STUDIA UBB PSYCHOL.-PAED., LXVIII, 2, 2023, p. 65-92
(Recommended Citation)
DOI:10.24193/subbpsyped.2023.2.04

The Relationship between Social Support and Depression in the LGBT+ population: A Meta-analysis

Laura BERCEA[1], Sebastian PINTEA[2], Éva KÁLLAY[3],

ABSTRACT. Introduction: Previous research investigating the relationship between social support and depression in the LGBT+ community yielded mixed results. Considering that the LGBT+ population has a high prevalence of mental disorders and is frequently victim of discrimination, it would be essential to know if social support is related to the depressive symptoms its representatives face. The main purpose of this meta-analysis was to clarify whether there is a correlation between social support and depression in the LGBT+ population and to identify moderators of this relationship. **Methods**: EBSCO, PubMed, and PsychNET databases were searched. Studies that reported statistical indicators for the relationship between social support and depression in an LGBT+ sample were included in this meta-analysis. **Results**: 48 studies were eligible for the meta-analysis. Our results show that there is a significant negative moderate relationship between social support and depression in the LGBT+ community. The heterogeneity of the results in the literature is partially explained by the way social support was defined and measured, by gender, sexual orientation, and ethnicity. Limitations and implications of the current study are discussed. **Discussion:** Practical implications of these results include promoting social support, and acceptance at individual and social levels, with more emphasis on policies and practices that foster well-being and a positive climate, that encourage information sharing, and offering support related to LGBT+ issues. It is also important to create safe spaces for sexual minority youth. Considering the LGBT+ adults, all these aspects can be implemented as well in work contexts, to promote safe spaces and accepting attitudes in the workspace.

Keywords: LGBT+, depression, depressive symptoms, social support, meta-analysis.

[1] M.A, Department of Psychology, Babeş-Bolyai University, Cluj-Napoca, Romania. Email: laurabercea97@gmail.com
[2] PhD, Department of Psychology, Babeş-Bolyai University, Cluj-Napoca, Romania. Email: sebastianpintea@psychology.ro
[3] PhD, Department of Psychology, Babeş-Bolyai University, Cluj-Napoca, Romania. Email: evakallay@psychology.ro

Introduction

The analysis of several meta-analyses indicated that the prevalence of mental disorders in the LGBT+ population is higher than in the heterosexual population (Meyer, 2003; Semlyen et al., 2016). A meta-analysis of 12 health surveys in UK population showed that lesbian, gay, bisexual, and adults identified as having other sexual orientation were two times more likely to report symptoms of mental disorders, with higher rates among younger and older LGB population. Even higher rates were noticed for bisexuals, and adults identified as having other sexual orientation (Semlyen et al., 2016). Another meta-analysis showed that, in LGB population, anxiety, alcohol, and substance misuse are at least 1.5 times more common, the 12 months prevalence of depression being at least two times higher, the risk for suicide attempts in the past year is also double, reaching a lifetime risk four times higher than the risk in heterosexual population (King et al., 2008). Another meta-analysis showed that the LGB community experience higher rates of depression and anxiety, the bisexual population having similar or even higher rates (Ross et al., 2018). Data describing sexual minority youth are not very different. The prevalence of depressive symptoms and depressive disorder among sexual minority youth are almost 3 times higher compared to their heterosexual peers, with female sexual minority youth being at particular risk (Lucassen et al., 2017).

Several studies highlight that the risk and prevalence for mental disorders are even higher in transgender and gender nonconforming (TGNC) population, compared to their cisgender peers (i.e., a person whose gender identity matches the one assigned at birth). Transgender youth specifically are two to three times more likely to experience depression, anxiety, suicidal ideation, suicide attempt, non-suicidal self-injury, and mental health treatment, both inpatient and outpatient (Reisner et al., 2015), while transgender adults have a higher risk for depression and attempted suicide (37.7%) compared to non-transgender LGB adults (15.9%) (Su et al., 2016).

The acronym LGBT+ is used to refer to lesbian, gay, bisexual, and transgender individuals, and to any sexual minority person whose sexual orientation or gender identity is not described by those mentioned or does not identify as any of them. In this article, we will use LGBT+, unless we refer to specific subpopulations (e.g., LGB for lesbian, gay, and bisexual people).

A framework for understanding the higher prevalence of mental disorders among the LGB population, when compared to heterosexual individuals, is represented by The Minority Stress Theory (Meyer, 2003), which states that, besides typical life stressors (e.g., loss, illness, injury), people can also experience LGB-specific stressors as a result of their minority status. They can be categorized

into four domains: a) prejudice events, b) expectations of prejudice events, c) concealment of sexual orientation, and d) internalization of negative social attitudes and beliefs. These LGB-specific stressors are described on a continuum, ranging from distal (e.g. discrimination, violence, interpersonal homophobia) to proximal (e.g., fear of rejection, internalized homophobia) processes. All of these types of stressors can have a negative impact on mental health outcomes, but the model also postulated that there are factors that can reduce the negative effects of minority stress on mental health outcomes, such as coping strategies and social support. More recent studies offer further support for Meyer's model (Hall, 2018; Mongelli et al., 2019). The model has also been expanded for transgender and gender-nonconforming people to incorporate their unique experiences as well (Hendricks & Testa, 2012).

The LGBT-specific stressors that might have a negative impact on mental health outcomes mentioned in the Minority Stress Theory (Hendricks & Testa, 2012; Meyer, 2003) have been thoroughly studied and it has been shown that LGBT+ people are very often victims of discrimination. More specifically, LGB adolescents are more frequently victims of bullying and victimization by peers than heterosexual adolescents (Choukas-Bradley & Thoma, in press; Mustanski et al., 2011), with up to 94% reporting violence based on their sexual orientation (Mustanski et al., 2011) - the highest rates being reported by transgender youth (McGuire et al., 2010; Su et al., 2016; Veale et al., 2017).

In recent years, there have been major changes around the world regarding the rights of LGBT people (e.g., the issue of same-sex marriage, Poushter & Kent (2020), and the public support for LGBT issues has "dramatically increased" (Russell & Fish, 2016).

According to a report published in 2020, using data from a survey conducted across 34 countries, views about homosexuality have been changing since 2002. For example, in 2019 in the United States 72% of the participants reported that homosexuality should be accepted, while in 2007, only 49% reported the same. Nonetheless, public opinion remains sharply divided by country, region, and economic development. More specifically, levels of acceptance tend to be higher in American and Western European countries and lower in Eastern Europe, the Middle East, Russia, and part of Africa (Poushter & Kent, 2020).

Furthermore, LGBT youth tend to come out at younger ages, yet they still have a high risk for mental health problems. Based on their review, Russell and Fish (2016) suggested several risk factors that could explain this phenomenon: lack of support at the social and cultural levels that limit their rights, living in communities unsupportive of LGBT rights, rejection from family and friends after coming out, bullying based on sexual orientation or gender identity, and unhealthy coping strategies. Moreover, McDermott et al. (2021)

stated that to support LGBT+ mental health, specifically among youth, it is important "to understand that they live in a heteronormative world that despite improvements continues to either explicitly denigrate LGBTQ+ identities or marginalize and silence those lives" (p. 7).

It is well established in the literature that social support and social relationships are extremely important in promoting well-being in the general population. Even more important than the availability of social support is the person's perception regarding it (Cohen, 2004).

According to Ryan et al. (2010) during adolescence, which is a unique developmental period, parents are still important for the basic needs and psychological well-being of the adolescent, even though relationships with peers and their feedback become increasingly more important. Moreover, according to McDonald (2018) "[…] social support becomes fundamental to the development of the adolescent's sense of self and particularly relevant to LGBTQ adolescents who typically face higher amounts of stress and violence throughout their youth" (p. 1), In this review, the authors examined studies evaluating social support and its effect on mental health in LGBTQ adolescents, and they concluded that low social support or the lack of social support was associated with poor mental health, alcohol or drug use, risky sexual behaviors, shame, and low self-esteem, while high social support was associated with positive self-esteem. In their review, Russell and Fish (2016) suggested that parental and peer support, social support from LGBT friends, and coming out can act as protective factors. Some of the benefits that might be associated with these protective factors could be as follows: better mental health, self-acceptance, well-being, reduced effects of victimization.

A study that compared LGBQ adolescents to their heterosexual peers, reported more depressive symptoms, more externalizing behavior, higher rates of bullying and sexual harassment, a more hostile peer environment of victimization, and less social support from family and friends for the former group. Based on their results, the authors suggested that the depressive and externalizing symptoms can be explained by the victimization experiences and the lack of social support (Williams et al., 2005).

It is important to note that the types and levels of social support in the LGBT+ community are not equally distributed. Many LGBT adolescents report that sexuality-specific social support is lower than other forms of social support, and family members offer the lowest levels of this type of support for sexuality stress (Doty et al., 2010). Moreover, adolescents questioning their sexual orientation report adjustment difficulties, victimization experiences, and perceived social support similar to their LGB peers (Williams et al., 2005). For transgender youth, family social support was associated with lower levels of depressive symptoms,

lower perceived burden of being transgender, and higher life satisfaction (Simons et al., 2013). In qualitative studies, transgender and gender-variant youth reported that social support from peers and friends contributes to a positive sense of self (Pusch, 2005; Singh, 2013), and to maintaining mental health (Pusch, 2005), while social support from family improved the way they defined themselves as a marginalized gender (Singh, 2013).

However, research regarding the relationship between social support and depression in the LGBT+ population yielded mixed results. Some studies identified small, but positive correlations between social support and depression (Kaufman et al., 2017; Martin-Storey & Crosnoe, 2012), and the magnitude of the negative correlations found varied considerably: some studies identified almost null negative correlations (e.g. Bauermeister et al., 2010; Flanders et al., 2019; Kertzner et al., 2009; Woodford et al., 2015), small negative correlations (e.g. Rosario et al., 2011; Verrelli et al., 2019; Vincke & van Heeringen, 2002), medium negative correlations (e.g. Berghe et al., 2010; Cain et al., 2017; Lehavot & Simoni, 2011), and high negative correlations (e.g. Busby et al., 2020; Fingerhut, 2018; Puckett et al., 2015).

There is also a great diversity regarding the variables included in the studies. Some studies use samples of adolescents (e.g., Dickenson & Huebner, 2016), others of adults (e.g., Fingerhut, 2018), and others of elders (Ramirez-Valles et al., 2014). In some of the studies, there is a great percentage of university graduates (e.g., 97% in Fingerhut, 2018), while in others the percentage is lower (e.g., 24.3% in Wang et al., 2020). Moreover, some researchers choose to use full scales to evaluate depression and social support (e.g., Feinstein et al., 2014; Sheets & Mohr, 2009), while others select certain items and use them (e.g. Kaufman et al., 2017; Masini & Barrett, 2008).

To our knowledge, there is no meta-analysis to study the relationship between social support and depression in the LGBT+ population. In this context, the primary goal of the current meta-analysis is to clarify whether there is a correlation between social support and depression in the LGBT+ population. The second objective is to determine if the methodological characteristics of the original studies and sample characteristics account for the variability of the results observed across studies. Given the diversity of the primary studies, the following moderators will be tested using an exploratory approach: (i) the percentage of lesbian, gay, bisexual, and transgender participants; (ii) the percentage of women; (iii) the percentage of participants with higher education; (iv) the percentage of participants involved in a romantic relationship; (v) the mean age of the participants; (vi) the percentage of White participants; (vii) the region where the study was developed.

METHODS

Search Procedure and Study Selection

We conducted a meta-analysis that follows the guidelines provided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher et al., 2009).

The following databases were searched by two reviewers: EBSCO, PubMed, and PsychNET. The search terms used included the following: "LGBT+" (and other variations, such as LGBTQ+, LGBTQIA+, etc.) or "lesbian" or "gay" or "bisexual" or "transgender" or "homosexual" or "queer" or "sexual orientation" or "gender identity" or "sexual minority" AND "depression" or "depressive disorder" or "depressive symptoms" or "major depressive disorder" AND "social support" or "social networks" or "social relationships".

Publications were included if they:

- provided statistical indicators for the association between social support and depression,
- were studies conducted with LGBT+ participants,
- were published after the year 2000, to ensure temporal relevance, considering that the public and scientific support and awareness for the LGBT issues has changed considerably (Russell & Fish, 2016).
- were published in English.

Publications were excluded if they:

- were not published in a peer-reviewed journal. We decided not to include unpublished studies because having gone through the process of peer-review is proof of the quality of the studies included. To compensate for this decision, we performed two methods of publication bias analysis, which will be detailed in the Methods section.
- included heterosexual people in the sample and did not provide statistical indicators specifically for the LGBT+ subsample, only for the sample as a whole.
- mentioned social support in the title and/or abstract but did not measure actual social support.
- assessed depressive symptoms, but did not provide statistical indicators for the association between social support and depression, only for mental health and social support.

Data Set and Coding Procedure

Social Support

Social support is a concept with many definitions and little consensus around them (Pearson, 1986). A frequently cited definition was proposed by Cobb (1976), who defined social support as the perception that one is part of a network with mutual obligations, and that one is respected, loved, and cared for.

In this article, social support refers specifically to perceived social support as a result of the fact that none of the studies included in this meta-analysis objectively assessed social support, all of them asking participants about their perceptions of social support. Perceived social support refers to different types of social support, including support from family, friends, significant-other, LGBT+ community, as well as instrumental support, informational support, and emotional support.

We divided the studies into categories, based on the way they defined and measured social support: firstly, we labeled with "Core definition" studies that used instruments specifically developed to assess social support (e.g., Multidimensional Scale of Perceived Social Support, Child and Adolescent Social Support Scale; such studies are Puckett et al., 2015; Watson et al., 2019), and secondly, we labeled with "Peripheral definitions" studies that used instruments that were not specifically developed to measure social support, but the authors chose to include those constructs into their definition of social support (e.g., Connectedness to the LGBTQ Community Scale, used by Flanders et al., 2019). We made this distinction because it would be expected that there would be a difference in the results of the studies that use instruments designed specifically to assess social support, compared to the results of the studies that used instruments that were not specifically developed to measure social support, but the authors chose to include those constructs into their definition of social support.

We also distinguished between studies that used full scales to measure social support (e.g., Fingerhut, 2018; Puckett et al., 2015) and studies that used selections of items to measure social support (e.g., Gibbs & Rice, 2016; Masini & Barrett, 2008). It would be expected that complete instruments, designed specifically to assess social support, would yield different results than using a single item or a selection of items, being able to assess multiple facets, and to draw a better understanding of the construct, considering that those instruments have been tested for validity and reliability.

Depression

According to the DSM-V (APA, 2013), major depressive disorder is characterized by well-defined changes in a person's affect, cognition, and neuro-vegetative functions, with every episode lasting at least two weeks. The most

important feature of this disorder is that the affected person loses interest or pleasure in the majority of the activities.

In this meta-analysis, we included studies that operationalized depression as the presence of various symptoms, and not necessarily having a diagnostic of major depressive disorder. This lead to dividing the studies into two categories: firstly, studies that used full scales, full instruments designed to evaluate the presence and intensity of depressive symptoms (e.g., Beck Depression Inventory, and the Depression Subscale from the Center for Epidemiological Studies; such studies are Bauermeister et al., 2010; Cain et al., 2017), and secondly, studies that used items taken from or adapted from other instruments (such studies are Kaufman et al., 2017; Ramirez-Valles et al., 2014). It would be expected that complete instruments, designed specifically to assess depressive symptoms, would yield different results than using a single item or a selection of items, being able to assess multiple facets, and to draw a better understanding of the construct, considering that those instruments have been tested for validity and reliability.

Sexual Orientation and Gender Identity

Sexual orientation and gender identity measures were comprised by both self-report measures (i.e., the participants declared their sexual orientation and gender identity), and objective measures (i.e., for sexual identity the participants were asked to declare the genders they were attracted to or the gender of the people they were/used to be in a relationship with; for gender identity, the participants were asked to declare the gender assigned at birth and the gender they identify as).

In this meta-analysis, we used as moderators only three sexual orientations (LGB specifically), and one gender identity (Transgender) due to the lack of studies that include more sexual orientations and gender identities. The percentage of lesbian and gay participants was treated as one variable because the primary studies often do the same (e.g., Busby et al., 2020; Martin-Storey & Crosnoe, 2012; Puckett et al., 2015; Woodford et al., 2015).

We wanted to test the effect of each sexual orientation on the relationship between social support and depression because it is established in the literature that, between lesbian, gay, and bisexual people, those who identify as bisexual are the most vulnerable (Marshal et al., 2011; Semlyen et al., 2016). Moreover, we decided to test the effect of the transgender identity on the association between social support and depression because transgender people have a higher prevalence for mental health problems compared to their cisgender peers (Eisenberg et al., 2017; Reisner et al., 2015; Su et al., 2016).

Other Moderators

We chose the percentage of women participating in the studies as a moderator for the relationship between social support and depression because previous results showed that social support has a higher protective value against depression for women from the general population (Kendler et al., 2005), but there seems to be no data regarding the same association for the women in the LGBT+ community.

Higher education was operationalized as the percentage of participants that graduated college or university. Across the primary studies, the percentages of participants with higher education vary considerably: from 0% (in Dickenson & Huebner, 2015; Martin-Storey & Crosnoe, 2012; Mereish et al., 2020; Moran et al., 2018) to 97% (in Fingerhut, 2018). Moreover, to our knowledge, no research tested the effects of having higher education on the association between social support and depression in the LGBT+ community. Nonetheless, some studies tested the association between social support and educational attainment and the association between depression and educational attainment. More specifically, among older gay men, depressive symptoms are more frequent among those with less than a college education compared to those with college degrees of higher education, $t(162) = 2.24$, $p < .05$, (Ramirez-Valles et al., 2014). Furthermore, among sexual minority women, higher levels of education were associated with lower depression ($r = -.20$, $p < .001$), and higher social support ($r = .16$, $p < .001$) (Lehavot & Simoni, 2011).

We decided to test the effect of relationship status on the association between social support and depression because the results regarding the benefits for the LGBT+ community of being involved in a relationship are mixed. Previous research suggested that being involved in a relationship might have the same benefits for the LGBT+ community as it has for heterosexual people (Whitton et al., 2018), and that mental health is improved in participants who were in a relationship compared to those who were not (Ayala & Coleman, 2000; Kornblith et al., 2016; Oetjen & Rothblum, 2000; Parsons et al., 2013). Some studies suggest that sexual minority youth might benefit more from being in a relationship compared to heterosexual youth (Katz-Wise & Hyde, 2012; Ryan et al., 2009), but there is also research that did not find an association between relationship involvement and mental health in the LGBT+ community (Feinstein et al., 2014). The relationship status was not assessed in 36 studies. In all of the studies that reported relationship status, participants were asked if, at the time of the study, they were involved in a relationship (regardless of the partner's gender): some of the studies asked only if they had a partner (e.g., Ayala & Coleman, 2000; Cain et al., 2017), others asked them whether they were married, divorced or widowed (Hu et al., 2020), while others asked them if they were in a committed relationship, including both partnership and marriage (Li et al., 2020).

The mean age of the participants was chosen as another moderator, considering the diversity of the average age of the participants in the primary studies. Moreover, based on our research of the literature, no study tested if age is a moderator for the relationship between social support and depression in the LGBT+ population. We only found that previous research showed that the protective effects of social support received specifically from family decrease with age (Mustanski et al., 2011; Wise et al., 2017).

The percentage of White participants was also included as another moderator for the relationship between social support and depression because, to our knowledge, no study tested this relationship. This would be a moderator of interest because, according to the Minority Stress Theory (Meyer, 2003), the risk for experiencing minority-related stressors is higher for those belonging to two or more minority groups, which in turn is associated with higher mental health problems.

We also decided to test if the region where the primary studies were developed was a moderator for the relationship between social support and depression, considering the cultural differences that might influence this relationship. We classified the studies into three categories, based on where they were conducted: (1) Asia; (2) U.S.A., Canada & Australia; (3) Western Europe.

To ensure coding consistency and construct validity, the coding scheme was jointly developed by the authors in line with the conceptual and operational definitions provided in the theoretical framework of the study. Further on, the coding procedure was performed by both authors. All instances of disagreement were resolved through consensus.

Data Analysis

Analyses were conducted by using Comprehensive MetaAnalysis software, version 2.2.050 (Biostat Inc., Englewood, NJ, USA). As an indicator of the effect sizes, Pearson's correlation coefficient was used. Given the heterogeneity of the studies, all analyses were based on a random-effects model.

Publication Bias Analysis

Publication bias analysis was performed using two methods. First, we used the Classic Fails-safe N of Rosenthal (Rosenthal, 1979) to evaluate the number of studies with null effects that are required to turn the effect size to zero. Second, we calculated the Begg and Mazumdar's rank correlation test (Begg & Mazumdar, 1994). This test computes the rank order correlation (Kendall's tau b) between the effect size and the standard error (which is driven primarily by

the sample size) to identify if large studies tend to be included in the analysis regardless of their effect size, whereas small studies are more likely to be included when they show a relatively large effect size.

RESULTS

Study selection

Following the procedure described in the Methods section, 1639 studies were identified through database searching, and 46 studies through additional sources (i.e. articles cited in other publications). After removing the duplicates, 735 studies were left to be screened by 2 reviewers, of which 576 were excluded based on the exclusion criteria. 159 full-text articles were assessed for eligibility by two reviewers, and 111 were removed. In the end, 48 were eligible and included in the current meta-analysis. No duplicated datasets were included. This process is illustrated in Figure 1.

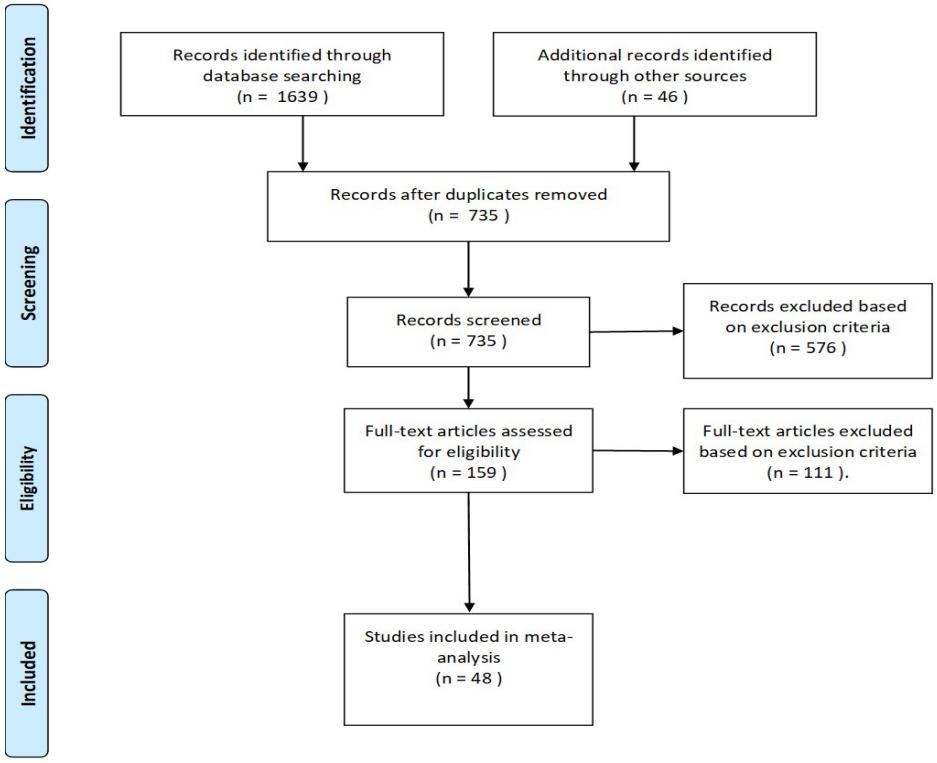

Figure1. The PRISMA flow chart diagram describing the selection of studies

The 48 eligible studies were conducted in many different countries, they had varying sample sizes, and they varied regarding the characteristics of each sample. In-depth study characteristics are presented in Table 1.

Table 1. The studies included in the meta-analysis and their main features

Study	Study Design	Country	Sample Size	% of LG	% of B	% of T	Mean Age
Ayala & Coleman, 2000	Cross-sectional	Canada	112	100	0	0	NS
Bauermeister et al., 2010	Longitudinal	U.S.A	190	NS	NS	0	17
Berghe et al., 2010	Cross-sectional	Belgium	820	93	7	0	21.5
Busby et al., 2020	Cross-sectional	U.S.A	868	28.3	45	10	NS
Cain et al., 2017	Cross-sectional	U.S.A	1071	95	5	0	40.24
Chakrapani et al., 2017	Cross-sectional	India	600	9	6	100	29.7
Dickenson & Huebner, 2015	Cross-sectional	U.S.A	519	64.35	28.51	0	16.5
Ding et al., 2019	Cross-sectional	China	715	72.9	NS	NS	27.09
Feinstein et al., 2014	Cross-sectional	U.S.A	414	100	0	NS	31.3
Fingerhut, 2018	Cross-sectional	U.S.A	89	100	0	0	36.7
Flanders et al., 2019	Cross-sectional	U.S.A & Canada	136	0	100	14.7	21.5
Fredriksen-Goldsen et al., 2012	Cross-sectional	U.S.A	2349	94.64	5.36	0	67
Gibbs & Rice, 2015	Cross-sectional	U.S.A	195	86	9.8	0	22
Hu et al., 2020	Cross-sectional	China	302	85.76	14.24	NS	24
Johnson et al., 2001	Longitudinal	U.S.A	103	100	0	0	38
Kaufman et al., 2017	Cross-sectional	Netherlands	267	49	22.1	NS	17.61
Kertzner et al., 2009	Cross-sectional	U.S.A	396	83.8	16.2	0	38.5
Latkin et al., 2017	Cross-sectional	U.S.A	1402	NS	NS	0	NS
Lehavot & Simoni, 2011	Cross-sectional	U.S.A	1381	50	29	0	33.54
Li et al., 2020	Cross-sectional	China	385	100	0	NS	24
Logie et al., 2017	Cross-sectional	Canada	391	33.8	16.6	2.8	30.9
Martin-Storey & Crosnoe, 2012	Cross-sectional	U.S.A	40	25	75	NS	NS
Masini & Barrett, 2008	Cross-sectional	U.S.A	220	95	5	0	57
McConnel et al., 2015	Cross-sectional	U.S.A	232	61.9	28.57	9.52	18.75
McDowell et al., 2019	Cross-sectional	U.S.A	150	NS	NS	100	27.5
Mereish et al., 2020	Cross-sectional	U.S.A	94	29.8	35.1	11.7	16.1
Moran et al., 2018	Cross-sectional	U.S.A	347	51	28	15	21.3
Mulya & Hutahaean, 2020	Cross-sectional	Indonesia	295	100	0	0	NS
Mustanski & Liu, 2013	Cross-sectional	U.S.A	237	61.6	28.7	8.9	18.76
Parra et al., 2017	Cross-sectional	Canada	62	79	21	0	21.34
Pflum et al., 2015	Cross-sectional	U.S.A & Canada	427	NS	NS	100	33.05
Puckett et al., 2015	Cross-sectional	U.S.A	241	71.8	2.1	2.5	35.96
Ramirez-Valles et al., 2014	Cross-sectional	U.S.A	182	NS	NS	NS	66
Rosario et al., 2005	Longitudinal	U.S.A	156	66	31	0	18.3
Rosario et al., 2011	Longitudinal	U.S.A	156	66	31	0	18.3
Ryan et al., 2010	Cross-sectional	U.S.A	245	70	13	9	NS
Sheets & Mohr, 2009	Cross-sectional	U.S.A	210	0	100	NS	20.96
Simons et al., 2013	Cross-sectional	U.S.A	66	NS	NS	100	19.06
Tabler et al., 2019	Cross-sectional	U.S.A	157	NS	NS	0	36
Veale et al., 2017	Cross-sectional	Canada	600	NS	NS	56	22
Verrelli et al., 2019	Cross-sectional	Australia	1305	71.6	28.3	0	33.73
Vincke & van Heeringen, 2002	Longitudinal	Belgium	197	85	0	0	19.9
Wang et al., 2020	Cross-sectional	Taiwan	581	55.4	44.6	0	NS
Wang et al., 2018	Cross-sectional	Taiwan	500	74.2	25.8	0	22.9
Watson et al., 2019	Cross-sectional	U.S.A	835	54	46	0	18.77
Wise et al., 2017	Cross-sectional	U.S.A	64	NS	NS	NS	19.88
Woodford et al., 2015	Cross-sectional	U.S.A	326	11.3	16.3	2.5	23.48
Yan et al., 2019	Cross-sectional	China	347	NS	NS	NS	33.9

Heterogeneity analysis

The heterogeneity analysis performed for the distribution of the effect sizes in our meta-analysis indicated a significant heterogeneity, Q(47)= 409.02, p < .001. Taking into account also the diversity related to research designs (e.g. participants, instruments, design), we decided to perform all the data analysis using a random-effects model.

Overall analysis

The forest plot presented in Figure 2 shows that there is a significant negative moderate relationship between social support and depression, r= -.255, CI95%=[-.295; -.215], p < .001.

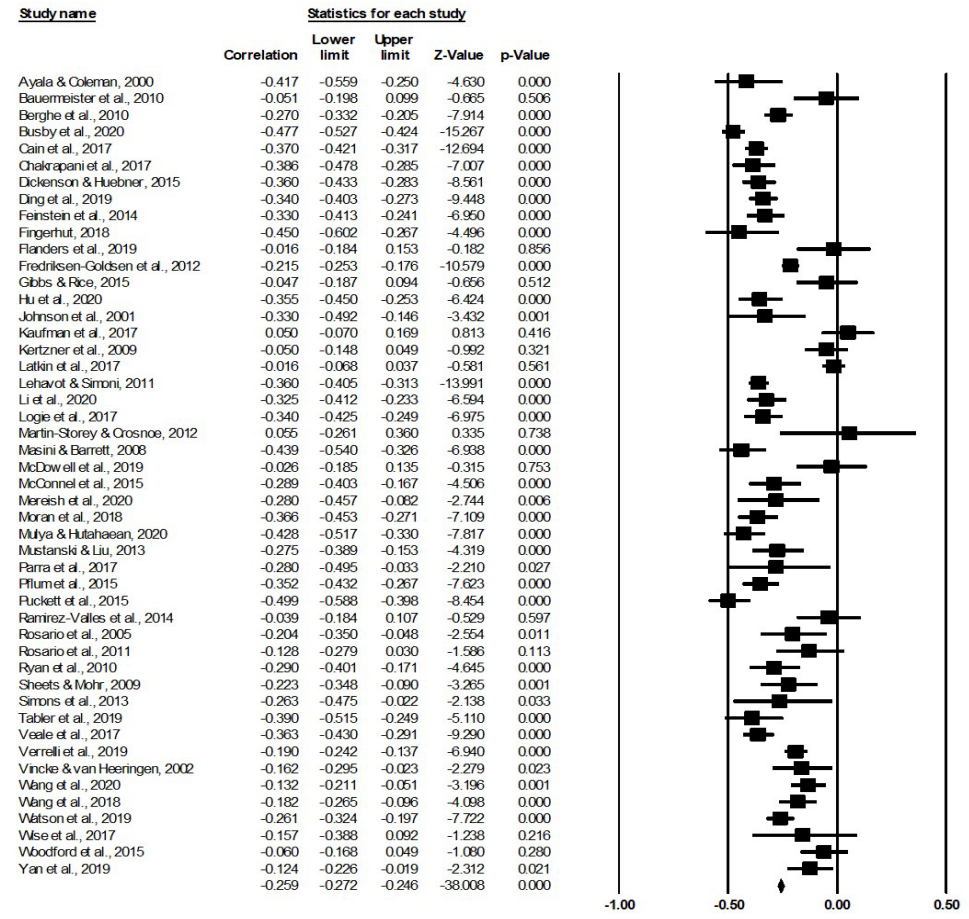

Figure 2. The Forest plot for the overall effect size

Publication bias analysis

As we have already detailed in the Method section, publication bias analysis was performed using two methods, the Classic Fails-safe N of Rosenthal, and the Begg and Mazumdar's rank correlation test.

The Classic Fails-safe N of Rosenthal. Our meta-analysis incorporates data from 48 studies, which yield a Z-value of -34.19 and a corresponding 2-tailed p-value of .001.

The fail-safe N is 4563. This means that we would need to locate and include 4563 "null" studies for the combined 2-tailed p-value to exceed .050. In other words, there would need to be 95.06 missing studies for every observed study for the effect to be nullified.

The Begg and Mazumdar's rank correlation. This test was concerned with the potential relationship between the size of the studies and the effect size obtained by each one. The results revealed a non-significant Kendall's tau b of .12, with a two-tailed p-value of .197 (based on continuity-corrected normal approximation), suggesting there is no tendency for studies that are more precise (and implicitly larger) to generate larger effect sizes.

Moderators analysis

Moderators related to research design

Definition of social support

Table 2. The effect size as a function of defining social support

Definition	No. of studies	r	Limits of confidence interval (95%)		Z	p
			Lower	Upper		
Peripheral	12	-.130	-.240	-.017	-2.24	.025
Core	41	-.277	-.319	-.234	-12.02	.000

As it can be observed in Table 2, studies with a peripheral definition of social support obtained a small but significant negative effect (r = -.130, p =.025) while studies with core definitions of social support obtained a medium significant negative effect (r = -.277, p < .001). By statistical comparison, studies with core definitions obtained significantly higher effect sizes, Q(1)= 6.01, p = .014. In other words, when social support is more precisely defined, its relationship with depression is more evident.

Completeness of social support scale

Table 3. The effect size as a function of completeness of social support scale

Completeness	No. of studies	r	Limits of confidence interval (95%)		Z	p
			Lower	Upper		
Full scale	30	-.319	-.362	-.275	-13.35	.000
Selection of items	18	-.169	-.233	-.104	-5.03	.000

As table 3 shows, studies that used full psychometric scales to measure social support recorded a significant negative medium effect size (r = -.319, p< .001), while studies that measured the same concept using selections of items obtained a significant negative low effect size (r = -.169, p < .001). The difference between the two categories was statistically significant, Q(1)= 14.48, p < .001. In other words, studies that measure social support with more stable, well-rounded instruments, have greater chances to reveal the relationship between social support and depression.

Completeness of depression scale

Table 4. The effect size as a function of completeness of depression scale

Completeness	No. of studies	r	Limits of confidence interval (95%)		Z	p
			Lower	Upper		
Full scale	37	-.277	-.322	-.232	-11.44	.000
Selection of items	12	-.191	-.272	-.106	-4.37	.000

As table 4 shows, studies that used full psychometric scales to measure depression (or full clinical interview) recorded a significant negative medium effect size (r=-.281, p<.001), while studies that measured the same concept using selections of items obtained a significant negative low effect size (r = -.191, p < .001). The difference between the two categories was not significant at p < .05 but significant at p < .10, Q(1)= 3.27, p = .070. In other words, studies that measured depression with more stable, well-rounded instruments (or full clinical interviews), tend to have greater chances to reveal the relationship between social support and depression.

Moderators related to samples

Percentage of women

The percentage of women in each sample proved to be a significant negative predictor of the effect sizes, Z= -2.69 p < .001. Taking into account the negative correlation between social support and depression, this result means that as the percentage of women increases, the negative correlation between these two concepts increases. In other words, it could be said that, for women, social support has a higher protective value against depression.

Percentage of transgender participants

The percentage of transgender participants in each sample proved to be a significant negative predictor of the effect sizes, Z = -6.73, p < .001. Taking into account the negative relationship between social support and depression, this result means that as the percentage of transgender participants increases, the negative correlation between these two concepts increases.

Sexual orientation (% of lesbian and gay participants)

The meta-regression performed for the percentage of lesbian, and gay participants as a predictor for the effect sizes revealed a non-significant predictive value, Z = -.80, p = .420. In other words, the percentage of lesbian and gay participants did not affect the relationship between social support and depression.

Sexual orientation (% of bisexual participants)

The percentage of bisexual participants had a significant positive predictive value upon the effect sizes, Z = 3.74, p < .001. Taking into account that the correlation between social support and depression is negative, this means that higher percentages of bisexual people are associated with lower protective values of social support against depression.

The average age of participants

The meta-regression analysis with age as a predictor and the effect size as criterion variable proved that age had no significant predictive value, Z = .13, p = .894. In other words, age is not associated with the protective role of social support.

Percentage of higher educated participants

The percentage of participants with higher education had no significant predictive value for the effect sizes, Z =-.67, p = .502, which means that higher education does not affect the relationship between social support and depression.

Percentage of White participants

The percentage of White participants had a significant negative predictive value upon the effect sizes, Z = -9.56, p < .001. In other words, as the percentage of White participants in the samples increases, the magnitude of the negative correlation between social support and depression increases.

Percentage of participants involved in a relationship

The percentage of participants involved in a relationship had no significant predictive value for the effect sizes, Z = 1.10, p = .271, which means that being involved in a relationship does not affect the correlation between social support and depression.

Region

Table 5. The effect size as a function of the region

Region	No. of studies	r	Limits of confidence interval (95%)		Z	p
			Lower	Upper		
Asia	8	-.285	-.364	-.202	-6.51	.000
U.S.A.& Canada & Australia	37	-.258	-.305	-.209	-10.04	.000
Western Europe	3	-.133	-.326	.070	-1.28	.199

The meta-regression performed for the region where the studies were conducted showed no significant difference between regions Q(2)= 1.98, p = .371. This means that the country where the study was conducted does not influence the relationship between social support and depression.

DISCUSSION

The current meta-analysis found a significant negative moderate relationship between social support and depression in the LGBT+ community.

By analyzing some of the characteristics of the studies included in our meta-analysis, we found that when authors defined more precisely the construct of social support, its relationship with depression was more evident. Moreover, measuring social support and depression with more stable, well-rounded instruments, is associated with a greater chance to reveal the relationship between social support and depression.

Based on our results social support could be seen as having a higher protective value against depression for women, which is consistent with previous results on a sample from the general population (Kendler et al., 2005). A possible explanation might be that women perceive social networks as being more important and valuable to them than men do, the latter using other strategies for coping with discrimination.

We also found that social support could be seen as having a higher protective value against depression for transgender people. This is an interesting finding considering that transgender people represent an especially vulnerable subgroup of the LGBT+ community, reporting the highest rates of victimization (McGuire et al., 2010; Su et al., 2016; Veale et al., 2017), and the highest rates of mental health problems (Reisner et al., 2015; Su et al., 2016). In previous studies, compared to LGB youth, transgender youth reported having lower social support from parents (Ryan et al., 2010), and it was suggested that many of them may be facing a lack of belonging across a variety of life domains (Trujillo et al., 2017). Our results might be explained by the source of social support transgender people receive. To be precise, they might not be accepted by family or friends, but they might receive unconditional acceptance from a significant other (Trujillo et al., 2017).

Our results also showed that social support could be seen as having a lower protective value against depression for bisexual people. A possible explanation might be because bisexual people face double discrimination, firstly from heterosexuals, and secondly from lesbian and gay individuals (Brewster & Moradi, 2010; Roberts et al., 2015). Because of this lack of acceptance, and the invalidation of their identity, bisexual people might conceal their sexual orientation (Balsam & Mohr, 2007; Legate et al., 2012), which affects the sense of connection to the LGBT community (Balsam & Mohr, 2007; Chan et al., 2020; Hayfield et al., 2014; Kertzner et al., 2009), and the social support they can receive (Hayfield et al., 2014).

Moreover, we found that age does not affect the relationship between social support and depression. Previous research showed that the protective effects of social support received specifically from family decrease with age (Mustanski et al., 2011; Wise et al., 2017), and it was suggested that this might be a normal change because people start to rely more on friends while they transition into adulthood (Wise et al., 2017). However, according to the current results, age does not influence the relationship between social support and depression.

Furthermore, based on our results, social support could be seen as having a higher protective value against depression for White participants. This might be explained by the Minority Stress Theory (Meyer, 2003), which states that the risk for experiencing minority-related stressors is higher for people belonging to two minority groups (e.g., sexual minorities and people of color - POC). Previous studies support this statement (Balsam & Mohr, 2007; Bostwick et al., 2014; English et al., 2018; Ghabrial, 2017; Grollman, 2014; Sutter & Perrin, 2016). In a study, 60% of the sexual minority men of color reported any form of discrimination in the past year (compared to 23.8% of white sexual minority men), and 41.9% of the sexual minority women of color, compared to 20.7% of white counterparts (Bostwick et al., 2014). A study also showed that LGB-POC youth have lower chances of disclosing their sexual minority status (Mustanski et al., 2011).

Finally, being involved in a relationship does not affect the correlation between social support and depression. Previous research that focused on the benefits of romantic relationships in the LGBT+ community provided mixed results. Some studies showed that the benefits observed in heterosexual couples were likely to be the same for LGB adults as well, with a study using eight waves of data finding that, when they were involved in a relationship, participants reported less psychological distress, compared to the times when they were not (Whitton et al., 2018). Other studies showed that lesbian women in a committed relationship reported fewer depressive symptoms than their single counterparts (Ayala & Coleman, 2000; Kornblith et al., 2016; Oetjen & Rothblum, 2000), findings that are similar in the case of gay and bisexual men as well (Parsons et al., 2013). However, there is also research that did not find evidence for the protective role of relationship involvement on mental health disorders (Feinstein et al., 2016). Research on sexual minority youth suggested that they might benefit more from romantic relationships than their heterosexual counterparts because those relationships might provide the social support they are lacking in other relationships, like the ones with family and peers (Katz-Wise & Hyde, 2012; Ryan et al., 2009).

Implications

Based on the current results, we can highlight the importance of social support among the LGBT+ population suffering from depressive symptoms or major depressive disorder. Thereby, practical implications of these results include promoting social support, and acceptance at individual and social levels. For example, in schools, there should be more accent on policies and practices that foster well-being and a positive climate, that encourage information sharing and offering support related to LGBT+ issues. In addition, it is really important to create safe spaces for sexual minority youth. Considering the LGBT+ adults, all these aspects can be implemented as well in work contexts, to promote safe spaces and accepting attitudes in the workspace.

Limitations

Our results are limited by the lack of diversity regarding the sexual orientations, gender identities, and ethnicities of the samples from the original studies, by the way sexual orientation and gender identity were measured in those studies, and also by the lack of longitudinal perspectives in the empirical literature.

At the same time, these limitations highlight what future studies can improve. Specifically, they should include more diverse samples, and they should assess longitudinally the relationships between protective factors and mental health issues. Moreover, future research should study the intersectionality between multiple identities, its association with mental health outcomes, and

its impact on the relationship between protective factors and mental health problems. Most importantly, researchers should focus more on developing interventions to promote protective factors and to reduce the negative impact of minority stressors among the LGBT+ population.

Conclusions

Although the public support for LGBT issues has increased considerably (Russell & Fish, 2016), there are still a lot of worrying aspects that need to be addressed. Our meta-analysis found a significant negative moderate relationship between social support and depression in the LGBT+ community, with women, transgender people, and White participants benefiting more from social support, while among bisexual people and POC, these effects tend to be lower.

The current results have implications, highlighting the importance of social support in the LGBT+ community. Further research should focus on multiple subgroups of the community and identify their unique needs, on multiple types of social support, and on creating interventions to foster healthy and supportive relationships among the people who need them most.

REFERENCES

American Psychiatric Association, & American Psychiatric Association (Eds.). (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (5th Ed). American Psychiatric Association.

Ayala, J., & Coleman, H. (2000). Predictors of depression among lesbian women. *Journal of Lesbian Studies*, *4*(3), 71–86. https://doi.org/10.1300/J155v04n03_04

Balsam, K. F., & Mohr, J. J. (2007). Adaptation to sexual orientation stigma: A comparison of bisexual and lesbian/gay adults. *Journal of Counseling Psychology*, *54*(3), 306–319. https://doi.org/10.1037/0022-0167.54.3.306

Bauermeister, J. A., Johns, M. M., Sandfort, T. G. M., Eisenberg, A., Grossman, A. H., & D'Augelli, A. R. (2010). Relationship trajectories and psychological well-being among sexual minority youth. *Journal of Youth and Adolescence*, *39*(10), 1148–1163. https://doi.org/10.1007/s10964-010-9557-y

Begg, C. B., & Mazumdar, M. (1994). Operating characteristics of a rank correlation test for publication bias. *Biometrics, 50*(4), 1088. https://doi.org/10.2307/2533446

Berghe, W. V., Dewaele, A., Cox, N., & Vincke, J. (2010). Minority-specific determinants of mental well-being among lesbian, gay, and bisexual youth. *Journal of Applied Social Psychology*, *40*(1), 153–166. https://doi.org/10.1111/j.1559-1816.2009.00567.x

Bostwick, W. B., Boyd, C. J., Hughes, T. L., West, B. T., & McCabe, S. E. (2014). Discrimination and mental health among lesbian, gay, and bisexual adults in the United States. *American Journal of Orthopsychiatry*, *84*(1), 35–45. https://doi.org/10.1037/h0098851

Brewster, M. E., & Moradi, B. (2010). Perceived experiences of anti-bisexual prejudice: Instrument development and evaluation. *Journal of Counseling Psychology*, *57*(4), 451–468. https://doi.org/10.1037/a0021116

Busby, D. R., Horwitz, A. G., Zheng, K., Eisenberg, D., Harper, G. W., Albucher, R. C., Roberts, L. W., Coryell, W., Pistorello, J., & King, C. A. (2020). Suicide risk among gender and sexual minority college students: The roles of victimization, discrimination, connectedness, and identity affirmation. *Journal of Psychiatric Research*, *121*, 182–188. https://doi.org/10.1016/j.jpsychires.2019.11.013

Cain, D. N., Mirzayi, C., Rendina, H. J., Ventuneac, A., Grov, C., & Parsons, J. T. (2017). Mediating effects of social support and internalized homonegativity on the association between population density and mental health among gay and bisexual men. *LGBT Health*, *4*(5), 352–359. https://doi.org/10.1089/lgbt.2017.0002

Chakrapani, V., Vijin, P. P., Logie, C. H., Newman, P. A., Shunmugam, M., Sivasubramanian, M., & Samuel, M. (2017). Understanding how sexual and gender minority stigmas influence depression among trans women and men who have sex with men in India. *LGBT Health*, *4*(3), 217–226. https://doi.org/10.1089/lgbt.2016.0082

Chan, R. C. H., Operario, D., & Mak, W. W. S. (2020). Bisexual individuals are at greater risk of poor mental health than lesbians and gay men: The mediating role of sexual identity stress at multiple levels. *Journal of Affective Disorders*, *260*, 292–301. https://doi.org/10.1016/j.jad.2019.09.020

Choukas-Bradley, & Thoma, B. C. (in press). Mental health among LGBT youth. In W. I. Wong & D. VanderLaan (Eds.), *Gender and Sexuality Development: Contemporary Theory and Research*. Cham: Springer.

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, *38*(5), 300–314. https://doi.org/10.1097/00006842-197609000-00003

Cohen, S. (2004). Social relationships and health. *American Psychologist, 59*(8), 676–684.

D'augelli, A. R. (2002). Mental health problems among lesbian, gay, and bisexual youths ages 14 to 21. *Clinical Child Psychology and Psychiatry*, *7*(3), 433–456. https://doi.org/10.1177/1359104502007003010

Dickenson, J. A., & Huebner, D. M. (2015). The relationship between sexual activity and depressive symptoms in lesbian, gay, and bisexual youth: Effects of gender and family support. *Archives of Sexual Behavior*, *45*(3), 671–681. https://doi.org/10.1007/s10508-015-0571-8

Ding, C., Chen, X., Wang, W., Yu, B., Yang, H., Li, X., Deng, S., Yan, H., & Li, S. (2019). Sexual minority stigma, sexual orientation concealment, social support and depressive symptoms among men who have sex with men in China: A moderated mediation modeling analysis. *AIDS and Behavior*, *24*(1), 8–17. https://doi.org/10.1007/s10461-019-02713-3

Doty, N. D., Willoughby, B. L. B., Lindahl, K. M., & Malik, N. M. (2010). Sexuality related social support among lesbian, gay, and bisexual youth. *Journal of Youth and Adolescence*, *39*(10), 1134–1147. https://doi.org/10.1007/s10964-010-9566-x

Eisenberg, M. E., Gower, A. L., McMorris, B. J., Rider, G. N., Shea, G., & Coleman, E. (2017). Risk and protective factors in the lives of transgender/gender nonconforming adolescents. *Journal of Adolescent Health*, *61*(4), 521–526. https://doi.org/10.1016/j.jadohealth.2017.04.014

English, D., Rendina, H. J., & Parsons, J. T. (2018). The effects of intersecting stigma: A longitudinal examination of minority stress, mental health, and substance use among Black, Latino, and multiracial gay and bisexual men. *Psychology of Violence*, *8*(6), 669–679. https://doi.org/10.1037/vio0000218

Feinstein, B. A., Latack, J. A., Bhatia, V., Davila, J., & Eaton, N. R. (2016). Romantic relationship involvement as a minority stress buffer in gay/lesbian versus bisexual individuals. *Journal of Gay & Lesbian Mental Health*, *20*(3), 237–257. https://doi.org/10.1080/19359705.2016.1147401

Feinstein, B. A., Wadsworth, L. P., Davila, J., & Goldfried, M. R. (2014). Do parental acceptance and family support moderate associations between dimensions of minority stress and depressive symptoms among lesbians and gay men? *Professional Psychology: Research and Practice*, *45*(4), 239–246. https://doi.org/10.1037/a0035393

Fingerhut, A. W. (2018). The role of social support and gay identity in the stress processes of a sample of Caucasian gay men. *Psychology of Sexual Orientation and Gender Diversity*, *5*(3), 294–302. https://doi.org/10.1037/sgd0000271

Flanders, C. E., Shuler, S. A., Desnoyers, S. A., & VanKim, N. A. (2019). Relationships between social support, identity, anxiety, and depression among young bisexual people of color. *Journal of Bisexuality*, *19*(2), 253–275. https://doi.org/10.1080/15299716.2019.1617543

Fredriksen-Goldsen, K. I., Emlet, C. A., Kim, H.-J., Muraco, A., Erosheva, E. A., Goldsen, J., & Hoy-Ellis, C. P. (2012). The physical and mental health of lesbian, gay male, and bisexual (LGB) older adults: The role of key health indicators and risk and protective factors. *The Gerontologist*, *53*(4), 664–675. https://doi.org/10.1093/geront/gns123

Ghabrial, M. A. (2017). "Trying to figure out where we belong": Narratives of racialized sexual minorities on community, identity, discrimination, and health. *Sexuality Research and Social Policy*, *14*(1), 42–55. https://doi.org/10.1007/s13178-016-0229-x

Gibbs, J. J., & Rice, E. (2015). The social context of depression symptomology in sexual minority male youth: Determinants of depression in a sample of grindr users. *Journal of Homosexuality*, *63*(2), 278–299. https://doi.org/10.1080/00918369.2015.1083773

Grollman, E. A. (2014). Multiple disadvantaged statuses and health: The role of multiple forms of discrimination. *Journal of Health and Social Behavior*, *55*(1), 3–19. https://doi.org/10.1177/0022146514521215

Hall, W. J. (2018). Psychosocial risk and protective factors for depression among lesbian, gay, bisexual, and queer youth: A systematic review. *Journal of Homosexuality*, *65*(3), 263–316. https://doi.org/10.1080/00918369.2017.1317467

Hayes, J., Chakraborty, A. T., McManus, S., Bebbington, P., Brugha, T., Nicholson, S., & King, M. (2012). Prevalence of same-sex behavior and orientation in England: Results from a National Survey. *Archives of Sexual Behavior*, *41*(3), 631–639. https://doi.org/10.1007/s10508-011-9856-8

Hayfield, N., Clarke, V., & Halliwell, E. (2014). Bisexual women's understandings of social marginalization: 'The heterosexuals don't understand us but nor do the lesbians'. *Feminism & Psychology*, *24*(3), 352–372. https://doi.org/10.1177/0959353514539651

Hendricks, M. L., & Testa, R. J. (2012). A conceptual framework for clinical work with transgender and gender nonconforming clients: An adaptation of the Minority Stress Model. *Professional Psychology: Research and Practice*, *43*(5), 460–467. https://doi.org/10.1037/a0029597

Hu, J., Tan, L., Huang, G., & Yu, W. (2020). The disparity in depressive symptoms between heterosexual and sexual minority men in China: The role of social support. *PLOS ONE*, *15*(1), e0226178. https://doi.org/10.1371/journal.pone.0226178

Johnson, J. G., Alloy, L. B., Panzarella, C., Metalsky, G. I., Rabkin, J. G., Williams, J. B. W., & Abramson, L. Y. (2001). Hopelessness as a mediator of the association between social support and depressive symptoms: Findings of a study of men with HIV. *Journal of Consulting and Clinical Psychology*, *69*(6), 1056–1060. https://doi.org/10.1037/0022-006X.69.6.1056

Joloza, T., Evans, J., O'Brien, R., & Potter-Collins, A. (2010). *Measuring sexual identity: An evaluation report*. Office for National Statistics.

Katz-Wise, S. L., & Hyde, J. S. (2012). Victimization Experiences of Lesbian, Gay, and Bisexual Individuals: A Meta-Analysis. *The Journal of Sex Research*, *49*(2–3), 142–167. https://doi.org/10.1080/00224499.2011.637247

Kaufman, T. M. L., Baams, L., & Dubas, J. S. (2017). Microaggressions and depressive symptoms in sexual minority youth: The roles of rumination and social support. *Psychology of Sexual Orientation and Gender Diversity*, *4*(2), 184–192. https://doi.org/10.1037/sgd0000219

Kendler, K. S., Myers, J., & Prescott, C. A. (2005). Sex differences in the relationship between social support and risk for major depression: A longitudinal study of opposite-sex twin pairs. *American Journal of Psychiatry*, *162*(2), 250–256. https://doi.org/10.1176/appi.ajp.162.2.250

Kertzner, R. M., Meyer, I. H., Frost, D. M., & Stirratt, M. J. (2009). Social and psychological well-being in lesbians, gay men, and bisexuals: The effects of race, gender, age, and sexual identity. *American Journal of Orthopsychiatry*, *79*(4), 500–510. https://doi.org/10.1037/a0016848

King, M., Semlyen, J., Tai, S. S., Killaspy, H., Osborn, D., Popelyuk, D., & Nazareth, I. (2008). A systematic review of mental disorder, suicide, and deliberate self-harm in lesbian, gay and bisexual people. *BMC Psychiatry*, 17.

Kornblith, E., Green, R.-J., Casey, S., & Tiet, Q. (2016). Marital status, social support, and depressive symptoms among lesbian and heterosexual women. *Journal of Lesbian Studies*, *20*(1), 157–173. https://doi.org/10.1080/10894160.2015.1061882

Latkin, C. A., Van Tieu, H., Fields, S., Hanscom, B. S., Connor, M., Hanscom, B., Hussen, S. A., Scott, H. M., Mimiaga, M. J., Wilton, L., Magnus, M., Chen, I., & Koblin, B. A. (2017). Social network factors as correlates and predictors of high depressive symptoms among black men who have sex with men in HPTN 061. *AIDS and Behavior*, *21*(4), 1163–1170. https://doi.org/10.1007/s10461-016-1493-8

Legate, N., Ryan, R. M., & Weinstein, N. (2012). Is coming out always a "Good Thing"? Exploring the relations of autonomy support, outness, and wellness for lesbian, gay, and bisexual individuals. *Social Psychological and Personality Science*, *3*(2), 145–152. https://doi.org/10.1177/1948550611411929

Lehavot, K., & Simoni, J. M. (2011). The impact of minority stress on mental health and substance use among sexual minority women. *Journal of Consulting and Clinical Psychology*, *79*(2), 159–170. https://doi.org/10.1037/a0022839

Li, F., Wang, Y., & Xing, J. (2020). Two sources of autonomy support and depressive symptoms among Chinese gay men: The sequential mediating effect of internalized homonegativity and rumination. *Journal of Affective Disorders*, *280*, 373–380. https://doi.org/10.1016/j.jad.2020.11.003

Logie, C. H., Lacombe-Duncan, A., Poteat, T., & Wagner, A. C. (2017). Syndemic factors mediate the relationship between sexual stigma and depression among sexual minority women and gender minorities. *Women's Health Issues*, *27*(5), 592–599. https://doi.org/10.1016/j.whi.2017.05.003

Lucassen, M. F., 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*, *51*(8), 774–787. https://doi.org/10.1177/0004867417713664

Marshal, M. P., Dietz, L. J., Friedman, M. S., Stall, R., Smith, H. A., McGinley, J., Thoma, B. C., Murray, P. J., D'Augelli, A. R., & Brent, D. A. (2011). Suicidality and depression disparities between sexual minority and heterosexual youth: A meta-analytic review. *Journal of Adolescent Health*, *49*(2), 115–123. https://doi.org/10.1016/j.jadohealth.2011.02.005

Martin-Storey, A., & Crosnoe, R. (2012). Sexual minority status, peer harassment, and adolescent depression. *Journal of Adolescence*, *35*(4), 1001–1011. https://doi.org/10.1016/j.adolescence.2012.02.006

Masini, B. E., & Barrett, H. A. (2008). Social support as a predictor of psychological and physical well-being and lifestyle in lesbian, gay, and bisexual adults aged 50 and over. *Journal of Gay & Lesbian Social Services*, *20*(1–2), 91–110. https://doi.org/10.1080/10538720802179013

McConnell, E. A., Birkett, M. A., & Mustanski, B. (2015). Typologies of social support and associations with mental health outcomes among LGBT youth. *LGBT Health*, *2*(1), 55–61. https://doi.org/10.1089/lgbt.2014.0051

McDermott, E., Eastham, R., Hughes, E., Pattinson, E., Johnson, K., Davis, S., Pryjmachuk, S., Mateus, C., & Jenzen, O. (2021). Explaining effective mental health support for LGBTQ+ youth: A meta-narrative review. *SSM - Mental Health, 1,* 100004. https://doi.org/10.1016/j.ssmmh.2021.100004

McDonald, K. (2018). Social Support and Mental Health in LGBTQ Adolescents: A review of the literature. *Issues in Mental Health Nursing*, *39*(1), 16–29. https://doi.org/10.1080/01612840.2017.1398283

McDowell, M. J., Hughto, J. M. W., & Reisner, S. L. (2019). Risk and protective factors for mental health morbidity in a community sample of female-to-male trans-masculine adults. *BMC Psychiatry*, *19*(1), 16. https://doi.org/10.1186/s12888-018-2008-0

McGuire, J. K., Anderson, C. R., Toomey, R. B., & Russell, S. T. (2010). School climate for transgender youth: A mixed method investigation of student experiences and school responses. *Journal of Youth and Adolescence*, *39*(10), 1175–1188. https://doi.org/10.1007/s10964-010-9540-7

Mereish, E. H., Cox, D. J., Harris, J. C., Anderson, Q. R., & Hawthorne, D. J. (2020). Familial influences, shame, guilt, and depression among sexual minority adolescents. *Family Relations*, fare.12514. https://doi.org/10.1111/fare.12514

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

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & The PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA Statement. *PLoS Medicine*, *6*(7), e1000097. https://doi.org/10.1371/journal.pmed.1000097

Mongelli, F., Perrone, D., Balducci, J., Sacchetti, A., Ferrari, S., Mattei, G., & Galeazzi, G. M. (2019). Minority stress and mental health among LGBT populations: An update on the evidence. *Minerva Psichiatrica*, *60*(1), 25.

Moran, T. E., Chen, C. Y.-C., & Tryon, G. S. (2018). Bully victimization, depression, and the role of protective factors among college LGBTQ students. *Journal of Community Psychology*, *46*(7), 871–884. https://doi.org/10.1002/jcop.21978

Mulya, I. S., & Hutahaean, B. S. H. (2020, November). Does perceived social support mediate the relationship between stigma consciousness and depressive symptoms among homosexuals in Indonesia?. In *3rd International Conference on Intervention and Applied Psychology (ICIAP 2019) and the 4th Universitas Indonesia Psychology Symposium for Undergraduate Research (UIPSUR 2019)* (pp. 415-427). Atlantis Press.

Mustanski, B., & Liu, R. T. (2013). A longitudinal study of predictors of suicide attempts among lesbian, gay, bisexual, and transgender youth. *Archives of Sexual Behavior*, *42*(3), 437–448. https://doi.org/10.1007/s10508-012-0013-9

Mustanski, B., Newcomb, M. E., & Garofalo, R. (2011). Mental health of lesbian, gay, and bisexual youths: A developmental resiliency perspective. *Journal of Gay & Lesbian Social Services*, *23*(2), 204–225. https://doi.org/10.1080/10538720.2011.561474

Oetjen, H., & Rothblum, E. D. (2000). When lesbians aren't gay: Factors affecting depression among lesbians. *Journal of Homosexuality*, *39*(1), 49–73. https://doi.org/10.1300/J082v39n01_04

Parra, L. A., Bell, T. S., Benibgui, M., Helm, J. L., & Hastings, P. D. (2017). The buffering effect of peer support on the links between family rejection and psychosocial adjustment in LGB emerging adults. *Journal of Social and Personal Relationships*, *35*(6), 854–871. https://doi.org/10.1177/0265407517699713

Parsons, J. T., Starks, T. J., DuBois, S., Grov, C., & Golub, S. A. (2013). Alternatives to monogamy among gay male couples in a community survey: Implications for mental health and sexual risk. *Archives of Sexual Behavior*, *42*(2), 303–312. https://doi.org/10.1007/s10508-011-9885-3

Pearson, J. E. (1986). The definition and measurement of social support. *Journal of Counseling & Development*, *64*(6), 390–395. https://doi.org/10.1002/j.1556-6676.1986.tb01144.x

Pflum, S. R., Testa, R. J., Balsam, K. F., Goldblum, P. B., & Bongar, B. (2015). Social support, trans community connectedness, and mental health symptoms among transgender and gender nonconforming adults. *Psychology of Sexual Orientation and Gender Diversity*, *2*(3), 281–286. https://doi.org/10.1037/sgd0000122

Poushter, J., & Kent, N. O. (2020). The Global Divide on Homosexuality Persists. 27.

Puckett, J. A., Woodward, E. N., Mereish, E. H., & Pantalone, D. W. (2015). Parental rejection following sexual orientation disclosure: Impact on internalized homophobia, social support, and mental health. *LGBT Health*, *2*(3), 265–269. https://doi.org/10.1089/lgbt.2013.0024

Pusch, R. S. (2005). Objects of curiosity: Transgender college students' perceptions of the reactions of others. *Journal of Gay & Lesbian Issues in Education, 3*(1), 45–61. https://doi.org/10.1300/J367v03n01_06

Ramirez-Valles, J., Dirkes, J., & Barrett, H. A. (2014). GayBy boomers' social support: Exploring the connection between health and emotional and instrumental support in older gay men. *Journal of Gerontological Social Work*, *57*(2–4), 218–234. https://doi.org/10.1080/01634372.2013.843225

Reisner, S. L., Vetters, R., Leclerc, M., Zaslow, S., Wolfrum, S., Shumer, D., & Mimiaga, M. J. (2015). Mental health of transgender youth in care at an adolescent urban community health center: A matched retrospective cohort study. *Journal of Adolescent Health*, *56*(3), 274–279. https://doi.org/10.1016/j.jadohealth.2014.10.264

Roberts, T. S., Horne, S. G., & Hoyt, W. T. (2015). Between a gay and a straight place: Bisexual individuals' experiences with monosexism. *Journal of Bisexuality*, *15*(4), 554–569. https://doi.org/10.1080/15299716.2015.1111183

Rosario, M., Schrimshaw, E. W., & Hunter, J. (2005). Psychological distress following suicidality among gay, lesbian, and bisexual youths: Role of social relationships. *Journal of Youth and Adolescence*, *34*(2), 149–161. https://doi.org/10.1007/s10964-005-3213-y

Rosario, M., Schrimshaw, E. W., & Hunter, J. (2011). Different patterns of sexual identity development over time: Implications for the psychological adjustment of lesbian, gay, and bisexual youths. *Journal of Sex Research*, *48*(1), 3–15. https://doi.org/10.1080/00224490903331067

Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin, 86*(3), 638–641. https://doi.org/10.1037/0033-2909.86.3.638

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., & Fish, J. N. (2016). Mental health in lesbian, gay, bisexual, and transgender (LGBT) youth. *Annual Review of Clinical Psychology*, *12*(1), 465–487. https://doi.org/10.1146/annurev-clinpsy-021815-093153

Ryan, C., Huebner, D., Diaz, R. M., & Sanchez, J. (2009). Family rejection as a predictor of negative health outcomes in white and Latino lesbian, gay, and bisexual young adults. *PEDIATRICS*, *123*(1), 346–352. https://doi.org/10.1542/peds.2007-3524

Ryan, Russell, S. T., Huebner, D., Diaz, R., & Sanchez, J. (2010). Family acceptance in adolescence and the health of LGBT young adults: Family acceptance in adolescence and the health of LGBT young adults. *Journal of Child and Adolescent Psychiatric Nursing*, *23*(4), 205–213. https://doi.org/10.1111/j.1744-6171.2010.00246.x

Savin-Williams, R. C., & Ream, G. L. (2007). Prevalence and stability of sexual orientation components during adolescence and young adulthood. *Archives of Sexual Behavior*, *36*(3), 385–394. https://doi.org/10.1007/s10508-006-9088-5

Semlyen, J., King, M., Varney, J., & Hagger-Johnson, G. (2016). Sexual orientation and symptoms of common mental disorder or low wellbeing: Combined meta-analysis of 12 UK population health surveys. *BMC Psychiatry*, *16*(1), 67. https://doi.org/10.1186/s12888-016-0767-z

Sheets, R. L., & Mohr, J. J. (2009). Perceived social support from friends and family and psychosocial functioning in bisexual young adult college students. *Journal of Counseling Psychology*, *56*(1), 152–163. https://doi.org/10.1037/0022-0167.56.1.152

Simons, L., Schrager, S. M., Clark, L. F., Belzer, M., & Olson, J. (2013). Parental support and mental health among transgender adolescents. *Journal of Adolescent Health*, *53*(6), 791–793. https://doi.org/10.1016/j.jadohealth.2013.07.019

Simons, L., Schrager, S. M., Clark, L. F., Belzer, M., & Olson, J. (2013). Parental support and mental health among transgender adolescents. *Journal of Adolescent Health, 53*(6), 791–793. https://doi.org/10.1016/j.jadohealth.2013.07.019

Singh, A. A. (2013). Transgender youth of color and resilience: Negotiating oppression and finding support. *Sex Roles, 68*(11–12), 690–702. https://doi.org/10.1007/s11199-012-0149-z

Su, D., Irwin, J. A., Fisher, C., Ramos, A., Kelley, M., Mendoza, D. A. R., & Coleman, J. D. (2016). Mental health disparities within the LGBT population: A comparison between transgender and non-transgender individuals. *Transgender Health*, *1*(1), 12–20. https://doi.org/10.1089/trgh.2015.0001

Sutter, M., & Perrin, P. B. (2016). Discrimination, mental health, and suicidal ideation among LGBTQ people of color. *Journal of Counseling Psychology*, *63*(1), 98–105. https://doi.org/10.1037/cou0000126

Tabler, J., Mykyta, L., Schmitz, R. M., Kamimura, A., Martinez, D. A., Martinez, R. D., Flores, P., Gonzalez, K., Marquez, A., Marroquin, G., & Torres, A. (2019). Getting by with a little help from our friends: The role of social support in addressing HIV-related mental health disparities among sexual minorities in the lower Rio Grande Valley. *Journal of Homosexuality*, *68*(2), 269–289. https://doi.org/10.1080/00918369.2019.1651112

Trujillo, M. A., Perrin, P. B., Sutter, M., Tabaac, A., & Benotsch, E. G. (2017). The buffering role of social support on the associations among discrimination, mental health, and suicidality in a transgender sample. *International Journal of Transgenderism*, *18*(1), 39–52. https://doi.org/10.1080/15532739.2016.1247405

Veale, J. F., Peter, T., Travers, R., & Saewyc, E. M. (2017). Enacted stigma, mental health, and protective factors among transgender youth in Canada. *Transgender Health*, *2*(1), 207–216. https://doi.org/10.1089/trgh.2017.0031

Verrelli, S., White, F. A., Harvey, L. J., & Pulciani, M. R. (2019). Minority stress, social support, and the mental health of lesbian, gay, and bisexual Australians during the Australian Marriage Law Postal Survey. *Australian Psychologist*, *54*(4), 336–346. https://doi.org/10.1111/ap.12380

Vincke, J., & van Heeringen, K. (2002). Confidant support and the mental wellbeing of lesbian and gay young adults: A longitudinal analysis. *Journal of Community & Applied Social Psychology*, *12*(3), 181–193. https://doi.org/10.1002/casp.671

Wang, Lin, H.-C., Chen, M.-H., Ko, N.-Y., Chang, Y.-P., Lin, I.-M., & Yen, C.-F. (2018). Effects of traditional and cyber homophobic bullying in childhood on depression, anxiety, and physical pain in emerging adulthood and the moderating effects of social support among gay and bisexual men in Taiwan. *Neuropsychiatric Disease and Treatment*, *Volume 14*, 1309–1317. https://doi.org/10.2147/NDT.S164579

Wang, Y., Miao, N., & Chang, S. (2020). Internalized homophobia, self-esteem, social support and depressive symptoms among sexual and gender minority women in Taiwan: An online survey. *Journal of Psychiatric and Mental Health Nursing*, jpm.12705. https://doi.org/10.1111/jpm.12705

Watson, R. J., Grossman, A. H., & Russell, S. T. (2019). Sources of social support and mental health among LGB youth. *Youth & Society*, *51*(1), 30–48. https://doi.org/10.1177/0044118X16660110

Whitton, S. W., Dyar, C., Newcomb, M. E., & Mustanski, B. (2018). Romantic involvement: A protective factor for psychological health in racially-diverse young sexual minorities. *Journal of Abnormal Psychology*, *127*(3), 265–275. https://doi.org/10.1037/abn0000332

Williams, T., Connolly, J., Pepler, D., & Craig, W. (2005). Peer victimization, social support, and psychosocial adjustment of sexual minority adolescents. *Journal of Youth and Adolescence, 34*(5), 471–482. https://doi.org/10.1007/s10964-005-7264-x

Wise, A. E., Smith, B. C., Armelie, A. P., Boarts, J. M., & Delahanty, D. L. (2017). Age moderates the relationship between the source of social support and mental health in racial minority lesbian, gay, and bisexual youth. *Journal of Health Psychology*, *24*(7), 888–897. https://doi.org/10.1177/1359105316686667

Woodford, M. R., Kulick, A., & Atteberry, B. (2015). Protective factors, campus climate, and health outcomes among sexual minority college students. *Journal of Diversity in Higher Education*, *8*(2), 73–87. https://doi.org/10.1037/a0038552

Yan, H., Li, X., Li, J., Wang, W., Yang, Y., Yao, X., Yang, N., & Li, S. (2019). Association between perceived HIV stigma, social support, resilience, self-esteem, and depressive symptoms among HIV-positive men who have sex with men (MSM) in Nanjing, China. *AIDS Care*, *31*(9), 1069–1076. https://doi.org/10.1080/09540121.2019.1601677