated with violence. This indicates that vulnerability for victimization may be linked with several dimensions of sexual orientation. Therefore, we used a multidimensional approach to sexual orientation in our study and prefer to use the term “non-heterosexual” instead of “LGB”: Some people are classified as non-heterosexual even though they do not identify themselves as lesbian, gay or bisexual. Overall, most prevalence studies have used an exclusive non-heterosexual sampling design (e.g., Balsam, Beauchaine, & Rothblum, 2005; Burke, Jordan,

& Owen, 2002; Carvalho, Lewis, Derlega, Winstead, & Viggiano, 2011; Descamps, Rothblum, Bradford, & Ryan, 2000; Eaton et al., 2008; Halpern, Young, Waller, Martin, & Kupper, 2004; Matte & Lafontaine, 2011; McKenry, Serovich, Mason, & Mosack, 2006; Renzetti, 1989). Only a few have included a heterosexual comparison group to examine differences or similarities between non-heterosexual and heterosexual IPV (e.g., Freedner, Freed, Yang, & Austin, 2002; Messinger, 2011).

**Heterosexual versus non-heterosexual IPV.** Studies that document IPV prevalence rates of non-heterosexual aggression or those comparing non-heterosexual and heterosexual relationships, have reported mixed results. Whereas some have found higher rates for heterosexuals than non-heterosexuals (Balsam et al., 2005; Messinger, 2011), most have reported similar prevalence estimates in heterosexual and non-heterosexual relationships (Alexander, 2002; Freedner et al., 2005; Potoczniak, Mourot, Crosbie-Burnett, & Potoczniak, 2003). In their methodological review about same-sex IPV, Murray and Mobley (2009) observed that approximately one quarter to half of same-sex intimate relationships show abusive dynamics, which is comparable to the rates of heterosexual IPV. Based on 19 studies, Burke and Follingstad (1999) presented prevalence rates specifically for physical IPV ranging from 8.5% up to 48% among non-heterosexual partners. Despite the interesting findings of the latter review, most of the studies focused exclusively on physical and sexual IPV, whereas only a few examined the prevalence of psychological IPV. There is a particular gap in the knowledge about psychological aggression where gay men are concerned (Stephenson, Rentsch, Salazar, & Sullivan, 2011; Turell, 2000). Furthermore, the few studies that exist in the field only report on results based on convenience samples. Consequently they cannot be considered as “true” prevalence rates. To counter this limitation, Messinger (2011) examined IPV in non-heterosexuals in a nationally representative sample in the US ( $N = 14,182$ ). This study showed that respondents with a history of same-sex relationships were twice as likely to

report verbal aggression (69%), controlling behaviors (77%), physical aggression (36%), and sexual aggression (11%) in their relationships than those with exclusively heterosexual relationships. As in Messinger's study, our first research question (RQ1) concerned the examination of physical and psychological IPV prevalence estimates among non-heterosexuals in a representative sample.

**Non-heterosexual women versus non-heterosexual men.** For non-heterosexuals, there is more literature on prevalence rates of IPV in lesbian relationships than there is about gay relationships (e.g., Merrill & Wolfe, 2000). This is due to the fact that violence against women is an issue of interest for feminists (Burke & Follingstad, 1999) although the overwhelming focus of research on HIV among gay men also plays a role here (Merrill & Wolfe, 2000). Therefore, studies comparing non-heterosexual women and men are almost nonexistent (Waldner-Haugrud, Vaden Gratch, & Magruder, 1997). Some hypotheses have been formulated to describe that IPV is more prevalent among lesbian women than among gay men (e.g., Turrell, 2000) but no valid conclusions have been drawn. A study by Waldner-Haugrud et al. (1997) has found that lesbians are more likely to be victims as well as perpetrators of physical IPV compared to gay men, but when examining the severity of these acts, no differences were found.

### **Theoretical Explanations for IPV Among Non-heterosexuals**

General theories, based on research in heterosexual relationships, are often applied to explain IPV in non-heterosexual relationships (Balsam & Szymanski, 2005; Burke & Follingstad, 1999; McClennen, 2005; Murray, Mobley, Buford, & Seaman-DeJohn, 2006). These theories mainly focus on gender differences but one of the characteristics that distinguishes between heterosexuals and non-heterosexuals is that in the latter, the partners' gender does not determine the role they perform (Schechory & Ziv, 2007). To date, no clarity exists on the extent to which (a) non-heterosexual IPV can be explained by the same (gender-

based) theories used to explain heterosexual IPV, and (b) on the extent to which specific dynamics inherent to same-sex relationships influence same-sex IPV.

Overall, and with respect to the first ambiguity, IPV is a complex phenomenon and has to be understood from a multifactorial perspective (Stith, Smith, Penn, Ward, & Tritt, 2004). Heterosexual IPV has commonly been explained by biological (i.e., aggression as a human instinct), psychological (i.e., aggression as learned behavior, as personality characteristic), and socio-cultural theories (i.e., power and control dynamics). According to Burke and Follingstad (1999), these theories can be used to support dissimilarities as well as similarities between heterosexual and non-heterosexual IPV (for a detailed review see Burke and Follingstad, 1999). For example, IPV has often been linked to unequal power dynamics and a loss of control in the relationship (Johnson & Ferraro, 2000). Power and control dynamics have mainly been identified as critical factors in heterosexual IPV because of its association with the dominant role of men in our society. According to this heteronormative view, IPV should be more prevalent among heterosexuals than non-heterosexuals. Using the concepts of power and control dynamics in non-heterosexual relationships is challenging as some research has stated that non-heterosexual relationships are more egalitarian than heterosexual relationships (Shechory & Ziv, 2007). Limited research has focused on these power and control dynamics among non-heterosexual couples but evidence has been found that victimized lesbians report remarkably less control and decision making authority in their relationships than their not victimized counterparts (Eaton et al., 2008). A proposed explanation from a gender-based perspective is that lesbian perpetrators report overall higher masculinity traits. This leads us to the second ambiguity.

Although some “causes” of aggression in non-heterosexuals fit within these gender-based heterosexual theories, it is important to consider that there may also be some specific IPV dynamics that are inherently relevant to men who have relationships with men, and

women who have relationships with women. For example, it is possible that not only gender but also sexual orientation are directly related to unequal power and control dynamics (Miller, Greene, Causby, White, & Lockhart, 2001). Non-heterosexual victims/perpetrators may experience a sense of “loss of control” while they remain “in the closet” and lack a clear identity to present to others. Or, when a person is open about his/her sexual orientation, a lack of control may also be experienced in other aspects of their lives as they cope with reactions of family and friends, and changes in their work environment. Furthermore unlike heterosexuals, non-heterosexual women and men have to cope with additional stressors such as minority stress (i.e., stress that is derived from being a member of a minority group; Dewaele, Van Houtte, Cox, & Vincke, 2013; Meyer, 1995). An excess in prevalence of mental disorders is explained through this concept of minority stress. The latter explains how stigma, prejudice, and discrimination create a hostile and stressful social environment that causes mental health problems. The model describes stress processes, including the experience of prejudice events, expectations of rejection, hiding and concealing, internalized homophobia, and ameliorative coping processes. Recent studies have acknowledged the role that minority stress can play in intimate relationships (Balsam & Szymanski, 2005; Mohr & Daly, 2008; Rostosky, Riggle, Gray, & Hatton, 2007). Being in a romantic relationship with a same-sex partner can generate additional stressors such as experiences with discrimination, making the relationship more vulnerable to increased conflict (Frost, 2011) and IPV experiences (Alexander, 2002).

Overall, it is clear that explaining IPV among non-heterosexuals is complex and that multiple theories can be used to clarify differences or similarities with heterosexual IPV. The present study did not allow us to test these different theoretical perspectives, but there is no clear argument to expect that IPV among non-heterosexuals would be more or less prevalent than among heterosexuals when coming from a gender-based theoretical perspective. In the



current study we therefore aimed to explore whether IPV among non-heterosexuals is equally, less, or more prevalent relative to levels observed in heterosexual relationships (RQ2).

Further, specific theories on IPV among non-heterosexuals have not yet yielded empirical evidence for differences in vulnerabilities among non-heterosexual women and men.

Therefore, our third research question (RQ3) explored whether IPV in non-heterosexual women is equally, less, or more prevalent relative to IPV among non-heterosexual men.

### **Health Correlates of IPV**

Studies on the health correlates of IPV have consistently found an adverse effect of IPV on victims' mental health (Campbell, 2002; Coker et al., 2002). However, most of these studies have investigated these associations in heterosexual samples of women reporting physical aggression (Krahé et al., 2005). As such, several associations have received little empirical attention. These include associations between psychological aggression and health outcomes (Follingstad, 2009), and associations between IPV and victims sexual well-being (Coker, 2007). Furthermore, studies examining these associations in a sample of non-heterosexuals are even less common.

**Mental well-being.** Some research attention has been devoted to mental health outcomes for non-heterosexuals reporting IPV (e.g., Descamps et al., 2000; Distefano, 2009; Houston & McKirnan, 2007; Morris & Balsam, 2003). For example, in a sample of 817 men who have sex with men, Houston and McKirnan (2007) found that IPV victims were more likely to report mental health problems (e.g, depression, bipolar disorder, emotional disorder). Descamps et al. (2000) reported that lesbians with an IPV history, reported significantly more daily stress, and increased rates of depression and alcohol abuse. Given that aggression by an intimate partner is strongly associated with mental health problems, it is important to expand research on these associations for non-heterosexual victims. In particular the association between psychological aggression and mental health outcomes deserves more research

attention. The current study aimed to assess the association between the different types of IPV and mental health among non-heterosexual women and men (RQ4). We predicted that higher scores of IPV would be associated with lower levels of mental health for both non-heterosexual women and men.

**Sexual well-being.** Relationship research has found evidence for an association between relational and sexual well-being. Sexual well-being refers to a satisfying sexual relationship characterized by satisfaction with the quality and frequency of sex, and by the absence of sexual dysfunction (Bodenmann, Ledermann, & Bradbury, 2007). Recently, there has also been a growing interest in research on the interpersonal dynamics of sexual (dys)function (for a review, see Dewitte, 2012). For example, studies have shown that experiencing relationship problems (e.g., tension and conflict) is associated with lower sexual satisfaction, a greater likelihood of sexual dysfunction, and is one of the most important predictors for sexual distress among women (Bodenmann et al., 2007; Metz & Epstein, 2010; Oberg & Fugl-Meyer; King, Holt, & Nazareth, 2007; Stehpenson & Meston, 2010). Metz and Epstein (2002) assessed the specific role of relationship conflict in sexual dysfunction and proposed different pathways for the association between relationship conflict, and sexual dysfunctions. One of these paths assumes that relationship conflict can (directly or indirectly) lead to sexual dysfunction. More specifically, they argue that a relationship characterized by conflict, power and control dynamics, leads partners to protect themselves from being abused or controlled. Sexually, they will therefore focus on self-protection and control, rather than on intimacy with their partner. Although the authors do not provide information on how these relationship dynamics may be linked to different types of dysfunction, they emphasize that relationship dynamics may influence different phases in sexual responses (e.g., sexual desire, arousal, intimate behavior).

Despite the recent interest in relationship dynamics and sexual function, research on the association between intimate partner violence and sexual function is still scarce. To date, IPV research has mainly focused on the association with sexual risk-taking behaviors rather than the sexual function for couples reporting IPV and, to the best of our knowledge, this has not yet been tested among non-heterosexuals. Coker (2007) reviewed the role of physical IPV on sexual function in heterosexual women and reported associations with inconsistent condom use, partner non-monogamy, sexually transmitted diseases, unwanted pregnancies and abortion, dyspareunia, and lack of sexual pleasure. A distinct deficit has been noted on research on the topic of sexual satisfaction and sexual dysfunctions (for a review, see Coker, 2007). Therefore, the current study aimed to assess the association between physical, psychological, and sexual IPV and sexual functioning among non-heterosexual women and men (RQ5). We hypothesized that non-heterosexuals reporting IPV, would report lower levels of sexual satisfaction, less satisfaction with the frequency of sex, and more sexual distress. Further, as relationship variables are more likely to be linked with sexual functioning among women than men (Metz & Epstein, 2010), we expected stronger associations between IPV and sexual well-being among women than men.

## **Method**

### **Participants and Procedure**

**Sample I.** This sample drew on data from the survey ‘Sexual Health in Flanders’ (Buysse et al., 2012), a large-scale representative survey on sexuality, sexual health and relations in Flanders. The survey contained extensive information on sexual health characteristics and bio-medical, psychological, demographic, and socio-cultural correlates. Respondents between 14 and 80 years of age were included. Data were collected between February 2011 and January 2012. Our sample consisted of 1832 respondents (response rate: 40.0% of the eligible respondents), who were randomly drawn from the Belgian National

Register. In order to enhance statistical power in each of the three pre-defined age categories, we stratified the sample into three equally large parts: one-third consisted of young respondents (aged 14 to 25), one-third of middle-aged respondents (aged 26 to 49), and one-third of respondents aged between 50 and 80 years old. After data collection, the data were weighted by gender, age, and educational level. Data were gathered via face-to-face interviews, along with a combination of computer-assisted personal interviewing (CAPI) and computer-assisted self-interviewing (CASI). To describe in more detail, all sensitive information (i.e., a wide range of sexual health characteristics) was gathered in a CASI set-up, so that respondents never had to share private information about their sexual health with an interviewer. In this sample, we report on adult heterosexuals ( $\geq 18$  years,  $n = 1571$ ) and non-heterosexuals ( $\geq 18$  years,  $n = 119$ ). The mean age of heterosexual respondents was 46.15 years ( $SD = 16.70$ , Range: 18–79). The mean age of non-heterosexual respondents was 44.34 years ( $SD = 17.32$ , Range: 18–80). Most women (80.2%) and men (82.2%) were in a romantic relationship. See Table 1 for a detailed overview of this sample's characteristics.

**Sample II.** The second sample drew on data from the survey “Click out of the bedroom”, a large-scale convenience sample on sexuality, sexual health, and relations in sexual minorities in Flanders. This survey is similar to the survey in sample I, but was developed to be significantly shorter in order to minimize respondent drop-out. We collected data between September 2011 and March 2012 by setting up a target sampling design followed by a web survey. Web surveys offer a highly accessible way to pose delicate questions anonymously and are therefore suitable to reach sexual minorities without jeopardizing their status as a hidden population (Dewaele et al., 2010). However, these techniques are known for inducing self-selection bias. In order to recruit a relatively diverse sample, we used a variety of recruitment channels and methods (e.g., Facebook, flyers, lesbian, gay and bisexual parties, advertisements in the written press, electronic mailings).

The final database consisted of 3702 individuals (66.9% lesbians, gays or bisexuals). In this study, we only report on adult non-heterosexual women ( $\geq 18$  years,  $n = 883$ ), and non-heterosexual men ( $\geq 18$  years,  $n = 1518$ ). The mean ages for female and male respondents were 30.53 years ( $SD = 11.5$ , Range: 18-86) and 35.31 years ( $SD = 13.28$ , Range: 18-82), respectively. Sixty six percent of the women, and 57.8% of the men were in a romantic relationship. Table 1 provides a detailed overview of the sample characteristics.

## Measures

Identical measures were used in Sample I and II to assess respondents' sexual orientation and IPV victimization.

**Sexual orientation.** In order to assess the number of non-heterosexual women and men in the general population, it is important to use an appropriate definition of sexual orientation (see Mercer et al., 2007; Kerker, Motashari, & Thorpe, 2006; van Kesteren, Hospers, & Kok, 2007). We conceptualized sexual orientation as a three dimensional construct measuring self-identification, sexual behavior, and sexual desire (cf. Laumann et al., 1994). *Sexual self-identification* was assessed with the question: "How would you identify yourself?". Respondents could answer on a 5-point Likert scale (i.e, straight, more straight than gay/lesbian, bisexual, more gay/lesbian than straight, gay/lesbian). An open-end response category was added for respondents who did not identify with any of these labels (referred to as "other"). *Sexual behavior* was measured in two steps, first respondents were asked "How many people have you had sex with in your life?" (open-ended question) and then we asked respondents "Were these people men, women, or both?" (answers ranged from 1 = *exclusively women* to 5 = *exclusively men*). *Sexual desire* was also assessed using two questions: "Do you sexually fantasize about men, women, or both?" and "Do you feel sexually attracted to men, women or both?". Respondents could answer these questions on a 5-point Likert scale (from 1 = *only about / to women* to 5 = *only about / to men*). Furthermore,

respondents could answer these questions with “about/to neither”. With the information from these four items, we created a dichotomous variable categorizing respondents as non-heterosexual (= 0) or heterosexual (= 1) when they reported identifying as gay/lesbian, bisexual, or more gay/lesbian than straight, or when they reported having had at least as many same-sex sexual fantasies as opposite-sex fantasies, or when they reported feeling attracted to the same-sex at least as often to as to the opposite-sex, or when they reported having had at least as many same-sex sexual contacts as opposite-sex sexual contacts.

**Intimate partner violence.** In the present study, IPV is defined as self-reported physical and psychological victimization by a current or former partner. Physical IPV was assessed with one question measuring different acts of physical aggression (adapted from the Conflict Tactics Scale, CTS; Straus, 1979). Respondents were asked “If you think about your current or former partner, has he/she ever hit you with the flat of their hand, hit you with their fist, kicked you, or physically hurt you in another way?”. This question was rated on a 5-point Likert scale (from 0 = *never* to 4 = *very often*).

To assess psychological IPV, we adopted and modified items from the WHO Multi-country Study on Women's Health and Domestic Violence against Women (Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2005). Respondents were asked “If you think about your current or former partner, has he/she ever...” followed by seven items: (a) “tried to limit the contact you have with your friends or family members”, (b) “insisted on knowing your whereabouts and who you were with at every moment of the day”, (c) “ignored you or treated you indifferently”, (d) “criticized you or ridiculed you for what you do or say”, (e) “belittled or humiliated you in front of other people”, (f) “intentionally done something to scare or intimidate you”, and (g) “threatened you to hurt you or someone you love”. The seven items were rated on a 5-point Likert scale (from 0 = *never* to 4 = *very often*). As a Principal Component Analysis based on the eigenvalues revealed in both studies a single factor solution

with approximately equal weights for all items, a scale for the psychological aggression was computed by summing the scores for each item, with a higher score indicating more severe psychological IPV (Range: 0-28). The seven-item measure was reliable in sample I ( $\alpha = .87$ ) and sample II ( $\alpha = .83$ ).

In sample II only, sexual IPV was assessed. The question “If you think about your current or former partner, has he/she ever forced you to do sexual things that you did not want?” was rated on a 5-point Likert scale (from 0 = *never* to 4 = *very often*).

**Mental health.** As a measure of mental health, we used the shortened version of the Mental Health Inventory (MHI; Veit & Ware, 1983). The MHI-5 consists of five items (e.g., “Over the past four weeks, how much of the time were you a happy person?”) assessing persons’ current mental health status. All items were scored on a 6-point Likert scale (from 0 = *never* to 5 = *all the time*). The MHI-5 has a minimum score of 0 and a maximum score of 25. Higher scores are indicative of greater psychological well-being and an absence of psychological distress over the past four weeks. The psychometric properties of the MHI-5 are supported (Marques, Pais-Ribeiro, & Lopez, 2011) and the reliability and validity are methodologically sound (Strand, Dalgard, Tambs, & Rognerud, 2003). The alpha reliability for the MHI-5 in this study was .87.

**Sexual satisfaction.** As a measure of sexual satisfaction over the past six months, respondents were asked two questions: “In general, how satisfied are you with your sex life?” and “How satisfied are you with the frequency you had sex in the past six months?”. The two questions were scored on a 5-point Likert scale (from 1 = *very unsatisfied* to 5 = *very satisfied*).

**Sexual dysfunctions.** To assess sexual dysfunction and sexual distress associated with sexual dysfunction, the Sexual Functioning Scale (SFS; Enzlin et al., 2012) was used. Respondents were asked to what extent they experienced range of sexual problems (e.g.,

increased/decreased spontaneous or responsive sexual desire, arousal dysfunction, orgasmic dysfunction, dyspareunia, vaginismus, retrograde ejaculation, and a lack of a forceful propulsive ejaculation) in the past six months. All sexual difficulties were rated on a 4-point scale (from 1 = *no* to 4 = *severe or extreme*). Furthermore, respondents were asked to evaluate how distressing each sexual difficulty was for themselves and if applicable, for their partner, and for their relationship. Each type of distress was scored 1 (= *no or mild distress*), 2 (= *moderate distress*), or 3 (= *severe or extreme distress*). If respondents had a sum score of  $\geq 2$  when not in a relationship or  $\geq 5$  when in a relationship (i.e., moderate levels of distress in at least two of three domains), distress was considered to be present. For the current study, a sexual dysfunction scale was computed with three levels (0 = *no dysfunction*, 1 = *one or more dysfunctions without distress*, 2 = *one or more dysfunctions with distress*).

### **Sample I and II Characteristics**

Respondents in *sample I* were identified as non-heterosexual (7.1%,  $n = 119$ ) when they reported to *identify* as lesbian, gay, bisexual or more lesbian, gay than straight (3.2%), or when they reported having had at least as many same-sex sexual *fantasies* as opposite-sex fantasies (5.2%), or when they reported feeling *attracted* to people of the same-sex as at least as often as to the opposite-sex (3.3%), or when they reported having had at least as many same-sex sexual *contacts* as opposite-sex sexual contacts (2.0%). No differences were found between the heterosexuals and non-heterosexuals for the socio-demographic characteristics age,  $t(1688) = 1.14, p = .26$ , educational level,  $\chi^2(4) = 3.04, p = .55$ , and being in a romantic relationship,  $\chi^2(1) = 2.56, p = .11$  (see Table 1).

Of the non-heterosexuals in *sample II* ( $n = 2401$ ), 93% identified as lesbian, gay or more bisexual than straight, 96.7% had at least as many same-sex sexual *fantasies* as opposite-sex fantasies, 95.3% reported feeling *attracted* to the same-sex as at least as often as to the opposite-sex, and 88.5% reported having had at least as many same-sex sexual *contacts*



as opposite-sex sexual contacts. Non-heterosexual women and men differed in terms of the socio-demographics factors age,  $t(2399) = 8.94, p <.001$ ), being in a romantic relationship,  $\chi^2(1) = 16.92, p <.001$ , and educational level,  $\chi^2(4) = 75.28, p <.001$ . Overall, in comparison to non-heterosexual men, more non-heterosexual women were in a romantic relationship at the time of the survey. Non-heterosexual women also tended to be younger than the men surveyed and there were more non-heterosexual women who were still studying compared to non-heterosexual men (Table 1).

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### **Statistical Analyses**

Analyses were run in SPSS 20.0 and R 2.15. Univariate analyses were conducted to examine the prevalence of physical and psychological aggression among non-heterosexuals in a representative population sample (RQ1). In order to examine the role of sexual orientation in the prediction of physical and psychological IPV (RQ2) and to examine possible differences between non-heterosexual women and men in terms of physical and psychological IPV (RQ3), we used advanced count models that are specifically designed to analyze very (right) skewed counts. The standard model for analyzing count data is a *Poisson regression* but, a *negative binomial regression (NB)* is recommended when the data is overdispersed (i.e., the variance of the counts is larger than the mean). Count data typically display a lot of zero observations and therefore zero-inflated extensions of these two models have been developed, namely the *zero-inflated Poisson model* and the *zero-inflated NB model* (see Atkins & Gallop, 2007; Karazsia & van Dulmen, 2010). Lately, two hurdle models have been developed to support a more transparent split of the distribution in zero-counts and non-zero counts, called a *Poisson logit hurdle model* and a *hurdle negative binomial model* (for a detailed explanation, see Loeys, Moerkerke, De Smet, & Buysse, 2012). More precisely, the probability of all non-zero counts relative to all zero-counts (i.e., the *zero-hurdle part*) is

modeled using a binary logistic regression, while the frequency of all non-zero counts (i.e., the *counts part*) is modeled using a truncated Poisson or NB regression. In this setting, the *zero-hurdle part* examines the effect of a predictor (e.g., sexual orientation, gender) on the likelihood of experiencing IPV and the *counts part* examines the effect of this predictor on the frequency of IPV experiences among the victims. In both parts, regression coefficients are exponentiated ( $e^B$ ) and are named odds ratios (*ORs*) and rate ratios (*RRs*), respectively. In percentages— $100 \times (e^B - 1)$ —*ORs* reflect the percentage decrease ( $OR < 1$ ) or increase ( $OR > 1$ ) in the odds of experiencing IPV, whereas *RRs* reflect the percentage decrease ( $RR < 1$ ) or increase ( $RR > 1$ ) in the expected frequency of IPV experiences for each unit increase in the independent variable, controlling for the other predictors in the model.

First, we explored which model (Poisson, NB, hurdle Poisson, or hurdle NB model) best fitted with the dependent variables, physical and psychological IPV, in our first sample. Each of these count models included gender, age, education, sexual orientation, and gender x sexual orientation (to assess for potential differences between heterosexuals and non-heterosexuals according to gender) as independent variables. Using graphs and statistical tests (outlined in Atkins & Gallop, 2007; Loeys et al., 2012), it was found that the *NB model* best fitted the observed distribution of physical IPV and that the *hurdle NB model* (further referred to as NBLH) best fitted the distribution for psychological IPV (see Figures 1A and 1B). These preliminary analyses revealed no significant effect of gender x sexual orientation and therefore, the interaction term was excluded in further models. To examine possible differences between non-heterosexual women and men in terms of physical and psychological IPV (RQ3) in the second sample, the same count models were used. In addition, evidence was found that the *NB model* best fitted the distribution of sexual IPV (see Figures 2A to 2C).

INSERT FIGURES 1A, 1B AND 2A, 2B, 2C ABOUT HERE

## **Results**

### **IPV Prevalence Among Non-heterosexuals (RQ1; Sample I)**

Table 2 demonstrates that prevalence rates for physical and psychological IPV were high but when the frequency of these acts is examined, the scores indicate low to moderate occurrence of physical and psychological aggression by the current or former partner among non-heterosexual respondents. Overall, physical IPV was reported at least once by 14.5% of the non-heterosexual respondents. Further, Table 2 indicates that 57.9% of the non-heterosexuals reported at least one act seldom (out of seven) of psychological IPV by their current or former partner. The most commonly reported acts of psychological IPV among non-heterosexuals included being criticized for what you do or say, being ignored or threat indifferently, and being belittled or humiliated in front of other people. The least prevalent act of psychological IPV was that of threats made to hurt a loved one.

INSERT TABLE 2 ABOUT HERE

### **IPV Among Non-heterosexuals Relative to Heterosexuals (RQ2; Sample I)**

As illustrated in Table 3, the output of the NB model for physical IPV showed no significant effects for the control variables, nor for sexual orientation. This means that – controlling for gender, age, education, and relationship status – non-heterosexuals and heterosexuals report on average the same frequency of physical IPV by their current or former partner.

After controlling for gender, age, education, and relationship status, the Hurdle NB model for psychological IPV revealed no significant effect for sexual orientation either in the zero-hurdle part, or in the counts part. This implies that non-heterosexuals are as likely as heterosexuals to report psychological IPV and that victims report no differences in frequency of psychological IPV (Table 3). In terms of the socio-demographic control variables, a significant effect was found in the zero-hurdle part for the control variables gender, age, education, and relationship status. More specifically, the chance of being psychologically

victimized decreased by 27% when the respondent was female (relative male respondents), decreased by 1% for every unit increase in age, decreased by 36% if the respondent was in a current romantic relationship, and increased by 25% if they had a high level of education (relative to a lower education level). In the counts part, this regression revealed that the control variables relationship status and education level were significantly associated with the frequency of the psychological IPV experiences: Victims in a romantic relationship (relative to singles;  $RR = 0.65$ , a 35% decrease) and those who had a higher education level ( $RR = 0.76$ , a 24% decrease) reported less frequent acts of psychological IPV.

INSERT TABLE 3 ABOUT HERE

### **IPV Among Non-heterosexual Women Relative to Non-heterosexual Men (RQ3; Sample II)**

The NB model for physical IPV only showed one significant effect, namely for the control variable education. Respondents with a higher education level (relative to a lower education level) reported on average less physical IPV ( $RR = 0.43$ , a 57% decrease). The regression model showed no significant effect for gender, indicating that when controlling for the possible effects of the other variables non-heterosexual women and men reported the same frequencies of physical IPV (see Table 4).

The NB model for sexual IPV showed a significant effect for all variables except for gender. More specifically, the chance of experiencing sexual IPV increased by 1% for every unit increase in age, decreased by 43% for those with a higher education level (relative to lower levels), and decreased by 73% if the respondent was in a romantic relationship. The fact that no effect was found for gender indicates that controlling for all other variables, non-heterosexual women reported on average the same frequency of sexual IPV as non-heterosexual men (Table 4).

As illustrated in Table 4, the results of the NBLH model for psychological IPV showed that the odds of experiencing psychological IPV were significantly lower for those in an ongoing romantic relationship. Further, the counts part showed a significant effect for gender, age, romantic relationship level and education level. More specifically, the frequency of psychological IPV experiences significantly increased with increasing age, and was lower for more highly educated people and people in relationship. The frequency of psychological IPV among the victims increased by 15% for women (relative to men). This indicates that non-heterosexual women (relative to non-heterosexual men) are as likely to report psychological IPV, but that among the victims non-heterosexual women report more frequent acts of psychological aggression than non-heterosexual men.

INSERT TABLE 4 ABOUT HERE

### **IPV and Mental Health**

To examine the effect of physical, psychological, and sexual IPV on the current mental health of the non-heterosexual respondents (RQ4), a hierarchical linear regression analysis was used (view Table 5). To control for possible effects of socio-demographic characteristics on mental health, these variables (i.e., gender, age, educational level, and being in a romantic relationship) were entered in the first step of the regression. In the second step, respondents' scores for physical IPV, psychological IPV, and sexual IPV were entered. In the third step, three interaction terms were entered to examine possible interaction effects between gender and the different types of intimate partner violence (i.e., Gender x Physical IPV, Gender x Psychological IPV, Gender x Sexual IPV). Non-significant interaction terms were removed from the final model. Prior to the regression analysis, collinearity diagnostics were performed using the variance inflation factors (VIF). No multicollinearity was evident as the VIF for the different types of IPV ranged between 1.04 and 1.56 ( $< 10$ ; Cohen, Cohen, West, & Aiken, 2003). The final model was found to be significant,  $F(8,2127) = 8.08, p < .001$  and

accounted for 10.6% of variance in mental health scores. Physical IPV did not contribute significantly to the model while a significant effect was found for psychological IPV. Higher levels of psychological IPV corresponded with lower mental health scores. There was one significant interaction, involving Gender x Sexual IPV: While in men, increasing sexual IPV was associated with lower mental health scores,  $\beta = -.17, p = .01$ , no such association was found in women,  $\beta = .03, p = .25$ .

INSERT TABLE 5 ABOUT HERE

### **IPV and Sexual Well-being**

Our final research question concerned the association between IPV experiences and victims' sexual well-being (RQ5). Therefore, we examined the association between IPV and sexual satisfaction, satisfaction with the frequency of sex and sexual dysfunctions.

**Association with sexual satisfaction and satisfaction with frequency of sex.** A similar hierarchical regression analysis was also used to examine the effect of the different types of IPV on respondents' sexual satisfaction (see Table 5). The same steps were followed as when predicting mental health scores (see above). Entering the interaction terms in step 3 did not significantly increase  $R^2$ . The final model without interaction terms was found to be significant,  $F(7, 1856) = 27.59, p < .001$  and accounted for 9.4% of the variance in sexual satisfaction. No significant association was found between either physical or sexual IPV, and sexual satisfaction. In contrast, a significant association was found between psychological IPV and sexual satisfaction. These results indicate that, in contrast to physical and sexual IPV, higher levels of psychological IPV were associated with lower levels of sexual satisfaction.

When predicting respondents' satisfaction in terms of the frequency of sexual activity over the past 6 months, the model was found to be significant,  $F(8, 1855) = 17.43, p < .001$  and accounted for 7.0% of the variance in the satisfaction with the frequency of sex (see Table

5). Entering the interaction terms in step 3 did not significantly increase the explained variance. However, a significant interaction was found for Gender x Psychological IPV. Higher levels of psychological IPV were associated with lower levels of satisfaction with the frequency of sex for both men and women, but this was found to be slightly more pronounced in men,  $\beta = -.14, p = .00$ , than in women,  $\beta = -.12, p = .00$ .

**Association with sexual dysfunctions.** To assess to what extent IPV affects respondents' sexual functioning, we ran a multinomial logistic regression with the different IPV scores as predictors and sexual dysfunction as an outcome variable with three levels (0 = no dysfunction, 1 = dysfunction without distress, and 2 = dysfunction with distress). First, a full model was tested with gender, age, educational level, and being in a romantic relationship as control variables. The main effects (the three different IPV scores) and all interaction terms with gender were added to the model. Results revealed that the interaction terms did not significantly add to the overall fit of the model so they were removed from the final model. Multinomial logistic regression analysis was first performed with absence of sexual dysfunction as the outcome reference category (see Table 6). From our variables of interest, only psychological IPV was positively associated with sexual dysfunctions,  $\chi^2(2) = 15.28, p = .00$ ; an increase of one unit on psychological IPV increased the odds of sexual dysfunction without distress versus no dysfunction with a factor of 1.05 [95% C.I. 1.01-1.08] and of a sexual dysfunction with distress versus no dysfunction by a factor of 1.07 [95% C.I. 1.03-1.10]. No association was found between physical IPV,  $\chi^2(2) = 1.32, p = .52$ , or sexual IPV,  $\chi^2(2) = 1.41, p = .50$ , and sexual dysfunction either with or without distress.

INSERT TABLE 6 ABOUT HERE

## Discussion

The current study adds to the recent research extension for IPV in same-sex relationships by providing an in-depth exploration of the prevalence of IPV among non-

heterosexual women and men. In contrast to most previous studies, the current study examined the prevalence of physical as well as psychological aggression by an intimate partner in a large-scale representative population-based sample of (non-) heterosexuals. Furthermore, we aimed to explore whether IPV among non-heterosexuals is equally, less, or more prevalent relative to levels observed in heterosexual relationships. In addition to this, differences between non-heterosexual women and men, and health correlates of IPV were examined in a second large-scale convenience sample consisting of predominantly non-heterosexual persons.

As some reviews have already suggested (e.g., Burke & Follingstad, 1999; Murray & Mobley, 2009), IPV is a relatively frequent concern among non-heterosexuals. Our results indicate that about one in seven (14.5%) of the non-heterosexual respondents reported physical aggression at the hand of their current or former partner. Psychological aggression by the current or former intimate partner was reported by almost two thirds (57.9%) of the non-heterosexual respondents. Examining the average frequency, respondents generally reported low to moderate forms of physical and psychological IPV. As prevalence research is very sensitive to methodological choices, however, interpretation of these prevalence estimates and the comparison with other prevalence estimates should be approached with a certain level of caution. For example, where some studies include psychological aggression in their list of violent acts (e.g., Greenwood et al., 2002; Houston & McKirnan, 2007; Messinger, 2011), others only measure physical and/or sexual aggression (e.g., Kelly et al., 2011). Although some studies report one-year prevalence rates (e.g., Finneran, Chard, Sineath, Sullivan, & Stephenson, 2012), others provide five-year (e.g., Balsam et al., 2005) or life-time prevalence rates (e.g., Freedner et al., 2002). Finally, while some studies use small (e.g., McKenry et al., 2006; Merrill & Wolfe, 2000) or large (e.g., Morris & Balsam, 2003; Stephenson et al., 2011) convenience sample, others recruit a population-based representative



sample (Messinger, 2011; Halpern et al., 2004). In general, representative samples – such as the current study – tend to report somewhat lower prevalence estimates than self-selective convenience samples (e.g., Halpern et al., 2004; Nielsen & Einarsen, 2008). Our estimates do indeed fall at the lower end of the prevalence spectrum, especially compared to some other studies (e.g., Burke et al., 2002) but, they are still in line with the overall reports of abusive dynamics in one quarter to half of all non-heterosexual relationships (Alexander, 2002; Murray & Mobley, 2009). Further, in concurrence with previous studies (e.g., Craft & Serovich, 2005; Merrill & Wolfe, 2000; Stephenson et al., 2011; Turrell, 2000), it was found that physical and psychological IPV tended to co-occur ( $r = .60, p < .001$ ). However, there were far more respondents experiencing psychological IPV than physical IPV.

Our second research question concerned the examination of differences in IPV prevalence among non-heterosexuals and heterosexuals. We found that non-heterosexuals and heterosexuals reported on average the same frequency of physical aggression by their current or former intimate partner. Further, both groups were as likely to report psychological aggression and among the victims, no differences were found in the frequency of these reported acts. Although our findings partially contrast with the findings of Balsam et al. (2005), our results are compatible with most previous estimations (e.g., Alexander, 2002; Burke & Follingstad, 1999; Freedner et al., 2005; Potoczniak, Mourot, Crosbie-Burnett, & Potoczniak, 2003) .

Gender did not interact with sexual orientation for either physical or psychological IPV. This indicates that the role of sexual orientation in the prediction of IPV experiences does not differ for women and men. Compared to other studies, similarities (Owen & Burke, 2004; Morris & Balsam, 2003) as well as differences (Descamps et al., 2000) are noted. For example, based on their exploration of IPV among same-sex relationships, Owen and Burke (2004) noted no differences between heterosexual and lesbian women, although, they found

IPV to be a greater problem for gay men compared to heterosexual men. The current study found no differences between heterosexual and non-heterosexual men, although we must be cautious with this interpretation as only thirty non-heterosexual men were included in this sample. The small number of non-heterosexual men may have increased the possibility for a Type II error, which means that we may have missed a significant effect.

With regard to our third research question of to what extent IPV experiences differ within a sample of non-heterosexual women and men, we found some interesting results. Gender did not influence the probability of experiencing either physical or sexual IPV. In other words, non-heterosexual women were as likely to be subjected to acts of physical or sexual IPV by their current or former partner as non-heterosexual men. Slightly different results were found for psychological IPV. That is, men and women were equally likely to report being a victim, but female victims reported a higher incidence of violence than male victims. In terms of other studies comparing non-heterosexual women and men, the empirical literature offers inconsistent findings. According to some studies, IPV is more prevalent among lesbians than among gay men (e.g., Turrell, 2000; Waldner-Haugrud et al., 1997). Other studies, however, have suggested that IPV is more prevalent among gay men than among lesbians (e.g., Bryant & Demian, 1994; Burke et al., 2002) and others still have reported comparable rates (e.g., Carvalho et al., 2011). Again, methodological choices may partially explain the divergence in results among the different studies. A possible explanation for the finding by our current study that psychological aggression is more frequently experienced by female than male victims, may be derived from the lesbian concept *fusion* (Miller et al., 2001). Fusion refers to the formation of both intimacy and conflict dynamics within lesbian relationships. As a reaction to the dominance of a heteronormative culture, some lesbians want to stress the seriousness of their relationship by creating a very intense and intimate bond with each other. Consequently, they become highly dependent on each

another. This high dependency makes them more vulnerable to conflict and IPV victimization/perpetration (Miller et al., 2001; Renzetti, 1989).

A fourth research question examined the relationship between IPV experiences and non-heterosexual victims' mental well-being. While increasing psychological IPV was associated with lower mental health scores, no association was found for physical IPV. Therefore, one could mistakenly conclude that experiencing physical IPV does not affect respondents' mental health. Although post-hoc computed separate linear regressions did reveal an association between physical IPV and mental health, our results showed that when controlling the different types of IPV, only psychological IPV was significantly associated with respondents' mental health status. The meaning of this finding is twofold. First, it indicates that higher levels of psychological IPV are related to lower mental health scores. Second, it indicates that psychological IPV explains the largest amount of variance even if respondents also experienced physical or sexual IPV. This finding is consistent with a growing body of research specifically focusing on psychological IPV and its correlates (e.g., Follingstad, 2007, 2009). Researchers who have compared physical and psychological IPV in terms of health correlates found psychological aggression to be more mentally damaging than physical aggression (Follingstad, Rutledge, Berg, Hause, & Polek, 1990; O'Leary & Maiuro, 2001).

Furthermore, sexual victimization by the current or former partner was related to lower mental health scores, but only for men. A possible explanation for this result is that the nature of acts of sexual aggression among gay couples may differ from the sexual aggression that occurs within in lesbian relationships. Research examining the health outcomes of sexually abused victims, have consistently reported a more negative health outcome when the abuse involved penetration (e.g., forced anal sex) because of the severity of these acts (Browne & Finkelhor, 1986).

Our final research question examined the association between IPV experiences and non-heterosexual victims' sexual well-being. As expected, higher levels of victimization were negatively associated with sexual satisfaction and satisfaction with the frequency of sex, and positively associated with sexual dysfunctions with distress. However, this only applied for psychological IPV. Experiencing a physical form of aggression does not seem to act as a precondition that affects one's sexual well-being. In contrast to our expectations, these associations were not stronger for women than they were for men. These results add to the empirical literature that provides evidence that relationship problems are associated with people's sexual well-being (Metz & Epstein, 2002).

### **Strengths and Limitations**

Several strengths, limitations, and implications need to be addressed. The current study relied on a representative sample of adult women and men in Flanders to examine the overall prevalence of IPV among non-heterosexuals. Consequently, addressing all (i.e., heterosexual and non-heterosexual) adult women and men rather than making a sample selection based on sexual orientation improved the generalizability of our results. Despite this, using a general population-based survey often means that sample sizes are not large enough to explore the variables in depth. Therefore, we used a second large-scale convenience sample with an overrepresentation of non-heterosexual women and men. Although respondents in this online population tended to be younger and more highly educated than respondents in our first representative sample, a methodological study on the comparison of these two data sources revealed almost no differences between the outcomes of the two data sources once age and educational level were controlled for (see Dewaele, Caen, & Buysse, 2013). Although both studies did target individuals rather than couples, it might be that a few couples were included by chance, but information on couples is missing. We assumed throughout this paper independent observations, and anticipate a very limited impact

of ignoring non-independence in those small number of couples that were possibly recruited by chance.

Information on experiences with IPV is very sensitive. In our first and second sampling design, the use of CASI enhanced respondents to answer truthfully. In addition to this, the second sampling design has been shown to be a good format to encourage stigmatized individuals to share sensitive information, especially for respondents who do not identify themselves as non-heterosexual to others.

Data on IPV are in general very skewed and exhibit a lot of zero observations. That is, most respondents report no IPV experiences and a “small” group of respondents report some instances of IPV. To deal with such skewed distributions, previous studies mainly used categorical statistical analyses (e.g., chi square statistics, binary/multinomial logistic regression analysis), yet, the measurement of IPV as a dichotomous or continuous variable has been found to impact on the results (Langhinrichsen-Rohling, 2010). Therefore, the current study used more advanced countmodels that respected the true distribution of our dependent variables.

Some limitations need to be addressed. First, this study is part of a large investigation into sexual health. Therefore, some items that are important to the IPV research were not included. For example, we did not assess for “threat of outing”. Research has shown that this form of aggression is frequently reported by non-heterosexuals. Physical IPV was measured using a single question obtained from the Conflict Tactics Scale. Although the CTS has been utilized in a large number of studies on IPV, there have been several criticisms regarding this scale (e.g., McHugh & Frieze, 2006). One of them includes that it only measures a small number of violent acts. Though, there are many additional ways in which people can be physically hurt by a partner. It is possible that this partially contributes to an underestimation of physical and psychological IPV. Second, it should be noted that the current partner is not

necessarily the perpetrator of all aggression experienced by a respondent. Therefore, we cannot be sure whether the poor mental and sexual well-being we document for some respondents is a long term outcome from aggression in the previous relationship, or whether it definitely directly linked with the current relationship. Third – and in line with the second limitation – the current study is based on a cross-sectional design. Therefore, no causal conclusions can be drawn and we have to be careful with *prediction* statements. Although it might seem logical that a violent relationship might affect a person's well-being, an alternative hypothesis is that people with a low self-perceived mental health state are more prone and vulnerable to experiencing IPV (McKenry et al., 2006; Stith et al., 2004). A fourth limitation refers to the potentially cross-cultural differences related to experiences with IPV in non-heterosexuals. Some research points out that there are important cultural differences related to emotions, cognitive attributions, and symbolic selves between Northern Americans and Western Europeans (Kitayama, Park, Sevincer, Karasawa, & Uskul, 2009). Also, today, Belgium is one of the relatively few countries in the world that grants equal civil rights to same-sex partners. Although many Western-European countries are catching up (for a comparison between European countries, see Waaldijk & Bonini-Baraldi, 2006), we should beware that differences in the cultural and judicial climate might also affect experiences with IPV in same-sex partnerships. We therefore urge researchers to undertake studies which shed light on differences between being LGB in Western Europe versus Northern America. This could help us understand how minority stressors, cultural patterns, and impact on experiences with IPV might interact with each other.

### **Future Research and Implications**

To conclude, our results add to the mounting evidence that many people, regardless of their sexual orientation, are at risk of experiencing IPV at some point in their lives. From our findings, it appears that IPV is as common both in terms of presence and frequency among

heterosexuals and non-heterosexuals, and among non-heterosexual women and non-heterosexual men. This implies that researchers, policy makers, clinicians, and non-heterosexual IPV victims themselves must recognize IPV as a social concern in all kind of relationships, and not solely in heterosexual relationships.

As the body of research on this topic is still rapidly growing, it is not clear yet whether tackling this concern requires the same prevention campaigns and interventions as heterosexual IPV. However, some points of attention may help to acknowledge the existence of the problem and start the battle to diminish the number of cases of victims. First, a change in perception must be encouraged at the societal level. Although our results contradict the overall perception that IPV is more serious when it is directed from men towards women than from men towards men or women towards women (Seelau & Seelau, 2005), the lack of communication on this topic means that lesbians and gay men may not consider themselves as victims and that they may not respond to this violence. Therefore, a more gender-neutral and open conversation on the presence of IPV in same-sex relationships should be established. Second, more quantitative and qualitative research examining relationship dynamics in violent non-heterosexual relationships would lead to a greater in-depth understanding of this phenomenon. For example, the current study found that increased scores on psychological IPV were associated with lower levels of mental and sexual well-being. Possibly, these associations may be explained by a third variable, namely internalized homophobia. Research has found concrete evidence for a link between internalized homophobia and an array of both mental health issues (e.g., lower self-esteem, feelings of powerlessness, and self-destructive behavior) and sexual dysfunctions (McKenry et al., 2006; Meyer, 2003). Further, internalized homophobia has also been linked to increased relationship stress and more IPV (Balsam & Szymanski, 2005). Therefore it is possible that experiences with IPV do not directly predict

the health outcomes but that instead, internalized homophobia fully or partially explains this association.

To conclude, more public and research attention to IPV in non-heterosexual relationships would give clinical therapists the background knowledge and skills to provide a more equal treatment for all IPV victims, regardless of gender and sexual orientation.

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Table I

*Sample Characteristics of the Respondents in Sample I and Sample II*

	Sample I				Sample II			
	Heterosexuals ( <i>n</i> = 1571)		Non-heterosexuals ( <i>n</i> = 119)		Non-heterosexual women ( <i>n</i> = 883)		Non-heterosexual men ( <i>n</i> = 1518)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	46.15	16.70	44.34	17.32	30.53	11.5	35.31	13.28
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Gender								
Women	768	48.9%	86	71.7%	-	-	-	-
Men	803	51.1%	34	28.3%	-	-	-	-
Education level								
Student	74	4.7%	8	6.9%	311	35.3%	306	20.2%
No degree/primary school/Secondary school	460	29.4%	40	33.6%	36	4.1%	119	7.9%
High secondary school	570	36.4%	39	33.1%	134	15.2%	297	19.6%
High school	309	19.8%	23	19.4%	233	26.5%	424	28.0%
University	152	9.7%	8	7.0%	166	18.9%	367	24.3%
Romantic relationship								
Yes	1280	81.6%	90	75.3%	578	66.4%	866	57.8%
No	289	18.4%	29	24.7%	293	33.6%	632	42.2%

*Note.* Sample size varies across variables due to missing data.

Table II

*Descriptives and Frequencies of IPV by the Current or Former Partner Among Non-heterosexuals*

*(sample I)*

Physical IPV	<i>M (SD)</i>	<i>%</i>
Hit you with the flat of their hand, with their fist, kicked you or physically hurt you in another way	.23 (.63)	14.5%
Psychological IPV	3.16(4.29)	57.9%
a. Tried to restrict your contact with family and friends	.43(.79)	26.5%
b. Insisted upon knowing your whereabouts every moment of the day	.59 (1.01)	30.8%
c. Ignored you and treated you indifferently	.57 (.79)	41.5%
d. Criticized you or ridiculed you for what you do or say	.69 (.87)	47.9%
e. Belittled or humiliated you in front of other people	.46 (.73)	33.6%
f. Intentionally done something to scare or intimidate you	.26 (.76)	13.0%
g. Threatened to hurt either you or someone you love	.15 (.63)	7.8%

*Note.*  $n = 119$ . *IPV* = intimate partner violence.

Table III

Summary of main Effects of the NB (physical IPV) and NBLH (psychological IPV) Models

Testing Socio-demographic Control Variables and Sexual Orientation (Sample I)

Predictors for physical IPV				
Variables	$RR (e^B)$		95% CI	
Gender <sup>a</sup>	1.21		[0.85, 1.72]	
Age	0.99		[0.98, 1.00]	
Education <sup>b</sup>	0.70		[0.49, 1.00]	
Romantic relationship <sup>c</sup>	0.71		[0.47, 1.05]	
Sexual orientation <sup>d</sup>	1.40		[0.78, 2.52]	
Predictors for psychological IPV				
Variables	Zero-inflation part		Counts part	
	$OR (e^B)$	95% CI	$RR (e^B)$	95% CI
Gender <sup>a</sup>	0.73**	[0.60, 0.90]	1.05	[0.91, 1.20]
Age	0.99***	[0.98, 0.99]	1.00	[0.10, 1.01]
Education <sup>b</sup>	1.25*	[1.00, 1.55]	0.76***	[0.66, 0.87]
Romantic relationship <sup>c</sup>	0.64***	[0.49, 0.83]	0.65***	[0.56, 0.76]
Sexual orientation <sup>d</sup>	0.92	[0.63, 1.36]	1.08	[0.84, 1.40]

Note. IPV = intimate partner violence; OR = odds ratios; RR = rate ratios; CI = confidence interval.

<sup>a</sup> Reference category is male; <sup>b</sup> Education level was recoded into education level lower than high school degree (reference category) and a high school degree or above; <sup>c</sup> Reference category is not being in a romantic relationship; <sup>d</sup> Reference category is a heterosexual sexual orientation.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table IV

Summary of main Effects of the NB (physical and sexual IPV) and NBLH (psychological IPV)

Models Testing Socio-demographic Control Variables and Gender (Sample II)

Predictors for physical IPV				
Variables	$RR (e^B)$		95% CI	
Gender <sup>a</sup>	1.13		[0.83, 1.54]	
Age	0.99		[0.98, 1.00]	
Education <sup>b</sup>	0.43***		[0.31, 0.59]	
Romantic relationship <sup>c</sup>	0.79		[0.58, 1.06]	
Predictors for sexual IPV				
Variables	$RR (e^B)$		95% CI	
Gender	1.19		[0.77, 1.87]	
Age	1.02*		[1.00, 1.04]	
Education	0.57*		[0.36, 0.91]	
Romantic relationship	0.27***		[0.17, 0.41]	
Predictors for psychological IPV				
Variables	Zero-inflation part		Counts part	
	$OR (e^B)$	95% CI	$RR (e^B)$	95% CI
Gender	0.86	[0.71, 1.03]	1.15*	[1.03, 1.30]
Age	1.01	[0.10, 1.01]	1.01***	[1.00, 1.01]
Education	0.96	[0.78, 1.19]	0.72***	[0.64, 0.81]
Romantic relationship	0.63***	[0.52, 0.76]	0.59***	[0.53, 0.66]

Note. IPV = intimate partner violence; OR = odds ratios; RR = rate ratios; CI = confidence interval.

<sup>a</sup> Reference category is male; <sup>b</sup> Education level was recoded into education level lower than high school degree (reference category) and a high school degree or above; <sup>c</sup> Reference category is not being in a romantic relationship; <sup>d</sup> Reference category is a heterosexual sexual orientation.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table V

*Summary of Hierarchical Multiple Regression Analysis to predict Mental Health, Sexual Satisfaction, and Satisfaction with Frequency of sex from the Different Types of Intimate Partner Violence*

*(Sample II)*

	Mental Health		Sexual Satisfaction		Satisfaction Frequency sex	
	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$
Step 1	.06		.08		.06	
Gender		-.05		.05*		-.06*
Age		.13***		-.05*		-.04
Educational level		.04*		-.03		-.03
Romantic relationship		.16***		.26***		.21***
Step 2	.04		.01		.02	
Physical IPV		-.03		-.01		.01
Psychological IPV		-.21*		-.11***		-.16***
Sexual IPV		-.17*		.03		.04
Step 3	.01		-		.01	
Gender x Physical IPV		-		-		-
Gender x Psychological IPV		-		-		.02*
Gender x Sexual IPV		.20**		-		-
Total $R^2$	.11***		.09***		.07***	
<i>n</i>	2136		1864		1864	

*Note.* IPV = intimate partner violence.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table VI

*Summary Multinomial Regression Analysis examining the likelihood of Sexual dysfunctions by level of Intimate partner violence (Sample II)*

	B	SE	Wald <sup>a</sup>	Exp(B)
Sexual dysfunction without distress' versus 'no dysfunction' <sup>b</sup>				
Male	.09	.13	.49	1.09
Age	.00	.01	.24	1.01
No degree/ only secondary school degree	.65***	.13	24.19	1.92
Romantic relationship <sup>c</sup>	-.07	.14	.29	.93
Physical IPV	.08	.16	.25	1.08
Psychological IPV	.04**	.02	6.29	1.05
Sexual IPV	-.06	.18	.11	.94
'Sexual dysfunction with distress' versus 'no dysfunction' <sup>b</sup>				
Male	-.36**	.13	7.76	.70
Age	.00	.01	.41	1.00
No degree/ only secondary school degree	.33*	.15	4.99	1.38
Romantic relationship <sup>c</sup>	.59***	.13	19.83	1.81
Physical IPV	.17	.15	1.33	1.19
Psychological IPV	.06***	.02	13.56	1.07
Sexual IPV	.14	.15	.76	1.14

*Note.* IPV = intimate partner violence.

<sup>a</sup>df = 1; <sup>b</sup>Reference category is no dysfunction; <sup>c</sup>Reference category is not being in a romantic relationship.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

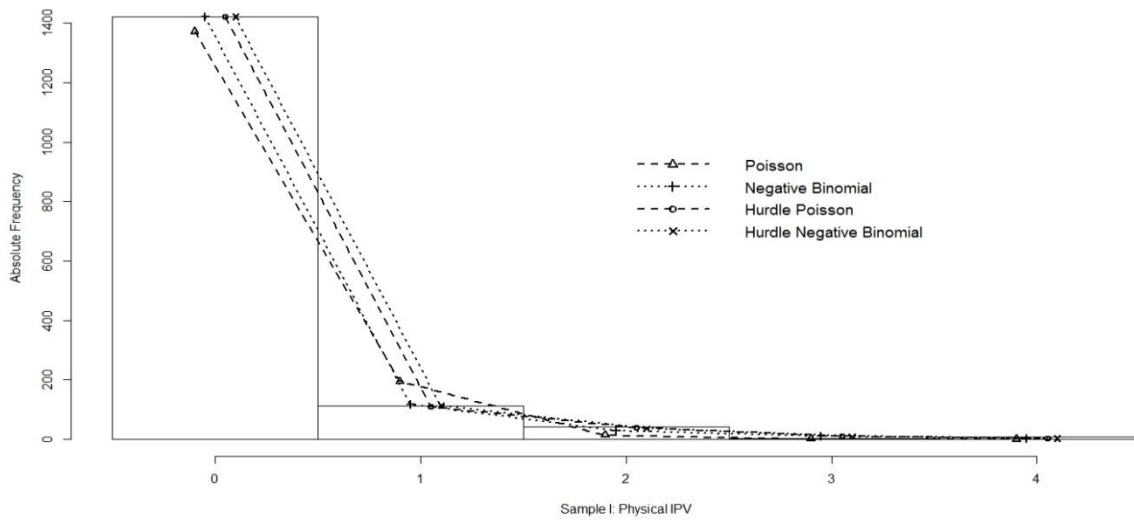


Figure 1A. Histogram of physical IPV experiences with predicted frequencies from different types of count regressions (Sample I).

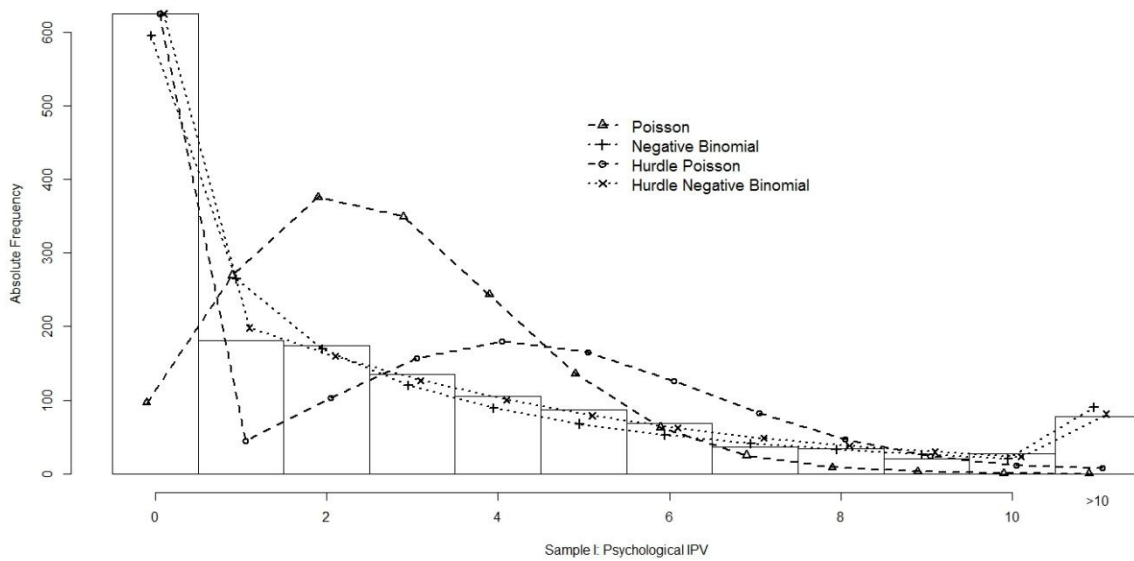


Figure 1B. Histogram of psychological IPV experiences with predicted frequencies from different types of count regressions (Sample I).



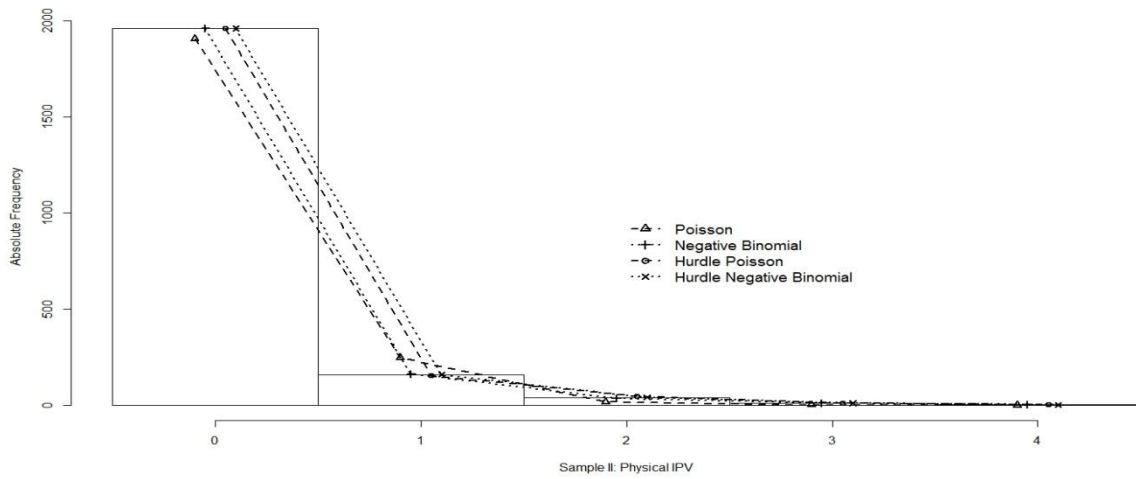


Figure 2A. Histogram of physical IPV experiences with predicted frequencies from different types of count regressions (Sample II).

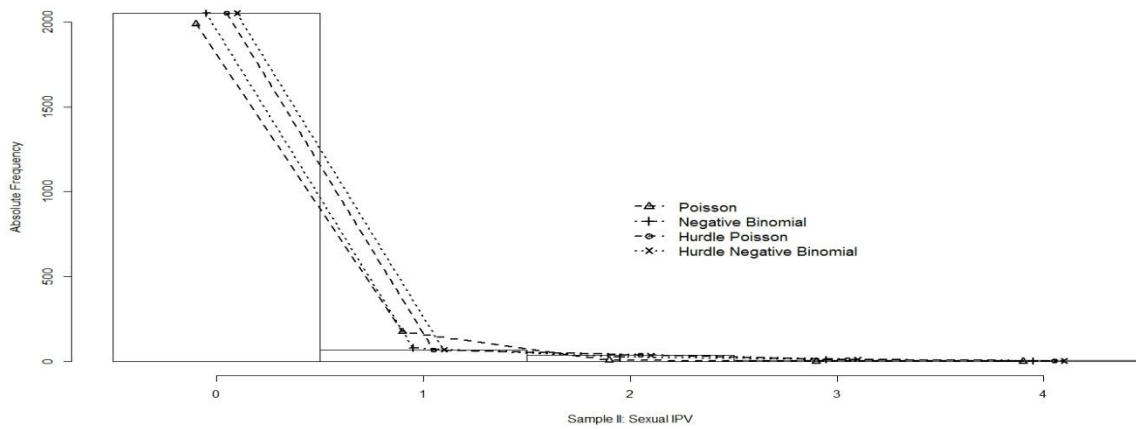


Figure 2B. Histogram of sexual IPV experiences with predicted frequencies from different types of count regressions (Sample II).

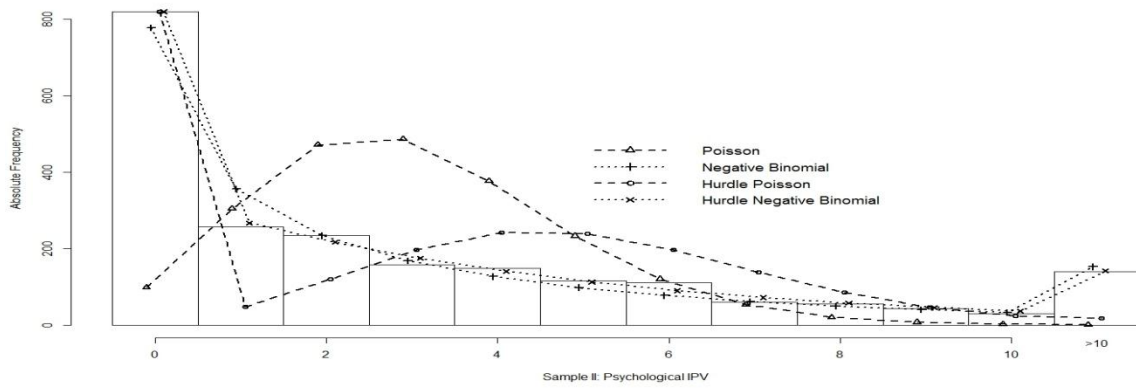


Figure 2C. Histogram of psychological IPV experiences with predicted frequencies from different types of count regressions (Sample II).