UAB
Universitat Autònoma de Barcelona

Dipòsit digital de documents de la UAB

This is the **accepted version** of the journal article:

Drou-Roget, Gemma; Bosque Prous, Marina; González Casals, Helena; [et al.]. «Mental well-being, sexual orientation, and interpersonal stigma in cisgender adolescents in Catalonia, from a gender and territorial perspective». Psychology of Sexual Orientation and Gender Diversity, Advance online publication 2025. 43 pàg. American Psychological Association. DOI 10.1037/sgd0000800

This version is available at https://ddd.uab.cat/record/321611

under the terms of the IN COPYRIGHT license

Mental Well-Being, Sexual Orientation, and Interpersonal Stigma in Cisgender Adolescents in Catalonia, From a Gender and Territorial Perspective

Gemma Drou-Roget [1,2,3], Marina Bosque-Prous [1,4,5*], Helena González-Casals [1,6,7], Ester Teixidó-Compañó [1,2], Carmen Vives-Cases [3,8], Cinta Folch [6,7,8], Esther Sánchez-Ledesma [9,10], Judit Rogés [1,2], Gemma Serral [8,9,10], Albert Espelt[1,5,8]

[1]Epi4Health Research Group, UOC – UAB – IRIS-CC; [2] Department of Epidemiology and Methodology of Social and Health Sciences, Universitat de Vic – Universitat Central de Catalunya (UVic-UCC); [3] Department of Community Nursing, Preventive Medicine and Public Health and History of Science, Universitat d'Alacant [4] Faculty of Health Sciences, Universitat Oberta de Catalunya (UOC); [5] Department of Psychobiology and Methodology in Health Sciences, Universitat Autònoma de Barcelona (UAB); [6] Centre d'Estudis Epidemiològics sobre les Infeccions de Transmissió Sexual i Sida de Catalunya (CEEISCAT), Generalitat de Catalunya; [7] Institute for Health Science Research Germans Trias i Pujol (IGTP); [8] Centro de Investigación Biomédica en Red de Epidemiología y Salud Pública (CIBERESP); [9] Direcció de Vigilància i Promoció de la salut, Agència de Salut Pública de Barcelona (ASPB); [10] Institut d'Investigació Biomèdica Sant Pau (IIB SANT PAU)

CITATION

Drou-Roget, G., Bosque-Prous, M., González-Casals, H., Teixidó-Compañó, E., Vives-Cases, C., Folch, C., Sánchez-Ledesma, E., Rogés, J., Serral, G., & Espelt, A. (2025). Mental well-being, sexual orientation, and interpersonal stigma in cisgender adolescents in Catalonia, from a gender and territorial perspective. Psychology of Sexual Orientation and Gender Diversity. Advance online publication. https://dx.doi.org/10.1037/sgd0000800

Roberto Abreu served as action editor.

This article is part of the doctoral dissertation of Gemma Drou-Roget in Universitat d'Alacant. This project has been funded by the Subdirecció General d'Addiccions, VIH, Infeccions de Transmissió Sexual i Hepatitis Víriques de l'Agència de Salut Pública de Catalunya, the Plan Nacional Sobre Drogas (2021|86), and the Subprograma de Desigualdades sociales en la Salud y en los comportamientos de Salud de las personas jóvenes de España del Centro de Investigación Biomédica en Red de Epidemiologia y Salud Pública (ESPCP41/2022). The authors would like to thank all the students and school staff who participated in the DESK (DEterminants de Salut en adolescents escolaritzats a la Catalunya Central [Health Determinants of Secondary School Adolescents in Central Catalonia]) survey and the FRESC (Factors de Risc en Estudiants de SeCundària) survey. The authors have no relevant financial or nonfinancial interests to disclose. Raw datawere generated at Epi4Health Research Group. Derived data supporting the findings of this study

and code behind this analysis are available fromthe corresponding author upon request. Materials for data collection are publicly available at the DESKproject webpage and can be accessed at https://deskcohort.cat/en/2nd-wave-2021–2022-schoolyear/.Mindful that our identities can influence our approach to science, the authors wish to provide the reader with information about our backgrounds. With respect to gender, when the article was drafted, eight authors self-identified as women and one author as men.With respect to sexual orientation, one author identified as bisexual, one as questioning, and seven as heterosexual.

With respect to race, eight authors self-identified as white and one preferred not to answer. One author preferred not to disclose their background information. Recent work in several fields of science has identified a bias in citation practices such that articles from women and other minority scholars are undercited relative to the number of such articles in the field. Here, we sought to proactively consider choosing references that reflect the diversity of the

field in thought from a gender perspective. We manually searched the profile of the first and last authors of each reference and noted down their gender. By this measure (and excluding self-citations to the first and last authors of our current article), our references contain 54.9% women authors, with a ratio of woman(first)/man(first) of 1.03 and woman(last)/man(last) of 1.44. This method is limited in that (a) names, pronouns, and social media profiles used for the search may not, in every case, be indicative of gender identity and (b) it cannot account for intersex, nonbinary, or transgender people. Gemma Drou-Roget, Albert Espelt, and Gemma Serral contributed equally

to conceptualization and methodology. Gemma Drou-Roget served as a lead for software and formal analysis. Albert Espelt and Gemma Serral contributed equally to software and formal analysis. Judit Rogés and Gemma Serral served as lead for investigation. Gemma Drou-Roget, Helena González-Casals, Ester Teixidó-Compañó, and Ester Sánchez-Ledesma contributed equally to investigation. Marina Bosque-Prous and Albert Espelt contributed equally to resources. Albert Espelt andMarina Bosque-Prous served as lead for data curation.

Gemma Drou-Roget, Helena González-Casals, and Judit Rogés contributed equally to data curation. Gemma Drou-Roget served as lead for writing–original draft, writing–review and editing, and visualization. Albert Espelt, Carmen Vives-Cases, and Gemma Serral contributed equally to writing–original draft. Marina Bosque-Prous, Helena González-Casals, Ester Teixidó-Compañó, Carmen Vives-Cases, Cinta Folch, Ester Sánchez-Ledesma, Judit Rogés, Gemma Serral, and Albert Espelt contributed equally to writing–review and editing. Albert Espelt served as lead for supervision, project administration, and funding acquisition.

Correspondence concerning this article should be addressed to Marina Bosque-Prous, Faculty of Health Sciences, Universitat Oberta de Catalunya (UOC), Rambla del Poblenou, 156, 08018 Barcelona, Spain. Email: mbosquep@uoc.edu

Mental Well-Being, Sexual Orientation, and Interpersonal Stigma in Cisgender Adolescents in Catalonia, From a Gender and Territorial Perspective

Abstract

Lesbian, gay and bisexual adolescents have less mental well-being than heterosexual adolescents, which is partly explained by experiencing stigma in the form of school bullying or bad family relationships. However, it is unclear whether this association is different according to specific sexual orientations (lesbian, gay, bisexual), gender (cisgender boys, cisgender girls) and in different types of municipality (small towns, intermediate cities and a metropolis). The aim of this study was to analyse the association between mental well-being and specific sexual orientations, taking into account the role of school bullying and family relationships, among cisgender adolescents in Catalonia (Spain), from a gender and territorial perspective. Data was collected using two cross-sectional questionnaires in secondary school students aged 15 to 19 years from Central Catalonia (N=5,962) and the Catalan metropolis of Barcelona (N=1,601) during 2021-2022. First, linear regression models showed an inverse association between mental well-being and being gay or bisexual among boys in small towns. In intermediate cities and the metropolis, this inverse association was observed only with being bisexual. In girls, there was a weaker inverse association between mental well-being and being bisexual across all three types of municipality. Second, school bullying and family relationships had an indirect effect on mental well-being. Our results suggest that having a LGB sexual orientation is more penalized in cisgender boys than in cisgender girls, and that despite the progressive acceptation of gay identities in intermediate cities and a metropolis compared to small towns, stigma towards bisexuality persists in all types of municipality.

Public significance statement; Our study found that school bullying and family relationships partly explain the lower mental well-being experienced by lesbian, gay and bisexual (LGB) adolescents compared to their heterosexual peers, especially in small towns and among bisexual adolescents. Findings point to the need for intersectional action to reduce stigma towards LGB adolescents, by challenging restrictive gender and sexual orientation norms that impair adolescents' genuine self-expression and well-being.

Keywords: sexual orientation; mental well-being; school bullying; family relationships; adolescents

Supplemental materials: https://doi.org/10.1037/sgd0000800.supp

Mental Well-Being, Sexual Orientation, and Interpersonal Stigma in Cisgender Adolescents in Catalonia, From a Gender and Territorial Perspective

In Europe, 18.6% of girls and 16.1% of boys aged 15-19 were estimated to be diagnosed with negative mental health outcomes in 2019 (UNICEF, 2021). Improving adolescent mental well-being, which can be described as a subjective feeling of happiness and an internal perception of effectively coping with the everyday stresses of life, is one of the primary public health challenges today (Clarke et al., 2011).

Notably, mental well-being is unequally distributed according to gender, sexual orientation, socioeconomic position and migratory status, among other axis of oppression (Fagrell Trygg et al., 2021). Regarding sexual orientation, adolescents who do not conform to heteronormativity, such as lesbian, gay and bisexual (LGB) persons, have worse mental health outcomes than heterosexual adolescents. Indeed, two meta-analysis of studies in the Global North showed that LGB adolescents have a 2.26 times higher risk of attempting suicide compared to heterosexual adolescents (Miranda-Mendizábal et al., 2017), and that young people who are not heterosexual have a 2.94 times higher risk of depressive symptoms compared to heterosexual youth (Lucassen et al., 2017). Although most of the research in the field comes from the United States or other English speaking countries (Lucassen et al., 2017), similar results seem to be found in Spain (Gómez-Chica et al., 2023).

Theoretical Framework: Minority Stress Model

The Minority Stress Model suggests that mental well-being inequalities according to sexual orientation can be explained by the excess stress and stigma that LGB adolescents experience because of their minority and stigmatized position in society (Brooks, 1981; Meyer, 1995, 2003). These forms of stigma or stressors can be conceptualized in a distal-

proximal axis. Distal stressors can be defined as objective stressors that do not depend on individual's perceptions, such as experiencing discrimination or violence –although certainly their report depends on perception. Proximal stressors are more subjective and can include being vigilant in interactions with others, concealment of their identity, and internalized homophobia (Meyer, 2003).

There is a wide body of evidence on sexual orientation inequalities in health that focuses on behavioural responses to cope with stressors, such as the adoption of unhealthy behaviours (Hatzenbuehler & Pachankis, 2016; Mereish, 2019). However, it is becoming clear that the focus should not be placed on individual behaviours but on the distal stressors that LGB adolescents experience, since they modulate the association between sexual orientation and health outcomes. These distal stressors can be further classified into interpersonal forms of stigma and structural stigma (Hatzenbuehler & Pachankis, 2016).

Interpersonal Stigma: the Effect of Relationships

Interpersonal forms of stigma refer to prejudice and discrimination expressed in the interaction with other people. One example is school bullying, which involves a repetitive abuse of power between pupils with the intention of harming, and can take the form of physical or verbal abuse, social exclusion, or sexual abuse (Garcia Continente et al., 2010). Bullying victimization mediates negative mental health outcomes in adolescents (Argyriou et al., 2021; Rinehart et al., 2020), and LGB adolescents experience school bullying to a greater extent than heterosexual adolescents (Berlan et al., 2010; Feijóo & Rodríguez-Fernández, 2021). Moreover, LGB adolescents experience bias-based bullying due to their social group, such as being called homophobic epithets. This further impacts their mental well-being, since it denigrates their identity (Poteat et al., 2011).

Negative family relationships are also mediators of mental distress in LGB adolescents (Argyriou et al., 2021). Some LGB adolescents experience family rejection,

which can be expressed in different ways. Sometimes, it might be in a direct or even aggressive way, including verbal abuse, physical abuse, disownment or hostility. For other people it might be through more indirect, passive and covert expressions of unacceptance. All these experiences of family rejection lead to a decreased mental well-being, through the perception of lack of support, a negative image of LGB adolescents' self-identity, and increased anxiety and depression (Carastathis et al., 2017).

Structural Stigma: the Effect of Territory

Structural stigma refers to societal-level conditions, cultural norms, and institutional policies that constrain the opportunities, resources, and well-being of the stigmatized (Hatzenbuehler & Pachankis, 2016). For instance, regions that are more supportive to LGB youth and that undertake actions to promote their well-being, such as implementing anti-bullying policies or promoting protective school climates, show a reduced risk of negative mental health outcomes among LGB adolescents (Hatzenbuehler et al., 2014). Considering the influential effect of societal-level conditions, it is relevant to broaden the current knowledge on sexual orientation and well-being (mainly from the United States) to other countries with different social contexts and attitudes towards the LGB population.

Spain is a country where homosexuality was prosecuted from 1954 until 1978 under the national law for "Slackers and Delinquents" (in Spanish, Ley de Vagos y Maleantes), later substituted for the national law for "Social Danger and Rehabilitation" (in Spanish, Ley sobre Peligrosidad y Rehabilitación Social). When the Francoist Dictatorship ended (1975), the social movement called Gay Liberation Front of Catalonia fought to decriminalize homosexuality. Spain has since become pioneer in supporting Lesbian, Gay, Bisexual, Trans, Queer, Intersex, Asexual + (LGBTQIA+) rights, and now ranks in fourth place among 49 Eurasian countries in which LGBTQIA+ rights have been achieved (ILGA-Europe, 2024). Notably, Spain was the third country in the European Union to legalise same-sex marriage (Law 13/2005), and it recently approved the Law 4/2023, for the real and

effective equality of trans persons and for the guarantee of the rights of lesbian, gay, trans, bisexual, and intersex (LGTBI) persons. Catalonia, the north-east region of Spain, is a particularly progressive region where this law was approved by the regional government 9 years earlier (Law 11/2014).

Despite these achievements, a meta-analyses of Spanish studies estimated that the prevalence of school bullying among LGBTQIA+ adolescents was of 51.1%, compared to the 8.6% of the general adolescent population (Feijóo & Rodríguez-Fernández, 2021). In fact, negative attitudes towards LGBTQIA+ classmates are still perceived by many adolescents as a form of fun or even as legitimate (Pina et al., 2021). This suggests that despite the progress made in the legal field, heteronormative social norms and expectations are still deeply entrenched in the country (Fernández-Rouco et al., 2020).

An additional consideration regarding territory is that most LGB research has been conducted in urban settings (Rosenkrantz et al., 2017). It has been hypothesized that rural areas are less supportive to LGB adolescents than urban areas. For instance, some studies suggest that school climate is more hostile to LGB adolescents in rural areas (Kosciw et al., 2009), and that outness about sexual orientation is more associated with school bullying in rural settings than in urban ones (Kosciw et al., 2014). Moreover, rural environments offer less opportunities to LGB adolescents to meet other LGB people and become involved with the LGB community, fomenting a sense of isolation (Agueli et al., 2022). Indeed, LGB youth living in rural areas report more lifetime minority stress and depressive symptoms than urban LGB youth (Goldbach et al., 2023). However, evidence on the different experiences of being LGB in rural or urban municipalities is scarce, and often not focused on the adolescent population (Rosenkrantz et al., 2017). This study aims to contribute to this knowledge in the Spanish context.

Gender and Sexual Orientation Differences

The Minority Stress Model offers a useful framework to understand mental well-being inequalities according to sexual orientation, but does not acknowledge differences between specific sexual orientations. For instance, bisexual adolescents have a higher burden of mental distress than their lesbian/gay peers (Perales & Campbell, 2019). This has been explained by the additional stigma they experience for having a non-monosexual identity (Herek, 2002). In particular, bisexual individuals are stereotyped by both heterosexual and lesbian/gay individuals as uncertain about their sexual identities (e.g., experimenting with their sexuality, transitioning to a lesbian/gay identity), and as sexually promiscuous (Arriaga & Parent, 2019; Yost & Thomas, 2012). Therefore, research on mental well-being inequalities in the adolescent population should be sensitive to these differences between specific sexual orientations.

Moreover, sexual orientation inequalities are often studied together with gender identity inequalities, under the broad LGBTQIA+ category (Feijóo & Rodríguez-Fernández, 2021; Lucassen et al., 2017; Miranda-Mendizábal et al., 2017). Although all these identities certainly challenge heteronormativity, gender identity and sexual orientation are partly different constructs (Rioux et al., 2022) that have intersecting impacts on health. In this line, transgender and gender non-conforming adolescents have worse mental health outcomes than cisgender adolescents (Aparicio-García et al., 2018; Rider et al., 2018), possibly reflecting a lower social acceptance of gender diversity compared to sexual orientation diversity. Therefore, gender identity should be treated as a distinct variable to avoid mixed interpretations of both constructs.

Finally, gender is a key element in studies on sexual orientation and mental well-being. On one hand, lesbian/bisexual girls show more negative mental health outcomes than gay/bisexual boys (Lucassen et al., 2017; Perales & Campbell, 2019), possibly related to the fact that girls (regardless their sexual orientation) have less mental well-being than boys

(UNICEF, 2021). However, not complying with heteronormativity poses a greater risk of school bullying for boys than for girls (Carrera-Fernández et al., 2013), in line with the hegemonic masculinity model in which masculinity is demonstrated by correcting those who do not conform to the norm (Bonino, 2002). Therefore, applying a gender perspective to study the association between sexual orientation and mental well-being might provide a deeper and more nuanced understanding.

Present Study

Considering the aforementioned, the aim of this study was to analyse the association between mental well-being and specific sexual orientations, taking into account the role of school bullying and family relationships, among cisgender adolescents in Catalonia, from a gender and territorial perspective. Based on the literature and the theoretical framework of the Minority Stress Model, we hypothesized that in our study:

1. The association between sexual orientation and mental well-being would be greater for bisexual adolescents, followed by lesbian/gay adolescents, and by heterosexual adolescents.
2. The association between sexual orientation and mental well-being would be greater for cisgender boys than for cisgender girls.
3. There would be an effect of school bullying and family relationships in the association between sexual orientation and mental well-being, and this effect would be greater for cisgender boys than for cisgender girls.
4. The magnitude of the association between sexual orientation and mental well-being, as well as the effect of interpersonal relationships, would be greater in small towns than in intermediate cities and the metropolis.

Methods

Study Design and Sample

We performed a cross-sectional study using data from two questionnaires on health-related behaviours periodically administered to secondary school students in two regions of Catalonia (Spain): the survey "Factors de Risc en Estudiants de SeCundària" (FRESC) in Barcelona (the capital of Catalonia) (Agència de Salut Pública de Barcelona, 2021), and the survey "DEterminants de Salut en adolescents escolaritzats a la Catalunya Central" (DESK) in the counties of Central Catalonia (Rogés et al., 2023). The study population consisted of students in 4th year of Compulsory Secondary Education (CSE), 2nd year Post-Compulsory Secondary Education (PCSE), and 2nd year of Intermediate Level Training Cycles (ILTC), aged 15 to 19 years, who were living and studying in Central Catalonia (N=5962) or in Barcelona (N=1601), between 2021 and 2022. For FRESC in Barcelona, a stratified random sample was used, in which 129 out of 239 secondary schools participated (Sánchez-Ledesma et al., 2022). For DESK in Central Catalonia, a convenience sample was used, in which 84 out of 98 schools participated. We divided the DESK sample according to the size of the municipality, generating three sub-samples: small municipalities (<30,000 inhabitants) and intermediate cities (≥30,000 inhabitants) in Central Catalonia, and the metropolis of Barcelona (1.6 million inhabitants). This categorization of municipalities is further explained in the Stratification Variables section.

Two exclusion criteria were applied: participants with missing values for any of the main study variables (N=60), and participants who did not identify with their sex assigned at birth (N=147). Since most of those who did not identify with their sex assigned at birth placed themselves in the non-binary spectrum or did not inform any gender identity, they could not be included in our analysis categories of boys and girls (Rioux et al., 2022). Although it would have been relevant to create another analysis category for gender non-conforming or transgender participants, the limited sample size was insufficient to perform

our analysis that further divide the sample into 9 possible categories (3 possible types of municipalities by 3 possible sexual orientations). Consequently, the overall percentage of exclusions from the initial sample was 2.8%. The final sample consisted of 7,352 individuals: 3,559 cisgender boys and 3,793 cisgender girls. For the sake of a more fluid reading, from now onwards we refer to them as boys and girls.

Variables

Mental Well-being

The dependent variable was mental well-being, which was measured in all sub-samples according to the validated Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) (Clarke et al., 2011). The scale consists of 14 statements about feelings and thoughts over the last two weeks (*e.g.* I've been feeling optimistic about the future; I've been feeling relaxed; I've been feeling loved) with a 5-point Likert-type response, and a final score from 14 (mental distress) to 70 points (mental well-being). The WEMWBS was adapted for Spanish adolescents obtaining satisfactory global score's Cronbach's alpha (0.90), item-total score correlations (0.44–0.76), and test–retest ICC (0.84). Moderate to high correlations (r = 0.45–0.70) were observed between WEMWBS and validity scales (López et al., 2013). This scale has previously been used in other studies with samples of LGB adolescents (Marquez et al., 2023). In our sample, we obtained a satisfactory global score's Cronbach's alpha of 0.896 (CI95%: 0.893-0.900). For descriptive purposes and in order to provide an estimate of the prevalence of high mental well-being in our population, we dichotomised the scale using the authors' suggested statistical approach, which consists in cutting-off at plus one standard deviation ('Collect, Score, Analyse and Interpret WEMWBS', 2021), set at ≤58 points for our sample. This separated people with high mental well-being from people with medium and low mental well-being in our population. This cut-off point has no clinical significance, yet it holds epidemiological importance. For analytic purposes, we used the scale as a continuous variable of mental well-being.

Sexual Orientation

The main independent variable was sexual orientation, which was collected as a single-item measure in line with other studies using data from general health surveys and general population samples (Berlan et al., 2010; Marquez et al., 2023). In the DESK survey, participants were asked which option they mostly identified with: "Heterosexual (you usually experience other-sex attraction)"; "Homosexual (you usually experience same-sex attraction)"; "Bisexual (you usually experience same-sex and other-sex attraction)"; "I'm questioning/I don't know"; "I prefer not to answer"; and "Other". Although we acknowledge that the term homosexual carries stigma in some countries and the trend is moving away from this term, in the Spanish context it was still widely used as a neutral form to refer to lesbian/gay people at the time of data collection (Pina et al., 2021; Vela et al., 2022). In the FRESC survey, the response options were the following: "I am only attracted to people of my sex"; "I am usually attracted to people of my sex, but sometimes I am attracted to people of the other sex"; "I'm indistinctly attracted to people of my sex and the other sex"; "I am usually attracted to people of the other sex, but sometimes to people of my sex"; "I am only attracted to people of the other sex" "I don't know"; and "Other option". For both surveys, four categories of sexual orientation were derived: heterosexual, gay/lesbian, bisexual, and questioning/prefer not to answer (PNA)/other sexual orientation. People who had shown any attraction to both sexes (either indistinctly or with some preference) were classified as bisexual. People who reported they were questioning or did not know their sexual orientation (2.4% of boys and 9.4% of girls), who preferred not to answer (2.0% of boys and 1.4% of girls), or who reported other sexual orientation options (0.5% of boys and 0.6% of girls) were classified as questioning/PNA/other.

Interpersonal Relationships

Data on interpersonal relationships was collected for all the participants. School bullying was defined based on a question with three items: "In relation to your classmates,

have you found yourself in any of these situations in the last year (situations in which you have felt violated)? (i) You have been treated badly or insulted at school or on the way to school; (ii) you have been hit, attacked and/or threatened at school or on the way to school; and (iii) you have been ostracised or rejected from the group". For every item, there were five options to answer, from "never" to "4 or more times", leading to a continuous variable that ranged from 0 to 12 points. Considering the skewness of the variable (1st quartile: 0; 2nd quartile: 0; 3rd quartile: 1), we decided to derive three categories in relation to having experienced bullying over the last year: never, once, or twice or more. A sensitivity analysis using the variable in a dichotomic form was performed, which yielded the same results.

Family relationships were assessed using the question "In general, how good is your relationship with your family? (we refer to the people who you live with", with 5 response options, from "very bad" to "very good". In line with other studies that assess the influence of positive family relationships on mental well-being (Chen & Harris, 2019), two categories were derived: very good or good; and regular or bad.

Stratification Variables

Two independent stratification variables were considered: gender and type of municipality. Gender was assessed by two questions: 1) "Which was your sex assigned at birth?" (with response options male or female) and 2) "Do you identify with your sex assigned at birth?" (with response options yes or no). Only participants who identified themselves with their sex assigned at birth (cisgender) were included in the study, resulting in two gender categories (cisgender boys and cisgender girls), henceforth referred to as boys and girls.

The second stratification variable was type of municipality (small towns, intermediate cities, and metropolis). The FRESC sample in Barcelona, the capital of Catalonia, corresponds to the metropolis (1.6 million inhabitants). The DESK sample in the

region of Central Catalonia, a more rural region, was divided according to the size of the municipality, into small municipalities (<30,000 inhabitants) and intermediate cities (≥30,000 inhabitants). The cut-off size for intermediate cities was theoretically founded from population data of the Statistical Institute of Catalonia (*Idescat. Anuari Estadístic de Catalunya. Altitud, Superfície i Població. Municipis.*, 2023). Using a cut-off point of 30,000 inhabitants, we were able to separate the three main intermediate cities of the region of Central Catalonia– Manresa (78,570 inhabitants), Vic (48,235), and Igualada (41,287) – from small towns. The next largest city has 21,182 inhabitants, with populations decreasing rapidly thereafter. Intermediate cities are distinct not only in terms of population, but also in that they have more services than small towns, such as universities (*Cercador d'equipaments*, 2023), which endow these cities with a greater influx of young people and active social movements.

Sociodemographic Variables

Following the Framework of the Commission to Reduce Social Inequalities in Health in Spain (Comisión Para Reducir Las Desigualdades Sociales En Salud En España, 2012), three additional sociodemographic variables were selected as possible confounders: age measured as academic year (4th year of Compulsory Secondary Education, 2nd year of Post-Compulsory Secondary Education, and 2nd year of Intermediate Level Training Cycles), maximum level of studies of the family unit (primary school/less, secondary school, university, or unknown) as a proxy for socioeconomic position; and migratory status of the adolescent (from Spain, second-generation migrant, first-generation migrant, or born outside of Spain with Spanish parents).

Analysis

We performed a descriptive analysis of the sample in terms of sociodemographic variables and the main study variables (sexual orientation, mental well-being, school bullying and family relationships), stratified by gender and type of municipality. We

estimated the prevalence of high mental well-being and its 95% Confidence Intervals (95% CI) for each sexual orientation. Then, we calculated the mean of the mental well-being scale (treated as a continuous variable) according to sexual orientation, school bullying, family relationships and the independent sociodemographic variables, with their 95%CI, again stratifying by gender and type of municipality.

To analyse the relationship between mental well-being and sexual orientation according to type of municipality, we first conducted a moderation analysis to examine the interaction of sexual orientation and type of municipality in predicting mental well-being in boys and girls. We then estimated two linear regression models for boys and for girls, stratifying by type of municipality. In model 1, we estimated the adjusted coefficient and 95% CI of mental well-being according to sexual orientation, adjusted for the sociodemographic variables of academic year, maximum level of studies of the family unit, and migratory status. In model 2, school bullying and family relationships were added to model 1. This allowed us to see the variation in the model upon inclusion of two interpersonal relationships variables. Finally, we performed a path analysis to identify the indirect effect of school bullying and family relationships, adjusting by sociodemographic variables (Figure 1). We calculated the ratio of the indirect effect to the total effect (RIT) to assess the effect of school bullying and family relationships, using the *medsem* package from STATA 18 (Mehmetoglu, 2018). All the analyses were stratified by gender and type of municipality.

IRB Statement

This study was performed in line with the principles of the Declaration of Helsinki. The DESK survey was approved by the Ethics Committee of the Universitat de Vic – Universitat Central de Catalunya (internal code of approval: 96/2019). The FRESC survey is part of the Annual Statistical Action Program of the Government of Catalonia (register

number: 09 01 03) and is not subject to an ethics committee evaluation. Written informed consent was obtained from all the individual participants or their legal guardians, according to the Organic Law 3/2018, of Personal Data Protection and Guarantee of Digital Rights.

Results

In our sample, 51.6% of the participants were girls and 48.4% were boys (Table 1). The sociodemographic variables of maximum level of studies of the family unit and migration status were different across types of municipality, for both boys and girls. As for sexual orientation, 3.7% and 4.8% of boys reported being gay and bisexual, and 3.8% and 20.6% of girls reported being lesbian and bisexual respectively; percentages that were higher in the metropolis than in intermediate cities and small towns. 4.8% of boys and 11.4% of girls were questioning their sexual orientation, preferred not to answer (PNA), or reported another sexual orientation. The prevalence of high mental well-being in our sample was higher in boys than in girls (25.4% vs. 8.9%), but similar across types of municipality.

The estimated prevalence of high mental well-being in our population was lower in gay (18.9%; 95% CI: 12.6% - 26.7%), bisexual (15.9%; 95% CI: 10.7% - 22.2%) and questioning/PNA/other attraction (14.0%; 95% CI: 9.0% - 20.0%) boys than in heterosexual boys (26.8%; 95% CI: 25.2% - 28.4%) (Figure 2). The prevalence of high mental well-being was lower in girls, but similar across different sexual orientation options: 9.8% (95% CI: 8.6% - 11.1%) in heterosexual girls, 9.0% (95% CI: 4.8% - 14.9%) in lesbian girls, 6.9% (95% CI: 5.2% - 8.9%) in bisexual girls, and 6.9% (95% CI: 4.7% - 9.7%) in girls who were questioning/PNA/other.

Mental well-being showed variability according to the main independent variable sexual orientation and the stratifying variables gender and type of municipality (Supplemental Table 1). In small towns, mental well-being scores were significantly lower in gay ($\bar{x}$=46.7, 95% CI 44.1 - 49.3), bisexual ($\bar{x}$=46.4, 95% CI 44.0 - 48.8), or

questioning/PNA/other ($\bar{x}$=48.8, 95% CI 46.8 - 50.8) boys than in heterosexual boys ($\bar{x}$=52.4, 95% CI 52.0 - 52.8). Interestingly, in intermediate cities and in the metropolis, these differences were no longer observed between gay and heterosexual boys. Regarding girls, in small towns, those with lower mental well-being scores were bisexual ($\bar{x}$=43.8, 95% CI 42.8 - 44.7) or questioning/PNA/other ($\bar{x}$=43.7, 95% CI 42.7 - 44.8) girls in comparison with heterosexual girls ($\bar{x}$=46.7, 95% CI 46.3 - 47.1). The same trends were observed in intermediate cities and in the metropolis, except for questioning/PNA/other girls in intermediate cities, who did not have a worse mental well-being score than heterosexual girls. Lesbian and heterosexual girls had similar well-being scores across all three types of municipality.

Type of municipality was found to interact with sexual orientation in predicting mental well-being in boys, but not in girls (Supplemental Table 2). Gay boys had 2.76 (95% CI 1.29 - 4.23) points less of mental well-being than heterosexual boys, but when the interaction between sexual orientation and type of municipality was considered, these differences were greater in small towns [5.61 (95% CI 2.42 - 8.80) points less] but not significant in intermediate cities, compared to the metropolis (Supplemental Table 2, model 2A). A similar trend was observed for bisexual boys.

Considering the interaction between sexual orientation and type of municipality in predicting mental well-being in boys, an analysis stratified by type of municipality was performed (Table 2). Linear regression models showed different associations between mental well-being and sexual orientation in boys according to the type of municipality (Model 1, Table 2). In small towns, the mental well-being score was 5.78 (95% CI 3.48 - 8.08) points lower for gay boys, 6.36 (95% CI 4.24 - 8.49) points lower for bisexual boys, and 3.44 (95% CI 1.72 - 5.16) points lower in questioning/PNA/other boys, compared to heterosexual boys. In intermediate cities and the metropolis, scores were significantly lower

in bisexual or questioning/PNA/other boys, in comparison with heterosexual boys, but no differences were observed between gay and heterosexual boys.

When adjusting the regression models for school bullying and family relationships, the association between sexual orientation and mental well-being decreased, and it was no longer significant for bisexual boys in intermediate cities and the metropolis (Table 2, model 2). These results suggested an indirect effect of school bullying and family relationships, which was further assessed by path analysis. Indeed, school bullying and family relationships influenced the mental well-being of bisexual boys in small towns, with effects of 13.6% (95% CI: 6.5% to 20.7%) and 22.4% (95% CI: 12.4% to 32.5%), respectively. These effects on mental well-being were 25.3% (95% CI 7.7% to 43.0%) and 14.7% (95% CI -7.6% to 36.9) in bisexual boys in intermediate cities, and 34.3% (95% CI 14.5% to 54.2%) and 19.1% (95% CI -2.6% to 40.8%) in bisexual boys in the metropolis. Being gay was only associated with mental well-being in small towns, where the effects of school bullying and family relationships were of 22.9% (95% CI 12.7% to 33.1%) and 28.6% (95% CI 15.7% to 41.4%).

In the case of girls, a stratified analysis was also conducted (Table 3). In line with the results of the moderation analysis (Supplemental Table 2), the association between sexual orientation and mental well-being was consistent in the three types of municipality. For instance, in comparison with heterosexual girls, bisexual girls displayed 2.97 (95% CI 1.97 - 3.97) points less of mental well-being in small towns, 3.90 (95% CI 2.43 - 5.37) points less in intermediate cities, and 1.94 (95% CI 0.55 - 3.33) points less in the metropolis (Table 3, model 1).

When adjusting regression models for school bullying and family relationships, the existing associations between being bisexual and mental well-being in girls decreased but remained statistically significant (Table 3, model 2). Path analysis showed that the effect of

school bullying on mental well-being in bisexual girls was 10.8% (95% CI: 4.2% to 17.5%) in small towns and 12.2% (95% CI: 0.1% to 24.3%) in intermediate cities. The effect of family relationships was 24.4% (95% CI: 11.9% to 36.8%) in small towns, 31.8% (95% CI: 17% to 46.6%) in intermediate cities, and 24.5% (95% CI: 4.3% to 44.8%) in the metropolis. Being a lesbian was not associated with mental well-being in any type of municipality.

Discussion

The main findings of the study, in line with our hypotheses, are the following: 1) Bisexual adolescents showed the lowest mental well-being, followed by gay/lesbian adolescents (although the difference between lesbian and heterosexual girls was not statistically significant); 2) Sexual orientation was greatly associated with mental well-being in boys than in girls; 3) School bullying and family relationships explained some of the association between sexual orientation and mental well-being. The effect of school bullying in the association between sexual orientation and mental well-being was higher for boys, but the effect of family relationships was higher for girls and 4) For boys, there was a territorial gradient in which being gay/bisexual was greatly associated with lower mental well-being in small towns, followed by intermediate cities and the metropolis. In the case of girls, being bisexual was more associated with lower mental well-being in intermediate cities, followed by small towns and the metropolis.

Association Between Mental Well-being and Sexual Orientation, and Effect of School Bullying and Family Relationships

Gender Perspective

Boys. Our findings support that gay and bisexual boys have lower mental well-being than heterosexual boys, which is partly explained by school bullying (Berlan et al., 2010; Coulter et al., 2016), to a greater extent than observed for girls. The fact that boys greatly participate in bullying, both as targets and perpetrators (Garcia-Continente et al., 2013),

responds to the hegemonic masculinity model, in which masculinity is demonstrated by correcting those who escape from the sex-gender-sexual orientation system (Bonino, 2002). Indeed, one study showed that adolescents with the masculine traits of competitiveness and aggressiveness had more assaultive behaviour, and sexist and homophobic attitudes; and boys not complying with gender roles were at higher risk of bullying (Carrera-Fernández et al., 2013).

Girls. The lower mental well-being in bisexual girls, in comparison to heterosexual girls, is somewhat explained by school bullying, but to a greater extent, by family relationships. Although our findings suggest that the prevalence of bullying is higher in girls than in boys, it is less associated with sexual orientation in the case of girls. In this line, some studies point out that at school girls suffer more sexual harassment than boys, but boys suffer more harassment for having an atypical gender expression or homophobic harassment (Brown & Stone, 2016). In the case of girls, other factors such as family relationships seem to have a more pronounced effect. Additionally, the lower mental well-being in bisexual girls, in comparison to heterosexual (and to lesbian) girls, has been partly attributed to other forms of stigma, such as denial and invisibility of the bisexual identity (by both heterosexual and gay/lesbian people), pressure to change towards a monosexual identity, and the assumption of promiscuity and hypersexualization of bisexual girls (Bostwick & Hequembourg, 2014).

In contrast with the literature, we did not find any association between mental well-being and being a lesbian (Perales & Campbell, 2019). Research on mental health outcomes in sexual minorities has mostly adopted a minority stress perspective (Hatzenbuehler & Pachankis, 2016), focusing on the forms of stigma and discrimination that negatively impact this population. However, some authors point that this deficit-oriented perspective overlooks potential protective factors that might contribute to the well-being of this population, such as self-awareness, authenticity, community, capacity for intimacy, and social justice (Riggle et

al., n.d.; Siegel et al., 2022). Moreover, it should be considered that heterosexual girls might be exposed to risk factors to which lesbian girls might not. For instance, the World Health Organization Report on Violence Against Women estimated that, globally, 29.4% (26.8-32.1%) of girls aged 15 to 19 years in heterosexual relationships had experienced partner violence (World Health Organization, 2013). Therefore, having an LGB sexual orientation and, in this case, being a lesbian, might sometimes act as a protective factor.

Territorial Perspective

The higher percentages of LGB people in the metropolis than in small towns and intermediate cities could be due to the different collection of the sexual orientation variable in the surveys of Barcelona and Central Catalonia (Geary et al., 2018). However, we cannot rule out a territorial effect of social acceptance, facilitating self-identification with LGB sexual orientations in bigger cities. In this line, one study pointed out that the adult population who reported being LGB doubled between the early 1990s and the early 2010s in the United States, and that this rise was partly due to more accepting societal attitudes towards the LGB population (Twenge et al., 2016).

Similarly, the lower association between mental well-being and sexual orientation in the metropolis could be related to the underestimation of the inequalities by using measures based on attraction instead of identity (Ross et al., 2018). However, the gradient observed in our results between small towns, intermediate cities, and the metropolis, supports the hypothesis that there is more stigma in smaller municipalities (Morandini et al., 2015), leading to lower mental well-being in LGB adolescents in these settings, especially in boys.

One striking result that contrasts with the literature is that the effect of school bullying in bisexual boys is higher in intermediate cities, and also in the metropolis, than in small towns (Kosciw et al., 2014). However, this does not necessarily indicate that bisexual boys in small towns experience less school bullying than in bigger cities. Instead, we

hypothesize that in small towns where the community members know each other, LGB adolescents might experience more forms of interpersonal stigma at the community level, which would explain the smaller overall percentage of the association explained by school bullying (Hulko & Hovanes, 2018). In this line, in our results, small towns are the only setting where family relationships have a bigger effect than school bullying for gay and bisexual boys.

Finally, the inverse association between mental well-being and being bisexual is stronger than for being gay or lesbian in boys and girls of all types of municipality. Despite the fact that there has been a progressive acceptance of gay and lesbian identities, there is still the belief that monosexuality (either being straight, gay or lesbian) is more legitimate than a bisexual or other non-monosexual orientation. This leads to more negative attitudes towards bisexual than towards gay or lesbian people (Herek, 2002), which in turn would imply worse mental health outcomes for bisexual people (Perales & Campbell, 2019). Therefore, in small towns where homophobia persists, disparities are observed between gay and heterosexual adolescents, as well as between bisexual and heterosexual adolescents. In contrast, in intermediate cities and the metropolis, disparities between gay and heterosexual adolescents are attenuated, but disparities between bisexual and heterosexual adolescents still exist.

Implications for the Spanish Context

Our findings are a reflection of a Spanish society where heteronormativity still prevails and is reproduced at the familiar and school level, compromising the mental well-being of LGB adolescents (Fernández-Rouco et al., 2020; Pina et al., 2021). Schools are often positioned at the forefront for implementing interventions to promote LGB mental well-being (Hatzenbuehler et al., 2014; Johns et al., 2019). They have great potential, since they are educational agents as well as a key socialization space during adolescence, but having adequate financial and logistic support is often a challenge for a successful

implementation of these programmes (O'Reilly et al., 2018). In this regard, the approval of the Spanish Law 4/2023, for the real and effective equality of trans persons and for the guarantee of the rights of LGTBI persons, represents a moment of opportunity, and based on our results we call for Spanish institutions to support interventions that promote mental well-being in LGB adolescents.

In order to do so, a clear framework to guide interventions is necessary (O'Reilly et al., 2018). Based on the evidence, we aim to provide some reflections that should be taken into consideration when pursuing this goal. The three simple yet true observations one could derive from our findings is that being LGB is more penalised in boys than in girls, that bisexuality must be claimed as a valid sexual choice, and that interventions should be implemented without leaving small towns behind. However, there is a more overarching consideration in how sexual orientation inequalities must be tackled. The different results observed in different types of municipality highlight how the context shapes the experience of LGB adolescence, counteracting the portrayal of LGB adolescents as automatically vulnerable and 'at risk', and focusing on the oppressive sexual and gender-based structures and relations (Bryan & Mayock, 2017).

This suggests that while LGB victimization is real and must end, the efforts should not be directed towards protecting LGB youth, but towards challenging the restrictive gender norms that legitimise this victimization and ultimately influence health (Heise et al., 2019). Within this restrictive gender norms, hegemonic masculinity explains the greater victimization of LGB boys compared to LGB girls, but it is also related to the dominance of boys over girls that results in girls experiencing more sexual harassment (Bonino, 2002; Brown & Stone, 2016). The invisibilization of girls' sexuality is also related to this lower penalization for being LGB, but has other detrimental effects in the field of sexual and reproductive health (Diamond, 2016; Heise et al., 2019). Therefore, interventions that challenge this gender and sexual norms might not only be more effective in improving LGB

mental well-being, but will also liberate all Spanish adolescents from restricting norms that limit their genuine self-expression and their right to well-being (Heise et al., 2019).

Limitations and Strengths

The first limitation of this study is the comparability of the data on sexual orientation between territories. Sexual orientation has three dimensions: attraction, behaviour, and identity. People who feel attracted by others of the same sex will not necessarily sexually relate to them or identify themselves as gays/lesbians (Diamond, 2016; Geary et al., 2018; Meyer et al., 2002). On the one hand, the DESK survey administered in small towns and intermediate cities of Central Catalonia used a definition based on sexual identity (although it also included attraction as an explanation for the question). On the other hand, the FRESC survey administered in Barcelona used a definition based on attraction. Thus, the estimates of LGB adolescents may not be comparable between the two samples. Moreover, measures of identity tend to yield higher inequalities than measures of attraction (Ross et al., 2018). Therefore, our operationalisation may have led to an underestimation of the association between mental well-being and sexual orientation in Barcelona, with respect to the small towns and intermediate cities of Central Catalonia. However, this limitation was partially compensated by stratifying the sample of Central Catalonia. This enabled us to notice that intermediate cities (identity-based measure) exhibited trends more akin to those of Barcelona (attraction-based measure) than to those of small municipalities (identity-based measure), suggesting that territorial dynamics may contribute to the observed differences between municipalities, independent of how sexual orientation was operationalized.

An additional limitation regarding sexual orientation is the clustering of questioning/PNA/other adolescents in the same group. The aim of the study was to analyse differences between adolescents that identify with a specific sexual orientation; therefore, participants who were questioning or did not provide an answer were out of our scope. Participants with another sexual orientation (different than heterosexual, gay, lesbian or

bisexual) represented a small and heterogeneous fraction of the sample and we did not have enough statistical power to analyse them in a separate category. Nevertheless, we included all these participants to avoid excluding 8.1% of the sample, and our results show that more attention should be put on these groups.

A second limitation consists in the exclusion of people not identifying themselves with their sex assigned at birth. Although studying the intersecting impacts of sexual orientation and gender identity on health is of great interest, we decided to exclude transgender or gender non-conforming participants due to small sample size and our complex stratification strategy that results in a further division of our sample. However, ultimately, this selection allowed us to avoid confusion in the interpretation of the data, while still analysing most of the sample.

A third limitation is that general bullying was assessed instead of bias-based bullying based on sexual orientation. Bias-based bullying has a more detrimental effect than general bullying (Russell et al., 2012); therefore, our results are probably conservative.

Another consideration is the different sampling methods used for each survey, since it is not typical to combine data from a convenience sample (DESK) and a stratified random sample (FRESC). We analysed both samples jointly as convenience samples following the advice of the Barcelona Public Health Agency, responsible for the FRESC survey. We considered both samples comparable since the DESK sample represents almost all the territory of Central Catalonia, with the participation of 85.7% of the high schools of the territory (Rogés et al., 2023), and the FRESC sample represents the totality of Barcelona through sample extraction.

Finally, although our results suggest an indirect effect of school bullying and family relationships on the association between sexual orientation and mental well-being in adolescents, which is supported by longitudinal studies (Rinehart et al., 2020), it is important

to note that cross-sectional designs have inherent limitations in capturing longitudinal and mediational processes (Maxwell & Cole, 2007; O'Laughlin et al., 2018). Therefore, we cannot rule out the possibility that what appears to be a mediating effect might actually be a confounding effect.

Despite the aforementioned limitations, this study provides novel information for the Spanish context in an important moment for the achievement of LGTBI rights. One of the main strengths of our study is that our large sample has allowed us to cover some understudied aspects in the field of LGB adolescents' well-being. First, we have been able to separately analyse the effect of sexual orientation in cisgender boys and cisgender girls, applying a gender perspective to discuss our findings (Bonino, 2002; Heise et al., 2019). Second, the disaggregation of sexual orientation into different categories has also allowed us to visibilize the reality of bisexual adolescents, which is often covered by the main monosexual discourses within and outside the LGBTI+ community (Arriaga & Parent, 2019; Yost & Thomas, 2012). We have also disentangled the concepts of sexual orientation and gender identity, that despite being related to the same oppressive sexual and gender-based structures, yield different results in health (Aparicio-García et al., 2018; Rider et al., 2018). Third, we have provided evidence of some territorial differences between smaller (and more rural) and bigger (and more urban) municipalities in the configuration of sexual orientation inequalities in adolescent well-being (Goldbach et al., 2023; Hulko & Hovanes, 2018). This knowledge is useful both to prioritize interventions and to understand how the context shapes LGB experiences. Fourth, the role of stigma and of oppressive sexual and gender norms has been discussed (Bryan & Mayock, 2017; Heise et al., 2019), aiming to provide a more nuanced and complete framework for upcoming interventions in the Spanish context.

References

Agència de Salut Pública de Barcelona. (2021). *Enquesta Factors de Risc en Estudiants de Secundària (FRESC)*. https://www.aspb.cat/documents/fresc-manuals-questionaris/

Agueli, B., Celardo, G., Esposito, C., Arcidiacono, C., Procentese, F., Carbone, A., & Di Napoli, I. (2022). Well-Being of Lesbian, Gay, Bisexual Youth: The Influence of Rural and Urban Contexts on the Process of Building Identity and Disclosure. *Frontiers in Psychology*, *12*, 787211. https://doi.org/10.3389/fpsyg.2021.787211

Aparicio-García, M., Díaz-Ramiro, E., Rubio-Valdehita, S., López-Núñez, M., & García-Nieto, I. (2018). Health and Well-Being of Cisgender, Transgender and Non-Binary Young People. *International Journal of Environmental Research and Public Health*, *15*(10), 2133. https://doi.org/10.3390/ijerph15102133

Argyriou, A., Goldsmith, K. A., & Rimes, K. A. (2021). Mediators of the Disparities in Depression Between Sexual Minority and Heterosexual Individuals: A Systematic Review. *Archives of Sexual Behavior*, *50*(3), 925–959. https://doi.org/10.1007/s10508-020-01862-0

Arriaga, A. S., & Parent, M. C. (2019). Partners and Prejudice: Bisexual Partner Gender and Experiences of Binegativity From Heterosexual, Lesbian, and Gay People. *Psychology of Sexual Orientation and Gender Diversity*, *6*(3), 382–391. https://doi.org/10.1037/sgd0000337

Berlan, E. D., Corliss, H. L., Field, A. E., Goodman, E., & Austin, S. B. (2010). Sexual orientation and bullying among adolescents in the Growing Up Today Study. *The Journal of Adolescent Health* , *46*(4), 366. https://doi.org/10.1016/J.JADOHEALTH.2009.10.015

Bonino, L. (2002). Masculinidad hegemónica e identidad masculina. *Dossiers Feministes. Masculinitats: Mites, de/ Construccions i Mascarades*, 7–37.

Bostwick, W., & Hequembourg, A. (2014). 'Just a little hint': Bisexual-specific microaggressions and their connection to epistemic injustices. *Culture, Health & Sexuality*, *16*(5), 488–503. https://doi.org/10.1080/13691058.2014.889754

Brooks, V. R. (1981). *Minority stress and lesbian women*. Lexington Books.

Brown, C. S., & Stone, E. A. (2016). Gender Stereotypes and Discrimination. In *Advances in Child Development and Behavior* (Vol. 50, pp. 105–133). Elsevier. https://doi.org/10.1016/bs.acdb.2015.11.001

Bryan, A., & Mayock, P. (2017). Supporting LGBT Lives? Complicating the suicide consensus in LGBT mental health research. *Sexualities*, *20*(1–2), 65–85. https://doi.org/10.1177/1363460716648099

Carastathis, G. S., Cohen, L., Kaczmarek, E., & Chang, P. (2017). Rejected by Family for Being Gay or Lesbian: Portrayals, Perceptions, and Resilience. *Journal of Homosexuality*, *64*(3), 289–320. https://doi.org/10.1080/00918369.2016.1179035

Carrera-Fernández, M. V., Lameiras-Fernández, M., Rodríguez-Castro, Y., & Vallejo-Medina, P. (2013). Bullying among Spanish secondary education students: The role of gender traits, sexism, and homophobia. *Journal of Interpersonal Violence*, *28*(14), 2915–2940. https://doi.org/10.1177/0886260513488695

Cercador d'equipaments. (2023). gencat.cat. http://web.gencat.cat/ca/equipaments

Chen, P., & Harris, K. M. (2019). Association of Positive Family Relationships With Mental Health Trajectories From Adolescence to Midlife. *JAMA Pediatrics*, *173*(12), e193336. https://doi.org/10.1001/jamapediatrics.2019.3336

Clarke, A., Friede, T., Putz, R., Ashdown, J., Martin, S., Blake, A., Adi, Y., Parkinson, J., Flynn, P., Platt, S., & Stewart-Brown, S. (2011). Warwick-Edinburgh Mental Well-being Scale (WEMWBS): Validated for teenage school students in England and Scotland. A mixed methods assessment. *BMC Public Health*, *11*, 487. https://doi.org/10.1186/1471-2458-11-487

Collect, score, analyse and interpret WEMWBS. (2021, December 1). *Warwick Medical School*. https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/using/howto/

Comisión Para Reducir Las Desigualdades Sociales En Salud En España. (2012). [A proposal of policies and interventions to reduce social inequalities in health in Spain. Commission to Reduce Social Inequalities in Health in Spain]. *Gaceta Sanitaria / S.E.S.P.A.S*, *26*(2), 182–189. https://doi.org/10.1016/j.gaceta.2011.07.024

Coulter, R. W. S., Herrick, A. L., Friedman, M. R., & Stall, R. D. (2016). Sexual-Orientation Differences in Positive Youth Development: The Mediational Role of Bullying Victimization. *American Journal of Public Health*, *106*(4), 691. https://doi.org/10.2105/AJPH.2015.303005

Diamond, L. M. (2016). Sexual Fluidity in Male and Females. *Current Sexual Health Reports*, *8*(4), 249–256. https://doi.org/10.1007/s11930-016-0092-z

Fagrell Trygg, N., Månsdotter, A., & Gustafsson, P. E. (2021). Intersectional inequalities in mental health across multiple dimensions of inequality in the Swedish adult population. *Social Science & Medicine*, *283*. https://doi.org/10.1016/j.socscimed.2021.114184

Feijóo, S., & Rodríguez-Fernández, R. (2021). A Meta-Analytical Review of Gender-Based School Bullying in Spain. *International Journal of Environmental Research and Public Health*, *18*(23). https://doi.org/10.3390/ijerph182312687

Fernández-Rouco, N., Carcedo, R. J., & Yeadon-Lee, T. (2020). Transgender Identities, Pressures, and Social Policy: A Study Carried Out in Spain. *Journal of Homosexuality*, *67*(5), 620–638. https://doi.org/10.1080/00918369.2018.1550330

Garcia Continente, X., Pérez Giménez, A., & Nebot Adell, M. (2010). Factores relacionados con el acoso escolar (bullying) en los adolescentes de Barcelona. *Gaceta Sanitaria*, *24*(2), 103–108. https://doi.org/10.1016/j.gaceta.2009.09.017

Garcia-Continente, X., Pérez-Giménez, A., Espelt, A., & Nebot Adell, M. (2013). Bullying among schoolchildren: Differences between victims and aggressors. *Gaceta Sanitaria*, *27*(4), 350–354. https://doi.org/10.1016/j.gaceta.2012.12.012

Geary, R. S., Tanton, C., Erens, B., Clifton, S., Prah, P., Wellings, K., Mitchell, K. R., Datta, J., Gravningen, K., Fuller, E., Johnson, A. M., Sonnenberg, P., & Mercer, C. H. (2018). Sexual identity, attraction and behaviour in Britain: The implications of using different dimensions of sexual orientation to estimate the size of sexual minority populations and inform public health interventions. *PLoS ONE*, *13*(1), e0189607. https://doi.org/10.1371/journal.pone.0189607

Goldbach, J. T., Parra, L. A., O'Brien, R. P., Rhoades, H., & Schrager, S. M. (2023). Explaining behavioral health differences in urban and rural sexual minority adolescents. *The Journal of Rural Health*, *39*(1), 262–271. https://doi.org/10.1111/jrh.12706

Gómez-Chica, P., Rueda-Ruzafa, L., Aparicio-Mota, A., Rodriguez-Arrastia, M., Ropero-Padilla, C., Rodriguez-Valbuena, C., & Román, P. (2023). Examining suicide risk in sexual and gender minority youth: A descriptive observational study on depressive symptoms, social support and self-esteem. *Journal of Clinical Nursing*, *00*, 1–9. https://doi.org/10.1111/jocn.17147

Hatzenbuehler, M. L., Birkett, M., Van Wagenen, A., & Meyer, I. H. (2014). Protective School Climates and Reduced Risk for Suicide Ideation in Sexual Minority Youths. *American Journal of Public Health*, *104*(2), 279–286. https://doi.org/10.2105/AJPH.2013.301508

Hatzenbuehler, M. L., & Pachankis, J. E. (2016). Stigma and Minority Stress as Social Determinants of Health Among Lesbian, Gay, Bisexual, and Transgender Youth: Research Evidence and Clinical Implications. *Pediatric Clinics of North America*, *63*(6), 985–997. https://doi.org/10.1016/j.pcl.2016.07.003

Heise, L., Greene, M. E., Opper, N., Stavropoulou, M., Harper, C., Nascimento, M., Zewdie, D., Darmstadt, G. L., Greene, M. E., Hawkes, S., Heise, L., Henry, S., Heymann, J., Klugman, J., Levine, R., Raj, A., & Rao Gupta, G. (2019). Gender inequality and restrictive gender norms: Framing the challenges to health. *The Lancet*, *393*(10189), 2440–2454. https://doi.org/10.1016/S0140-6736(19)30652-X

Herek, G. M. (2002). Heterosexuals' attitudes toward bisexual men and women in the United States. *The Journal of Sex Research*, *39*(4), 264–274. https://doi.org/10.1080/00224490209552150

Hulko, W., & Hovanes, J. (2018). Intersectionality in the Lives of LGBTQ Youth: Identifying as LGBTQ and Finding Community in Small Cities and Rural Towns. *Journal of Homosexuality*, *65*(4), 427–455. https://doi.org/10.1080/00918369.2017.1320169

Idescat. Anuari estadístic de Catalunya. Altitud, superfície i població. Municipis. (2023). https://www.idescat.cat/indicadors/?id=aec&n=15903

ILGA-Europe. (2024). *Country Ranking | Rainbow Europe*. https://rainbowmap.ilga-europe.org/

Johns, M. M., Poteat, V. P., Horn, S. S., & Kosciw, J. (2019). Strengthening Our Schools to Promote Resilience and Health Among LGBTQ Youth: Emerging Evidence and Research Priorities from *The State of LGBTQ Youth Health and Well-being* Symposium. *LGBT Health*, *6*(4), 146–155. https://doi.org/10.1089/lgbt.2018.0109

Kosciw, J. G., Greytak, E. A., & Diaz, E. M. (2009). Who, What, Where, When, and Why: Demographic and Ecological Factors Contributing to Hostile School Climate for Lesbian, Gay, Bisexual, and Transgender Youth. *Journal of Youth and Adolescence*, *38*(7), 976–988. https://doi.org/10.1007/s10964-009-9412-1

Kosciw, J. G., Palmer, N. A., & Kull, R. M. (2014). Reflecting Resiliency: Openness About Sexual Orientation and/or Gender Identity and Its Relationship to Well-Being and

Educational Outcomes for LGBT Students. *American Journal of Community Psychology*, *55*(1–2), 167–178. https://doi.org/10.1007/s10464-014-9642-6

López, M. A., Gabilondo, A., Codony, M., García-Forero, C., Vilagut, G., Castellví, P., Ferrer, M., & Alonso, J. (2013). Adaptation into Spanish of the Warwick–Edinburgh Mental Well-being Scale (WEMWBS) and preliminary validation in a student sample. *Quality of Life Research*, *22*(5), 1099–1104. https://doi.org/10.1007/s11136-012-0238-z

Lucassen, M., Stasiak, K., Samra, R., Frampton, C. M., & Merry, S. N. (2017). Sexual minority youth and depressive symptoms or depressive disorder: A systematic review and meta-analysis of population-based studies. *Australian & New Zealand Journal of Psychiatry*. https://doi.org/10.1177/0004867417713664

Marquez, J., Humphrey, N., Black, L., Cutts, M., & Khanna, D. (2023). Gender and sexual identity-based inequalities in adolescent well-being: Findings from the #BeeWell Study. *BMC Public Health*, *23*, 2211. https://doi.org/10.1186/s12889-023-16992-y

Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation. *Psychological Methods*, *12*(1), 23–44. https://doi.org/10.1037/1082-989X.12.1.23

Mehmetoglu, M. (2018). medsem: A Stata package for statistical mediation. *Int. J. Computational Economics and Econometrics*, *8*, 63–68.

Mereish, E. H. (2019). Substance use and misuse among sexual and gender minority youth. *Current Opinion in Psychology*, *30*, 123–127. https://doi.org/10.1016/j.copsyc.2019.05.002

Meyer, I. H. (1995). Minority Stress and Mental Health in Gay Men. *Journal of Health and Social Behavior*, *36*(1), 38–56. https://doi.org/10.2307/2137286

Meyer, I. H. (2003). Prejudice, Social Stress, and Mental Health in Lesbian, Gay, and Bisexual Populations: Conceptual Issues and Research Evidence. *Psychological Bulletin, 129*(5), 674–697. https://doi.org/10.1037/0033-2909.129.5.674

Meyer, I. H., Rossano, L., Ellis, J. M., & Bradford, J. (2002). A brief telephone interview to identify lesbian and bisexual women in random digit dialing sampling. *The Journal of Sex Research, 39*(2), 139–144. https://doi.org/10.1080/00224490209552133

Miranda-Mendizábal, A., Castellví, P., Parés-Badell, O., Almenara, J., Alonso, I., Blasco, M. J., Cebrià, A., Gabilondo, A., Gili, M., Lagares, C., Piqueras, J. A., Roca, M., Rodríguez-Marín, J., Rodríguez-Jiménez, T., Soto-Sanz, V., Vilagut, G., & Alonso, J. (2017). Sexual orientation and suicidal behaviour in adolescents and young adults: Systematic review and meta-analysis. *The British Journal of Psychiatry : The Journal of Mental Science*, *211*(2), 77–87. https://doi.org/10.1192/BJP.BP.116.196345

Morandini, J. S., Blaszczynski, A., Dar-Nimrod, I., & Ross, M. W. (2015). Minority stress and community connectedness among gay, lesbian and bisexual Australians: A comparison of rural and metropolitan localities. *Australian and New Zealand Journal of Public Health*, *39*(3), 260–266. https://doi.org/10.1111/1753-6405.12364

O'Laughlin, K. D., Martin, M. J., & Ferrer, E. (2018). Cross-Sectional Analysis of Longitudinal Mediation Processes. *Multivariate Behavioral Research*, *53*(3), 375–402. https://doi.org/10.1080/00273171.2018.1454822

O'Reilly, M., Svirydzenka, N., Adams, S., & Dogra, N. (2018). Review of mental health promotion interventions in schools. *Social Psychiatry and Psychiatric Epidemiology*, *53*(7), 647–662. https://doi.org/10.1007/s00127-018-1530-1

Perales, F., & Campbell, A. (2019). Early roots of sexual-orientation health disparities: Associations between sexual attraction, health and well-being in a national sample of

Australian adolescents. *Journal of Epidemiology and Community Health*, 954–962. https://doi.org/10.1136/jech-2018-211588

Pina, D., Marín-Talón, M. C., López-López, R., Martínez-Sánchez, A., Cormos, L. S., Ruiz-Hernández, J. A., Abecia, B., & Martínez-Jarreta, B. (2021). Attitudes toward School Violence against LGBTQIA+. A Qualitative Study. *International Journal of Environmental Research and Public Health*, *18*(21), 11389. https://doi.org/10.3390/ijerph182111389

Poteat, V. P., Mereish, E. H., DiGiovanni, C. D., & Koenig, B. W. (2011). The Effects of General and Homophobic Victimization on Adolescents' Psychosocial and Educational Concerns: The Importance of Intersecting Identities and Parent Support Í. *Journal of Counseling Psychology*, *58*(597–609).

Rider, G. N., McMorris, B. J., Gower, A. L., Coleman, E., & Eisenberg, M. E. (2018). Health and Care Utilization of Transgender and Gender Nonconforming Youth: A Population-Based Study. *Pediatrics*, *141*(3), e20171683. https://doi.org/10.1542/peds.2017-1683

Riggle, E. D. B., Whitman, J. S., Olson, A., Scales Rostosky, S., & Strong, S. (n.d.). The positive aspects of being a lesbian or gay man. *APA PsycNET*. https://doi.org/10.1037/0735-7028.39.2.210

Rinehart, S. J., Espelage, D. L., & Bub, K. L. (2020). Longitudinal Effects of Gendered Harassment Perpetration and Victimization on Mental Health Outcomes in Adolescence. *Journal of Interpersonal Violence*, *35*(23–24), 5997–6016. https://doi.org/10.1177/0886260517723746

Rioux, C., Paré, A., London-Nadeau, K., Juster, R.-P., Weedon, S., Levasseur-Puhach, S., Freeman, M., Roos, L. E., & Tomfohr-Madsen, L. M. (2022). Sex and gender terminology: A glossary for gender-inclusive epidemiology. *Journal of Epidemiology and Community Health*, *76*(8), 764–768. https://doi.org/10.1136/jech-2022-219171

Rogés, J., González-Casals, H., Bosque-Prous, M., Folch, C., Colom, J., Casabona, J., Drou-Roget, G., Teixidó-Compañó, E., Fernández, E., Vives-Cases, C., & Espelt, A. (2023). Monitoring health and health behaviors among adolescents in Central Catalonia: DESKcohort protocol. *Gaceta Sanitaria*, *37*, 102316. https://doi.org/10.1016/j.gaceta.2023.102316

Rosenkrantz, D. E., Black, W. W., Abreu, R. L., Aleshire, M. E., & Fallin-Bennett, K. (2017). Health and health care of rural sexual and gender minorities: A systematic review. *Stigma and Health*, *2*(3), 229–243. https://doi.org/10.1037/sah0000055

Ross, L. E., Salway, T., Tarasoff, L. A., MacKay, J. M., Hawkins, B. W., & Fehr, C. P. (2018). Prevalence of Depression and Anxiety Among Bisexual People Compared to Gay, Lesbian, and Heterosexual Individuals:A Systematic Review and Meta-Analysis. *The Journal of Sex Research*, *55*(4–5), 435–456. https://doi.org/10.1080/00224499.2017.1387755

Russell, S. T., Sinclair, K. O., Poteat, V. P., & Koenig, B. W. (2012). Adolescent Health and Harassment Based on Discriminatory Bias. *American Journal of Public Health*, *102*(3), 493. https://doi.org/10.2105/AJPH.2011.300430

Sánchez-Ledesma, E., Serral, G., Ariza, C., López, M. J., Pérez, C., & Grup col·laborador Enquesta FRESC 2021. (2022). *La salut i els seus determinants en adolescents de Barcelona. Enquesta FRESC 2021.* Agència de Salut Pública de Barcelona.

Siegel, M., Randall, A. K., Lannutti, P. J., Fischer, M. S., Gandhi, Y., Lukas, R., Meuwly, N., Rosta-Filep, O., van Stein, K., Ditzen, B., Martos, T., Schneckenreiter, C., Totenhagen, C. J., & Zemp, M. (2022). Intimate Pride: A Tri-Nation Study on Associations between Positive Minority Identity Aspects and Relationship Quality in Sexual Minorities from German-Speaking Countries. *International Journal of Applied Positive Psychology*, 1–29. https://doi.org/10.1007/s41042-022-00070-6

Twenge, J. M., Sherman, R. A., & Wells, B. E. (2016). Changes in American Adults' Reported Same-Sex Sexual Experiences and Attitudes, 1973–2014. *Archives of Sexual Behavior*, *45*(7), 1713–1730. https://doi.org/10.1007/s10508-016-0769-4

UNICEF. (2021). *State of the World's Children 2021—On my mind*. United Nations International Children's Emergency Fund. https://www.unicef.org/reports/state-worlds-children-2021

Vela, J. A. M., Guilló, S., Correa, I., Sevilla, J., Vernardos, L., Fuentes, R., & Estebaranz, L. (2022). *LGTBfobia en las aulas*. COGAM Asociación LGBTI+ de Madrid.

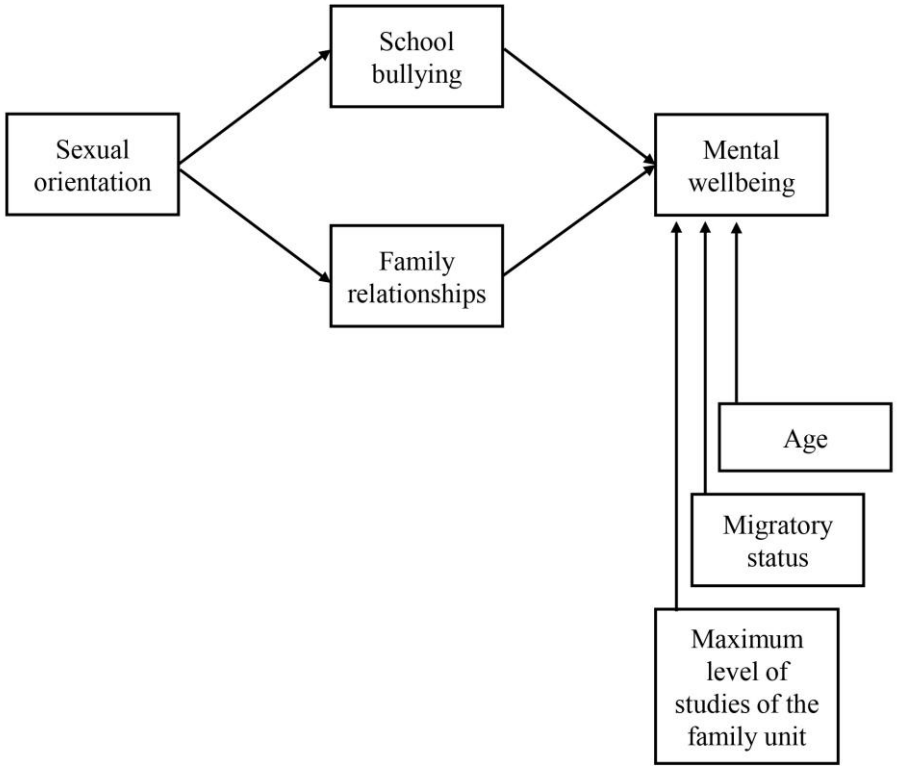
World Health Organization. (2013). *Global and regional estimates of violence against women: Prevalence and health effects of intimate partner violence and non-partner sexual violence*. World Health Organization. https://apps.who.int/iris/handle/10665/341337

Yost, M. R., & Thomas, G. D. (2012). Gender and Binegativity: Men's and Women's Attitudes Toward Male and Female Bisexuals. *Archives of Sexual Behavior*, *41*(3), 691–702. https://doi.org/10.1007/s10508-011-9767-8

Tables and Figures

Figure 1

Diagram of the path analysis performed to test the effect of school bullying and family relationships in the association between sexual orientation and mental wellbeing



Note. Six different path analysis were performed, for each gender (cisgender boys and cisgender girls) in each type of municipality (small towns, intermediate cities, and metropolis).

Figure 2

Prevalence of high mental wellbeing (and 95% CI) according to sexual orientation, stratified by gender

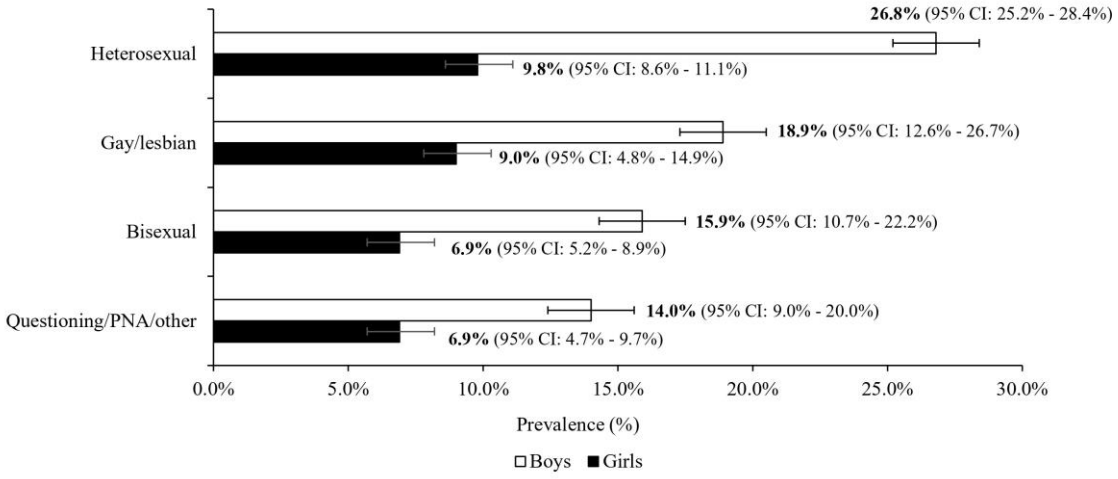


Table 1

Description of the sociodemographic variables and main study variables of the sample, stratified by gender and type of municipality

	Boys					Girls				
	Total	Small towns	Intermediate cities	Metropolis		Total	Small towns	Intermediate cities	Metropolis	
	n (%)	n (%)	n (%)	n (%)	p-value[a]	n (%)	n (%)	n (%)	n (%)	p-value[a]
	3559 (48.4)	1918 (53.9)	907 (25.5)	734 (20.6)		3793 (51.6)	2018 (53.2)	946 (24.9)	829 (21.9)	
Sociodemographic variables										
Academic year[b]					0.278					<0.001
4th CSE	2064 (58)	1088 (56.7)	529 (58.3)	447 (60.9)		2046 (53.9)	1066 (52.8)	550 (58.1)	430 (51.9)	
2nd Bacc.	1061 (29.8)	581 (30.3)	269 (29.7)	211 (28.7)		1436 (37.9)	807 (40.0)	325 (34.4)	304 (36.7)	
2nd IVT	434 (12.2)	249 (13)	109 (12.0)	76 (10.4)		311 (8.2)	145 (7.2)	71 (7.5)	95 (11.5)	
Maximum level of studies of the family unit					<0.001					<0.001
Primary school or less	531 (14.9)	327 (17.0)	147 (16.2)	57 (7.8)		663 (17.5)	393 (19.5)	193 (20.4)	77 (9.3)	
Secondary school	1071 (30.1)	608 (31.7)	272 (30.0)	191 (26.0)		1230 (32.4)	719 (35.6)	281 (29.7)	230 (27.7)	
University	1615 (45.4)	767 (40.0)	389 (42.9)	459 (62.5)		1689 (44.5)	776 (38.5)	400 (42.3)	513 (61.9)	
I don't know	342 (9.6)	216 (11.3)	99 (10.9)	27 (3.7)		211 (5.6)	130 (6.4)	72 (7.6)	9 (1.1)	
Migration status[c]					<0.001					<0.001
From Spain	2677 (75.2)	1570 (81.9)	615 (67.8)	492 (67.0)		2755 (72.6)	1621 (80.3)	587 (62.1)	547 (66.0)	
2nd-generation migrant	558 (15.7)	228 (11.9)	185 (20.4)	145 (19.8)		648 (17.1)	274 (13.6)	219 (23.2)	155 (18.7)	
1st-generation migrant	281 (7.9)	98 (5.1)	97 (10.7)	86 (11.7)		288 (7.6)	78 (3.9)	110 (11.6)	100 (12.1)	
Born outside of Spain with Spanish parents	43 (1.2)	22 (1.1)	10 (1.1)	11 (1.5)		102 (2.7)	45 (2.2)	30 (3.2)	27 (3.3)	
Main study variables										
Sexual orientation					<0.001					<0.001
Heterosexual	3085 (86.7)	1707 (89.0)	794 (87.5)	584 (79.6)		2436 (64.2)	1378 (68.3)	649 (68.6)	409 (49.3)	
Gay/lesbian	132 (3.7)	52 (2.7)	17 (1.9)	63 (8.6)		144 (3.8)	46 (2.3)	19 (2.0)	79 (9.5)	
Bisexual	170 (4.8)	61 (3.2)	49 (5.4)	60 (8.2)		780 (20.6)	345 (17.1)	151 (16.0)	284 (34.3)	
Questioning/PNA/Other	172 (4.8)	98 (5.1)	47 (5.2)	27 (3.7)		433 (11.4)	249 (12.3)	127 (13.4)	57 (6.9)	
High mental well-being					0.289					0.472
No	2656 (74.6)	1417 (73.9)	675 (74.4)	564 (76.8)		3457 (91.1)	1849 (91.6)	860 (90.9)	748 (90.2)	

	Boys					Girls				
	Total	Small towns	Intermediate cities	Metropolis		Total	Small towns	Intermediate cities	Metropolis	
	n (%)	n (%)	n (%)	n (%)	p-value[a]	n (%)	n (%)	n (%)	n (%)	p-value[a]
Yes	903 (25.4)	501 (26.1)	232 (25.6)	170 (23.2)		336 (8.9)	169 (8.4)	86 (9.1)	81 (9.8)	
School bullying (over last year)					0.008					<0.001
Never	2439 (72.9)	1307 (72.5)	594 (70.5)	538 (77.2)		2312 (65.7)	1191 (63.7)	519 (60.7)	602 (75.9)	
Once	429 (12.8)	230 (12.7)	111 (13.2)	88 (12.6)		569 (16.2)	300 (16.0)	148 (17.3)	121 (15.3)	
Twice or more	476 (14.2)	267 (14.8)	138 (16.4)	71 (10.2)		638 (18.1)	380 (20.3)	188 (22.0)	70 (8.8)	
Family relationships					<0.001					0.851
Good or very good	3083 (86.6)	1676 (87.4)	805 (88.8)	602 (82.0)		2842 (74.9)	1515 (75.1)	712 (75.3)	615 (74.2)	
Regular or bad	476 (13.4)	242 (12.6)	102 (11.2)	132 (18.0)		951 (25.1)	503 (24.9)	234 (24.7)	214 (25.8)	

[a] p-value calculated by chi-squared test.

[b] Compulsory Secondary Education (CSE), Baccalaureate (Bacc.), Intermediate Vocational Training (IVT).

[c] Second-generation migrant (any progenitor born outside of Spain). First-generation migrant (adolescent born outside of Spain).

Table 2

Analysis of the association of sexual orientation with mental well-being in boys, and the effect of school bullying and family relationships, stratified by type of municipality

	Small towns (N=1918)		Intermediate cities (N=907)		Metropolis (N=734)	
	Model 1[a]	Model 2 [a]	Model 1 [a]	Model 2 [a]	Model 1 [a]	Model 2 [a]
	$Coeff._{adj}$ (95% CI)	$Coeff._{adj}$ (95% CI)	$Coeff._{adj}$ (95% CI)	$Coeff._{adj}$ (95% CI)	$Coeff._{adj}$ (95% CI)	$Coeff._{adj}$ (95% CI)
Sexual orientation						
Heterosexual	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)
Gay	**-5.78 (-8.08; -3.48)**	**-4.09 (-6.43; -1.75)**	-1.87 (-5.88; 2.14)	-0.98 (-5.01; 3.05)	-0.08 (-2.36; 2.20)	-0.92 (-3.15; 1.32)
Bisexual	**-6.36 (-8.49; -4.24)**	**-4.69 (-6.83; -2.56)**	**-4.02 (-6.43; -1.61)**	-2.39 (-4.78; 0.00)	**-3.11 (-5.43; -0.78)**	-2.22 (-4.55; 0.10)
Questioning/PNA/Other	**-3.44 (-5.16; -1.72)**	**-2.18 (-3.93; -0.42)**	**-3.02 (-5.55; -0.50)**	**-2.86 (-5.36; -0.36)**	**-4.35 (-7.74; -0.97)**	**-4.73 (-8.00; -1.46)**
School bullying						
Never		0		0		0
Once		-1.03 (-2.16; 0.09)		**-2.32 (-3.91; -0.72)**		**-2.1 (-4.01; -0.18)**
Twice or more		**-3 (-4.09; -1.91)**		**-5.53 (-7.02; -4.03)**		**-4.26 (-6.43; -2.10)**
Family relationships						
Good or very good		0		0		0
Regular or bad		**-6.03 (-7.18; -4.88)**		**-6.22 (-7.96; -4.48)**		**-5.23 (-6.93; -3.53)**
Effect of school bullying [b]						
Gay		22.9% (12.7; 33.1%)		- [c]		- [c]
Bisexual		13.6% (6.5; 20.7%)		25.3% (7.7; 43.0%)		34.3% (14.5; 54.2%)
Questioning/PNA/Other		14.9% (5.8; 24.0%)		10.6% (-24.9; 3.6%)		15.8% (-5.2; 36.7%)
Effect of family relationships [b]						
Gay		28.6% (15.7; 41.4%)		- [c]		- [c]
Bisexual		22.4% (12.4; 32.5%)		14.7% (-7.6; 36.9%)		19.1% (-2.6; 40.8%)
Questioning/PNA/Other		19.5% (5.4; 33.6%)		0.4% (-15.9; 16.7%)		10.6% (-10.4; 31.6%)

Note. Values highlighted in bold indicate statistically significant associations. Coeff.adj = adjusted coefficient; CI = confidence interval; PNA= prefer not to answer; RIT=ratio of the indirect effect to the total effect. [a] All models have been adjusted according to academic year, maximum level of studies of the family unit, and migration status. [b] Effect calculated as the ratio of the indirect effect to the total effect (RIT) using Path Analysis. [c] Path Analysis was not performed since model 1 showed no statistically significant association between being gay and mental well-being.

Table 3

Analysis of the association of sexual orientation with mental well-being in girls, and the effect of school bullying and family relationships, stratified by type of municipality

	Small towns (N=2018)		Intermediate cities (N=946)		Metropolis (N=829)	
	Model 1 [a]	Model 2 [a]	Model 1 [a]	Model 2 [a]	Model 1 [a]	Model 2 [a]
	$Coeff._{adj}$ (95% CI)	$Coeff._{adj}$ (95% CI)	$Coeff._{adj}$ (95% CI)	$Coeff._{adj}$ (95% CI)	$Coeff._{adj}$ (95% CI)	$Coeff._{adj}$ (95% CI)
Sexual orientation						
Heterosexual	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)
Lesbian	-0.23 (-2.71; 2.26)	-0.13 (-2.54; 2.29)	-2.85 (-6.63; 0.93)	-0.67 (-4.54; 3.19)	-1.33 (-3.48; 0.83)	-1.38 (-3.49; 0.72)
Bisexual	**-2.97 (-3.97; -1.97)**	**-2.19 (-3.16; -1.22)**	**-3.90 (-5.37; -2.43)**	**-2.76 (-4.20; -1.33)**	**-1.94 (-3.33; -0.55)**	**-1.49 (-2.84; -0.14)**
Questioning/PNA/Other	**-2.95 (-4.09; -1.81)**	**-2.38 (-3.49; -1.27)**	**-2.31 (-3.90; -0.71)**	**-1.67 (-3.18; -0.16)**	**-3.1 (-5.59; -0.61)**	**-2.57 (-5.00; -0.14)**
School bullying						
Never		0		0		0
Once		**-1.7 (-2.69; -0.70)**		**-3.55 (-4.93; -2.16)**		**-1.91 (-3.58; -0.24)**
Twice or more		**-3.55 (-4.49; -2.62)**		**-5.06 (-6.36; -3.77)**		**-4.38 (-6.50; -2.27)**
Family relationships						
Good or very good		0		0		0
Regular or bad		**-6.39 (-7.23; -5.55)**		**-6.42 (-7.62; -5.21)**		**-5.57 (-6.95; -4.19)**
Effect of school bullying [b]						
Lesbian		- [c]		- [c]		- [c]
Bisexual		10.8% (4.2; 17.5%)		12.2% (0.1; 24.3%)		3.0% (-16.0; 10.0%)
Questioning/PNA/Other		3.3% (-3.3; 9.8%)		14.2% (-5.2; 33.6%)		18.3% (0.6; 36.0%)
Effect of family relationships [b]						
Lesbian		- [c]		- [c]		- [c]
Bisexual		24.4% (11.9; 36.8%)		31.8% (17.0; 46.6%)		24.5% (4.3; 44.8%)
Questioning/PNA/Other		21.9% (8.7; 35.1%)		27.0 (2.1; 51.9%)		35.7% (9.5; 61.9%)

Note. Values highlighted in bold indicate statistically significant associations. Coeff.adj = adjusted coefficient; CI = confidence interval; PNA= prefer not to answer; RIT=ratio of the indirect effect to the total effect. [a] All models have been adjusted according to academic year, maximum level of studies of the family unit, and migration status. [b] Effect calculated as the ratio of the indirect effect to the total effect (RIT) using Path Analysis. [c] Path Analysis was not performed since model 1 showed no statistically significant association between being a lesbian and mental well-being.