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Sociopolitical and cultural correlates of internalised homonegativity in gay and bisexual men: Findings from a global study

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ABSTRACT

Objectives: Based on the premise that internalised homonegativity (IH) is a product of the incorporation of environmental heterosexism, we examined the influence of sociopolitical- and individual influences on IH. **Methods:** Our cross-sectional study consisted of 109,382 gay and bisexual men across 77 countries. **Results:** Variables at the (European) country-level that were associated with higher levels of IH included lack of laws recognising same-sex relationships, perceived- and actual negative gay-related public opinion about homosexuals. Individual-level variables significantly associated with IH were public opinion about homosexuals and exposure to gay-related victimisation/discrimination. **Conclusions:** An improved sociopolitical climate for LGB individuals is needed.

INTRODUCTION

Internalised homonegativity (IH), generally defined as the internalisation of society's homonegative attitudes within a lesbian, gay, or bisexual (LGB) individual (Meyer, 1995), is an important factor relevant to LGB persons' mental health. As specified by Herek (2000), IH is characterised by negative judgments and feelings towards oneself when one recognises one's homosexuality or bisexuality. Such internalised beliefs create a psychological dilemma between romantic interests and negative thoughts about the self, such as self-contempt and shame (Herek, 2007; Malyon, 1981; Meyer and Dean, 1998; Shidlo, 1994; Weinberg, 1973). A recent systematic mapping review reported on 164 studies that examined the association of IH with other variables, of which a third involved mental health aspects. These studies generally suggested that higher levels of IH are related to higher risks of depression, shame, guilt, and low self-esteem (Berg et al., 2016). There is an increasing body of evidence on the link between LGB bias, IH, and poor mental health (e.g. Almeida et al., 2009; Kuyper and Fokkema, 2011; Newcomb and Mustanski,

2010). One of the most coherent and widely used theories to explain the impact of sociopolitical homonegativity, or heterosexism, on LGB people's lives is Meyer's (2003; 2007) minority stress theory. According to this theory, the heightened vulnerability of LGB persons originates from their exposure to environmental stressors that are unique to their sexual minority status.

Researchers and theorists describe homonegative internalisation as a product of the incorporation of sociopolitical and cultural bias. Among others, Russell and Bohan (2006) and Herek (2007) argue that IH is an individual manifestation of cultural heterosexism, i.e. that societal prejudice and discrimination toward homosexuals invoke feelings of self-stigma in LGB individuals. However, the aforementioned mapping review (Berg et al., 2016) found there was a scarcity of consideration of the impact of societal factors upon IH. It called for examinations of the link between exposure to sociopolitical homonegativity and IH in general, and the impact of sociopolitical determinants such as civil rights and equity on IH in specific. Such links were examined in two recent studies. First, Rosser and colleagues (2011) compared eight pro-gay policy cities in the USA with eight anti-gay policy cities. The researchers found that men who have sex with men (MSM, n=1,725) in anti-gay cities experienced less community gay tolerance, which in turn predicted higher IH, compared to MSM in pro-gay cities. Second, the European MSM Internet Study (EMIS, see Weatherburn et al., 2013) examined environmental predictors of IH among 174,209 MSM in 38 European countries (Berg et al., 2013; Ross et al., 2013). The analysis included variables at policy-level, community-level, and individual-level such as perceived exposure to gay-related hostility and violence. The EMIS team found that homonegative variables at all levels, such as an absence of state laws related to same-sex relationships and adoption rights for homosexuals, were related to MSM's higher level of IH. The results of these two studies (Berg et al., 2013; Rosser et al., 2011) support the thesis that

structural and societal stigma towards homosexuals affect the internalisation of that stigma by MSM themselves.

To expand on the literature about environmental predictors of IH, in the present study, we sought to distinguish two different dimensions of sociopolitical heterosexism that may affect IH in LGB persons: manifest- and latent heterosexism in a society. With manifest expressions of heterosexism we refer to actual laws and prohibitions based on sexual orientation as well as individual experiences of hostility and discrimination based on sexual orientation. Such factors are manifest in the sense that they are written down or lived individual experiences of heterosexism. Influences on IH of these manifest expressions were demonstrated in the two studies mentioned above. In addition to manifest experiences, IH may evolve from latent heterosexism in a society, namely the general public's negative attitudes and opinions towards homosexuals. They are latent in the sense that they might be perceived by LGB persons without being directly experienced through manifest gay-related abuse. For example, in their country-level analysis, the EMIS team (Berg et al., 2013) found that populations' greater dislike for homosexuals as neighbours was related to MSM's higher level of IH.

Following the definition of IH, also on an individual level, perceived gay-related public opinion might predict IH. A long tradition of research has investigated if and how people's perception of public opinion influences their own opinions and behaviours (Donsbach et al., 2014). Noelle-Neumann and Petersen (2004) defined public opinion as "a form of broad social consensus to which [...] each individual member of a particular society must adhere" in order not to be at risk of isolating oneself (p. 340). Public opinion exerts its power in many areas, and with respect to sexual minorities, the impact of perceived public opinion was recently investigated by Fox and Warber (2015). They showed that LGB individuals orient their behaviour on Facebook (posting, liking) in accordance with their perception of their Facebook friends' gay-related

opinion. Among a heterosexual circle of friends, the tendency to like or post LGB positive issues was much less likely. Furthermore, LGB individuals with higher self-confidence tended to unfriend people with opposite opinions from their own and thus also created congruence between their own behaviour and public opinion. While the effect of perceived public opinion on situational opinions and behaviours is well documented, its effect on IH has not been researched.

In this study, we aimed to examine the influence of both manifest and latent sociopolitical factors on IH in a global sample of gay and bisexual men, uniquely for European countries and non-European countries. As such, the analysis would, firstly, test the robustness of the EMIS results (Berg et al. 2013) while incorporating wider sociopolitical contexts, and secondly, expand on the empirical literature about environmental determinants of IH by including the concepts of public opinion and perceived public opinion. We examined whether perception of public opinion added further explanation to IH. In accordance with our aim, and similar to the EMIS analyses, we assessed both sociopolitical-level (H1) and individual-level (H2) influences on IH. Based on the premise that IH evolves both from manifest- and latent homonegativity, and empirical findings (Berg et al., 2013; Ross et al., 2013; Rosser et al., 2011), our analysis was guided by four hypotheses:

H1a: Levels of IH are higher in countries with limited civil rights equity.

H1b: Levels of IH are higher in countries with actual- and perceived unfavourable societal attitudes toward homosexual people.

H2a: Levels of IH are higher when MSM are exposed to gay-related hostility and gay-related discrimination.

H2b: Levels of IH are higher when MSM perceive that their social climate is less gay-friendly.

METHODS

The research is based on the Gay Happiness Monitor survey (Lemke et al., 2015). The overarching aim of this anonymous multilingual Internet-based survey was to investigate gay and bisexual men's perceptions of gay-related public opinion, their individual experiences with anti-gay statements and behaviours and how these social environmental stressors affected them. All procedures fully complied with American Psychological Association ethical standards as well as with German research guidelines.

Recruitment

We recruited participants through the dating site PlanetRomeo®, which is one of the world's largest male gay dating sites with 1.8 million members in 192 countries. Its major distribution is in Europe and Asia. PlanetRomeo® invited all members of their community to take part in an online survey: They placed a 22-day promotion box on the first member page and announced the study through newsletters. They sent two newsletters to all members (excluding escort profiles) in December 2014, and a third newsletter to all members from countries with less than 500 survey respondents by February 2015. Men volunteered by clicking on the study link provided, which took them to a landing page. Upon selecting one of 25 available languages, the study website described the research in the chosen language. Consent was implied by the men selecting to continue to the survey questions. The survey was available from December 2014 to February 2015. The location of the server was in Germany and the survey software allowed survey completion on both computer and smartphone. The survey had to be completed in one sitting and the participants received no recompense. We collected no data that could be used to identify computers (and hence participants), e.g. IP addresses, browser cookies. While this ensured respondents full privacy, we were unable to protect against multiple responses from the

same person. However, because there was no incentive associated with participation and we removed seemingly inauthentic responses (described below), massive bias due to multiple responses is highly unlikely. Further details regarding the methods are available elsewhere (Lemke et al., 2015).

Measures

Internalised homonegativity

To assess homonegative internalisation, the dependent variable, we used a modified version of the Internalised Homonegativity Scale developed by Ross and Rosser (1996) and recently revised (Smolenski et al., 2010). Participants were asked "How do you feel about your sexual orientation" and answered each of several statements on a 7-point Likert scale from 'Does not apply to me' to 'Applies to me'. Respondents skipping any one item were coded as missing cases. There were six items: Even if I could change my sexual orientation, I wouldn't; I feel comfortable about being seen in public with an obviously gay person; I feel comfortable about being homo-/bisexual; I feel comfortable discussing my homo-/bisexuality; I would prefer to be solely or more heterosexual; I am not worried about anyone finding out that I am gay/bisexual. Like Ross and Rosser (1996), we coded the items such that a higher score represented greater IH (score range= 0-6). Cronbach alpha for the total sample was .789.

Civil rights equity

The sociopolitical-level variables included the same variables used in the EMIS analysis: The Global Gender Gap Index, that reports one value per country, was used (higher score represents greater equity for citizens; see Table 2 for source). In addition, the existence or absence of six possible gay rights laws was checked for each country (six legislative protections

of LGB status, or legal discrimination, as operationalised by the list of LGB rights by country: http://en.wikipedia.org/wiki/LGBT_rights_by_country_or_territory). These sociopolitical-level variables are also described in Berg et al. (2013). The wikipedia list of gay rights laws is a condensed version of several global reports by the organisation ILGA. We checked the correctness of the list relative to the ILGA reports using a sample of countries, finding that it was accurate. The laws under investigation were: legality of same-sex sexual activity, recognition of same-sex unions, recognition of same-sex marriage, adoption by same-sex couples, permission for LGBT to serve in the military, and existence of anti-discrimination laws concerning sexual orientation. We list all laws and their existence in all countries in Table 2. All six laws were coded dichotomous with ‘no’ and ‘partly’ coded as 0 and ‘yes’ coded as 1. The status for a few gay rights laws in a few countries was unclear due to no- or contradictory sources or not applicable because no army exists in that respective country (‘serve openly in the military’ was unclear for eight countries; ‘possible to adopt’ and ‘legal framework’ were unclear in one country; see Table 2). To avoid missing cases in the regression analysis we substituted missing cases with the mean over the entire variable. All variables measuring civil rights equity (the Global Gender Gap Index and the six laws) were used as separate variables in the analyses.

Actual and perceived gay-related public opinion / social climate

To assess the sociopolitical-level variables in regard to public opinion about LGB people, we used two representative population polls about homosexuality. For European countries, we used a variable from the 2008 European Values Study (EVS, <http://www.europeanvaluesstudy.eu>). It provided the proportion of respondents in each country agreeing that homosexuality cannot be justified. A higher score indicates greater hostility toward homosexual people. The variable was included and described in EMIS (Berg et al., 2013). For

non-European countries, we used a variable from the spring 2013 39-Nations survey conducted by the PEW research centre, the Public Opinion Poll survey (PEW). It provided the proportion of respondents in each country agreeing that homosexuality is morally unacceptable, whereby a higher score again indicates greater hostility toward homosexual people (see Table 2 for exact wordings and source). The PEW-data is not available for all countries in the world, but has a global perspective.

Perceived gay-related public opinion (PGP) was measured using a modified version of the perception of local stigma scale by Herek and Glunt (1995). As discussed by Goffman (1963), the theory of stigma closely relates to the theory of public opinion. The Herek and Glunt (1995) scale measures gay and bisexual men's extent of perceptions of homosexual stigma in their local area. We modified the original scale by using "around me" (instead of the original "Sacramento area") in the wording of each original item and by adding two items (see below). Participants were asked "How do you assess the people in your area?" and answered several statements related to people's perspective on gay/bisexual men on a 7-point Likert scale from 'Strongly disagree' to 'Strongly agree'. Respondents skipping any one item were coded as missing cases. There were six items: Most people around me believe that a gay/bisexual man is just as trustworthy as the average heterosexual citizen; Most people around me will hire a gay/bisexual man if he is qualified for the job; Most people around me would treat a gay/bisexual man just as they would treat anyone else; Most people around me would willingly accept a gay/bisexual man as a close friend; Most men around me would willingly share a changing cubicle and shower (e.g. in a public swimming pool or gym); Most men around me would willingly play in a sports team with a gay/bisexual man. The last two items were added by us to complement the scale with an additional subtle dimension of heterosexism. We coded the items such that a higher PGP-index

score represented a perceived gay-friendlier atmosphere (score range= 0-6). Cronbach alpha for the total sample was .789.

Exposure to gay-related victimisation and discrimination

We assessed exposure to gay-related victimisation and violence with the question "Have you ever experienced victimisation due to your sexual orientation?" The respondents could answer with regard to verbal insults and physical assaults on a three-point scale with 'never' (0), 'longer than one year ago' (1), and 'during the last year' (2). Because both verbal and physical assault reflect gay-related victimisation (and could be expected to be correlated) we created one variable, where 0 was coded as no exposure to verbal insults or physical assaults, 1 was exposure to one or the other type of victimisation, and 2 as exposure to both. Similarly, we used one question to assess exposure to gay-related discrimination: "Have you ever experienced or assumed that your sexual orientation have been the reason for any of the following kinds of discrimination within your family, at work, education or healthcare?" with 13 possible options describing discrimination (e.g. banned from home, losing or not getting a job, see Lemke et al., 2015) that were answered yes/no, where 0 was coded as no exposure to gay-related discrimination (score range= 0-13).

Analysis

Data cleaning involved removing ineligible respondents, i.e. respondent who did not meet the criteria for inclusion in the study, abandoned the survey before reaching the final page, and/or provided seemingly inauthentic responses. To this end, we assessed whether the respondent provided inconsistent data and completed the survey in less than 300 seconds. From 165,257 who started the survey, we removed 49,705 respondents (for further details see Lemke et al., 2015).

For the present analysis, we followed the procedure suggested by the EMIS team by including in our analyses only countries with at least 100 respondents with a valid IH score. Similarly, given our focus on IH, we also restricted the analyses to respondents who self-identified as gay or bisexual. This left an analytic sample of 109,382 participants (Table 1) across 77 countries (Table 2).

We performed univariable analyses with simple linear regression to examine the relationship between each independent variable and IH. We assessed correlation and collinearity by the tolerance level, planning to exclude any independent variables that had a tolerance level of $<.01$, which is the standard cutoff (Brace et al., 2006). Next, we tested the theoretically assumed relationship between the sociopolitical environment and IH through separate multiple regression models (testing H1a and H1b). In each case, we included all variables that were statistically significant in the univariable analyses and exhibited statistically acceptable tolerance levels. In accordance with our aim, we performed one country-level analysis for the European countries and a separate one for non-European countries (denoted as ‘Global’ because they include 38 countries across Africa, Asia, Australia, North America, and South America). In these analyses, the same policy variables were included in step one, while the PGP-index score was included in step two in addition to either the EVS-score or the PEW-score, depending on region. We used a step-wise approach because we aimed to test separate layers of influence (manifest and latent).

Lastly, we performed individual-level simultaneous regression analyses, one for all gay and bisexual men across the European countries, and one for participants in the non-European countries. In the individual-level analyses we controlled for age, because it has been found to be strongly associated with IH (see e.g. Ross et al., 2013). Similar to the country-level analysis, in step two we added the variable perceived gay-related public opinion.

The dependent variable in all regression models was formed by the score on the IH scale. For the country-level analysis, we used the country mean score of both the PGP-index and the IH scale. For the individual-level analysis, we used the individual score of the PGP-index and the individual's value on the IH scale. We used SPSS 22.0 statistical software to perform analyses and set a 5% two-tailed significance level for all tests.

RESULTS

Most survey participants (75%) completed the survey after having received the invitation newsletter, while 25% responded to the promo box. Slightly more than half of the participants (52.7%) used the German- or the English language versions of the survey. The average survey completion time was 13 minutes – this was auto-captured by the survey software.

Demographic characteristics for the sample are shown in Table 1. There were 3.2 times more participants who resided in Europe (n= 83,874) than in a non-European country (n= 25,508). The average age for this global sample of 109,382 gay and bisexual men was 37.07 (SD= 12.50). Across the sample, 82.5% described themselves as gay or homosexual. Fewer men in Europe than outside of Europe described themselves as bisexual (14.1% vs 28.9%). Men in the sample were predominantly single (58.0%) while about a third were in a steady relationship with a man (33.9%). The sample was well-educated with about half (55.8%) stating they were university graduates. A majority of men (52.1%) lived in cities with less than 500,000 inhabitants. Further details regarding the response rate, survey language selection, and the sample are available elsewhere (Lemke et al., 2015).

Table 2 shows that there were 77 countries, including 39 European countries (the same countries as included in EMIS, plus Montenegro), for which we could calculate a country mean of IH. The mean varied from a low of <1.4 in the four Nordic countries Denmark, Sweden,

Norway and Iceland, to a high of >3.0 in Saudi Arabia, Algeria, Ivory Coast, Egypt, India, Bosnia & Herzegovina, and Cameroon. The countries with the greatest hostility toward LGB people (>90% of the population believes homosexuality is morally unacceptable / disagrees homosexuality can be justified) were Egypt, Turkey, Indonesia, and Ukraine, while the countries with the least hostility toward LGB individuals (<10%) were Spain, Germany, and Iceland. We found that twelve countries had adopted all six legal protections of LGB status, of which Canada, New Zealand, and South Africa were the only non-European countries.

Results of country-level analyses

Because some countries were missing a public opinion score about homosexuality (we could neither locate an EVS-score nor a PEW-score), 38 countries were included in the European model and 20 countries in the Global model (Table 3). In univariable analyses, all variables were significant (in the expected direction) predictors of IH ($p < .002$) and had acceptable tolerance level (>0.8). Thus, the multiple regression models included nine predictors.

With respect to the European country-level analysis, a significant model emerged ($F_{8, 29} = 75.372, p < .001$). The results of the analysis largely supported our hypotheses (H1a and H1b) and we note that adding public opinion in step two increased explained variance (adjusted R^2), such that the final model accounted for 94% explained variance. In the final model, four predictors remained significantly associated with IH in the context of other sociopolitical variables. These were the presence of laws recognising same-sex relationships ($\beta = -.202$), same-sex marriage ($\beta = .203$), perceived gay-related public opinion ($\beta = -.451$) and actual public opinion about homosexuals ($\beta = .358$).

With respect to the Global country-level analysis, a significant model emerged ($F_{9, 10} = 9.410, p < .01$). The final model accounted for 80% (adjusted R^2) explained variance. As in the

European country-level analysis, explained variance increased when we included the two public opinion variables. However, there were no variables that were statistically significant in both the first and the second step of the multivariate analysis ($p > .05$).

Results of individual-level analyses

Among the 109,382 participants, the IH score ranged from 0 to 6, with a mean of 2.052 (SD= 1.55). In univariable analyses, all four predictor variables were significantly associated with IH ($p < .002$) and had acceptable tolerance level (> 0.15). Thus, the multiple regression model included four predictors. In the analysis with men residing in Europe, the final model was significant ($F_{3, 83428} = 4128.10$, $p < .001$) and accounted for 16.5% (adjusted R^2) explained variance, which was an increase from step one. All four variables (including age) were statistically associated with IH in the final model that included the influence of public opinion. These were exposure to gay-related victimisation ($\beta = -.097$), exposure to gay-related discrimination ($\beta = .023$), as well as perceived gay-related public opinion ($\beta = -.393$). These results partially supported our hypotheses (H2a and H2b).

The results for participants residing outside of Europe were similar as for men residing in Europe, again partially supporting our hypotheses. The final model was significant ($F_{3, 25328} = 998.64$, $p < .001$). It accounted for 13.6% (adjusted R^2) explained variance, which was an increase from step one. In the final model, all four predictors (including age) remained significantly associated with IH. The variables were exposure to gay-related verbal victimisation ($\beta = -.087$), exposure to gay-related discrimination ($\beta = .042$), and perceived gay-related public opinion ($\beta = -.311$).

DISCUSSION

At a time when the legal protections of LGB persons has been proceeding apace in many industrial nations (as seen in Table 2, most notably, in northern- and western Europe, North America, and in Argentina, Australia, Brazil, Colombia, New Zealand, and South Africa), the efforts of legislators and other political officials in other countries to prohibit legal recognition of LGB persons demand attention. In many countries, especially in the regions of Africa, Middle East and South East Asia, homonegativity is condoned, by policies that criminalise LGB individuals or neglect their basic human rights. Thirteen of our 77 included countries prohibit same-sex sexual activity between consenting adults, 23 have no anti-discrimination laws concerning sexual orientation, and a full 40 countries do not recognise same-sex unions. It is evident that especially in low- and middle-income countries, gay and bisexual men often lack legal protection against hate crimes and other forms of gay-related discrimination and bias.

In this study, we assessed both sociopolitical- and individual influences on IH, based on the premise that IH is a product of the incorporation of environmental heterosexism. Regarding the sociopolitical influences, we hypothesised that levels of IH are higher in countries with limited civil rights equity and unfavourable societal attitudes toward LGB people. Our results generally supported our hypotheses as well as the results from EMIS (Berg et al., 2013). For European countries, we found that levels of IH were higher among men residing in European countries without legal provisions for same-sex relationship. This finding repeats the EMIS findings, and similar to those results (Berg et al., 2013), state law related to same-sex relationships was one of the factors most strongly associated with IH. The strongest association was between IH and the perception of public opinion about LGB people. IH was significantly higher in countries where a high proportion of the population are hostile toward LGB people, as well as countries where gay and bisexual men perceive that the population has a negative opinion

about LGB people. Thus, in European countries, both manifest- and latent homonegativity were strongly and significantly related to greater levels of IH among the respondents. The results confirm the results of previous studies (Rosser et al., 2011), including the EMIS study (Berg et al., 2013), by demonstrating that less community gay tolerance predicts higher levels of IH among gay and bisexual men. Also prospective research from countries such as the U.S. has found that there is a link between living in states that have bans on same-sex marriage and the prevalence of psychiatric morbidity among LGB populations (Hatzenbuehler et al., 2010). The display of gay-related bias through populations' dislike of LGB people is not only a continuation of homonegativity in legislation, but may represent one of the most important environmental factors that affects gay and bisexual men's levels of self-stigma.

We found, however, that in the presence of other sociopolitical-level variables, in European countries, the result with respect to laws about same-sex marriage was in the opposite direction of what we expected. This result is perplexing, since in the univariate analysis, the relationship was in the expected direction, i.e. levels of IH were higher among men residing in European countries without a same-sex marriage law. It is possible that this result is influenced by low variability for this factor, and the fact that some countries recently changed their respective law.

The present study expands the knowledge gained by the earlier EMIS study by including a large non-European sample of gay and bisexual men. For countries outside of Europe, while all predictors were associated with IH in the expected direction in the univariate analyses, none of the variables were significantly associated with IH in the final model. It is important to point out that no evidence of an association is not evidence of no association. In fact, our model had a good fit, showing that the final model accounted for 80% explained variance and some of the associations were strong.

Nonetheless, that none of the variables were significantly associated with IH might be due to three reasons. First, almost a third of men in countries outside of Europe described themselves as bisexual. Bisexually-identified men might be less reactive to issues concerning homosexuality, relative to gay-identified men. Second, the countries examined in this analysis might be too culturally different for a joint analysis so that actual laws and public opinion alone cannot explain differences in country average values of IH. Third, the model might suffer from sampling issues: In the country-level analysis, each country contributes the same amount to the regression estimation – regardless of the number of participants per country. Some of the non-European countries, however, are represented by only a small number of participants relative to the actual number of inhabitants of the country, and, given PlanetRomeo®’s market composition, it is possible that a many study participants of these countries are expats from one of the main market regions.

Concerning the individual-level analyses, our multivariate regression results demonstrated that gay and bisexual men who perceive that people in their community have a negative opinion about LGB people have higher levels of IH. As in the country-level analysis, the strongest relationship was between IH and the perceived public’s opinion about LGB people. The analysis also showed that respondents who experience or assume that their sexual orientation has been the reason for discrimination – in their family, work, education or healthcare setting – have higher levels of IH. These results again substantiate that one’s health is responsive to one’s social position and treatment in society, as has been firmly established by researchers such as Wilkinson (1997). Specific for LGB populations, our results strengthen Meyer’s (2003; 2007) theory of minority stress, by finding that gay and bisexual men’s feelings of self-stigma partially originates from expectations of rejection and experiencing prejudicial events related to their sexual minority status. The results also support other empirical examinations of a link between LGB bias and

poor mental health (e.g. Almeida et al., 2009; Kuyper and Fokkema, 2011). vanden Berghe and colleagues (2010) found that IH had a direct negative effect on mental well-being among Belgian LGB youth. It bears mention, however, that contrary to our hypothesis, greater experiences with gay-related victimisation was negatively associated with IH. This was a finding also in the EMIS study (Berg et al., 2013). As suggested by others (Berg et al., 2013; Ross, 1985), this paradoxical relationship can be because gay and bisexual men who have higher levels of self-stigma also are less 'out', or more closeted, about being gay (Chow and Cheng, 2010; Rostosky and Riggle, 2002; Smolenski et al., 2010), and therefore mostly avoid gay-related victimisation.

Our global study is among the first to produce empirical evidence showing that well-being among gay and bisexual men is shaped both by manifest sociopolitical stigma towards gays and also latent heterosexism in a society. We found an association between IH and perceived gay-related public opinion. Not only did all our models' explanatory power increase with this variable; perceived gay-related public opinion had by far the highest statistical influence on IH in both the country- and individual-level analyses. With this result, our study extends the knowledge about the power of public opinion. Research has shown that public opinion influences judgment and beliefs related to others (Stangor et al., 2001) as well as behaviours of disclosure or support (Fow and Warber, 2013). Our results indicate that public opinion also influences basic characteristics like a person's self-concept, as here represented by IH. Future research should combine surveys like the present one with content analyses of LGB media representations. If it is found, as suggested in our study, that the perception of gay-related public opinion influences IH, non-discriminatory guidelines for dealing with LGB issues in the media should be considered.

With respect to implications, examination of the range of gay-related bias faced by LGB persons, which can vary from high-level structural factors that prohibit same-sex romantic and sexual behaviours to personal victimisation, is important because inequity for LGB populations is

injustice in and of itself (Berg et al., 2013), and thus demands attention. However, from a public health perspective, the fact that denial of equal rights for LGB populations has detrimental health effects, adds to the argument for an improved sociopolitical climate for LGB persons. The lack of legal protection against hate crimes and other forms of discrimination and bias create an environment where provision of preventive and clinical health services is more difficult, resulting in lesser availability of services as well as access and uptake of health information and services. In fact, UNAIDS (2008) acknowledges that to stem the spread of HIV among gay and other MSM, it will be necessary to address the societal causes of HIV risk and vulnerability. Sociopolitical and cultural homonegativity impede an effective response to the HIV epidemic among gay and bisexual men. As one example, EMIS (Berg et al., 2013) highlighted the downstream effects of stigma by finding that IH was associated with low confidence in being able to get an HIV test and actually testing for HIV. Similarly, other studies show that IH negatively affects gay and bisexual men's likelihood of healthcare resource awareness (Huebner et al., 2002), HIV testing (Knox et al., 2011), and adherence to antiretroviral therapies (Johnson et al., 2008). Overall, given our examination of current policies and societal attitudes shows impact on gay and bisexual men's health, our results can be used as a tool for policy makers and advocates to consider national policies that create more equitable and supportive environments for LGB communities. Our findings indicate it may be particularly important to extend legal provisions for same-sex relationships. We believe that at the structural level, legal measures play an important role in cementing or reshaping existing policies and the public's attitudes regarding LGB persons.

The links between sociopolitical bias and stigma internalisations have yet to be comprehensively explored within empirical research. There is a need to develop a greater evidence base on the predictors of self-stigma, not just for gay and bisexual men but also for

lesbian and bisexual women and transgender individuals. The explanation of why some individuals internalise a homonegative climate more than others (e.g. according to sexual identity) will be an important addition to understanding how homonegative milieus lead to IH. Similarly, there is limited evidence about the structural, social, and community interventions that might reduce the impact of stigma and its consequences on LGB and transgender populations.

Strengths and limitations

Our research into the link between environmental bias toward LGB and stigma internalisations is preliminary and warrant further study. Given the cross-sectional nature of this study, direction of causality cannot be established. This is especially true for the connection between IH and perceived gay-related public opinion, because those with high IH may be more sensitive to their environment and may wrongly attribute other people's statements to homonegativity. On the other hand, a causal influence of environment and public opinion on IH is theoretically plausible and analytically rational.

It is possible that the respondents are not representative of gay and bisexual men in the areas where they resided. The study sample was a convenience sample recruited through one website, which limits the generalisability of the results to the wider population of gay and bisexual men. Because of the large sample size, however, the range of gay and bisexual milieus is likely good, although we recognize this is not a monolithic group and it was recruited through the Internet. Compared to population-based surveys among gay and bisexual men, Internet sexuality surveys tend to recruit men who are more urban, single, younger, and have higher education (Ross et al., 2005). Similarly, it must be acknowledged that we limited the study to gay and bisexual men because of the objective of the study (and lack of transgender respondents), but we

highlight that sociopolitical challenges faced by gender diverse individuals are unique, and unique investigations relative to IH for other sexual minorities are likely warranted.

Individual responses are self-reported and we cannot rule out response bias. As has been suspected in similar studies (Huebner et al., 2002), it is likely that IH is under-reported, because men who have feelings of self-stigma are less likely to visit gay websites, volunteer for research about sexuality and stigma, and the construct is affected by social desirability (Shidlo, 1994). This may also have lowered our potential to find associations. While valid scales were used, data quality may be an issue. For all data not collected by us, we used the most recent dataset available, but some of these data (e.g. EVS) were not perfectly matched to our data collection point. Lastly, we must be cautious to avoid simplistic generalisations about our two regions as homogeneous entities. The choice was largely a pragmatic and statistical one, as we aimed to test the robustness of the EMIS results for Europe while giving regions a deserved role in our research question.

Despite the mentioned limitations, the study draws strength from the fact that it was able quickly to recruit a global sample of about 115,500 gay and bisexual men. Moreover, this study is one of the first, and certainly the most geographically diverse, to test sociopolitical influences on homonegative internalisation in gay and bisexual men. It assessed, and reinforced, the conclusions of the first international study on the association between socio-political influences on IH (EMIS). Although primarily conducted through one dating site with mainly gay identified men, we used several sources of data to examine the effects of sociopolitical influences on gay and bisexual men's IH, and we anticipate that the findings have relevance on a broader scale.

Conclusion

Our results from this global study show that sociopolitical and cultural homonegativity differs in its manifestation and intensity between and within regions. Importantly, our results clearly indicate that IH is socially based and that the display of gay-related bias through populations' dislike of LGB people may represent one of the most important environmental factors that affects gay and bisexual men's levels of self-stigma. Not only manifest sociopolitical stigma, actual discriminatory events but also expectations of rejection independently contribute to high levels of IH among gay and bisexual men, particularly within the European region. These results thus offer support for previous research conducted in Europe while expanding our understanding of the environmental factors associated with IH.

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Table 1: Study participant characteristics, by region (Europe n=83,874; Global n=25,508) and total (n=109,382)

| | Europe n (%) | Global n (%) | All/total n (%) |
|----------------------------------|------------------|------------------|--------------------|
| Median age (mean [SD]) | 37 (38.1 [12,4]) | 30 (33.7 [12.4]) | 35.0 (37.1 [12.5]) |
| Sexual orientation | | | |
| Gay or homosexual | 72049 (85.9) | 18145 (71.1) | 90194 (82.5) |
| Bisexual | 11825 (14.1) | 7363 (28.9) | 19188 (17.5) |
| Relationship status | | | |
| Single | 47505 (56.8) | 15859 (62.4) | 63364 (58.1) |
| Steady relationship with man | 30024 (35.9) | 6940 (27.3) | 36964 (33.9) |
| Steady relationship with woman | 3633 (4.3) | 1478 (5.8) | 5111 (4.7) |
| Other relationship | 2558 (3.0) | 1157 (4.8) | 3715 (3.3) |
| Size of place of residence | | | |
| ≥1 mill inhabitants | 23541 (28.1) | 12349 (48.5) | 35890 (32.9) |
| ≥500,000 inhabitants | 11867 (14.2) | 4511 (17.7) | 16378 (15.0) |
| 100,000-499,999 inhabitants | 17370 (20.7) | 4976 (19.5) | 22346 (20.4) |
| 10,000-99,999 inhabitants | 17718 (21.2) | 2672 (10.6) | 20390 (18.7) |
| ≤10,000 inhabitants | 13267 (15.8) | 953 (3.7) | 14220 (13.0) |
| Education | | | |
| University graduate | 41233 (49.4) | 19573 (77.2) | 60806 (55.8) |
| Completed secondary (higher) edu | 28567 (34.2) | 5262 (20.8) | 33829 (31.1) |
| Completed primary (basic) edu | 13228 (15.8) | 413 (1.6) | 13641 (12.5) |
| No formal edu | 543 (0.6) | 105 (0.4) | 648 (0.6) |

SD=Standard deviation, mill=million, edu=education

Table 2: Descriptive data for each country included in the analysis (n=77)

| Country | n | IH score ¹ | PGP ¹ | GGGI ² | PEW % ³ | EVS % ⁴ | Laws / civil rights for gays ⁵ | | | | | |
|--------------------|-------|-----------------------|------------------|-------------------|--------------------|--------------------|---|-----------------------|-------------------|-------------------|------------------------|-----------------------------|
| | | | | | | | same-sex sexual activity | same-sex relationship | same-sex marriage | same-sex adoption | openly gay in military | anti-gay discrimination law |
| <i>Europe</i> | | | | | | | | | | | | |
| Austria | 2447 | 1.658 | 5.087 | 7.266 | | 36 | Yes | Yes | No | Yes | Yes | Yes |
| Belarus | 113 | 2.846 | 3.164 | 7.300 | | 76 | Yes | No | No | No | Partly | No |
| Belgium | 2700 | 1.799 | 5.232 | 7.809 | | 28 | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosnia-Herzegovina | 405 | 3.066 | 2.695 | | | 89 | Yes | No | No | No | No | Partly |
| Bulgaria | 659 | 2.635 | 3.853 | 7.444 | | 73 | Yes | No | No | No | Yes | Yes |
| Croatia | 540 | 2.431 | 3.588 | 7.075 | | 78 | Yes | Yes | No | Partly | Yes | Yes |
| Cyprus | 338 | 2.667 | 3.495 | 6.741 | | 82 | Yes | No | No | No | No | Yes |
| Czech Republic | 533 | 1.855 | 5.232 | 6.737 | 14 | 48 | Yes | Yes | No | No | Yes | Yes |
| Denmark | 459 | 1.274 | 5.937 | 8.025 | | 18 | Yes | Yes | Yes | Yes | Yes | Yes |
| Estonia | 280 | 2.201 | 4.327 | 7.017 | | 78 | Yes | Yes | No | Partly | Yes | Yes |
| Finland | 653 | 1.402 | 5.501 | 8.453 | | 29 | Yes | Yes | No | Yes | Yes | Yes |
| France | 6890 | 2.011 | 5.100 | 7.588 | 14 | 30 | Yes | Yes | Yes | Yes | Yes | Yes |
| Germany | 28579 | 1.511 | 5.226 | 7.780 | 8 | 34 | Yes | Yes | No | Partly | Yes | Yes |
| Greece | 2766 | 2.507 | 3.714 | 6.784 | 45 | 59 | Yes | No | No | No | Yes | Yes |
| Hungary | 2077 | 2.074 | 3.875 | 6.759 | | 66 | Yes | Yes | No | No | Yes | Yes |
| Iceland | 118 | 1.390 | 6.275 | 8.594 | | 9 | Yes | Yes | Yes | Yes | NA | Yes |

| Country | n | IH score ¹ | PGP ¹ | GGGI ² | PEW % ³ | EVS % ⁴ | Laws / civil rights for gays ⁵ | | | | | |
|-------------|------|-----------------------|------------------|-------------------|--------------------|--------------------|---|-----------------------|-------------------|-------------------|------------------------|-----------------------------|
| | | | | | | | same-sex sexual activity | same-sex relationship | same-sex marriage | same-sex adoption | openly gay in military | anti-gay discrimination law |
| Ireland | 404 | 1.695 | 5.208 | 7.850 | | 40 | Yes | Yes | No ⁶ | No ⁶ | Yes | Yes |
| Italy | 9656 | 2.408 | 4.188 | 6.973 | 19 | 59 | Yes | No | No | No | Yes | Partly |
| Latvia | 279 | 2.761 | 3.464 | 7.691 | | 79 | Yes | No | No | No | Yes | Partly |
| Lithuania | 234 | 2.577 | 3.539 | 7.208 | | 88 | Yes | No | No | No | No | Yes |
| Luxembourg | 278 | 1.660 | 5.463 | 7.333 | | 27 | Yes | Yes | No ⁶ | No ⁶ | Yes | Yes |
| Macedonia | 235 | 2.828 | 3.179 | 6.943 | | 84 | Yes | Yes | Yes | No | Yes | No |
| Malta | 195 | 1.882 | 4.942 | 6.707 | | 57 | Yes | Yes | Partly | Yes | Yes | Yes |
| Montenegro | 116 | 2.794 | 2.864 | 6.934 | | 90 | Yes | No | No | No | Yes | Yes |
| Netherlands | 2966 | 1.494 | 5.459 | 7.730 | | 15 | Yes | Yes | Yes | Yes | Yes | Yes |
| Norway | 505 | 1.301 | 5.998 | 8.374 | | 20 | Yes | Yes | Yes | Yes | Yes | Yes |
| Poland | 1956 | 2.421 | 4.247 | 7.051 | 44 | 75 | Yes | No | No | No | Yes | Partly |
| Portugal | 500 | 2.210 | 4.861 | 7.243 | | 59 | Yes | Yes | Yes | No | Yes | Yes |
| Romania | 2383 | 2.832 | 3.245 | 6.936 | | 84 | Yes | No | No | No | Yes | Yes |
| Russia | 1276 | 2.634 | 2.949 | 6.927 | 72 | 82 | Yes | No | No | No | Yes | No |
| Slovakia | 390 | 2.204 | 4.143 | 6.806 | | 47 | Yes | No | No | No | Yes | Yes |
| Slovenia | 381 | 2.252 | 4.372 | 7.443 | | 60 | Yes | Yes | Yes | Yes | Yes | Yes |
| Serbia | 1681 | 2.618 | 3.082 | 7.086 | | 88 | Yes | No | No | No | Yes | Yes |
| Spain | 3653 | 1.727 | 5.549 | 7.325 | 6 | 29 | Yes | Yes | Yes | Yes | Yes | Yes |

| Country | n | IH score ¹ | PGP ¹ | GGGI ² | PEW % ³ | EVS % ⁴ | Laws / civil rights for gays ⁵ | | | | | |
|--|------|-----------------------|------------------|-------------------|--------------------|--------------------|---|-----------------------|-------------------|-------------------|------------------------|-----------------------------|
| | | | | | | | same-sex sexual activity | same-sex relationship | same-sex marriage | same-sex adoption | openly gay in military | anti-gay discrimination law |
| Sweden | 609 | 1.297 | 5.779 | 8.165 | | 18 | Yes | Yes | Yes | Yes | Yes | Yes |
| Switzerland | 3079 | 1.608 | 5.378 | 7.798 | | 27 | Yes | Yes | No | No | Yes | Partly |
| Turkey | 1698 | 2.806 | 3.281 | | 78 | 97 | Yes | No | No | No | No | No |
| Ukraine | 354 | 2.593 | 3.047 | 7.056 | | 91 | Yes | No | No | No | Partly | No |
| United Kingdom | 1487 | 1.558 | 5.204 | 7.383 | 17 | 37 | Yes | Yes | Partly | Yes | Yes | Yes |
| <i>Global (countries outside of Europe)</i> | | | | | | | | | | | | |
| <i>Middle East & Central Asia</i> | | | | | | | | | | | | |
| Israel | 334 | 1.552 | 5.608 | 7.005 | 43 | | Yes | Yes | Partly | Yes | Yes | Partly |
| Japan | 187 | 2.280 | 4.194 | 6.584 | 31 | | Yes | Partly | No | No | Yes | Partly |
| Lebanon | 127 | 2.755 | 2.997 | 5.923 | 80 | | Yes | No | No | No | No | No |
| Saudi Arabia | 189 | 3.307 | 2.705 | 6.059 | | | No | No | No | No | No | No |
| United Arab Emirates | 252 | 2.644 | 3.122 | 6.436 | | | No | No | No | No | No | No |
| <i>South East Asia, Oceania and Australia</i> | | | | | | | | | | | | |
| Australia | 589 | 1.583 | 5.191 | 7.409 | 18 | | Yes | Yes | No | Partly | Yes | Yes |
| China | 504 | 2.488 | 3.968 | 6.830 | 61 | | Yes | No | No | No | Unclear | No |
| India | 6856 | 3.075 | 3.465 | 6.455 | 67 | | No | No | No | No | No | No |
| Indonesia | 837 | 2.807 | 4.144 | 6.725 | 93 | | Yes ⁸ | No | No | No | No | No |
| Malaysia | 1369 | 2.834 | 3.972 | 6.520 | 88 | | No | No | No | No | No | No |

| Country | n | IH score ¹ | PGP ¹ | GGGI ² | PEW % ³ | EVS % ⁴ | Laws / civil rights for gays ⁵ | | | | | |
|---------------|------|-----------------------|------------------|-------------------|--------------------|--------------------|---|-----------------------|-------------------|-------------------|------------------------|-----------------------------|
| | | | | | | | same-sex sexual activity | same-sex relationship | same-sex marriage | same-sex adoption | openly gay in military | anti-gay discrimination law |
| New Zealand | 167 | 1.456 | 5.541 | 7.772 | | | Yes | Yes | Yes | Yes | Yes | Yes |
| Philippines | 4545 | 2.388 | 4.973 | 7.814 | 65 | | Yes ⁸ | No | No | Partly | Yes | Partly |
| Singapore | 518 | 2.546 | 3.934 | 7.046 | | | No | No | No | No | Partly | No |
| Sri Lanka | 178 | 2.804 | 3.508 | 6.903 | | | No | No | No | No | No | No |
| Taiwan | 171 | 1.907 | 4.849 | | | | Yes | Partly | No | No | Yes | Partly |
| Thailand | 1419 | 1.875 | 5.650 | 7.027 | | | Yes | No | No | No | Yes | No |
| Vietnam | 198 | 2.552 | 4.383 | 6.915 | | | Yes | No | Yes | Unclear | Unclear | Unclear |
| <i>Africa</i> | | | | | | | | | | | | |
| Algeria | 312 | 3.171 | 3.050 | 6.182 | | | No | No | No | No | No | No |
| Cameroon | 176 | 3.018 | 2.644 | | | | No | No | No | No | Unclear | No |
| Egypt | 168 | 3.078 | 2.280 | 6.064 | 95 | | No | No | No | No | No | No |
| Ivory Coast | 110 | 3.079 | 3.529 | 5.874 | | | Yes | No | No | No | Unclear | No |
| Kenya | 107 | 2.960 | 2.813 | 7.258 | 88 | | No | No | No | No | No | No |
| Mauritius | 174 | 2.796 | 3.695 | 6.029 | | | Partly ⁷ | No | No | No | No | Partly |
| Morocco | 698 | 2.980 | 3.029 | 5.988 | | | No | No | No | No | Unclear | No |
| Senegal | 111 | 2.697 | 2.369 | 6.912 | 68 | | No | No | No | No | Unclear | No |
| South Africa | 246 | 1.793 | 4.996 | 7.527 | 62 | | Yes | Yes | Yes | Yes | Yes | Yes |
| Tunisia | 261 | 2.945 | 3.157 | 6.272 | | | No | No | No | No | Unclear | No |

| Country | n | IH score ¹ | PGP ¹ | GGGI ² | PEW % ³ | EVS % ⁴ | Laws / civil rights for gays ⁵ | | | | | |
|--|------|-----------------------|------------------|-------------------|--------------------|--------------------|---|-----------------------|---------------------|---------------------|------------------------|-----------------------------|
| | | | | | | | same-sex sexual activity | same-sex relationship | same-sex marriage | same-sex adoption | openly gay in military | anti-gay discrimination law |
| <i>North, Middle and South America</i> | | | | | | | | | | | | |
| Argentina | 291 | 1.876 | 5.551 | 7.317 | 27 | | Yes | Yes | Yes | Yes | Yes | Partly |
| Brazil | 646 | 2.191 | 4.455 | 6.941 | 39 | | Yes | Yes | Yes | Yes | Yes | Partly |
| Canada | 666 | 1.566 | 5.681 | 7.464 | 15 | | Yes | Yes | Yes | Yes | Yes | Yes |
| Chile | 141 | 2.253 | 4.749 | 6.975 | 32 | | Yes | No ⁶ | No | No | Yes | Yes |
| Colombia | 401 | 2.148 | 4.774 | 7.122 | | | Yes | Yes | Partly | Partly | Yes | Yes |
| Cuba | 161 | 1.700 | 5.026 | 7.317 | | | Yes | No | No | No | Yes | Partly |
| Ecuador | 134 | 2.323 | 4.622 | 7.455 | | | Yes | Yes | No | No | Yes | Yes |
| Mexico | 554 | 1.858 | 4.731 | 6.900 | 40 | | Yes | Partly | Partly | Partly | Partly | Yes |
| Peru | 305 | 2.495 | 4.387 | 7.198 | | | Yes | No | No | No | Yes | Yes |
| United States of America | 1193 | 1.606 | 5.094 | 7.463 | 37 | | Yes | Partly ⁶ | Partly ⁶ | Partly ⁶ | Yes | Partly |
| Venezuela | 213 | 2.044 | 4.665 | 6.851 | 49 | | Yes | Partly | No | No | Yes | Partly |

1=measured in the present study

2=Global Gender Gap Index, data gained from the World Economic Forum 2014 survey results available from <http://www.weforum.org/reports/global-gender-gap-report-2014>

3=data gained from the 2013 “Pew Global Attitudes & Trends Question Database” 39-Nation Survey, which included the question “Do you personally believe that homosexuality is morally acceptable, morally unacceptable, or is it not a moral issue?”. We show the proportion of respondents selecting the option “Morally unacceptable”. To replicate the database search use <http://www.pewglobal.org/question-search/?qid=1697>

4=data gained from the 2008 European Value Survey, which included the question “Please tell me for each of the following whether you think it can always be justified, never be justified, or something in between, using this card” with 'homosexuality' being one out of several topics and respondents having to rate using a 10-point scale (range='never' to 'always'). We show the proportion of respondents selecting value 0-4. Data can be investigated in the GESIS Online Study Catalogue (<http://zakat.gesis.org>).

5=legislative protections of LGB status from the list of LGB rights by country: http://en.wikipedia.org/wiki/LGBT_rights_by_country_or_territory;

6=legal in entire country since 2015 (after data were collected);

7=anal-sex is illegal;

8=except for Muslims in some areas.

| Country | n | IH score ¹ | PGP ¹ | GGGI ² | PEW % ³ | EVS % ⁴ | Laws / civil rights for gays ⁵ | | | | |
|---------|---|-----------------------|------------------|-------------------|--------------------|--------------------|---|------------------------|-------------------|-------------------|------------------------|
| | | | | | | | same-sex sexual activity | same-sex relation-ship | same-sex marriage | same-sex adoption | openly gay in military |

Table 3: Multiple regression on internalised homonegativity: country-level

| Variables | Europe n=38 | | | | | | | Global n=20 | | | | | | |
|--|----------------------------------|-------|-------------------|-----|----------------------------------|-------|-------------------|----------------------------------|-------|--------|----------------------------------|-------|--------|-------------------|
| | Step 1 adj. R ² =.775 | | | | Step 2 adj. R ² =.941 | | | Step 1 adj. R ² =.746 | | | Step 2 adj. R ² =.799 | | | |
| | β | B | 95% CI | | β | B | 95% CI | β | B | 95% CI | β | B | 95% CI | |
| Male same-sex activity | a | | | | a | | | | | | | | | |
| Same-sex relationship | -.511 | -.544 | -.785 to -.303 | *** | -.202 | -.215 | -.365 to -.064 | ** | -.216 | -.244 | -.950 to .462 | -.113 | -.128 | -.782 to .526 |
| Same-sex marriage | .256 | .293 | .044 to .543 | * | .203 | .233 | .104 to .362 | ** | .396 | .515 | -.169 to 1.198 | .357 | .464 | -.198 to 1.125 |
| Same-sex adoption | -.298 | -.327 | -.594 to -.060 | * | -.093 | -.103 | -.248 to .043 | | -.337 | -.404 | -1.312 to .504 | -.354 | -.425 | -1.313 to .463 |
| Openly serve in the military | -.024 | -.037 | -.322 to .249 | | .039 | .059 | -.091 to .210 | | -.246 | -.256 | -.699 to .186 | -.002 | -.002 | -.475 to .471 |
| Anti-discrimination law for sexual orientation | -.074 | -.090 | -.316 to .136 | | -.028 | .035 | -.151 to .082 | | -.236 | -.283 | -.656 to .091 | -.125 | -.150 | -.514 to .215 |
| Global Gender Gap Index | -.383 | -.372 | -.571 to -.173 | ** | -.076 | -.074 | -.195 to .047 | | -.204 | -.222 | -.590 to .145 | -.182 | -.198 | -.577 to .181 |
| Perceived gay-related public opinion | | | | | -.451 | -.232 | -.384 to -.081 | ** | | | | -.151 | -.077 | -.365 to .210 |
| Actual public opinion ^b | | | | | .358 | .007 | .002 to .013 | * | | | | .372 | .008 | -.001 to .017 |

*p<0.05, ** p<0.01, ***p<0.001

a=same-sex activity legal in all European countries, thus constant for the analysis and excluded from the regression

b= for European countries measured by EVS score, for non-European countries (Global) measured by PEW score

Table 4: Multiple regression on internalised homonegativity: individual-level

| Variables | Europe (n=83,874) | | | | | | | | Global (n=25,508) | | | | | | |
|--|----------------------------------|-------|---------------|-----|----------------------------------|-------|---------------|-----|----------------------------------|-------|---------------|----------------------------------|-------|-------|---------------|
| | Step 1 adj. R ² =.029 | | | | Step 2 adj. R ² =.165 | | | | Step 1 adj. R ² =.052 | | | Step 2 adj. R ² =.136 | | | |
| | β | B | 95% CI | | β | B | 95% CI | | β | B | 95% CI | | β | B | 95% CI |
| Age (control variable) | -.110 | -.014 | -.014 to .013 | *** | -.054 | -.007 | -.007 to .006 | *** | -.178 | -.022 | -.024 to .021 | *** | -.140 | -.017 | -.019 to .016 |
| Exposure to gay-related victimization | -.080 | -.165 | -.180 to .150 | *** | -.097 | -.200 | -.214 to .186 | *** | -.072 | -.147 | -.173 to .121 | *** | -.087 | -.178 | -.202 to .153 |
| Exposure to gay-related discrimination | .135 | .146 | .138 to .154 | *** | .023 | .025 | .017 to .032 | *** | .137 | .101 | .092 to .110 | *** | .042 | .031 | .022 to .041 |
| Perceived gay-related public opinion | | | | | -.393 | -.383 | -.389 to .377 | *** | | | | | -.311 | -.280 | -.291 to .269 |

*p<0.05, ** p<0.01, ***p<0.001

