

**Bisexuality and Non-Suicidal Self-Injury: an analysis of risk and
exploration of associated psychological variables**

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Word count

*Including paper abstracts, excluding
references and appendices*

Thesis Abstract	466
Paper 1	8,246
Paper 2	5,725
Paper 3	5,553
Paper 4	4,740
Total	24, 730

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Thesis Abstract

This thesis explored the relationship between bisexuality and Non-Suicidal Self-Injury (NSSI). This thesis consists of four chapters: 1) a meta-analysis of risk and narrative synthesis of associated variables, 2) a quantitative empirical study, 3) a qualitative empirical study and 4) a critical appraisal and reflection of the research process and associated considerations.

In the meta-analysis and narrative synthesis (Paper 1), 24 papers were identified. Bisexual people had around six times the odds of engaging in NSSI compared to heterosexual people, and around four-and-a-half times the odds when compared to gay and lesbian people. When compared to any other sexuality, the overall weighted odds ratio was 3.50. From six papers included in the narrative synthesis, symptoms of anxiety and depression were most often, and most strongly, associated with NSSI for this group. This review emphasises the need for bisexual people to be studied independently of other sexual minorities when researching NSSI, given clear differences. Targeted support for bisexual people is recommended, with further research needed to investigate this behaviour for bisexual people.

The quantitative empirical paper (Paper 2) was a six-week microlongitudinal online survey study. The aim of this paper was to examine if the psychological variables of self-esteem and thwarted belongingness were associated at the same point in time with NSSI urges, and if such variables were also associated with next week urges. The total sample was N=207, with participants from 25 countries taking part. Results indicated that self-esteem and thwarted belongingness were both strongly associated with NSSI urges at the same point in time. Additionally, when self-esteem was

lagged in a mixed model linear regression with covariates, NSSI urges could be reliably predicted.

Paper 3 reports on a qualitative investigation of bisexuality and NSSI. A subset of participants from Paper 2 were invited to take part in an online interview of their experiences of bisexuality, NSSI and the COVID19 pandemic. The total sample for this paper was N=15, and results were analysed using thematic analysis. Four themes were constructed from the data: 1) coping with a heteronormative and binary-focused world, 2) relationship between bisexuality and NSSI, 3) experiences of lockdown and 4) meaning and consequences of NSSI. Results were taken back to a subset of participants for member-checking. Results are discussed with reference to epistemic injustice and the finding that NSSI was used to manage negative reactions from others, rather than an implicit dislike of bisexuality. It is recommended that future research should explore the nuances of intersecting identities to further unpack this relationship.

The final paper, Paper 4, provides a critical reflection and appraisal of the research process. This includes how the qualitative study came to be, a discussion of challenges encountered and decisions made, and an update of literature relevant to the meta-analysis, given that this paper was published in 2020.

Declaration

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Finally, I wish to acknowledge my everlasting thanks to the young bisexual people that took part in this research. Without you this body of work would not have been possible. I feel humbled to have been able to tell some of your stories and bring to light difficulties that you have faced, and continue to face.

To bisexual people everywhere that walk the line of invisibility and hear the cruel invalidations of others, to you I say: I see you, I hear you, and I stand with you.

Paper 1:

Bisexuality and Non-Suicidal Self-Injury (NSSI): a narrative synthesis of associated variables and a meta-analysis of risk

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This paper has been formatted according to the journal guidelines for *Journal of Affective Disorders* (Appendix A). This paper was subsequently published in the *Journal of Affective Disorders* in July 2020 (Appendix B).

Abstract

Background

Bisexual people have been found to be at increased risk of Non-Suicidal Self-Injury (NSSI) when compared to heterosexual and gay or lesbian people. The purpose of this review was to update the estimated risk of NSSI for bisexual people and to examine variables that have been associated with NSSI in this population.

Methods

The protocol for this paper was pre-registered (CRD42019145299). An electronic search of PsycINFO, CINAHL Plus, PubMed, Ovid Online and Web of Science was undertaken from earliest available date to October 2019. Twenty-four eligible papers were identified. Meta-analyses, including moderator analysis, were conducted to ascertain NSSI risk and a narrative synthesis was undertaken of predictors and correlates. All studies were assessed for risk of bias.

Results

Bisexual people had up to six times the odds of engaging in NSSI compared to other sexualities. Mental health variables of anxiety and depression symptoms were found to be most commonly associated with NSSI for this population. The majority of studies had moderate risk of bias. This review demonstrates that bisexual people have an elevated risk of engaging in NSSI. Increased incidence of anxiety and depression and exposure to negative life events may explain this increased risk.

Limitations

Studies were found to be consistently cross-sectional in design and limited to western cultures. A limitation of this review was that only English language papers were included.

Conclusions

Results are clinically relevant as they suggest early identification and prevention of NSSI can be achieved. Future research should examine bisexual people independently of others.

Keywords: *bisexual, bisexuality, non-suicidal self-injury, NSSI, self-injury, LGBT*

Highlights

- Bisexual people have heightened odds of engaging in Non-Suicidal Self-Injury.
- A narrative synthesis finds anxiety and depression associated most for this group.
- Studies frequently did not report bisexual people separately from others.
- Risk of bias in included studies was most commonly found to be moderate.

Introduction

Non-Suicidal Self-Injury (NSSI) is a pervasive difficulty, involving “the deliberate, self-inflicted damage of body tissue without suicidal intent and for purposes not socially or culturally sanctioned” (International Society for the Study of Self Injury, 2018). This can include a range of behaviours, including cutting, hitting, burning and scratching oneself (Klonsky et al., 2014).

International prevalence rates for NSSI range from 5.5% to 23.2% for adults (Klonsky, 2011; Muehlenkamp and Gutierrez, 2007; Swannell et al., 2014) and from 9.9% to 35.6% for adolescents (Matsumoto et al., 2008; Swannell et al., 2014; Zetterqvist et al., 2013). Moreover, lifetime prevalence in England has increased from 2.4% in 2000 to 6.4% in 2014 (McManus et al., 2019).

Engaging in NSSI can often indicate an individual is in distress or struggling with overwhelming emotions (Hjelmeland et al., 2002). NSSI can also have physical consequences, such as infection and scarring, and can

increase the risk of engaging in other high-risk behaviours, including suicidal behaviour (Andover et al., 2012; Guttridge et al., 2019; Ribeiro et al., 2016).

In addition to individual distress, research has found increased healthcare costs associated with NSSI (Byford et al., 2009; Sinclair et al., 2010).

NSSI can occur across all sections of society, cultures, genders, ages and sexualities. Mental health outcomes for bisexual people, however, appear to be consistently worse than heterosexual, lesbian and gay people (Jorm et al., 2002; King et al., 2008; Loosier and Dittus, 2010; Ross et al., 2018). For example, a recent meta-analysis found a standardised mean difference (SMD) of 0.21 (95% confidence interval [CI] 0.14-0.27) in depression symptoms for bisexual people when compared to gay/lesbian people, and a SMD of 0.42 (95% CI 0.37-0.47) when compared to heterosexual people (Ross et al., 2018).

Earlier reviews highlight that bisexual people are at a significantly increased risk of suicide (Marshall et al., 2011; Pompili et al., 2014; Salway et al., 2018) and NSSI (Batejan et al., 2015). Odds ratios (OR) for the association between bisexuality and NSSI are highest when compared to heterosexual people (OR=4.37; 95% CI 3.95-4.84) and gay/lesbian people (OR=2.36; 95% CI 2.00-2.78; Batejan et al., 2015). As the scope of their review was on sexual orientation generally, Batejan and colleagues computed just three meta-analyses pertaining specifically to bisexual people. The number of included studies were small, which limited the scope of analyses, and since publication in 2015 new studies have emerged. There were also no tests for moderators of NSSI risk specific to this population in the original review. Furthermore, a narrative synthesis of risk factors for NSSI

behaviour in this population has never been reported. A recent call to action paper has highlighted the pertinent need to examine the mental health of bisexual people as a distinct group (Taylor, 2018). An updated review and meta-analysis of NSSI risk in bisexual people specifically is therefore warranted.

Minority stress, as defined within Minority Stress Theory (Meyer, 2003), has been directly associated with increased NSSI risk in sexual minorities (Muehlenkamp et al., 2015). This theory suggests that experiences of stigma and discrimination associated with sexual minority status create stressful social environments that can lead to poor mental health. As well as general minority stress common to numerous sexual minorities, bisexual people face additional stressors. Bisexual women are more likely to have experienced childhood and lifetime sexual assault (Rothman et al., 2011), attitudes towards bisexual people are more negative than nearly any other sexuality group (Herek, 2002) and bisexual people often face homophobia and heterosexism within heterosexual relationships (Hayfield et al., 2014). Discrimination furthermore exists within the Lesbian, Gay and Bisexual (LGB) community; the validity of bisexuality is questioned (McLean, 2008) and bisexual commitment to gay and lesbian politics and community is seen as untrustworthy (Israel and Mohr, 2004).

The potential impact of minority stress and status can be linked into theoretical models of NSSI. The Experiential Avoidance model (Chapman et al., 2006) posits that stimuli (such as discrimination or abuse) create unwanted emotional reactions and individuals may engage in NSSI to avoid or manage this. If this is appraised as an effective strategy, NSSI can

become negatively reinforced. Similarly, the Benefits and Barriers model (Hooley and Franklin, 2017), suggests NSSI provides a means of distracting from negative thoughts and emotions (Selby and Joiner, 2009). The Cognitive-Emotional model of NSSI (Hasking et al., 2017) suggests a propensity toward emotional reactivity may influence individual interaction with the world. This emotional reactivity may result from earlier life experiences, such as stressful social environments, applicable to some bisexual people. NSSI may be used to avoid or modulate the emotional responses that result from these experiences. Heightened experiences of stigma and discrimination, paired with bisexual-specific stressors, may contribute to negative thought and affect for bisexual people and NSSI may therefore become a strategy to manage this.

This review has two primary objectives. The first is to update the Batejan and colleagues (2015) meta-analysis with a specific focus on a bisexual population. An updated estimate of risk of NSSI behaviours in bisexual people compared to other sexualities will be generated, and moderators of effect size will be investigated. The second objective is to identify predictors and correlates of NSSI thoughts and behaviours in a bisexual population within the extant literature. Previous reviews of NSSI in lesbian, gay, bisexual and transgender populations (Batejan et al., 2015; Jackman et al., 2016; King et al., 2008; McCartney, 2016) have typically focused on prevalence and not examined the extant evidence regarding correlates and predictors of NSSI specifically amongst bisexual people.

Method

Pre-registration of protocol

The protocol for this systematic review was pre-registered with the International Prospective Register of Systematic Reviews (PROSPERO; registration number CRD42019145299). There were only two deviations from the protocol: a different statistical software package was used and NSSI outcome was not used as a moderator as a sufficient number of studies enabled separate analyses for this. This review adhered to relevant Preferred Reporting Items of Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009), where applicable.

Study eligibility

For inclusion in this review papers must have: (1) included a sample of bisexual people; (2) included a measure of NSSI thoughts, urges or behaviour; (3) either: a) provided a comparison of the prevalence, frequency or severity of NSSI between a bisexual sample and another sample(s) of different sexual orientations, and/or b) investigated the association between NSSI and other study variables within a purely bisexual sample (or where a mixed sample of bisexual and non-bisexual people had been used, data must have been provided for bisexual people separately to other groups).

Papers were excluded if they: (1) were not written in English; (2) employed a purely qualitative methodology; (3) did not report on original research data (e.g., reviews or editorials).

Search strategy

The electronic databases PsycINFO, CINAHL Plus, PubMed, Ovid Online and Web of Science were searched from the earliest date available to October 2019. The majority of databases were selected due to their inclusion in a previously published integrative review examining NSSI amongst LGBT populations (Jackman et al., 2016). The following search terms, to be present in the abstract or title, were combined with Boolean operators: (Bisexual* OR LGBT* OR sexual minorit* OR sexual orientation) AND (Self-harm* OR self harm* OR self-mutilat* OR self mutilat* OR self-injur* OR self injur* OR self-wound* OR self wound* OR parasuicid* OR non-suicid* OR NSSI OR DSH).

After papers had been identified they were added to Endnote and duplicates were removed. An initial review of titles and abstracts was conducted by BJD. Full text screening of articles was completed independently by authors BJD and OO. Disagreements were resolved through discussion with PJT and SH.

Where studies were potentially eligible but did not separate out data for bisexual people from other groups, the required data were requested from authors. Thirty-four requests were made and seven provided additional data (two offered data but this was not provided, four no longer had access to their data and 21 did not reply). To further maximise the likelihood of detecting eligible studies, reference lists from relevant systematic reviews and meta-analyses (Batejan et al., 2015; Jackman et al., 2016; King et al., 2008; Liu et al., 2019; McCartney, 2016) published within the last 15 years, were searched for studies not detected through database searching. The

reference lists of each included study was searched for other potentially eligible studies (backwards-tracking). Subsequent papers that cited included studies were also screened for potentially eligible studies (forward-tracking). The authors of included papers were contacted and asked if they were aware of any (un)published research that could be eligible for inclusion.

Risk of bias assessment

Risk of bias was assessed independently by BJD and OO. The adapted Agency for Research and Healthcare Quality (Sheehy et al., 2019; Williams et al., 2010) assessment was used, that provided a quality rating of 'yes', 'no', 'partial', 'can't tell' or 'not applicable' to a number of domains. A summary rating was provided to indicate overall risk of bias assessed to be present for each study. A high risk of bias rating was assigned when overall there were 0-2 'yes' ratings, a moderate risk when 3-5 'yes' ratings and low risk for 6-9 'yes' ratings. Disagreements in ratings were resolved through discussion, with all reaching consensus and PJT reviewing the final ratings. Details of assessment consensus are provided in Appendix C.

Data extraction

Study characteristics, including design, participants, study measures, variables and relevant statistics were independently extracted by BJD and OO and transferred to a data extraction spreadsheet. Any data extraction discrepancies were resolved through discussion with PJT and SH, or by contacting the authors for clarification. Authors were contacted for this information if it was not reported in the paper.

Meta-analytic calculations

Random-effects meta-analyses were applied to comparisons of NSSI rates between bisexual people and other sexual orientations, where >3 studies were available. A random-effects model was used due to expected heterogeneity in study design, sample and outcome. Odds Ratios (OR) were used as the effect size metric. Analyses were undertaken in *R* (R Core Team, 2019) with the Meta package (Balduzzi et al., 2019). The Sidik-Jonkman estimator with Knapp-Hartung variance adjustment (Hartung and Knapp, 2001a, 2001b; Sidik and Jonkman, 2002) was used to provide overall weighted ORs. Results from the Sidik-Jonkman estimator are more conservative and result in improved error rates (IntHouse et al., 2014). Analyses were repeated with the more commonly used DerSimonian-Laird (DerSimonian and Laird, 1986) estimator to establish whether results were robust to the type of estimator used.

The I^2 statistic (Higgins and Thompson, 2002) was employed to describe inconsistency between studies. Higgins et al. (2003) provide guidance on interpreting I^2 ; 25%=low heterogeneity, 50%=moderate heterogeneity, 75%=high heterogeneity. The outlier-exclusion function within the Dmetar package (Harrer et al., 2019) which identifies outlying studies based on the overlap between their confidence intervals and the pooled effect confidence intervals, was used to identify any influential cases. Analyses were re-run with influential cases removed, to enable a sensitivity analysis of their impact on results. Moderator analysis via meta-regression was conducted using Restricted Maximum Likelihood estimation (Patterson and Thompson, 1971)

with the Knapp-Hartung variance estimator. Pre-defined moderators were publication status (binary variable: published or not), publication year (continuous variable: year) and sample (categorical variable: adolescent, high school/university student, general population adult). Moderator analysis was conducted with any meta-analysis with $k \geq 10$ (Borenstein et al., 2011). Publication bias was assessed using funnel plots and Egger's test (Egger et al., 1997).

Results

Study characteristics

In total, twenty-four papers were identified as eligible for inclusion. This included three papers in Batejan et al. (2015) and one from Liu et al. (2019) meta-analyses that were not detected during screening. Figure 1 details the data identification and screening process and Table 1 details study characteristics. Two papers included in the Batejan et al. (2015) meta-analysis were not accessible online as they were originally poster presentations. Original study authors and Batejan and colleagues were unable to provide copies. Data for these two studies was therefore extracted from the Batejan et al. (2015) paper. A sensitivity analysis was undertaken: analyses were repeated with these two studies excluded, to determine the impact this had on results.

Figure 1: Data identification and screening process

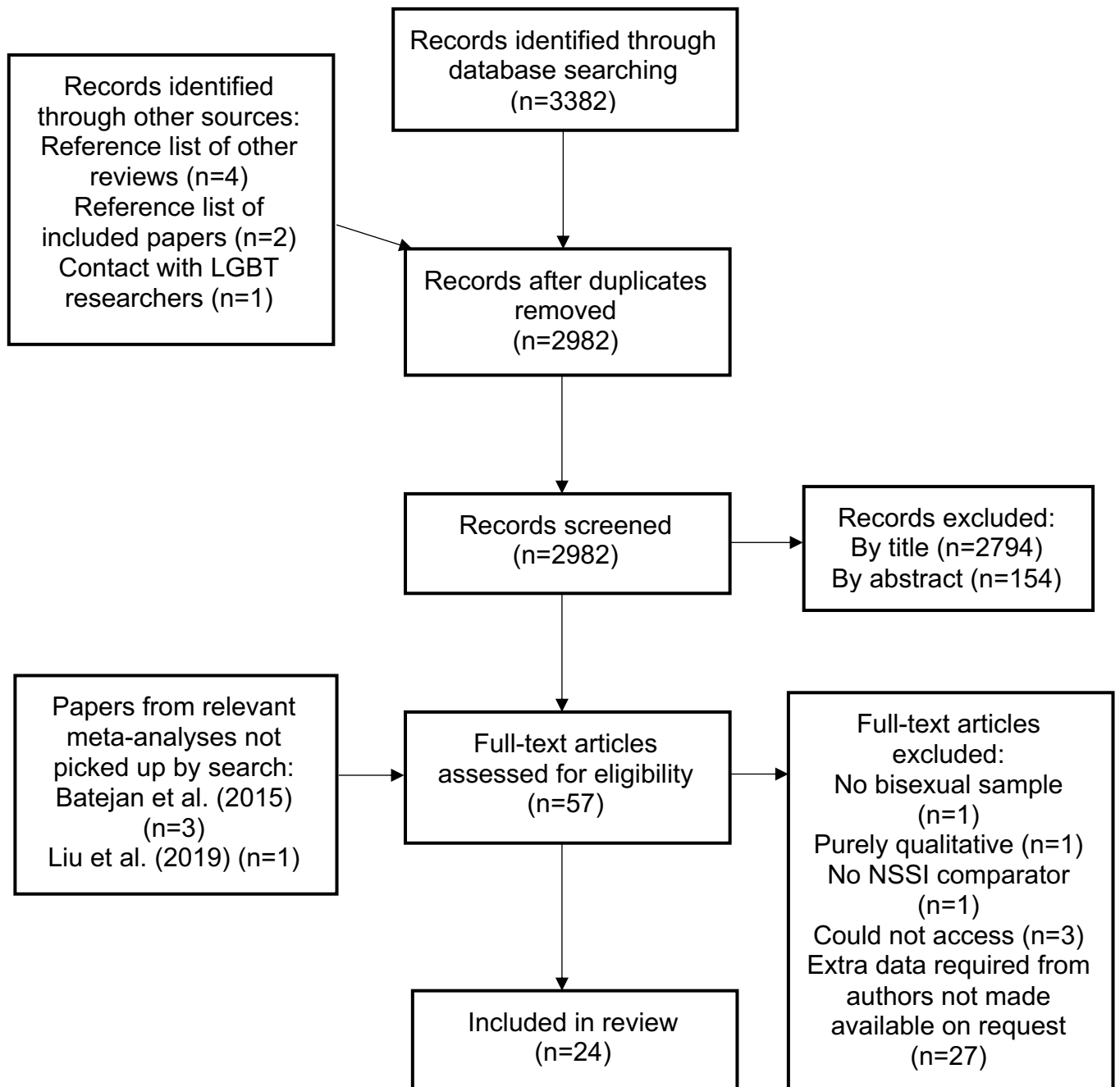


Table 1: Study characteristics

Study author (year) Country	Publication status	N	Population	Bisexual sample characteristics	Comparison group characteristics	NSSI measure	NSSI timeframe
Amos et al. (2019) United Kingdom	Published	9,885	Adolescents	N=576	Heterosexual (N=9,256) Gay/Lesbian (N=50)	Non-validated single item	Past year
Balsam et al. (2005) United States	Published	1,254	General population	N=163; 125 female. M age= 32.4y (SD=10.4)	Heterosexual (N=533); 348 female; M age=36.5y, SD=11.2 Lesbian (N=332); M age=36.8y, SD=11.1 Gay (N=226); M age=39.3y, SD= 11.7	Non-validated single item	Lifetime
Blosnich and Bossarte (2012) United States	Published	8,576 ¹	Undergraduate students	N=2,503; 1,925 female. M age=20.2y	Heterosexual (N=4,273); 2,818 female; M age=20.2y Gay/Lesbian (N=1,800); M age=20.3y	Non-validated single item	Past year
Colledge et al. (2015) United Kingdom	Published	5,706	General population	N=937; 937 female. M age=28.4y, SD=9.6	Lesbian (N=4,769); 4,769 female. M age=32.4y, SD=10.7	Non-validated single item	Past year
DeCamp and Bakken (2016)* United States	Published	7,109 ²	High school students	N=284. M age=16y, SD=1.2	Heterosexual (N=6,825); 3,291 female. M age=16y, SD=1.2	Non-validated single item	Past year
Fraser et al. (2018) ³ New Zealand	Published	1,799	Young people	N=54. M age=15.6y, SD=1.1	Heterosexual (N=1,717) M age=15.1y, SD=2.7 Gay/Lesbian (N=20) M age= 15.5y, SD=1 Asexual (N=8) M age= 16.1y, SD=1.4	Modified Deliberate Self-Harm Inventory- simplified (Lundh et al., 2007) ³	Past year
Goldbach et al. (2017)* United States	Published	334 ⁴	Adolescents	N=88. M age=16y, SD=0.95	Gay (N=142) M age=15.8y, SD=0.96 Lesbian (N=104) M age=15.8y, SD=1.04	Non-validated single item	Past year

Gollust et al. (2008)* <i>United States</i>	Published	2,762 ⁵	Undergraduate, postgraduate and professional students	N=67	<i>Heterosexual</i> (N=2,621) <i>Gay/Lesbian</i> (N=74)	Non-validated single item	Past month
Hickson et al. (2015) <i>United Kingdom</i>	Published	5,741 ⁶	General population	N=1,078; 0 female. M age=32.6y, SD=12.6	<i>Gay</i> (N=4,663); M age=35.7y, SD=12.8	Non-validated single item	Past year
Kerr et al. (2013) <i>United States</i>	Published	6,689	Undergraduate students	N=2,456; 2,456 female	<i>Heterosexual</i> (N=3,384); 3,384 female <i>Lesbian</i> (N=849); 849 female	Non-validated single item	Past year
Kokaliari (2005) <i>United States</i>	Unpublished dissertation	161	Undergraduate students	N=25	<i>Heterosexual</i> (N=114) <i>Lesbian</i> (N=13) <i>Questioning</i> (N=9)	Self-Injurious Behavior Questionnaire (McArdle, 2003)	Lifetime
Lucassen et al. (2011) <i>New Zealand</i>	Published	7,958 ⁷	High school students	N=268; 151 female. M age=15.1y, SD=1.4	<i>Heterosexual</i> (N=7,329); 3,402 female. M age=14.9y, SD=1.4 <i>Gay/Lesbian</i> (N=73); 27 female. M age=15.4y, SD=1.2 <i>Not sure</i> (N=142); 88 female. M age=14.8y, SD=1.4 <i>Neither</i> (N=146); 89 female. M age=14y, SD=1.4	Non-validated single item	Past year
Muehlenkamp et al. (2012)^ <i>Unknown</i>	Unpublished	360	Undergraduate students	N=6	<i>Heterosexual</i> (N=324) <i>Gay</i> (N=4) <i>Other</i> (N=26)	Unknown	Lifetime
Muehlenkamp et al. (2015)* <i>United States</i>	Published	498 ⁸	Undergraduate students	N=94	<i>Heterosexual</i> (N=263) <i>Gay</i> (N=36) <i>Lesbian</i> (N=41) <i>Questioning</i> (N=64)	Seven self-report items based on Inventory Of Statements About Self-Injury (Klonsky and Glenn, 2009)	Lifetime
Oswalt and Wyatt (2011) <i>United States</i>	Published	27,454	Undergraduate students	N=785. M age=21.7y, SD=5	<i>Heterosexual</i> (N=25,746); M age=21.6, SD=5 <i>Gay/Lesbian</i> (N=508); M age=22.8y, SD=6 <i>Unsure</i> (N=415); M age=21y, SD=4	Non-validated single item	Lifetime and Past year

Serras et al. (2010)* <i>United States</i>	Published	5,530 ⁹	Undergraduate, postgraduate and professional students	N=112	<i>Heterosexual</i> (N=5,240) <i>Gay/Lesbian</i> (N=139) <i>Other</i> (N=39)	Non-validated single item	Past year
Silva et al. (2012)^ <i>Unknown</i>	Unpublished	81	Undergraduate students	N=13	<i>Heterosexual</i> (N=56) <i>Gay/Lesbian</i> (N=12)	Unknown	Lifetime and Past year
Smith and Perrin (2017)* <i>United States</i>	Published	239	General population	N=72. M age=31.9y, SD=10.6	<i>Gay/Lesbian</i> (112); M age=33.6y, SD=12.5 <i>Queer</i> (N=48); M age=27y, SD=8.1 <i>Other</i> (N=7); M age=23.9y, SD=5.6	Two non-validated items	Lifetime and Past year
Sornberger et al. (2013) <i>Canada</i>	Published	414 ¹⁰	Undergraduate students	N=73	<i>Heterosexual</i> (N=207) <i>Gay/Lesbian</i> (N=87) <i>Questioning</i> (N=47)	How I Deal with Stress Questionnaire (Ross and Heath, 2007)	Lifetime
Swannell et al. (2016) <i>Australia</i>	Published	9,470 ¹¹	General population	N=94; 37 female.	<i>Heterosexual</i> (N=9,262); 4,688 female <i>Gay</i> (N=77) <i>Lesbian</i> (N=37)	Four items based on previous author research and 'Functional Assessment of Self-Injury', 'Self-harm Behaviour Questionnaire' and 'Deliberate Self-Harm Interview' ¹²	Lifetime
Taliaferro and Muehlenkamp (2016) <i>United States</i>	Published	77,758	High school students	N=2,223	<i>Heterosexual</i> (N=72,798) <i>Gay/Lesbian</i> (N=655) <i>Questioning</i> (N=2,082)	Non-validated single item	Past year
Taylor et al. (2018)* <i>United Kingdom</i>	Published	729 ¹³	Undergraduate students	N=82; 65 female. M age=23y, SD=6.2	<i>Heterosexual</i> (N=585); 455 female. M age=23y, SD=7.2 <i>Gay/Lesbian</i> (N=37); 14 female. M age=23y, SD=7.5 <i>Not specified</i> (N=25); 17 female. M age=23.5y, SD=8.1	Non-validated single item	Lifetime thoughts and behaviour

Whitlock and Knox (2007) ^{14,15} <i>United States</i>	Published	2,875	Undergraduate students	N=83	<i>Heterosexual</i> (N=2,659) <i>Gay/Lesbian</i> (N=63) <i>Questioning</i> (N=75) ¹⁶	Non-validated single item followed by list of behaviours to select	Lifetime
Whitlock et al. (2011) ¹⁷ <i>United States</i>	Published	11,346 ¹⁸	Undergraduate students	N=495	<i>Heterosexual</i> (N=10,431) <i>Gay/Lesbian</i> (N=420)	Non-Suicidal Self-Injury Assessment Tool (Whitlock et al, 2006)	Lifetime
		N=194,719	N=12,631				

*indicates additional information was obtained from authors

[^]indicates paper not accessible; information obtained and reported from Batejan et al. (2015) meta-analysis

¹Total N=11,046 reported in paper; 'unsure' sexual orientation category comprising 15.2%. No NSSI information is provided for this group so adjusted N reported

²Total N=7,326 reported in paper; additional sexual orientation information provided by authors was N=7,109 so adjusted N reported

³Categories of 'Heterosexual' and 'Mostly heterosexual', and 'Homosexual' and 'Mostly homosexual' have been combined to give 'Heterosexual' and 'Gay/Lesbian' categories. Authors report 'Homosexual' category only includes people identifying as gay/lesbian

⁴Twelve participants declined to answer sexual orientation question so adjusted N reported

⁵Total N=2,843 reported in paper; additional sexual orientation information provided by authors was N=2,762 so adjusted N reported

⁶Total N=5,799 reported in paper; 58 participants declined to answer NSSI question so adjusted N reported

⁷Total N=8,002 reported in paper; 44 participants declined to answer NSSI question so adjusted N reported

⁸Total N=137 reported in paper; additional information provided by authors was a larger completed dataset of 498, so adjusted N reported

⁹Total N=5,689 reported in paper; additional sexual orientation and NSSI information provided by authors was N=5,530, so adjusted N reported

¹⁰Total N=4,091 reported in paper; paper reports on a subset of sexual orientation data from a larger study, so adjusted N reported

¹¹Total N=10,531 reported in paper; NSSI information not available for 1,061 participants so adjusted N reported

¹²References for these tools are not provided in the paper

¹³Total N=707 reported in paper; additional information provided by authors was a larger completed dataset of 729, so adjusted N reported

¹⁴Authors report participants who have engaged only in NSSI, and participants who have engaged in NSSI and suicidal behaviour. Data reported is from the NSSI only category

¹⁵Data reported in this paper is from the same dataset as Whitlock et al. (2006). This data has only been presented once

¹⁶When all categories are summed, N=2,880 due to rounding

¹⁷Categories of 'Heterosexual' and 'Mostly heterosexual', and 'Gay/Lesbian' and 'Mostly Gay/Lesbian' have been combined to give 'Heterosexual' and 'Gay/Lesbian' categories

¹⁸Total N=11,529 reported in paper; NSSI information not available for 183 participants so adjusted N reported

Studies were primarily conducted in North America (United States $k=14$; Canada $k=1$), some in the United Kingdom ($k=4$), and others in Australasia (New Zealand $k=2$; Australia $k=1$). It is unknown where studies for the two inaccessible papers took place. All papers examined the outcome of NSSI behaviour; additional data from one study indicated lifetime NSSI thoughts as an additional outcome (Taylor et al., 2018). All studies were cross-sectional in design, although for one study NSSI data came from a larger longitudinal project. The outcome measure in most studies was past year NSSI behaviour ($k=11$), followed by lifetime NSSI behaviour ($k=9$), with three studies examining both past year and lifetime NSSI, and one study using past month NSSI behaviour as the outcome. The majority of studies were published ($k=21$) and the majority used only a single item to measure NSSI ($k=14$). The number of bisexual participants in studies ranged from $n=6$ -2,223.

Risk of bias

Most studies were rated as having a moderate risk of bias present ($k=14$). Risk of bias assessments are provided in Table 2. One study was deemed to have a high risk of bias (Goldbach et al., 2017), and seven were deemed to have a low risk. As noted, two papers were not accessible, and so risk of bias could not be assessed. The majority of studies did not provide explicit sample size calculations, however seven had a sample of $n \geq 100$ and 16 had a sample of $n \geq 1,000$, so this presents less of a concern for statistical power. Most did not have a validated method, or had a partially validated method, for assessing NSSI because most utilised (in isolation) a non-

validated single-item measure ($k=14$). It is worth noting that a single-item measure of NSSI had face validity for the majority of studies given that the outcome was whether NSSI had occurred or not. Nonetheless, single-items can lead to inconsistent results when compared with behavioural checklists (Robinson and Wilson, 2020). Most studies were rated as 'partial' for a validated method of assessing predictor or correlates of NSSI ($k=16$) as psychometric properties for measures of other variables were not always provided.

Table 2: Risk of bias assessment

	Unbiased cohort selection	Selection minimises baseline differences	Sample size calculated	Validated method for assessing predictor/risk variable	Validated method for assessing outcome variable	Outcome assessments blind to participant status	Adequate follow-up period (longitudinal studies only)	Missing data is minimal	Analysis control for confounds	Analytic methods appropriate	<i>Overall risk of bias</i>
Amos et al. (2019)	Yes	Yes	No	Partial	No	Yes	Yes	Yes	Yes	Yes	Low
Balsam et al. (2005)	Yes	Yes	No	Yes	No	Yes	N/A	Yes	Yes	Yes	Low
Blosnich and Bossarte (2012)	Yes	Yes	No	Partial	No	Yes	N/A	Yes	Yes	Yes	Low
Colledge et al. (2015)	Yes	Yes	No	Partial	Can't tell	Yes	N/A	Yes	Yes	Yes	Low
DeCamp and Bakken (2016)	Yes	Can't tell	Can't tell	Partial	No	Yes	N/A	Yes	Yes	Yes	Moderate
Fraser et al. (2018)	Yes	Partial	No	Partial	Yes	Yes	N/A	Partial	Yes	Yes	Moderate
Goldbach et al. (2017)	No	Can't tell	No	Partial	No	Yes	N/A	Can't tell	No	Yes	High
Gollust et al. (2008)	Yes	No	No	Partial	No	Yes	N/A	Can't tell	Yes	Yes	Moderate
Hickson et al. (2016)	Partial	Can't tell	No	Partial	No	Yes	N/A	Yes	Yes	Yes	Moderate
Kerr et al. (2013)	Yes	Yes	No	Partial	Partial	Yes	N/A	Can't tell	Yes	Yes	Moderate
Kokaliari (2005)	No	Can't tell	No	Yes	Can't tell	Yes	N/A	Yes	Yes	Yes	Moderate
Lucassen et al. (2011)	Yes	Can't tell	No	Partial	No	Yes	N/A	Yes	Yes	Yes	Moderate
Muehlenkamp et al. (2012)	<i>Article not available to assess</i>										

Muehlenkamp et al. (2015)	No	Can't tell	No	Yes	Can't tell	Yes	N/A	Can't tell	Can't tell	Yes	Moderate
Oswalt and Wyatt (2011)	Yes	Yes	No	Partial	No	Yes	N/A	Can't tell	Can't tell	Yes	Moderate
Serras et al. (2010)	Yes	Can't tell	No	Partial	No	Yes	N/A	Can't tell	Yes	Yes	Moderate
Silva et al. (2012)	<i>Article not available to assess</i>										
Smith and Perrin (2017)	Partial	Partial	No	Partial	No	Yes	N/A	Can't tell	Yes	Yes	Moderate
Sornberger et al. (2013)	Yes	Yes	No	Yes	Yes	Yes	N/A	Yes	No	Yes	Low
Swannell et al. (2016)	Yes	Can't tell	No	Partial	Partial	Yes	N/A	Can't tell	Yes	Yes	Moderate
Taliaferro and Muehlenkamp (2016)	Yes	Can't tell	No	Partial	No	Yes	N/A	Can't tell	Yes	Yes	Moderate
Taylor et al. (2018)	Yes	Can't tell	No	Yes	No	Yes	N/A	Yes	Yes	Yes	Low
Whitlock and Knox (2007)	Yes	Can't tell	No	Partial	Partial	Yes	N/A	Yes	Yes	Yes	Moderate
Whitlock et al. (2011)	Yes	Yes	No	Yes	Partial	Yes	N/A	Yes	Yes	Yes	Low

Most studies recruited from high school/university samples ($k=16$), using random classroom/university selection, or using random selections of pre-existing university student datasets. It was not possible to ascertain from most studies whether selection had minimised baseline differences in groups, so it is unclear whether this was done. Internal validity may have been affected if groups differed in other important ways that could have confounded findings. For all assessed studies the method of data collection was questionnaire/survey based. Analysis of data was either from pre-existing data sets, or questionnaires were completed without a researcher present so assessors were likely blind to participant status, reducing the likelihood of researcher bias affecting interpretation of results. Analytic methods were appropriate for all assessed studies.

Meta-analysis: NSSI risk for bisexual people

Nine meta-analyses were conducted. Details of the aggregate ORs (alongside confidence intervals and I^2) using the Sidik-Jonkman with Knapp-Hartung adjustment are provided in Table 3. Results were equivalent when using the DerSimonian-Laird estimator (Appendix D). For one comparison (bisexual vs lesbian lifetime NSSI) one study had unreliable estimated ORs due to separation in the data, and was not included in analyses (Swannell et al., 2016).

Table 3: Results of meta-analysis using Sidik-Jonkman estimator with Knapp-Hartung adjustment

Comparison	NSSI outcome	<i>k</i> (outliers removed)	Odds Ratio (outliers removed)	Confidence Interval (outliers removed)	<i>I</i>² (outliers removed)
Bisexual vs Heterosexual	Past Year	9 (8)	6.07 (5.52)	4.56-8.09 (4.34-7.03)	94.2% (79%)
Bisexual vs Heterosexual	Lifetime	12 (11)	4.57 (3.85)	3.02-6.92 (3.00-4.94)	84.5% (34.6%)
Bisexual vs Gay	Lifetime	4	4.37	1.73-11.04	13.2%
Bisexual vs Anyone	Any outcome	24 (17)	3.50 (3.09)	2.60-4.69 (2.55-3.74)	96.6% (70.4%)
Bisexual vs Gay and Lesbian	Lifetime	10	2.13	1.60-2.84	21.8%
Bisexual vs Gay and Lesbian	Past Year	8	1.62	1.28-2.06	47.4%
Bisexual vs Lesbian	Past Year	3	1.49	0.66-3.36	90.1%
Bisexual vs Questioning	Lifetime	4	1.23	0.33-4.65	29.9%
Bisexual vs Lesbian ¹	Lifetime	3	0.78	0.04 – 17.62	76.6%

¹k=4 originally; one outlier study excluded pre-analysis due to abnormally large effect size

The largest effect sizes were observed for bisexual people when compared to heterosexual people for past year (OR=6.07) and lifetime (OR=4.57) NSSI. Bisexual people also had a greater risk of lifetime NSSI compared to gay men (OR=4.37) and a greater risk of lifetime NSSI (OR=2.13) and past year NSSI (OR=1.62) when compared with gay and lesbian people combined. A greater risk was also observed when bisexual people were compared to anyone for any NSSI outcome (OR=3.50). Two out of nine studies included in the bisexual vs heterosexual past year comparison were rated as low risk of bias, and four out of 12 included for the heterosexual lifetime comparison were rated as low risk of bias, suggesting greater reliability of these results. No significant differences were identified between bisexual people and lesbian people for past year or lifetime NSSI, or for questioning people. The I^2 for three meta-analyses suggested low inconsistency, one moderate, and the remaining five high. Of the significant results, three had high inconsistency: comparisons with heterosexual people for past year and lifetime NSSI, and comparison with anyone for any outcome. When data from the two studies whose original papers could not be accessed (data obtained from Batejan et al., 2015) were removed from analyses, this had minimal impact on overall effect sizes (two analyses did not change, the other four differed between 0.06-0.11 from original weighted ORs).

Outlier analysis

Influential cases were identified for three analyses (bisexual vs heterosexual lifetime NSSI; bisexual vs heterosexual past year NSSI; bisexual vs anyone

any NSSI). When these outliers were removed, the overall weighted effect size did not substantially change (see Table 3; results with outliers excluded are reported in brackets). Reductions in I^2 were observed for all models. The degree of inconsistency for the bisexual vs heterosexual lifetime NSSI comparison changed from high to low, with the exclusion of one study. For the remaining two models, inconsistency remained high: I^2 for bisexual vs heterosexual past year NSSI reduced by 15.2%; a reduction of 26.2% was observed for the bisexual vs anyone any NSSI comparison.

Moderator analysis

A moderator analysis was run for the bisexual vs anyone, bisexual vs heterosexual lifetime and the bisexual vs gay and lesbian lifetime NSSI comparisons, as these comparisons all had $k \geq 10$. Not all pre-planned moderators could be investigated for each analysis due to small numbers of studies for some levels of the moderators. None of the moderators were significant, with the exception of publication year for the bisexual vs heterosexual lifetime NSSI comparison: more recent studies demonstrated marginally larger effects.

Table 4: Moderator analysis results

Comparison	Moderator variable	Regression coefficient	95% CI	p-value	Variance explained	Residual r^2
Bisexual vs Anyone	Sample	-0.23	-0.72-0.21	0.26	2.03%	96.39%
Bisexual vs Anyone	Publication status	0.59	-0.55-1.73	0.30	1.84%	96.59%
Bisexual vs Anyone	Publication year	0.06	-0.01-0.14	0.08	10.11%	96.01%
Bisexual vs Gay and Lesbian (Lifetime NSSI outcome)	Sample	-0.07	-0.57-0.43	0.18	0%	11.29%
Bisexual vs Gay and Lesbian (Lifetime NSSI outcome)	Publication year	-0.02	-0.08-0.04	0.23	0%	0.01%
Bisexual vs Heterosexual (Lifetime NSSI outcome)	Sample	0.44	-0.33-1.22	0.23	6.1%	88.74%
Bisexual vs Heterosexual (Lifetime NSSI outcome)	Publication year	0.08	-0.00-0.16	0.05	26.18%	86.35%

CI = Confidence Interval

Publication bias

The three comparisons with the most studies (bisexual vs anyone, bisexual vs heterosexual lifetime and bisexual vs gay and lesbian lifetime NSSI) were assessed for publication bias through visual inspection of funnel plots and Egger's test. Funnel plots (see Figures 2-4) were mostly symmetrical, suggesting no publication bias. In addition, Egger's test was non-significant for all comparisons (bisexual vs anyone: $t=-0.914$, $p=0.37$; bisexual vs heterosexual lifetime NSSI: $t=-0.952$, $p=0.36$; bisexual vs gay and lesbian lifetime NSSI: $t=-0.85$, $p=0.42$).

Figure 2: Bisexual vs Anyone funnel plot

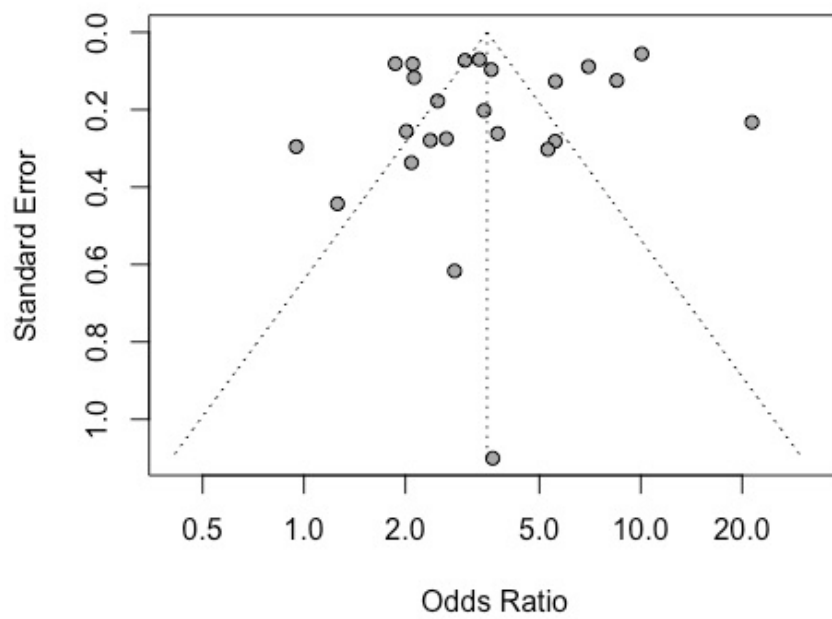


Figure 3: Bisexual vs Heterosexual (lifetime) funnel plot

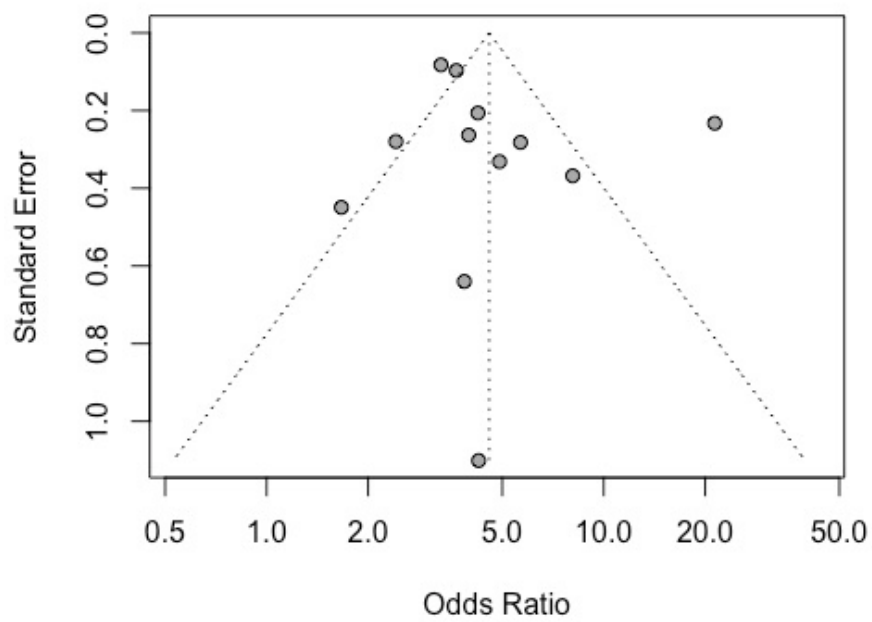
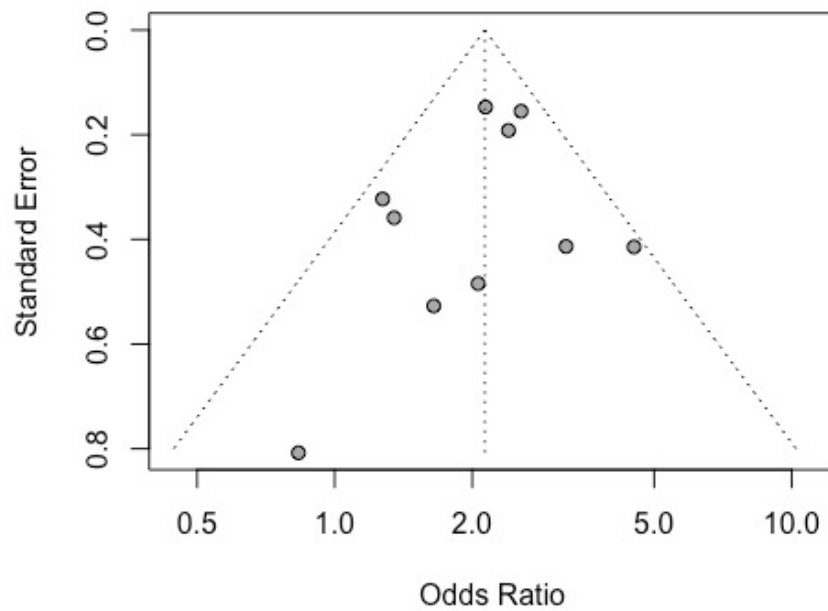


Figure 4: Bisexual vs Gay/Lesbian (lifetime) funnel plot



Additional Comparisons

A meta-analysis was not conducted for any comparisons with $k \leq 3$. Table 5 details ORs and confidence intervals (CI) for individual comparisons, ordered from highest to lowest effect size.

Table 5: Comparisons not entered into a meta-analysis

Comparison	Study	Outcome	OR	95% CI
Bisexual female vs Heterosexual female	Swannell et al. (2016)	Lifetime NSSI	32.24	18.80-55.28
Bisexual female vs Bisexual male	Swannell et al. (2016)	Lifetime NSSI	10.01	3.23-31.03
Bisexual vs Asexual	Fraser et al. (2018)	Lifetime NSSI	9.43	1.08-82.10
Bisexual vs Heterosexual	Taylor et al. (2018)	Lifetime NSSI thoughts	6.81	3.34-13.87
Bisexual vs Gay and Lesbian	Taylor et al. (2018)	Lifetime NSSI thoughts	5.53	2.13-14.35
Bisexual female vs Heterosexual female	Balsam et al. (2005)	Lifetime NSSI	4.38	2.84-6.77
Bisexual male vs Heterosexual male	Balsam et al. (2005)	Lifetime NSSI	3.59	1.71-7.54
Bisexual male vs Heterosexual male	Swannell et al. (2016)	Lifetime NSSI	3.17	1.13-8.91
Bisexual vs Questioning	Taliaferro and Muehlenkamp (2016)	Past year NSSI	3.13	2.60-3.76
Bisexual female vs Gay	Goldbach et al. (2017)	Past year NSSI	2.55	1.34-4.85
Bisexual vs Heterosexual	Gollust et al. (2008)	Past month NSSI	2.25	1.16-4.37
Bisexual vs Gay	Goldbach et al. (2017)	Past year NSSI	2.20	1.26-3.85
Bisexual vs Gay	Hickson et al. (2015)	Past year NSSI	2.12	1.69-2.67
Bisexual female vs Lesbian	Goldbach et al. (2017)	Past year NSSI	2.07	1.06-4.06
Bisexual male vs Gay	Goldbach et al. (2017)	Past year NSSI	1.72	0.78-3.78
Bisexual female vs Bisexual male	Goldbach et al. (2017)	Past year NSSI	1.48	0.62-3.56
Bisexual male vs Lesbian	Goldbach et al. (2017)	Past year NSSI	1.40	0.62-3.15
Bisexual female vs Bisexual male	Balsam et al. (2005)	Lifetime NSSI	1.28	0.60-2.74
Bisexual vs Gay and Lesbian	Gollust et al. (2008)	Past month NSSI	1.26	0.50-3.18
Bisexual vs Queer	Smith and Perrin (2017)	Past year NSSI	1.20	0.46-3.14
Bisexual vs Queer	Smith and Perrin (2017)	Lifetime NSSI	0.53	0.25-1.12

OR = Odds Ratio

CI = Confidence Interval

NSSI = non-suicidal self-injury behaviour (unless otherwise indicated)

Comparisons of bisexual compared to 'Unsure' categories was not completed, as it is difficult to discern meaningful conclusions

Effect sizes ranged from OR=0.53-32.24 for the 21 results produced. The largest effect (Swannell et al., 2016; moderate risk of bias) suggests odds of engaging in lifetime NSSI were 32 times higher for bisexual females when compared to heterosexual females in this study. One negative, non-significant effect (Smith and Perrin, 2017) indicates for their study odds for bisexual people were half that of queer people for lifetime NSSI.

The three largest observed effect sizes came from lifetime NSSI thoughts and behaviour as outcomes, with past year or past month NSSI outcomes consistently producing the smallest observed effect sizes. Seven studies produced non-significant effect sizes; four of these compared male or female bisexual people separately.

Narrative synthesis: variables associated with NSSI for bisexual people

Twenty-four variables were identified from six papers. Table 6 details associations between variables and NSSI.

Table 6: Narrative synthesis results

Predictor	Outcome	k	Bivariate association	Adjusted association	Control variables	Study
Beliefs						
Thwarted belongingness	Lifetime NSSI	2	OR=1.09 (with outliers excluded: 1.10*)	OR=0.99	Self-esteem, depression, anxiety	Taylor et al. (2018)
			r=.117*	-	-	Muehlenkamp et al. (2015)
Perceived burdensomeness	Lifetime NSSI	1	r=.248**	-	-	Muehlenkamp et al. (2015)
Perceived heterosexism	Past year NSSI	1	r=.316**	-	-	Smith and Perrin (2017)
	Lifetime NSSI		r=.233*	-	-	
Sexuality concerns	Lifetime NSSI	1	r=-.063	-	-	Fraser et al. (2017)
	DSHI score		r=.012	-	-	
Satisfaction with life	Past year NSSI	1	r=-.262*	-	-	Smith and Perrin (2017)
	Lifetime NSSI		r=-.304**	-	-	
Behaviours						
Physical fighting	Past year NSSI	1	-	β=-.044	Sexual assault, bullying, substance use, hardcore substance use, sexual behaviour, depression, fasting, use of diet pills, purging	DeCamp and Bakken (2016)
Substance use	Past year NSSI	1	-	β=.321*	As above, +physical fighting, -substance use	DeCamp and Bakken (2016)
Hardcore drug use	Past year NSSI	1	-	β=-.081	As above, +substance use, -hardcore drug use	DeCamp and Bakken (2016)

Sexual behaviour	Past year NSSI	1	-	$\beta = -.111$	As above, +hardcore drug use, -sexual behaviour	DeCamp and Bakken (2016)
Fasting	Past year NSSI	1	-	$\beta = .701^*$	As above, +sexual behaviour, -fasting	DeCamp and Bakken (2016)
Purging	Past year NSSI	1	-	$\beta = .166$	As above, +use of diet pills, -purging	DeCamp and Bakken (2016)
Use of diet pills	Past year NSSI	1	-	$\beta = -.373$	As above, +fasting, -use of diet pills	DeCamp and Bakken (2016)
Life experiences						
Sexual assault	Past year NSSI	2	-	OR=1.35*	Age, sex, race, mental health diagnosis/treatment, stress	Blosnich and Bossarte (2012)
			-	$\beta = .460$	Bullying, physical fighting, substance use, hardcore substance use, sexual behaviour, depression, fasting, use of diet pills, purging	DeCamp and Bakken (2016)
Physical assault	Past year NSSI	1	-	OR=2.01*	Age, sex, race, mental health diagnosis/treatment, stress	Blosnich and Bossarte (2012)
Intimate Partner Violence	Past year NSSI	1	-	OR=1.46*	As above	Blosnich and Bossarte (2012)
Family problems	Past year NSSI	1	-	OR=1.44*	As above	Blosnich and Bossarte (2012)
Discrimination	Past year NSSI	1	-	OR=1.37*	As above	Blosnich and Bossarte (2012)
Bullying	Past year NSSI	1	-	$\beta = .573^{***}$	Sexual assault, physical fighting, substance use, hardcore substance use, sexual behaviour, depression, fasting, use of diet pills, purging	DeCamp and Bakken (2016)

Mental health difficulties

Emotional regulation	Lifetime NSSI	1	r=-.344*	-	-	Fraser et al. (2018)
	DSHI score		r=-.246	-	-	
Depression symptoms	Past year NSSI	4	r=.470**	OR=5.61***	Sex, school grade, race/ethnicity	Smith and Perrin (2017) Taliaferro and Muehlenkamp (2016)
			-	β=.992***	Bullying, physical fighting, substance use, hardcore substance use, sexual behaviour, sexual assault, fasting, use of diet pills, purging	DeCamp and Bakken (2016)
	Lifetime NSSI		OR=1.24**	OR=1.03	Self-esteem, thwarted belonging, anxiety	Taylor et al. (2018)
			r=.438**	-	-	Smith and Perrin (2017)
Anxiety symptoms	Past year NSSI	3	-	OR=2.10***	Sex, school grade, race/ethnicity	Taliaferro and Muehlenkamp (2016)
			r=.249*	-	-	Smith and Perrin (2017)
	Lifetime NSSI		OR=1.19*	OR=1.02	Self-esteem, depression, thwarted belonging	Taylor et al. (2018)
			r=.308**	-	-	Smith and Perrin (2017)
Protective factors						
Parent connectedness	Past year NSSI	1	-	OR=0.94*	Sex, school grade, race/ethnicity	Taliaferro and Muehlenkamp (2016)
Friends caring	Past year NSSI	1	-	OR=0.89*	As above	Taliaferro and Muehlenkamp (2016)

Self-esteem	Lifetime NSSI	1	OR=0.84*** (with outliers excluded: 0.81***)	OR=0.86*	Thwarted belonging, depression, anxiety	Taylor et al. (2018)
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OR = Odds Ratio

NSSI = non-suicidal self-injury behaviour (unless otherwise indicated)

DSHI = Deliberate Self Harm Inventory

Beliefs

Almost all associations between NSSI and predictor beliefs were bivariate. Five predictor beliefs were reported in the literature. Feeling disconnected from others (thwarted belongingness) featured in two studies, with all other beliefs featuring in single studies only. The strongest association was between perceived heterosexism and past year NSSI. Associations between sexuality concerns (e.g., *“Do you worry about your sexuality?”*) and lifetime NSSI scores were non-significant and weak.

Behaviours

All associations between NSSI and behaviours adjusted for other covariates, and came from the same study (DeCamp and Bakken, 2016; moderate risk of bias). The strongest association was between increased fasting (restricted eating) and past year NSSI, and was one of two significant associations (the other being substance use and past year NSSI).

Life experiences

All investigated associations adjusted for other covariates. All life experience variables were significantly associated with NSSI ($OR=1.35-2.01$; $\beta=.57$) with the exception of past year NSSI for one study (sexual assault; $\beta=.46$). Experiences of bullying yielded the strongest relationship with past year NSSI ($\beta=.57$). Odds of engaging in NSSI doubled if participants had reported experiences of physical assault (Blosnich and Bossarte, 2012; low risk of bias).

Mental health difficulties

Mental health variables were most widely investigated ($k=5$; one study rated as low risk of bias, four rated as moderate risk). Symptoms of depression were most consistently supported of any predictor in this review. Adjusted associations between depression symptoms and past year NSSI were strongest of any variable examined; one study reported over five and a half times the odds of engaging in NSSI if depression symptoms were reported (Taliaferro and Muehlenkamp, 2016; moderate risk of bias). Bivariate associations between lifetime NSSI and depression symptoms were also significant ($r=.44$: Smith and Perrin, 2017; $OR=1.24$: Taylor et al., 2018). For one study the association between depression symptoms and past year NSSI became non-significant when adjusting for self-esteem, anxiety symptoms and thwarted belongingness (Taylor et al., 2018; low risk of bias).

Almost all associations between anxiety symptoms and past year or lifetime NSSI were statistically significant. Of note, odds of engaging in past year NSSI doubled if participants had reported anxiety symptoms (Taliaferro and Muehlenkamp, 2016). For one study the association between anxiety symptoms and lifetime NSSI became non-significant when controlled for self-esteem, depression symptoms and thwarted belongingness (Taylor et al., 2018). Adaptive emotion regulation was negatively associated with lifetime NSSI.

Protective factors

Feeling connected to parents, better self-esteem, and experiencing friends as caring were significantly negatively associated with NSSI, whilst adjusting

for other covariates. Bivariate association between self-esteem and lifetime NSSI was highly significant, even when outliers were excluded from the analysis (Taylor et al., 2018).

Discussion

This review aimed to provide an up-to-date meta-analysis of the risk of NSSI in bisexual people and identify correlates and predictors of NSSI for this population. This review extends past work by primarily identifying enough studies to conduct meta-analyses for bisexual people independent of other groups, through the inclusion of more recent studies, the inclusion of bisexual only data from reports where this had previously been combined with other groups ($k=7$), and the ability to undertake more nuanced comparisons (e.g., separating out comparisons with gay men and lesbian women). All studies included in this review were individually rated for risk of bias, an exercise missing from previous reviews. In line with previous findings (Batejan et al., 2015; Liu et al., 2019), this review found that bisexual people consistently show an increased risk of engaging in NSSI when compared to most other sexualities. Bisexual people are at a greater risk when compared to heterosexual people and gay and lesbian people combined. The results suggest that bisexual people are also at an increased risk of NSSI when compared to gay men ($OR=4.37$). Of particular relevance, bisexual people have between 4.5-6 times the odds of engaging in NSSI when compared to heterosexual people. Comparisons between bisexual women and lesbian women for past year or lifetime NSSI yielded non-significant results, as did comparison between bisexual and questioning

people for lifetime NSSI. Individual comparisons suggest that bisexual females seem to be most at risk, though few studies reported on bisexual females specifically ($k=3$). Mental health variables such as anxiety and depression symptoms were consistently found to be strongly associated with NSSI. Protective factors, including perception of connection to others, may reduce this risk.

In the current review seven individual comparisons were conducted that examined bisexual males and females separately. From these, bisexual females demonstrated increased risk of NSSI, in line with findings from McNair et al. (2005). Effect sizes for bisexual females were largest when compared with heterosexual females (Balsam et al., 2005; Swannell et al., 2016). Some literature suggests that prevalence of NSSI amongst females is higher than that of males (Sornberger et al., 2012) independent of sexuality; Meyer (2003) suggests that women have to confront gender-related stigma and discrimination that men do not. Given clear risks associated with bisexuality and NSSI found in this review, a pairing of female gender and bisexuality may compound risk.

It is already known that bisexuality is associated with anxiety and depression (Jorm et al., 2002; King et al., 2008; Ross et al., 2018). Consistent with previous research the variables found to be most commonly and most strongly associated with NSSI were depression and anxiety symptoms. Given that theoretical models link affect regulation with NSSI, the heightened incidence of anxiety and depression in bisexual people may explain this increased risk.

Negative life experiences (such as discrimination, bullying and physical/sexual assault) were found to be associated with past year NSSI, consistent with findings from Rothman et al. (2011). A positive relationship between perceived heterosexism and NSSI and a negative relationship between satisfaction with life and NSSI was evident for both past year and lifetime outcomes. The relationship between negative life experiences and NSSI has been well researched (Ford and Gomez, 2015; Liu et al., 2014, 2019; Tang et al., 2016). Minority Stress Theory (Meyer, 2003) provides a framework from which a reasonable assumption can be made that bisexual people experience greater social stress than heterosexual people, at least. It cannot be concluded from the data within this review with any certainty whether these difficulties are specifically more pronounced for bisexual people when compared to others. As with other people experiencing adverse life events, resulting negative affect may be managed through NSSI.

A notable limitation of included studies in this paper is that samples were exclusively from the Anglosphere (United States of America, Canada, Australia, New Zealand, United Kingdom). Whilst this could be a reflection of inclusion criteria (English-language articles only), it is worth noting that many countries around the world publish in English, if English is an official language of the country (e.g., India, South Africa or Nigeria). Western- and Anglo-centric bias in NSSI research is a recognised challenge (Chesin et al., 2013). Variables associated with NSSI may be bound and influenced by cultural context; for example in some cultures and countries bisexual people are under authority-condoned persecution and attack, so life experience variables may be more pertinent. Future research investigating cross-cultural

differences in NSSI behaviour for bisexual people would be useful to discern culturally-specific risk factors, and general bisexuality risk factors, though it is a recognised challenge that homo/biphobia in some non-western countries is a barrier to completing research in this area. A further limitation is that all papers included in this review were cross-sectional. Consequently, temporal characteristics of the associations between sexual orientation, other risk factors, and NSSI remain unclear. Longitudinal designs investigating NSSI and bisexuality may offer greater insight into the temporal nature of apparent associations.

For seven studies included in this review, bisexual-specific data had to be requested from authors. A content analysis of one database found that studies often combined bisexual participants with other sexual minorities (Kaestle and Ivory, 2012), obscuring the true risk for bisexual people only. When bisexual people had been reported independently of others, sample sizes for bisexual people were often inadequately powered to detect significant results. Clear differences in mental health outcomes, including NSSI, have been consistently recognised for bisexual people (Irish et al., 2019; King et al., 2008; Plöderl and Tremblay, 2015). Given their risk of NSSI is much higher, researchers in future should therefore pre-calculate statistical power for bisexual participants appropriately so that studies can analyse and report on bisexual people independently of other groups.

The majority of studies in this paper used a non-validated single item to measure NSSI. This often does not capture known nuances of self-injury, such as frequency, severity, lethality, location or methods of self-injury (Sornberger et al., 2012) that could be important for bisexual people. Future

research should use validated assessment measures that examine different facets of NSSI, to comprehensively describe this behaviour for a bisexual population (Robinson and Wilson, 2020).

Limitations

A notable limitation of this review is that studies were only included if they were written in English; papers from other countries may not have been identified. Furthermore, papers reporting on purely qualitative outcomes were not included. It is recognised that qualitative results may provide useful indications of risk factors associated with NSSI for bisexual people, and future reviews would do well to incorporate such results. Specific qualitative research into NSSI for bisexual people should focus exclusively on this population, so the experiences and insights from this group can be fully captured. Finally, this review did not have sight of two studies that Batejan et al. (2015) included in their meta-analysis, despite requests to access these. Consequently, the authors have made an assumption that Batejan et al. made no errors in their inclusion of these studies. A sensitivity analysis was conducted for all meta-analyses that had included these papers. The exclusion of these papers did not change results, and instead often increased the overall weighted odds ratio.

Implications

It is clear that bisexual people are at an increased risk of NSSI than others. This has important implications. To aid prevention of NSSI for bisexual people, LGBT and bisexual-specific support groups and services may benefit

from staff training in identification and management of NSSI, including risk factors such as symptoms of anxiety or depression. For clinicians who are aware of their client's bisexuality, a risk assessment for NSSI may be beneficial to provide for early identification and prevention of those who may be at risk of engaging in NSSI. Recognising that not all bisexual people will share this risk, this discussion should be navigated in a non-shaming, non-judgemental and supportive way. Clinicians providing individual therapy for NSSI should furthermore be mindful of an individual's sexuality, and consider potential variables that may be associated with this behaviour for the individual or their context that could be amenable to change. As female bisexual people seem to be at much greater risk, this is particularly applicable to this group.

Because it has been demonstrated that bisexual people are at a higher risk of NSSI, clinicians may not be the only people best placed to have conversations about this behaviour. Educational and voluntary organisations could play a role in supporting bisexual people who may present with these difficulties. Organisations may find it useful to provide wider support such as normalising different types of relationships, sexualities, and individual identities, whilst actively addressing, eradicating and naming biphobic discrimination and abuse. Relatively simple exercises such as 'myth-busting' sessions could help normalise relationships and provide space for bisexual people to talk about their difficulties.

It is recognised, however, that bisexual people may not always attend groups or services due to difficulties of biphobia or feelings of thwarted belonging from the LGBT community. For this reason, alternative means may

be necessary to reach this group. This could include links to mental health support on online bisexual support groups, posters aimed at bisexual people displayed in LGBT venues such as nightclubs or bars, and support services being present and engaging directly with the bisexual community, e.g., through BiPride and other events.

Conclusion

This review provides evidence that bisexual people have an increased risk of engaging in NSSI when compared to heterosexual people, gay and lesbian people, and gay men. Future quantitative research delineating bisexual-specific factors from other sexual minority factors, and further qualitative research to understand the experiences of bisexual people who engage in NSSI, would allow for specific interventions to be proposed.

Author statement

Brendan J Dunlop conceptualised the review, conducted the systematic-review, meta-analysis and narrative synthesis and drafted the first and subsequent manuscripts.

Samantha Hartley provided academic supervision, provided guidance on the systematic review process and helped revise drafts.

Olayinka Oladokun independently screened papers for inclusion, extracted data and assessed all studies for risk of bias in parallel with Brendan.

Peter J Taylor provided senior academic supervision, provided guidance on the systematic review process, provided expert statistical guidance and helped revise drafts.

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Declaration of Competing Interest

There are no conflicts of interest to report for any of the authors.

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**included in meta-analysis/narrative synthesis*

^reference taken from Batejan et al. (2015) meta-analysis, as paper not accessible

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Paper Two:

Self-Injury in Young Bisexual people: a Longitudinal investigation (SIBL) of thwarted belongingness and self-esteem on NSSI urges

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tables, excluding figures and references)*

This paper has been formatted according to the journal guidelines for *Psychological Medicine* (Appendix E). *Psychological Medicine* do not include tables within their word limit, as these are submitted as separate documents. For the purposes of this thesis, tables have been included within the main text word limit. For this reason the word limit for this paper does not reflect the word limit specified by the journal.

Abstract

Background

Bisexual people are at an elevated risk for Non-Suicidal Self-Injury (NSSI). Psychological factors including self-esteem and thwarted belongingness may help explain this risk. The aim of the current study was to investigate the association between self-esteem, thwarted belongingness and NSSI urges in young bisexual people.

Methods

Participants from 25 countries took part in this microlongitudinal online survey study (N=207). Participants aged between 16-25 were recruited through various channels and completed a variety of measures once a week for six weeks. Mixed-model linear regression was used for analysis, given the nested structure of data. Analysis examined relationship between self-esteem and thwarted belongingness on NSSI urges at the same point in time, and lagged by one week.

Results

Self-esteem and thwarted belongingness were positively associated with NSSI urges at the same point in time, and over the following week. Whilst adjusting for other variables, both self-esteem and thwarted belongingness retained an independent association with NSSI in concurrent models. Self-esteem was the only significant variable in the lagged covariate model.

Conclusions

Findings support previous research suggesting the importance of self-esteem in explaining NSSI amongst sexual minorities. Lower self-esteem may account for risk of NSSI in bisexual people. Preventative and

intervention strategies that aim to improve self-esteem may help reduce NSSI. Future studies should focus upon the experiences of bisexual people with intersecting identities (such as race) and ensure that studies are statistically powered from inception to detect effects.

Keywords: NSSI; bisexuality, self-esteem, thwarted belongingness, non-suicidal self-injury, self-injury

Introduction

Non-Suicidal Self-Injury (NSSI) is the act of deliberate self-inflicted damage to one's own body tissue, in the absence of suicidal intent and not for social or cultural reasons (International Society for the Study of Self Injury, 2018). NSSI is a prevalent difficulty in adolescence and young adulthood (Hawton et al., 2003; Klonsky et al., 2014; Madge et al., 2008). A comprehensive meta-analysis of 128 prevalence estimates from 119 records found pooled prevalence rates of NSSI for adults was 5.5%, compared to 13.4% in young adults and 17.2% among adolescents (Swannell et al., 2014). Sexual minority youth are at particular risk of suicide (Baiden et al., 2020) and NSSI (Smithee et al., 2019). Rates of NSSI amongst Lesbian, Gay, Bisexual and Transgender (LGBT) people are much higher than heterosexual people (King et al., 2008) and being LGBT is a known risk factor for self-harm (Hawton et al., 2012). Hickson et al. (2016) found that younger gay and bisexual men were at significantly greater risk for self-injury compared to older men. A recent meta-analysis indicates that bisexual people have up to six times the odds of engaging in NSSI compared to heterosexual people, and up to four-and-a-half times the odds when compared to gay men (Dunlop et al., 2020). Mental health variables (depression and anxiety symptoms, and emotional regulation) alongside life experiences such as bullying and feelings of thwarted belonging were associated with NSSI (Dunlop et al., 2020). Results of the Dunlop et al. (2020) review demonstrate that NSSI amongst bisexual people warrants urgent empirical examination to investigate psychological mechanisms that might explain this relationship.

NSSI urges are a risk factor for NSSI behaviour (Miller & Smith, 2008). Thoughts and urges to engage in NSSI are more common for adolescents than behaviour (Stallard et al., 2013), are positively associated with distress and impairment (Washburn et al., 2010) and intense urges have been found to predict more frequent NSSI (Turner et al., 2019). Focusing on the processes that potentially contribute to the development of NSSI urges may help to better elucidate the psychological mechanism underlying this behaviour. This study focuses on the psychological variables related to NSSI urges in young bisexual people.

Adolescence and young adulthood is a developmentally turbulent period (Casey et al., 2010). This is a time when rates of NSSI are high (Plener et al., 2015), and the concurrent development/exploration of sexuality is taking place (Moshman, 2014). NSSI has been linked to the navigation of a non-heterosexual orientation (Wilcox et al., 2012) during adolescence. Meyer's (2003) Minority Stress Theory proposed that being a sexual minority is an inherently stressful experience, due to associated stigma and discrimination, and that minority stress confers risk for a range of mental health difficulties. This highlights the need for research into the possible psychological mechanisms underlying this relationship. Hatzenbuehler (2009) extended this theory by proposing a psychological mediation framework. This framework posits that psychological processes mediate the relationship between minority stress and mental health difficulties. A recent ecological momentary assessment study found that greater experiences of minority stress predicted greater NSSI thoughts and behaviours at the same point in time, on the same day (Fehling, 2019).

Thwarted belongingness (the perception of impeded closeness to others, and the resulting unmet need to belong: Joiner, 2005; Van Orden, 2012) has been associated with NSSI risk for Lesbian, Gay and Bisexual (LGB) students (Taylor et al., 2018a), and for bisexual people as an independent group (Dunlop et al., 2020). Because bisexual commitment to gay/lesbian politics and community has been seen by some as untrustworthy (a form of discrimination; Israel & Mohr, 2004), bisexual people may feel unwelcome and unsupported within the LGBT community (Dunlop et al., 2021; Ross et al., 2010). In the Bower et al. (2002) qualitative study, one participant described: *"It's always viewed as sitting on a fence...You're neither fish nor fowl...you get shot at from both sides"*. Perception of 'outsider' status may lead to increased feelings of isolation and thwarted belonging, that could increase risk for NSSI.

Self-esteem has been defined as the evaluative or affective part of an individual's self-concept (Leary & Baumeister, 2000); how positively you feel about yourself. The relationships between being LGBT and having lower self-esteem are well documented, and research also supports an association between low self-esteem and the risk of engaging in NSSI (Forrester et al., 2017; Taylor et al., 2018a). The recent Forrester et al. (2017) meta-analysis found a relationship between low self-esteem and NSSI in clinical and non-clinical samples with a consistently moderate-large pooled effect size that ranged from $d=0.59-1.17$ (dependent on exclusion of outliers). Internalisation of antibisexual narratives may distort the development of a positive bisexual identity (Israel & Mohr, 2004), thus contributing to lower

self-esteem. Self-esteem could, therefore, partly explain the risk of NSSI found for bisexual people.

A recent call to action highlights the scarcity of bisexual-specific research (Taylor, 2018). It is further evident that it is vitally important that psychological processes that underlie NSSI for bisexual people are investigated, given the clear difference in risk of NSSI for this group (Dunlop et al., 2020) and lack of bisexual-focused mechanism research. Better understandings of the psychological processes that contribute to the experience of NSSI urges and behaviour in young bisexual people may help us understand the heightened risk this population experience, and develop more targeted interventions. A microlongitudinal research design, examining data over weeks rather than months/years, has the advantage of examining proximal and dynamic processes associated with NSSI urges. Whilst previous studies have examined NSSI and bisexuality cross-sectionally (Dunlop et al., 2020), to date there has been no research investigating this longitudinally that we are aware of. The current study aims to investigate both concurrent and prospective associations between NSSI urges and psychological factors (thwarted belongingness and self-esteem scores). Prospective effects focus on lagged associations between NSSI urges and psychological variables measured the preceding week. The study hypotheses were:

- 1) Lower self-esteem scores will be associated with higher NSSI urge scores at the same point in time.
- 2) Lower self-esteem scores will be associated with future (following week) higher NSSI urge scores.

- 3) A higher thwarted belongingness score will be associated with a higher NSSI urge score at the same point in time.
- 4) A higher thwarted belongingness score will be associated with future (following week) higher NSSI urge scores.

Methods

Design

A microlongitudinal design was used. Online assessments were completed at baseline (week one) followed by five weekly assessments (to week six). This study received ethical approval from a UK University Research Ethics Committee (Appendix F). The protocol for this study was pre-registered on the Open Science Framework (registration: www.osf.io/skrq8) and this paper focuses on a subset of the planned hypotheses within this protocol. In line with research guidance for working with bisexual people (BiUK, 2020), several bisexual individuals were consulted regarding the research design (Appendix G).

Participants

To be eligible to take part, participants needed to (1) be aged 16-25 years, (2) identify as bisexual, or attracted to more than one gender, (3) have experienced NSSI thoughts, urges or behaviours within the preceding six months, (4) have access to a computer/smartphone with internet access and (5) be able to understand written English.

Multiple routes of recruitment were used to reach potentially eligible participants. These included poster advertisements placed around a

University campus (Appendix H), social media advertisements through Facebook groups, Twitter, Instagram and Reddit (Appendix I), an online recruitment video (accessible at: <https://www.youtube.com/watch?v=Xgha8pznyl8>) alongside attendance at LGBT youth groups, and emails to LGBT support organisations to share details of the study with their groups. An active effort was made to recruit Black, Indigenous and People of Colour (BIPOC) via BIPOC-specific groups and through communication with UK Black Pride, in an attempt to gain a more diverse and representative sample.

Measures

Demographics questionnaire

A bespoke questionnaire at baseline recorded participant age, gender, sexuality, ethnicity, employment status and marital status (Appendix J).

Defining bisexuality can be complex. Rust (2000) suggests using 'bisexual' as both an adjective (in reference to sex acts and sexual attractions to same-sex and other-sex persons) and a noun (i.e., the people who have these attractions). The term 'bisexual' is often more widely understood and recognised than the term 'pansexual' (Mitchell et al., 2009): some individuals may describe themselves as pansexual, and others, bisexual. Others may have same-sex and other-sex attractions to lesser or greater degrees. For this reason, multiple options were given to allow participants to self-identify along a 'bisexual spectrum', from 'mostly heterosexual or mostly homosexual' to bi/pansexual.

Self-Injurious Thoughts and Behaviors Interview – Short Form (SITBI-SF: Nock et al., 2007; Appendix K)

The NSSI component of the SITBI-SF was used to assess the occurrence, nature, and frequency of NSSI behaviour at baseline. One question from this scale (“How many times in the past week have you engaged in NSSI?”) was also administered in weekly follow-ups. The SITBI-SF demonstrates strong test-retest reliability and concurrent validity with other measures of NSSI (Nock et al., 2007).

Alexian Brothers Urge to Self-Injure Scale (ABUSI: Washburn et al., 2010; Appendix L)

The ABUSI is a five-item measure that examines urges to self-injure over the previous week. The ABUSI derives a total score ranging from 0 – 30, with higher scores indicating more intense urges to self-injure. The ABUSI demonstrates good validity and reliability (Washburn et al., 2010). The ABUSI was administered at baseline and at weekly follow-ups. Cronbach’s alpha for this measure at baseline in the current study was 0.92.

Suicide Resilience Inventory-25 (SRI-25): Internal Protective subscale (SRI-25: Osman et al., 2004; Appendix M)

The nine-item Internal Protective subscale of the SRI-25 was used to measure self-esteem, including items such as “I like myself”. Items from this subscale were successfully used to measure self-esteem in an earlier study on self-harm and sexual orientation, with the factor structure and reliability of items supported in previous studies ($\alpha = .94$; Taylor et al., 2018a). All items

are rated on a six-point likert scale from one (strongly disagree) to six (strongly agree). This subscale was administered at baseline and at weekly follow-ups (range = 9 – 54, with higher scores indicating higher self-esteem). Cronbach's alpha at baseline was 0.88 in the current sample.

Interpersonal Needs Questionnaire (INQ): Thwarted Belongingness subscale (Van Orden et al., 2012; Appendix N)

The eight-item thwarted belongingness subscale of the INQ was used to measure thwarted belongingness. The INQ includes items such as “These days, I feel like I belong”. This subscale has strong convergent validity with measures of loneliness and social worth; related constructs of thwarted belongingness (Van Orden et al., 2012). This subscale has good internal reliability (Cronbach's alpha ranged from 0.81 – 0.90 across various samples; Hill et al., 2015). All items are rated on a seven-point likert scale from one (not at all true for me) to seven (very true for me). Total scores could range from 7 – 56. Higher scores indicate greater thwarted belongingness. This subscale was administered at baseline and at weekly follow-ups, and had a Cronbach's alpha of 0.86 at baseline.

Procedure

Individuals who were interested in learning more about the study completed an online consent to contact form (Appendix O). A researcher made contact via telephone or email to provide further information on the study, direct the individual to the participant information sheet (Appendix P) and answer any questions. If participants wished to proceed they were emailed a link to a

consent form (Appendix Q), which included the participant information sheet again. Once they had completed the consent form and submitted this online, participants were emailed a link to the baseline measures, along with bespoke login details to access each survey.

If a participant resided in the UK, links were sent either via text message or email. For participants outside the UK, or who preferred surveys via email, they were emailed weekly surveys by the research team. Links to support organisations were provided at the end of each survey. When participants had completed the study, they received a debrief email (Appendix R) with signposting information to support organisations. For each week a participant completed their survey, they could enter into a prize draw of all participants that had completed that particular week, for an online £50 voucher. A risk management protocol was developed to manage any risk that became apparent during participation (Appendix S).

Data extraction and screening

Extraction of data from the online survey system and collation into a single dataset was completed by BJD, with a 10% data check for accuracy completed by SEC. To further add rigour to the data entry process, an independent researcher completed a further 20% data check. Of the 30% of data checked by others (equating to around 8,500 individual data cells), six data entry inconsistencies were identified. All errors related to individual data points being assigned to different weeks, rather than raw score entry errors. Such inconsistencies were resolved through discussion and checking of data

from the output source. For the remaining 70% of data, additional care was taken to ensure such errors did not occur again.

To be eligible, follow-up data points had to be completed within three days of the intended follow-up date. Data points provided outside of this window were excluded from analyses. This time window allowed participants some flexibility in when they completed follow-up assessments, accounting for individual circumstance and time zones differences. In a small number of cases participants provided multiple data points relating to a single follow-up. This was possible as participants could log into the survey at any point during the study to complete a follow-up assessment. Where multiple data points were provided for a single follow-up point, the first eligible data point was used.

Analysis

Mixed-model linear regression was used to analyse data, given that data was nested at two levels: timepoint (level 1) within participant (level 2). A mixed-model linear regression allows for nested data and the non-independence of data this creates. Separate models were estimated testing contemporaneous associations (association between variables at the same time point) and lagged associations (lagging predictor variables by one week). Mixed-models can accommodate cases with incomplete data, assuming data are 'Missing At Random' (Schafer & Graham, 2002).

Power to detect standardised level 1 associations was estimated using Monte Carlo simulation. This required a priori estimates of both model and predictor variances, which were unknown. As such, data were generated

under varying conditions: 1) equal variance split in predictor and model variances; 2) 0.75/0.25 model variance (level 2/level 1) holding predictor variance equal; 3) 0.25/0.75 model variance; 4) 0.75/0.25 predictor variance split (level 2/level 1) holding model variance equal; and 5) 0.25/0.75 predictor variance split. A sample size of $N=100$ resulted in over 99% power to detect a standardised effect of 0.3 under all conditions. For a small effect ($B=0.1$) the variance split is important: under the most favourable conditions (condition 2) $N=100$ results in 85% power, however in the least (condition 4) $N=200$ would be required for 73% power. Based on the simulated power analysis, the SIBL project aimed to recruit $N=200$. Accounting for up to 50% attrition, this would maintain empirical power at $N=100$.

Analyses used random-intercept models. Given the limited number of assessment points per person, exacerbated by the presence of missing data, random slopes could not be estimated without convergence issues. Restricted Maximum-Likelihood estimation (Snijders & Bosker, 2011) was used. Predictors were grand-mean centred before inclusion in the analyses. All analyses were conducted using *R* (R Core Team, 2019). All assumptions for mixed-model linear regression were met (see Appendix T).

Results

Participant characteristics

The total number of participants was $N=207$. Ages ranged from 16-26 (median=20.50 years, interquartile range; IQR=18-23) and participants resided in 25 different countries ($N=103$ from the United Kingdom). The reason one participant was 26 was because they consented to the study

aged 25, and completed their baseline survey aged 26. The majority of participants were cisgender women and identified as bisexual. Most (80%) were White British or White Other in ethnicity. Demographic details are provided in Table 7.

Table 7: Participant characteristics

	N (Total N = 204)^a
<u>Gender</u>	
Cisgender woman	135 (66%)
Non-Binary/Third gender	28 (14%)
Cisgender man	25 (12%)
Transgender man	11 (5.5%)
Transgender woman	5 (2.5%)
<u>Sexual Orientation</u>	
Bisexual	124 (61%)
Pansexual	52 (25.5%)
Other ^b	15 (7.5%)
'Mostly homosexual'	8 (4%)
'Mostly heterosexual'	5 (2%)
<u>Ethnicity</u>	
White British	94 (46%)
White Other	69 (34%)
Other mixed/multiple ethnicity	16 (8%)
White and Asian	4 (2%)
Asian/Asian British: Indian	4 (2%)
Asian/Asian British: Pakistani	3 (1.5%)
Black African	3 (1.5%)
Black Caribbean	3 (1.5%)
Asian/Asian British: Chinese	2 (1%)
White and Black African	2 (1%)
Arab	2 (1%)
Asian/Asian British: Other Asian Background	1 (0.5%)
White and Black Caribbean	1 (0.5%)
<u>Employment status</u>	
Student	131 (64%)
Employed full-time	34 (16.5%)
Employed part-time	18 (9%)
Unemployed	18 (9%)
Volunteer	3 (1.5%)
<u>Marital status</u>	
Single	125 (61.5%)
Partnered	70 (34%)
Polyamorous	5 (2.5%)
Open relationship	2 (1%)
Married	2 (1%)
<u>Country^c</u>	
United Kingdom	103 (50.5%)
United States of America	53 (26%)

Other Europe	26 (13%)
Australasia	5 (2.5%)
Asia	4 (2%)
Africa	4 (2%)
South America	3 (1.5%)
Central America	3 (1.5%)
Canada	3 (1.5%)

History of NSSI

Yes	189 (93%)
No	15 (7%)

Method of NSSI^d

Cut or carved skin	152
Hit self on purpose	104
Picked areas of the body to the point of drawing blood	81
Scraped skin to the point of drawing blood	78
Burned skin	74
Other ^e	53
Inserted sharp objects into skin or nails	32
Gave self a tattoo	18

^aTotal number of participants in study is N=207. Three did not complete baseline measures, but completed follow-up surveys, so have been included in subsequent analysis.

^bOther responses:

- Bisexual (attracted to two or more genders) (N=7)
- Queer (N=3)
- Biromantic, asexual (N=2)
- Bisexual but mostly attracted to women (N=1)
- Bicurious (N=1)
- Polysexual (N=1)

^cA breakdown of all countries is provided in Appendix U.

^dParticipants could select more than one method.

^eOther NSSI methods included biting self, scratching, excess exercise, drinking toxic substances, self-strangulation, pushing fingers into bruises.

Almost all participants (N=189, 93%) had a history of NSSI behaviour. More than half of participants (N=137, 67%) reported NSSI in the past month. The median frequency of past year NSSI was 10 (IQR=4-30, range =0-730). The median frequency of NSSI in the past month was 1 (IQR=0-3, range=0-143). The most commonly reported methods of NSSI were cutting or carving the skin and hitting the self on purpose.

Descriptive statistics for study variables across the time points are reported in Table 8. Total completion of each weekly measure ranged from 97% to 47%. Participants responded to every item on each measure they completed, and consequently there was no missing data within any completed measure.

Table 8: Mean urge, self-esteem and thwarted belongingness scores

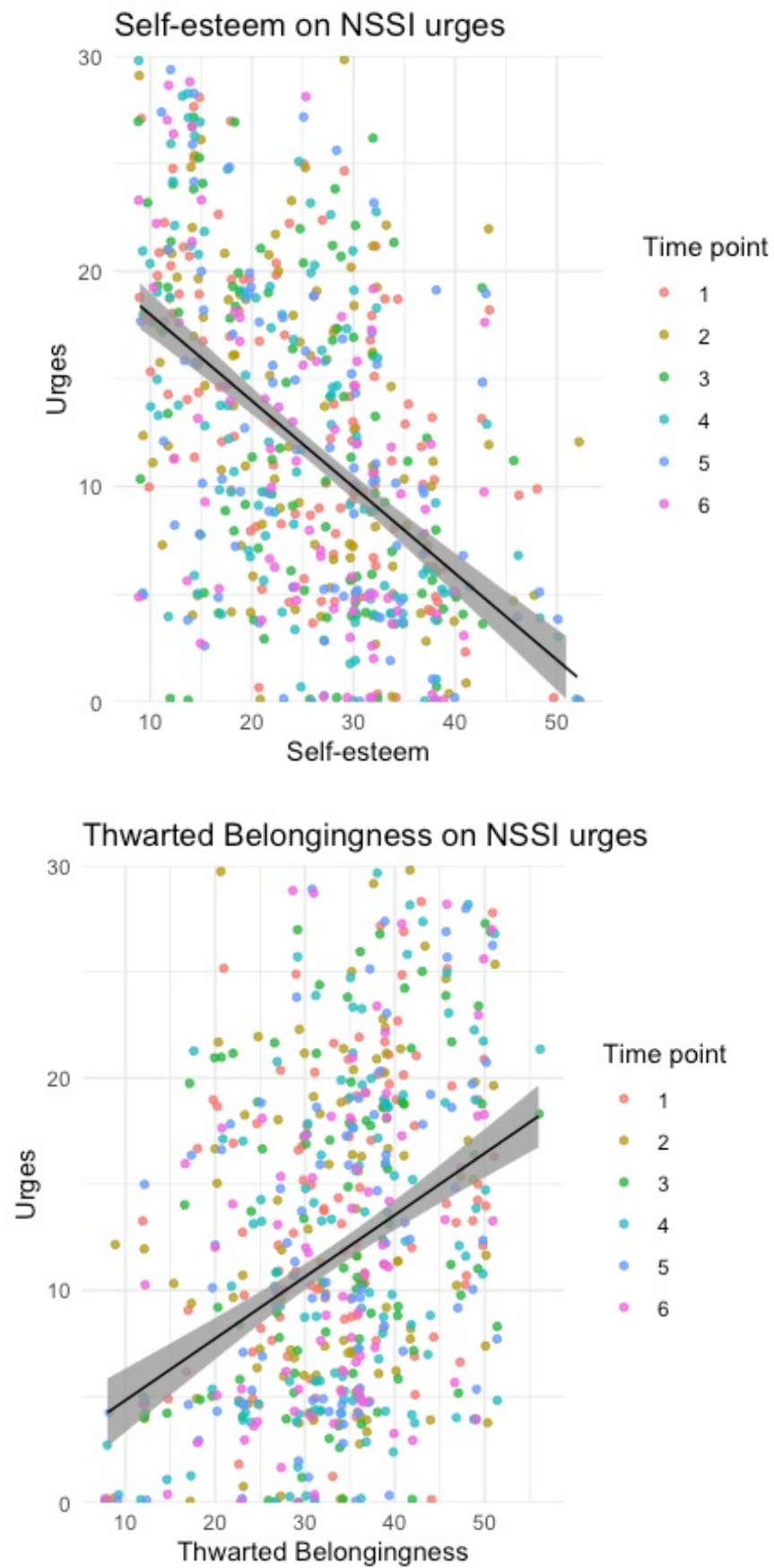
	Urge Mean (SD) (N=207)	Self-esteem Mean (SD) (N=207)	Thwarted belongingness Mean (SD) (N=207)
Baseline (week 1)	n=198 13.31 (7.10)	n=198 25.67 (8.74)	n=197 34.12 (9.98)
Week 2	n=162 12.12 (7.72)	n=153 25.3 (8.40)	n=152 33.98 (9.67)
Week 3	n= 135 11.96 (8.06)	n=132 25.47 (9.31)	n=131 33.02 (10.25)
Week 4	n=122 11.04 (8.19)	n=118 25.77 (9.90)	n=118 33.81 (9.90)
Week 5	n=109 10.75 (7.90)	n=105 25.4 (9.27)	n=105 34.46 (10.53)
Week 6	n=96 11.07 (8.04)	n=92 25.49 (8.88)	n=92 33.38 (10.73)

Effect of self-esteem and thwarted belongingness on NSSI urges

The intraclass correlation coefficient (ICC) in an empty model was ICC=0.62: 62% of observed variance was between person. The relationships between self-esteem and NSSI urges and thwarted belongingness and NSSI urges were graphed to explore associations (Figure 5). Self-esteem scores were negatively associated with weekly urge severity, and thwarted belongingness positively associated with weekly urges severity.

Mixed-model linear regression was used to investigate the concurrent associations between self-esteem, thwarted belongingness and NSSI urges. NSSI history (coded: no history = 0, history = 1), relationship status (coded: single = 0, in a relationship = 1), gender identity (coded: cisgender = 0, trans/non-binary = 1), age and country (reference category = UK) were included in the models as covariates.

Figure 5: Self-esteem scores on NSSI urges (top)
Thwarted Belongingness scores on NSSI urges (bottom)



Concurrent associations

Self-esteem was negatively associated with weekly NSSI urge severity at the same time point. Similarly, higher scores on thwarted belongingness were associated with increased NSSI urge severity at the same time point. Such concurrent associations between self-esteem and NSSI urge severity remained when controlling for covariates, and the same pattern was seen for the association between thwarted belongingness and NSSI urge severity. Being a participant from a country that was not the UK or USA was marginally significant in its association with NSSI urge severity (lower urge severity). Model residuals were checked for all three models and all were normally distributed. See Table 9, below.

Table 9: Concurrent associations with NSSI urge score

Predictor(s)	Regression coefficient (95% confidence interval)	N observations (N participants)	t-value	p-value	Model ICC
SE score	-0.36 (-0.43, -0.30)	797 (203)	-10.69	p<.001	0.57
TB score	0.29 (0.15, 0.26)	794 (203)	7.13	p<.001	0.63
SE score TB score Age USA participants ^a Rest of world participants ^a Cisgender participants Student participants Single participants NSSI history	-0.30 (-0.38, -0.23) 0.09 (0.03, 0.15) -0.16 (-0.49, 0.18) 0.01 (-1.95, 1.97) -2.17 (-4.20, -0.15) -0.58 (-2.48, 1.13) 0.42 (-1.99, 2.74) -0.07 (-1.58, 2.42) 0.03 (-3.14, 3.21)	787 (200)	-7.78 3.00 -0.90 0.01 -2.07 -0.59 0.40 -0.08 0.02	p<.001 p=.003 p=.368 p=.993 p=.040 p=.553 p=.688 p=.939 p=.985	0.58

^aReference category = UK participants

Lagged associations

Self-esteem was negatively associated with NSSI urge severity for the following week. Higher scores on thwarted belongingness were also associated with higher urges the following week. Whilst associations between self-esteem and NSSI urges remained significant when controlling for covariates, thwarted belongingness became non-significant. Model residuals were checked for both thwarted belongingness and self-esteem models, as well as the model with all covariates. All models were normally distributed. Table 10, below, provides results of these analyses.

Table 10: Associations with NSSI urges, lagged by one week

Predictor(s)	Regression coefficient (95% confidence interval)	N observations (N participants)	t-value	p-value	Model ICC
SE score	-0.22 (-0.30, -0.13)	552 (173)	-5.12	p<.001	0.59
TB score	0.13 (0.06, 0.20)	550 (173)	3.70	p=.001	0.63
SE score TB score Age USA participants ^a Rest of world participants ^a Cisgender participants Student participants Single participants NSSI history	-0.17 (-0.27, -0.07) 0.07 (-0.01, 0.15) -0.33 (-0.74, 0.08) -0.51 (-2.87, 1.88) -3.04 (-5.42, -0.63) -0.59 (-2.78, 1.62) -0.25 (-2.65, 2.16) -0.02 (-2.03, 1.98) 0.75 (-3.12, 4.63)	547 (171)	-3.40 1.73 -1.57 -0.41 -2.43 -0.51 -0.20 -0.02 0.37	p<.001 p=.084 p=.119 p=.684 p=.016 p=.610 p=.840 p=.981 p=.711	0.59

^aReference category = UK participants

Supplementary analysis

Thwarted belongingness was non-significant in a lagged analysis with covariates, but was significant in the concurrent model. Therefore, analyses were repeated with thwarted belongingness and the other covariates, excluding self-esteem. In the concurrent association model the association between thwarted belongingness and urge severity became stronger ($B=0.20$; $t=7.09$; $p<.001$). For the lagged model, thwarted belongingness was significantly associated with NSSI urge severity the following week ($B=0.13$; $t=3.69$; $p=.001$). Thus, it appears that for the lagged model, only when adjusting for self-esteem does the relationship between urge severity and thwarted belongingness become non-significant.

Discussion

This study aimed to investigate associations between the psychological variables of self-esteem and thwarted belongingness, and NSSI urges, for a young bisexual sample. Both lower self-esteem and greater feelings of thwarted belongingness were significantly associated with NSSI urge severity at the same point in time (Hypotheses 1 and 3). When these variables were entered into a model with other covariates, both remained significant. For lagged associations, lower self-esteem and greater feelings of thwarted belongingness were associated with next week NSSI urges (Hypotheses 2 and 4). However, when these variables were entered simultaneously with other covariates, self-esteem remained the only significantly associated variable.

Findings suggest that self-esteem may be an important variable in explaining NSSI risk in bisexual people. Such findings support earlier work demonstrating an association between low self-esteem and difficulties with NSSI, both within LGBT individuals (Taylor et al., 2018a) and the wider population (Forrester et al., 2017). This study builds on the previous cross-sectional studies by demonstrating that self-esteem is associated with NSSI urges over the following week. Whilst these lagged associations do not allow us to infer a causal effect, they increase the plausibility that low self-esteem may be contributing to more severe urges to self-injure over time. Previous research indicates that self-esteem is lower amongst sexual minority individuals compared to heterosexual individuals (Bridge et al., 2019), and therefore self-esteem may partly explain the heightened risk of NSSI seen in these populations. Effects of general minority stress, paired with bisexual-specific minority stress (Israel & Mohr, 2004), could have a particularly toxic effect on self-esteem for bisexual people, in turn leaving them vulnerable to NSSI. Hooley and Franklin (2017) describe a positive view of the self as being a 'barrier' to engaging in NSSI in their Benefits and Barriers model, and self-esteem ('representations of self') is also an important variable in the Hasking et al. (2017) Cognitive-Emotional model of NSSI.

Thwarted belongingness was independently associated with NSSI urge severity at the same point in time, and associated with next week NSSI urges. Thwarted belongingness as a concept is related to the unmet need to belong to a group (Van Orden et al., 2012). Resultant feelings of disconnect, loneliness or rejection from others conceptually link to NSSI, given that NSSI is often used to manage intense emotions (Taylor et al., 2018b). Results

from the current study are consistent with past research demonstrating a positive association between thwarted belongingness and NSSI urges and behaviour (Assavedo & Anestis, 2016, Chu et al., 2016; Muehlenkamp et al., 2015). However, when adjusting for self-esteem, belongingness was no longer significantly associated with NSSI urge severity in the lagged model. This is similar to past research reporting that belongingness no longer mediated the effect of sexual minority status on NSSI when adjusting for self-esteem (Taylor et al., 2018a). This finding could suggest that self-esteem mediates the association between thwarted belongingness and NSSI urges, but it may also be that thwarted belongingness has an artefactual relationship with urges due to its confounding relationship with self-esteem. Thwarted belongingness and self-esteem may also be potentially measuring facets of the same construct, and the removal of shared variance leaves only self-esteem holding an independent association with urges.

The microlongitudinal design allowed for associations between variables over time to be examined, rather than drawing conclusions based on cross-sectional results. Whilst lagged associations do not allow causal inferences to be made between variables, such analyses do show that even when self-esteem precedes urges there is still an apparent relationship. Interventionist-causal approaches (Kendler & Campbell, 2009) would help to establish a causal relationship between self-esteem and NSSI urge severity. This is particularly important because the study design means that the temporal ordering of NSSI urges, feelings of belongingness and self-esteem cannot be reliably established. For example, it cannot be ascertained whether a decrease in self-esteem one week had an impact on NSSI urges

the next week, or vice versa. Furthermore, recall of experiences from earlier on in the week could influence answers to the self-esteem or belongingness questions, whilst experiences at another point in the week could have independently impacted upon NSSI urge scores. The associative nature of the data in this design limits the ability to draw causal inferences about temporal relationships between variables.

Input and contribution from bisexual people during study design ensured acceptability and relevance of this research. A limitation of an online survey is the inability for participants to qualitatively describe the nuances of their experience, given greater variability within variables examined that may not have been captured by the measures used. To overcome this, and in response to participant feedback during the study, a linked qualitative study has been undertaken and is reported elsewhere (Dunlop et al., 2021; Appendix V).

An important consideration is the fact that almost 80% of the sample were White British or White Other, despite recruitment efforts to specifically target BIPOC via BIPOC-specific groups. This means that relevance of current findings may not extrapolate to BIPOC. Finally, the aim of this study was to examine factors associated with NSSI urges in bisexual people, due to evident risk demonstrated within this group (Dunlop et al., 2020). A limitation of this design is that conclusions cannot be drawn about the relevance of these factors just for bisexual people; there was no comparator group to measure differences in urge severity for other sexual orientations.

Implications

The potential relationship between lower self-esteem and NSSI urges provides some directions for bisexual-specific intervention, at multiple prevention and intervention levels (Sloan & Shipherd, 2019). Chaudoir et al. (2017) conducted a systematic review of interventions aimed at reducing sexual minority stress and bolstering coping resources. Their review did not identify any structural or systemic interventions that both reduced stressors and improved intrapersonal coping. Several studies did, however, report the benefits of Cognitive Behavioural Therapy (CBT) for improving self-esteem (Lucassen et al., 2015; Ross et al., 2008) amongst sexual minorities. The Chaudoir et al. (2017) review identifies some interventions that may be useful for improving self-esteem in sexual minority youth. These include Craig's (2012) case management model and a narrative writing exercise intervention (Riggle et al., 2014). Lucassen et al. (2015) report on their Rainbow SPARX computerized CBT intervention, that helps to identify positive aspects of sexual orientation, and Ross et al. (2008) found weekly sessions of CBT resulted in improve self-esteem. Evidence of efficacy of these interventions is, however, limited.

From a preventative structural and systemic perspective, bisexual-positive and affirmative messages could be embedded within educational establishments from an early age (Feinstein et al., 2019). Invisibility and isolation has been found to be a theme associated with NSSI for LGBT youth (Nickels, 2013) and may relate to low self-esteem experienced by this group. Representation is a powerful tool to help with this, including the incorporation of, for example, bisexual authors, artists and scientists into the taught curriculum (McCann et al., 2020). Increased teaching of sexuality and gender

diversity within lessons is also needed, including the challenging of common bisexual stereotypes and prejudicial assumptions, given that discrimination for gay and bisexual men is predictive of lower self-esteem (Huebner et al., 2004). Other preventative avenues include increased bisexual representation in mainstream media. Crucially, bisexual people from an early age need to be afforded the opportunity to internalise positive narratives and appraisals of their identity, given that prejudice exists even from other sexual minority individuals, and staying 'closeted' can impact on self-esteem (McCann et al., 2020; McLean, 2008).

From an intervention perspective, LGBT or bisexual-specific youth groups can help young people improve their self-esteem by facilitating safe, supportive and compassionate spaces to explore identity (Romijnders et al., 2017). For any young people seeing a therapist, therapists should be attuned to self-esteem as a potential risk factor for NSSI, if they are aware of their client's bisexuality.

Of utmost importance is the need for future studies investigating NSSI to ensure that they are statistically powered to detect differences in effects between bisexual samples and other samples (e.g., heterosexual people, other minoritised sexuality or gender identities). This would allow for reliable comparison of effects between sexual orientations. The relationship between NSSI and bisexuality has been demonstrated through meta-analysis (Dunlop et al., 2020), qualitative exploration (Dunlop et al., 2021) and quantitatively in the current study. Independent analysis of bisexual people is essential given that general minority stress experiences paired with bisexual-specific stressors are likely to need targeted support. The current study has

demonstrated that recruitment of bisexual people is feasible using a targeted approach focused on youth groups, online social media, university LGBT societies, and national charities.

Self-esteem is a multi-faceted concept, and future work exploring specific aspects of self-esteem and their relationship with NSSI urges would be helpful. This would be especially useful as more critical forms of self-concept may be especially important in NSSI (Forrester et al., 2017). Furthermore, the evidence base would also hugely benefit from a more significant BIPOC sample. Potentially pertinent intersections between race/ethnicity, sexuality and gender could have important implications for NSSI urges. If self-esteem remains an important psychological variable for NSSI urges, prevention and intervention strategies for bisexual people with multiple intersecting identities may need to focus on improving this for multiple aspects of the self.

Conclusion

The current study has provided recognition of a clear link between concurrent and lagged associations between self-esteem and NSSI urges for young bisexual people. With participants taking part from all over the world, the impact of lower self-esteem on urges seems stable cross-country. Thwarted belongingness is also a potentially important variable for NSSI urges. At the same point in time, this seems to be a significantly associated variable. Within a lagged model alongside self-esteem, however, this effect became statistically non-significant. Findings demonstrate the importance of low self-esteem as a risk factor for NSSI within this population, and therefore

preventative as well as intervention strategies to improve self-esteem for this group is needed.

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Conflicts of interest

None.

Ethical standards

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

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Paper 3:

“Why is it so different now I’m bisexual?”: young bisexual people’s experiences of identity, belonging, self-injury, and COVID19

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Abstract

Bisexual people demonstrate higher rates of Non-Suicidal Self-Injury (NSSI) in comparison to other groups. This study aimed to explore bisexual people's experiences of sexuality, NSSI and the COVID19 pandemic. Fifteen bisexual people (16-25 years old) with experience of NSSI participated in online qualitative interviews. Thematic analysis was used. Preliminary findings were shared with a subset of participants for member-checking. Participants described experiences of falling between the binary worlds of heterosexuality and homosexuality and described discrimination and invalidation related to this. Lack of access to positive bisexual representation contributed to feelings of self-loathing, with NSSI used to manage emotions or self-punish. The effect of lockdown was not clear cut, depending on personal circumstances and meanings of social interaction for participants. There is a need for greater recognition of significant societal narratives around bisexuality within clinical formulations of mental health difficulties and NSSI within this population.

Keywords: *bisexuality, non-suicidal self-injury, NSSI, lockdown, COVID19, qualitative*

Introduction

Non-Suicidal Self-Injury (NSSI), defined as “the deliberate, self-inflicted damage of body tissue without suicidal intent and for purposes not socially or culturally sanctioned” (International Society for the Study of Self Injury, 2018), is a prevalent concern within Lesbian, Gay, Bisexual, Transgender and Queer+ (LGBTQ+) communities (King et al., 2008). Sexual minority individuals have double the lifetime prevalence of NSSI compared to heterosexual people (Liu et al., 2019). Bisexual people seem particularly at risk. A recent meta-analysis found that bisexual people have up to four-and-a-half times the odds of engaging in NSSI compared to gay men (odds ratio=4.57; Dunlop et al., 2020). NSSI is associated with individual distress (Byford et al., 2009), increased risk of suicide (Hawton et al., 2015), self-injury scarring (Gutridge et al., 2019), and increased healthcare costs (Sinclair et al., 2010). Symptoms of anxiety and depression have been found to be most commonly associated with NSSI for bisexual people and additional variables such as sexual/physical assault, bullying and intimate partner violence also have relationships to NSSI (Dunlop et al., 2020). More research into bisexual-specific NSSI risk factors is needed, as bisexual people are seldom researched independent of other sexual minorities (Taylor, 2018).

The COVID19 pandemic has been disruptive to people’s lives and livelihoods on a worldwide scale. Within the UK, the infectious nature of COVID19 led to a gradual increase in restrictions of movement in March 2020 resulting in a national lockdown. People were encouraged to work from home if possible. A widespread closure of retail, hospitality and leisure

industries, educational establishments and non-essential services followed. For several months UK citizens were advised to not leave their home unless for essential food/medical supplies, to exercise once per day, or receive medical care. Restrictions on daily life eased in June 2020, and in October 2020 a 'three-tier' alert system was introduced, with varying levels of restrictions. The UK returned to a version of national 'lockdown' from November – December 2020, and such measures may return if deemed necessary by the UK government. Such experiences have the potential to interact with challenges faced by individuals who self-injure.

It is thought that the effects of COVID19 and associated public health measures may lead to an increase in mental health difficulties (Holmes et al., 2020). For those experiencing pre-existing mental health difficulties, the emotional impact of the pandemic and subsequent worldwide lockdowns may exacerbate such difficulties (Rajkumar, 2020; Yao et al., 2020) and mental health consequences are likely to remain for longer than the pandemic itself (Gunnell et al., 2020). However, remaining at home and other changes as a result of lockdown may be beneficial for some. For example, Widnall et al. (2020) reported an overall decrease in anxiety levels for young people when compared with baseline measures pre-COVID19. In addition, increased community connections during lockdown have brought benefits to some groups (Tiratelli & Kaye, 2020).

In relation to NSSI, COVID19 and lockdown may vary in its impact. Greater isolation, anxiety and loss of routine could potentially contribute to exacerbation in NSSI (Holmes et al., 2020). A longitudinal cohort investigation of mental health outcomes in Chinese young people showed an

increase in NSSI from 31.8% when schools closed due to COVID19, to 42% when school re-opened (adjusted odds ratio=1.35; Zhang et al., 2020). There are also potential benefits to lockdowns such as less exposure to stressful work or school environments (Widnall et al., 2020). A 'living systematic review' is in progress, and will continually document and update the impact of COVID19 on suicide and self-harm behaviour (John et al., 2020).

Those with existing mental health difficulties and people from marginalised groups (including the LGBTQ+ community) have been identified as vulnerable groups requiring particular research attention during the pandemic (Holmes et al., 2020). There are specific considerations and stressors for LGBTQ+ people. Returning to live with discriminatory/abusive others, and lack of opportunity to access LGBTQ+ safe spaces (such as youth groups), are specific risks faced by this population (LGBT Foundation, 2020). During lockdown, some LGBTQ+ people have been feeling isolated, do not feel safe where they are residing, and are concerned about alcohol/substance misuse relapse (LGBT Foundation, 2020). Despite an overall decrease in anxiety for young LGBTQ+ people, higher anxiety and depression scores and reduced wellbeing were still apparent during COVID19 (Widnall et al., 2020).

It is known that bisexual people face additional difficulties, such as biphobia from within and outside of the LGBTQ+ community (Herek, 2002; McLean, 2008). In the period from 23/03/2020–12/04/2020, one UK charity saw a 450% increase in calls about biphobia (LGBT Foundation, 2020). The impact that COVID19 has had on bisexual people and their experiences of NSSI may be significantly different to other sexual minorities and warrants

urgent investigation. This is especially pertinent as increased risk of NSSI is now well established within this group (Batejan et al., 2015; Dunlop et al., 2020).

At the time of writing, this is the first known qualitative study focusing on NSSI for bisexual people, and the first to explore the impact of COVID19 on this group. This article aims to explore the experiences of young bisexual people who have engaged in NSSI and recently experienced the UK COVID19 lockdown. In particular, the focus is on understanding the relationships between bisexuality, self-injury and lockdown.

Methods

Design and procedure

This is a qualitative study involving online semi-structured interviews with participants from a larger study. We adopted a critical realist epistemological perspective, acknowledging the theory-laden nature of the research process and product (Fletcher, 2017). This study was pre-registered (<https://www.maudsleybrc.nihr.ac.uk/research/covid-19-studies-project-details?id=9064>). A topic guide (Appendix X) was developed based on previous research into bisexuality, with questions relating to experiences of the COVID19 pandemic and lockdown.

Participants were recruited from a larger, online survey study called SIBL (The Self-Injury in young Bisexual people: a Longitudinal investigation). The SIBL study was pre-registered: www.osf.io/skrq8. Participants in the SIBL study had to be aged 16-25 years, identify as bisexual and/or attracted to more than one gender, and have experienced NSSI

thoughts/feelings/behaviours within the preceding six months. Participants were recruited into the SIBL study through social media posts, LGBTQ+ youth groups, posters around a northern UK University campus (Appendix H) and advertisement via internal University emails. Participation was open to people around the world.

SIBL participants were eligible to take part in qualitative interviews if they were based in the UK, were involved in SIBL at the point when UK lockdown began (from 23/03/2020), had experienced NSSI at some point in their lives, and had consented to further contact with the research team. People were invited via email to take part in a qualitative interview of their experiences of NSSI, bisexuality, COVID19 and subsequent lockdown. All participants provided written informed consent. Interview participants received a £10 voucher for their participation.

Data Collection

Interviews were conducted by BJD, MS and SEC via a video conference platform (e.g., Zoom/Skype). Participants were informed that they could stop or pause the interview at any time. Interviews ranged from 25–50 minutes. Interviews were audio-recorded with participant permission and transcribed verbatim. All participants provided informed consent. This study received ethical approval from the University of Manchester Research Ethics Committee Panel 3 (2019-7445-11947).

Research team

The research team consisted of psychologists and academics. None of the researchers identified as bisexual or pansexual, though the lead author was gay. Several of the researchers have previously conducted research into self-injury and suicidality, and some had personal experiences of self-injury and other mental health difficulties.

Analysis

We adopted thematic analysis as the analytic approach due to its theoretical and interpretive flexibility (Braun & Clarke, 2006). We sought to read the data with attention to individual/intrapsychic, relational/social, and wider societal and cultural levels of interpretation, and thematic analysis allowed for this approach.

A coding framework was developed inductively from initial analysis of five transcripts and then tentatively applied to the full dataset and further revised through this analysis.

As little research has been conducted into the intersection of bisexuality and self-injury from participants' perspectives, we started our analysis inductively, with one researcher (CH) analysing the first five transcripts, initially coding them comprehensively and closely to the participants' words and meanings. From this, a preliminary coding framework was developed and shared with BJD, MS and SEC. BJD, MS, SEC and CH then coded remaining transcripts whilst noting gaps or queries about codes, their definitions, or other salient aspects from their individual readings. Each team member kept notes on their process and reflections as a reflexive audit

trail (Seale, 1999). The wider team (BJD, MS, SEC, CH, PJT and SH) then discussed the whole dataset in the context of the research aims and developed the framework into broader themes and sub-themes. Data were related to relevant psychological and sociological theory. Through systematically coding each transcript and team discussion, we felt confident that thematic saturation was reached for the purpose of the research (i.e., all salient meanings and ideas across the dataset were represented within our thematic structure; Green & Thorogood, 2004). BJD then compiled the revised set of themes and sub-themes.

All participants were invited to take part in an online discussion of the results, allowing for member-checking (Creswell & Millar, 2000). Three participants took part. Preliminary themes and sub-themes were tentatively presented and participant views were invited during discussion, asking for reflections from their own perspective on the validity or otherwise of presented themes. Feedback from participants were used to further refine, merge and rename themes and subthemes. Participants were given a voucher for their participation.

Results

Participant characteristics

Fifteen participants were recruited. Table 11 details participant characteristics. All but two had engaged in past month NSSI.

Table 11: Participant Characteristics (qualitative study)

Characteristic	N
<u>Gender</u>	
Cisgender woman	8
Non-Binary/Third gender	4
Cisgender man	2
Transgender man	1
<u>Sexual Orientation</u>	
Bisexual	10
Pansexual	2
'Mostly homosexual'	1
"Bisexual, but attracted to male, female and other" ^a	1
"Bisexual, but mostly attracted to women" ^a	1
<u>Ethnicity</u>	
White British	12
White Other	2
Black African	1
<u>Method of NSSI^b</u>	
Cutting/carving skin	12
Burning skin	8
Other	7
Scraping skin to draw blood	6
Picking skin to draw blood	5
Hitting	5
<u>NSSI Frequency</u>	<u>M (range)</u>
Past year	38 (0-200)
Past month	6 (0-35)
Past week	2 (0-10)

^aParticipant self-defined orientation

^bParticipants could endorse multiple methods

Theme 1: Coping with a heteronormative and binary-focused world

Participants framed being bisexual as a form of deficit, expecting societal rejection and non-acceptance as a result of this identity. Stories of bisexual people as homophobic, indecisive or immoral (e.g., likely to cheat) made this an undesirable identity to claim. Binary-focused interactions and the lack of stories or visible representation of bisexual people in participants' lives made bisexuality hard to understand and embrace as an identity. When

participants had not experienced as much negativity as expected, they considered themselves 'lucky'. Whilst all four themes in this article are distinct, this theme seemed to permeate and provide context for other themes.

When participants had access to non-judgemental and positive narratives of bi/pansexuality, this contributed to self-acceptance, and participants reported not feeling as distressed and confused.

Expecting rejection

Participants described struggles with fitting in to a world that was not only heteronormative, but binary-focused. Particularly, participants described not fitting into the LGBTQ+ or heterosexual community, due to comments by others invalidating their sexuality. Participants often described experiences of being rejected because their bisexual identity did not neatly fit either side of the hetero/homosexual binary, and came to expect rejection:

“especially from the gay community, I’ve heard more like...I’m not really part of that community...‘cos you know I can choose to be with a man... I can pass as straight” (P10, cisgender woman)

One participant described being explicitly told to 'choose' their sexuality, reflective of the assumed binary between being straight and being gay/lesbian:

"I did have people telling me like make a choice, choose a side... if you're gonna accept me for being gay why is it so different now I'm bisexual?" (P12, non-binary/third gender person)

Living with prejudice

Participants described particular prejudices around sexuality, which influenced their experience of others and themselves. For instance, heterosexual women were perceived to be able to have varied sexual experiences, yet still able to have their heterosexuality affirmed by themselves and others. Being a bisexual woman was sometimes viewed as an extension, or part of, female heterosexuality and not itself an identity. In contrast, bisexual men were perceived by many as being on a 'journey' to coming out as gay. The experience of bierasure was prominent: according to others, individuals could not be seen to occupy multiple spheres and had to instead slot into a binary existence. To resist doing so was sometimes construed as 'homophobic':

"I've seen like, groups that have been tried to be set up, like, LGT groups, that just completely miss out the B...there are some members of the gay community that think that bi people are just closeted and, and it's homophobic of them not to just come out as gay" (P7, cisgender woman)

Living with a sense of threat

Living within a heteronormative and binary-focused world created a sense of threat, where people were at risk of being rejected or judged by others. This necessitated continual appraisal of safety in the context of social relationships, with some avoiding situations and others taking a more direct approach to protect themselves:

“I’m very loud about my sexuality when I meet new people so that I can gauge how they’re going to react to me and then decide how to pursue the friendship from there” (P15, non-binary/third gender person)

Considering yourself ‘lucky’

Perhaps because of this sense of threat, multiple participants spoke of how ‘lucky’ they felt that their negative experiences were not as bad as others, or as they had feared:

“I definitely think that I’ve been very lucky in how like I came out to my parents and they were very accepting...I definitely think that I’ve been very fortunate in my situation” (P5, cisgender woman)

Theme 2: Relationship between bisexuality and NSSI

Self-injury served the function of helping participants manage distress, self-loathing and confusion that they felt as a result of negative social narratives of bisexuality. It was not bisexuality, per se, that people struggled with.

Instead, self-injury was used to manage the feelings and prejudices that they encountered when trying to understand themselves. Finding like-minded people to connect with and claiming a bisexual identity were described as being hugely beneficial and protective of people's mental health. This gave them purpose and allowed them to feel like they belonged.

Sexuality as part of a wider context for self-injury

Participants described their sexuality as being one of many contributory factors relating to their self-injury, and viewed as part of a larger set of reasons and experiences:

“one extra little piece in this kind of jigsaw of emotion” (P10, cisgender woman)

“I think it adds to the feelings that make me self-harm...it's a little bit but it's not the main reason” (P8, cisgender woman)

Self-injury as a means of coping with identity

Self-injury was considered by some to be a strategy used to cope with negative judgements attached to their bi/pansexual identity. Self-injury sometimes had a self-punishing function, connected to feeling that being bisexual was wrong:

“I think, there have been one or two instances where it was kind of indirectly related to a kind of punishing behaviour...feeling like I was

being seen as, someone who'd be kind of up for a threesome...feeling of... just kind of ickiness and dirtiness" (P11, cisgender woman)

Navigating intersecting marginalised identities

Importantly, some participants spoke of difficulties experienced navigating intersecting marginalised identities. There was recognition that whilst challenges came with bisexuality, experiences of discrimination and threat could be related to more than one identity, and societal responses to these. People experienced challenges around different identities, e.g., feelings of not belonging due to sexuality and also feelings of threat connected to being Black during lockdown:

"it may not be that the police do have more power, but it definitely seems that way, and that's scary to me. [asked whether sexuality-related]...more to do with me being black I think...I don't like the idea of the police having more power...it's just sort of made, the world a little less stable for me" (P9, non-binary/third gender person)

Intersecting identities within the LGBTQ+ community was noted in the context of belonging; some identities could allow people to substantially belong to some parts of the community, but not others:

"[asked if they think they belong to the LGBTQ+ community] Yeah, but I think it's more because of my gender identity than my sexuality. I've got other trans friends which is great and I feel like I belong to that

very close knit community, but I think in terms of sexuality it's kind of like a bit wish-washy, I'm not sure where my group is" (P6, transgender man)

Learning to accept sexuality

Acceptance of sexuality was expressed by participants to be a process, and one which was not necessarily complete. A distinct sense of not feeling 'queer/bi enough', was frequently described. This process was especially difficult in the context of a heterosexual relationship; having only had sexual involvement with one gender was felt to call into question the validity of their identity, as if the 'bisexual label' could only be applied if the participant had had involvement with multiple genders:

"I've not had much experience with them [women] and so I feel, kind of not bi enough and so I feel almost guilty for labelling myself as bisexual sometimes, and then I'm not out to my family, again because I don't feel bisexual enough" (P11, cisgender woman)

Participants described their process of acceptance as being aided by knowledge that other queer people existed and had similar experiences, and were living happy lives:

"When I started to meet more queer people, and see that people could live happy lives and be queer, more specifically live happy lives and be bisexual, that like helped me to sort of come to terms with the fact

that...it was OK if I dated a girl, it was OK if I pursued that side of myself" (P15, non-binary/third gender person)

Arriving at a position of acceptance was described as having a positive impact on mental health:

"I believe my mental health's gone a lot better that, now that I've discovered myself more. When I was confused it's kind of, I was blaming myself or feeling a certain way... I believe I was doing it for not understanding myself fully...and now it's changed, I feel a lot better, I feel a lot happier" (Participant 1, cisgender man)

Positive aspects of a bisexual identity

As part of the journey towards acceptance, some participants described positive aspects of their bisexual identity. This included a desire for activism, and how this can cultivate positive connections with others. An increase in compassion for others was also described. The lived experience of bisexuality, and its associated difficulties, had allowed some to recognise the struggles of those in their community, when they otherwise may not have done:

"it's made me think about, you know, people's struggles with being bisexual and stuff, and I suppose if I was never bisexual, if I was straight, then I wouldn't have thought about it, and, wouldn't talk to people about it" (P14, cisgender man)

Theme 3: Experiences of lockdown

Lockdown affected participants in different ways. Some participants described negative emotional consequences; others welcomed this break from social interaction. Self-injurious behaviour tended to increase, mainly because other positive coping strategies could not be used, such as seeing loved ones or leaving the house. Adjusting to changes in daily living due to lockdown was difficult for participants. Most experiences of lockdown did not seem to be directly linked to bisexuality.

Emotional impact

Lockdown had a significant emotional impact for participants, with some describing the impact that loss of contact with loved ones had on their mental health and wellbeing:

“the lockdown has definitely taken a toll on my mental health. My whole home situation isn’t great, so, going to see my friends, and even going to school were kind of like my only escape mechanisms”
(P5, cisgender woman)

Others described relief from the reduction in social interaction, especially if the participant had experienced prejudice from others:

“...now I don’t have to do that many social interactions, [lockdown] helped me a little bit, having to not like, like to deal with random

people at school, like coming up to me and just like saying stuff... talking to people that I don't know is very stressful for me so, not having that, I guess has helped me" (P3, non-binary/third gender person)

Some people who spoke of their anxiety reducing during lockdown attributed this to not having to come into contact with potentially judgemental or abusive others.

Changes in self-injury

During lockdown changes in self-injury were described by participants.

Generally, self-injury increased due to the removal of other coping strategies or the significant disruption to every-day routines. For one participant, self-injury had become a default response to difficulties:

"I used to get out of the house a lot...I try not to stay in my room unless I have something to do, and I always work at the university...not having that environment, always being stuck in the same place, and this is where I self-harm as well, kind of made it worse, and it definitely made it like more prevalent" (P12, non-binary/third gender person)

For some, however, self-injurious behaviour had decreased, to the point that this was now better than pre-lockdown:

“I’ve not been doing it [self-injury] as much as I would have been, so, that’s definitely a benefit...I’d say it’s been better, er than before, which is kind of weird” (P14, cisgender man)

Changes to daily life

Changes to participant’s daily lives and routines were reported, and sometimes these were additionally linked to changes in self-injury:

“I’ve found it a lot harder to stay on top of taking my medication throughout the lockdown period, lacking that routine...I know that that has had an impact on my general wellbeing and then on self-injury” (P11, cisgender woman)

The absence of work-life separation was noted as difficult, given that the same space was being used for relaxation and work. Working from home was preferable for one participant:

“I’ve enjoyed working from home, I’m, I’m a bit of a workaholic so I can get on with a lot more work and I like that” (P10, cisgender woman)

Theme 4: Meaning and consequences of NSSI

Self-injury did not have a singular function for participants; rather there were numerous functions and meanings associated with this behaviour. The ‘spectrum’ of self-injury was considered to be broader than just injuries to skin. Like others that engage in self-injurious behaviour, negative

consequences of this were reported. Where self-injury had once been a strategy or coping mechanism, the visible effects of this (such as scarring) could create unintended consequences that perpetuated people's distress.

Self-injury as a broad spectrum

Self-injury was not appraised by all participants as just external damage to the skin. Rather, a broader range of self-defeating behaviours was described, such as excess alcohol use or eating disordered behaviour:

“my friends have discouraged me from, you know, not eating, they encouraged me to end that relationship that was very harmful to myself, so, yeah, I definitely feel like it's helped” (P3, non-binary/third gender person)

One participant during member-checking reflected that this idea of a spectrum of self-injury was very valid to them, reporting that *“there's a huge psychological aspect”* to self-injury, with psychological damage sometimes more functional than physical damage (sex as a form of self-injury was used to highlight this).

Numerous and multiple functions of self-injury

Functions of self-injury differed amongst participants. For some, self-injury was a strategy to regulate emotion, and for others it had a self-punishing function, to abate feelings of self-hatred. Others described self-injury as a means of managing experiences of marginalisation and rejection:

“just like when people dismissing it or people, like, making jokes about it, can you make you feel uncomfortable and then, in return you just take that feeling and take it out on yourself later on” (P13, cisgender woman)

Negative consequences of self-injury

The experience of self-injury, or the effects of this behaviour (e.g., scars and other people’s reactions) was described as sometimes creating, perpetuating or exacerbating distress. Although potentially helpful in the moment, longer term consequences were affecting mental health in unintended ways:

“It definitely affected my body image, because obviously like scarring...but I’ve also got a tattoo to cover up some of the scars”
(P15, non-binary/third gender person)

Negative consequences of self-injury was pertinent for participants in member-checking discussions, especially the notion that self-injury became the problem when it started as the solution.

Additional participant quotes for all themes is available in Appendix Y.

Discussion

To our knowledge, this study is the first qualitative exploration of the general experiences of young bisexual people with regards to NSSI, and the first to

document the impact of the COVID19 pandemic and lockdown for bisexual people specifically.

The experience of epistemic injustice, the notion that individuals or groups can be 'wronged' or 'silenced' in their capacity as knowers (Fricker, 2007) permeated participant narratives. Participants had a sense of their sexuality as 'not fitting' with ideas and narratives provided to them in a binary world. Bisexuality was appraised as a deficient or immoral identity in prominent narratives from LGBTQ+ and heterosexual communities. When participants spoke with others about their identity, this was often received with dismissal or disbelief. Fricker (2007) describes this experience of not being taken seriously in the capacity of the 'knowledge giver' as testimonial injustice. Because of this, and as previously found by McDermott et al. (2015), NSSI was therefore not described by participants as a way of managing *bisexuality*. Rather, it was a strategy used to manage the negative societal constructs and unwanted prejudicial reactions, narratives, appraisals and social consequences associated with bisexuality. Self-hatred and associated self-punishment was a widely described driver for self-injurious behaviour (Xavier et al., 2016), as participants had internalised negative societal narratives about bisexuality. Rejection and marginalisation from others was prominent, alongside feelings of disconnect and reduced belonging ('thwarted belongingness': Joiner, 2005; Van Orden, 2012). Such experiences have been found to be associated with NSSI for bisexual people (Dunlop et al., 2020).

Where participants could access positive or nuanced stories of bi/pansexuality (e.g., some used internet forums such as Reddit, or TV

shows like *Sex Education*, or in bisexual-specific social circles), this enabled them to come to accept and embrace their internal experience of sexuality. This sometimes led to feeling connected to others and a desire for activism; positive aspects of bisexuality highlighted by Rostosky et al. (2010). Without access to those narratives, or when surrounded by biphobic narratives, participants felt shut out of both sides of the 'binary world' and shut out of a way of understanding and naming their experiences and knowledges of a stigma-free self. The exclusion from both sides of the binary reduced the capacity for participants to shape and influence their own narratives and identity: another form of epistemic injustice described as hermeneutical injustice (Fricker, 2007). Identity denial described by participants is a common biphobic experience (Garr-Schultz & Gardner, 2019; Israel & Mohr, 2004). Experiences free from the stigma and distress associated with bisexuality led participants to feel 'lucky', highlighting the prevalent narrative that bisexuality and acceptance were not readily compatible. The compounded experience of marginalisation of being shut out of both sides of the binary seemed to characterise participant struggles, supporting Meyer's (2003) Minority Stress Theory that sexual minority status is an inherently stressful experience, because of this double stigma and marginalisation (Herek, 2002; McLean, 2008; Stonewall, 2020).

With regards to experiences of self-injury during lockdown, a mixed picture was described. For some, self-injury had increased, supporting findings from Zhang et al. (2020). An inability to access other coping strategies, that were not self-injurious in nature, resulted in increased NSSI. An awareness of the constant occupation of the same space for 'working,

sleeping and self-harming' exacerbated distress for some. Some behaviours that participants had characterised as self-injurious in function, such as alcohol use, increased during lockdown. Others, however, noticed a decrease. The lockdown had removed the likelihood of face-to-face interactions, and the potential for accompanying discrimination and stigma, contributing to improved wellbeing. Some participants highlighted the emotional toll that lockdown had on them, and described self-injury as a way of managing these emotional experiences.

Some unique emotional experiences were highlighted in the context of intersectional identities (Crenshaw, 1991). For example, in the wake of recent police violence toward Black folk, one Black African participant had experienced poorer mental health due to increased police presence that accompanied COVID19 restrictions and Black Lives Matter protests. Being non-binary, Black and bisexual created numerous difficulties, with self-injury used to manage subsequent emotional reactions.

It is well established that self-injury can serve an emotional regulation function for many groups (Taylor et al., 2018), including bisexual people (Dunlop et al., 2020). Whilst NSSI as a strategy to manage overwhelming emotion is not unique to this group, the consequences of living with a bisexual identity in a heteronormative and binary-focused world can generate stressors that lead to emotional dysregulation. The driver of emotional dysregulation for this group is likely to result from proximal and/or distal epistemic injustice, as demonstrated by bisexual exclusion from LGBTQ+ and heterosexual communities, and biphobic discrimination from both groups.

Participants in the member-checking discussion stated that the four themes were “bang on” (i.e., very well-captured) and representative of their experiences; suggesting that findings may be naturalistically generalizable (Smith, 2018). Furthermore, because findings and themes in this article have relevance to, and support concepts of, widely established theories (Epistemic Injustice: Fricker, 2007; Minority Stress Theory: Meyer, 2003), this article also reflects analytical generalisation (Chenail, 2010; Smith, 2018). That is, results can be generalised and understood within already relevant established theory.

Limitations

This study represents a subsample of a larger project which recruited people predominantly via social media and a university. It is possible that some groups were less likely to be reached by these methods or may have been excluded from participation due to the study’s online nature. Notably, participants were also predominantly White British/Other. Given our results suggest that navigating multiple marginalised identities presents different and unique challenges, research should aim to further explore experiences of bisexuality and self-injury for those marginalised in other ways (e.g., through disability or from ethnic minorities in the UK). Furthermore, because interviews had to be conducted remotely due to COVID19, some people may not have been able to participate whose views would be important to consider, e.g., people living with homo/biphobic others, people living without privacy from others, those who are digitally excluded/disadvantaged.

Implications and future directions

Further qualitative and quantitative research in the field of bisexuality and NSSI is needed. The intersection between bisexuality and other identities (race/ethnicity and gender, including transgender experience) and NSSI warrants more work.

The findings in this article suggest that clinicians and mental health services should acknowledge societal narratives and discourses that exist around bisexuality when helping their bi/pansexual clients with mental health difficulties, including NSSI. To ignore these has the potential to contribute toward testimonial and hermeneutical injustice (Fricker, 2007). Asking about sexual orientation within assessments, recognising and acknowledging the influence of social and systemic factors and considering how these interact with other difficulties like NSSI as part of shared clinical formulation, is highly recommended. Evidence-based interventions for self-injury, including Cognitive Behavioural Therapy (Hawton et al., 2016), Dialectical Behaviour Therapy (Turner et al., 2014) and emotion-regulation group therapy (Turner et al., 2014) tend to focus on intrapersonal processes, and it is vital that wider systemic influences on NSSI are also considered in therapeutic work with people with marginalised identities, such as bisexuality.

There is evidence that LGBTQ+ individuals may be less willing to engage with mainstream mental health services (McDermott et al., 2018). Hence, the development of more focused support and outreach to young bisexual people using collaborative approaches may be beneficial. In addition, these research findings highlight that it is vital that systemic discrimination within both LGBTQ+ and heterosexual communities is tackled.

Tackling heteronormativity and binary-focused positions is not likely to be easy. Bi/pansexual representation across all aspects of society is one way of challenging these positions, as is naming and addressing individual and systemic biphobia when propagated within services and the media.

Importantly, creating space for bisexual people to own and shape their own narratives, without questioning the validity of their identity/reality, is essential for challenging the current status quo.

Declaration of conflicting interests

The Authors declare that there is no conflict of interest.

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Paper Four: Critical Appraisal

A section of this chapter was published in the *British Psychological Society's peer-reviewed Qualitative Methods in Psychology (QMIP) bulletin* in April 2021. The section of this chapter that has been published is made clear in the text.

Word count: 4,720 (including tables, excluding references)

Introduction

The aim of this final chapter is to focus in on key learning points during my research journey. For me, a large part of the purpose of this chapter is as a reflective and critical learning log to help with my thinking and decision-making in future research endeavours. In this chapter I shall begin by presenting a critical reflection on the additional qualitative study (Paper 3) that I chose to complete in response to participant feedback. This particular piece of this chapter was published in April 2021 in the British Psychological Society's *Qualitative Methods in Psychology Bulletin* (Dunlop, 2021a; Appendix Z). After that, I shall reflect upon the research process, namely a discussion of the recruitment process and consideration of the data quality assurance strategies that were implemented during the first few weeks and months of recruitment. Next, I shall present an updated literature search relevant to my meta-analysis (Paper 1), due to the fact this was published almost a year ago in June 2020. This chapter will end with a dissemination plan, including dissemination outputs that have come from this thesis thus far.

Additional qualitative study: responding with action rather than explanation^a

During the study, it became apparent that the participants felt something was missing. Built into the SIBL study design are ‘check-in’ emails or phone calls, halfway through the study (at week three) and just before the final survey (at week five). Participants often told us that selecting boxes on the surveys was restricting their ability to tell us about the richness of their experience, and on occasions was not fully capturing all that they wanted to tell us.

During the inception of the study, as a research team, we recognised that a quantitative study would help us to investigate established psychological constructs that could predict NSSI for young bisexual people. We had wanted to include a qualitative element as the blended quantitative and qualitative approach would help to address the limitations posed by each (McDowell & MacLean, 1998). Given the anticipated demands of the main study, and the absence of literature investigating such variables, a decision was made to focus on the main quantitative study. When confronted with this dilemma again from the participants, however, we were in an advantageous position, namely that recruitment had gone well with no major issues (as with most research studies, we built in time and contingency planning for recruitment difficulties). Along with other members of the SIBL team, I felt that we were in a good place, and could expand the study. At this point, it felt

^aThis section of Paper 4 has been published in the *Qualitative Methods in Psychology Bulletin* (Dunlop, 2021a). For the purposes of this chapter, some wording has been amended from the original published article. This is due to the fact that elements of the main SIBL study, as well as the qualitative paper, had not yet been completed at the time of writing. These elements of the respective papers are now complete.

to me that we would be doing the participants a disservice by not allowing them an outlet to discuss their experiences. I also now reflect on my position as a gay man: I had not been able to quite name it at the time but can recognise that my own experience pulled me to listen and amplify the marginalised voices of a section of my community. I approached my supervisors about this and reignited our discussions again. They both enthusiastically agreed this would be a positive addition, and we decided to draft in some additional support to help give this extra project the time, space and thought it needed. The natural progression from Covid-19 restrictions to national lockdown provided an opportunity for us to let the world know how lockdown had been experienced by the often-forgotten 'B' in LGBTQ+. The pandemic had, of course, changed the way that research needed to be conducted, and our new study had to slot into this new version of the world.

Conducting interviews via video platforms was not something I had done before or come across much in my personal research experience. The pandemic forced this medium upon us, however, on reflection I wonder if this method of interviewing, for this particular topic, would have been beneficial in a pre-Covid world anyway. No participant in our study objected to this interview format, and this additionally gave much more flexibility when arranging times. Whilst I can imagine some people may value the distinct interaction of being face-to-face in a room with another human, talking to strangers about intimate aspects of your sexual identity and difficulties this may have caused, and recalling the trauma of living in a heteronormative world, is by no means easy. Pairing this with a discussion of self-injurious behaviour can be imagined to compound discomfort.

What I particularly liked about video interviews was the control this gave our participants. We offered participants a range of dates and allowed them to specify a time that suited them. We also provided a range of online platforms for them to choose from (almost all used Zoom; one requested Skype). Whilst this did not occur during our study, participants could have turned off their cameras if the discussion felt too much, or muted their microphones, or simply hung up the call. In doing so they also need not ever see or interact with us again, responding only perhaps to a follow-up email or call to ensure their wellbeing (however, if there were concerns for safety we had an established risk protocol to implement; Appendix S). As researchers conducting interviews, we always assure participants that they can stop an interview at any time, for any reason. How easy is this to do, however, when sitting in a room with a researcher? After all, you have perhaps travelled some distance for the interview, walked through the door, exchanged pleasantries with the researcher, the door has been closed, confidentiality/data protection/'the right to leave at any time' bestowed upon you, the tape recorder has begun, your obligation to the matter at hand confirmed?

Thinking about this has made me consider just how comfortable participants feel tolerating difficult interviews face-to-face, and just how much control they feel during that interaction. Clinical psychology research often focuses upon difficulties or adverse experiences a participant might have had. Just as in therapy, a power dynamic often exists in research (Limerick et al., 1996); even the word 'participant' has implications of 'participating' in someone else's endeavour. The titles of 'Dr' or 'Professor' on participant

information sheets emphasise that these researchers know what they are doing (do they?) and are powerful people (are they?). In my mind, this power dynamic should be disrupted: I am the learner, the recipient, the grateful. Participants are the teachers, the givers, and the knowledgeable. As researchers, we have ethical and moral responsibilities to keep our participants safe, and on occasion, such power may need to be exerted in the best interests of our participants. The flattening of the power dynamic and the creation of a more shared mutual space for discussion I do not think is always fully realised in the room (perhaps because a relationship has not been developed that would allow this space to feel more mutual?) and can be associated with uncomfortable relational contradictions (Limerick et al., 1996). I think there is something about the shift to participants sitting in and occupying their own space rather than temporarily joining the space of the researcher, that may cultivate a more collaborative feeling. This is emphasised by the participant having had control over the arrangement of the interaction and maintaining the ability to self-censor verbally or visually if needed. As Hanna (2012) describes, such online interviews have the dual benefits of researcher and participant being able to see each other (akin to a face-to-face interview), whilst the participant is still able to occupy their own private space. Furthermore, online interviews remove the barrier of physical distance: a participant can opt-in to research they otherwise may not have had the chance to take part in (Deakin & Wakefield, 2014). I hope this shared control is felt more deservedly during online interviews.

Ultimately, I wonder if my positive regard for online interviews in this instance is representative of something else: something meta or (at the time)

unspoken but felt. I recall informally chatting with several participants at the start of interviews about how 'weird' everything felt, how 'rubbish' our internet had been at times, and how we longed for an escape to sunnier and warmer climes when travel allowed. Maybe this helped to build the rapport that would have otherwise required a bit more creative thinking face-to-face. But I think there was something more sparking here: a recognition that for a moment we were two humans discussing a truly shared experience (albeit one that has affected people in unique and different ways). This added another dimension to the interview because the experiences of lockdown the participant was describing might have had resonance for me too, in slightly different ways. This helped to make the interaction more human, and less 'participant'. The patterned wallpaper, or film poster, or fish tank that I could see behind participants offered additional unique reminders that these stories belong to people who are not so dissimilar to me. I often think the people behind the stories can become forgotten when the pressures of research loom large over researchers.

The shared humanity that the online interview format has provided has helped remind me of the people behind the data. We have now completed thematic analysis and this too was done remotely through online Zoom analysis meetings. One of my supervisors reflected on the complexity of this, how the process of such analysis may flow easier had we all been in a room together, round a large table, shuffling post-it notes. As a research team, we are metaphorically shuffling these post-it notes in the online chat, discussing what is essential, what is good to include, what needs to go, what can be assimilated where, how does this fit with that, why are we including

this and not that, what needs renaming, and how can we make sure we are doing this analysis the justice that it deserves? Fifteen voices sprawled across my Word documents, fifteen stories, fifteen people's lives and experiences. Representing them weighs heavily on my shoulders, and I know it weighs heavily on others in our research team too. We are acutely aware of the biphobia and bi-erasure some of the SIBL participants have experienced, and we need to continue reflecting and noticing where our analysis may be perpetuating that. So far, it feels like we are doing a pretty good job at amplification, although we will undoubtedly have our blind spots and our unconscious and attentional biases.

It feels quite incomprehensible to think now that this qualitative part of our study almost did not come to be. The richness of our participant's narratives would never have been fully captured in the online study, and I fear we would have contributed to an element of bi-erasure in doing so. The main quantitative SIBL study is I think essential in helping us to understand some of the specific relationships between psychological factors and NSSI. The value of being able to have quantitative and qualitative approaches side by side, for a study such as this, has been really beneficial. Moving forward, I think that the use of online interviews should be seriously considered as a preferable option for qualitative research teams, especially when working with marginalised groups that have otherwise been excluded from engagement. Arguments such as "there are too few people in this research group to interview" seem increasingly more difficult to defend when access to online interview platforms have removed the red tape of physical geography.

I am so glad we took the time to listen, centre the perspective of our participant's voices, and respond with action, rather than an explanation.

Recruitment process reflections

One particular consideration I learned from the recruitment process was the necessity of building relationships with organisations and individuals that could assist with recruitment. This proved essential, given that the voice and experiences of bisexual people has not always been the central focus of psychological research. Understandably so, organisations wanted to ensure that engagement with their audiences would be meaningful, representative of their experiences, and done sensitively.

Investing time in these relationships allowed for open and honest two-way communication. For example, some organisations advised us that the language we had used on some of our social media posts should be tweaked, to be more representative of the whole bisexual community. When this was responded to empathically and with thanks, organisations and individuals were more willing to assist us because they could see that we were open to feedback and revision. Some of these relationships have been so positive that organisations or individuals have been willing to engage us in future research, or have asked me to write blog posts for their websites (e.g., Dunlop, 2021b), highlighting bisexual mental health disparities (and particularly, NSSI). A key learning point for me from the recruitment process has been the fact that allowing myself to spend time investing in relationships with key stakeholders is of utmost importance. Not only can this have

benefits for the research you are currently doing, but this can also foster future collaborations and partnership working.

One challenge that became apparent during the recruitment process was the fact that some organisations felt that the content of the study would be 'too difficult' for their audience to engage with. This 'gatekeeping' of recruitment (Bucci et al., 2015) meant that some young bisexual people who may have otherwise valued the opportunity to take part, could not. Additionally some individuals, for whom NSSI was a particular difficulty they were living with, would not have been represented within our sample. It is plausible that some of these individuals may have reported more NSSI urges or behaviour than was captured in our sample, especially if organisations believed that these people may have struggled with the content. Such gatekeeping in this context potentially imposes a form of selection bias; people with certain characteristics are more likely to have been excluded. I have come to recognise that this is the limitation of actively and directly reaching out to particular individuals and organisations; they may have their own assumptions and experiences of the research topic, or research and researchers in general, that may influence their willingness to advertise the study to their groups.

I think this particular challenge resonated quite strongly with me because my clinical position as a psychologist is to generally not treat my clients as if they were 'fragile'; a therapist consultation agreement featured in Dialectical Behaviour Therapy (Linehan, 1993). Whilst this may not have consciously been in the minds of organisations when deciding whether to advertise our study or not, this does suggest that they may have held

inaccurate assumptions about NSSI, for example that talking about NSSI will 'trigger' or increase its frequency. Perhaps such assumptions motivated organisations (especially if they were not clinical or mental health-focused), to decline the invitation to advertise. It is clear, therefore, that during our study decisions that were made by external parties meant that some people were never afforded the opportunity to take part.

Data quality assurance strategies

During study inception, we had aimed to minimise attrition by reaching out to participants routinely to check if they had any difficulties with the survey that we could help with. Based on participant preference, this was either via telephone, text or email.

All participants received their first survey via email, with UK participants then receiving automatic weekly text messages with links to subsequent surveys. When a participant was consented and had been sent their first email survey, text message prompts were automatically set-up in our online system. When checking the data early on in the study, it was noticed that some participants had completed weekly follow-up surveys, without having completed their baseline. Thus, some had missed the baseline email and had begun responding to the text messages they had received. To this end we implemented an internal quality assurance strategy to ensure that baseline measures had been completed before further follow-up text messages were sent. This involved manually checking the central participant database and cross-checking with the data output file. If a participant had not yet completed baseline, we would manually pause the

delivery of text-messages. We would send an email to the participant notifying them that we had paused their follow-up surveys, and that if they would still like to participate, please could they complete the baseline survey. This strategy proved highly effective, and was also incredibly useful at re-engaging those participants that had not completed the baseline survey or any weekly follow-ups. Participants often replied stating that they had lost their login details, accidentally deleted the baseline email, or had simply forgotten to complete it. We were therefore able to ensure that their baseline was completed before any others could be, as well as engage with participants that had otherwise wanted to participate but had not yet done so. I estimate that without implementing this strategy we could have potentially lost 10% of baseline data, and missed the opportunity to retain around the same percentage of participants.

This particular challenge was not as apparent for international participants, given that follow-up emails had to be manually sent by a researcher, rather than the automated text messages sent for UK participants. After we had implemented the above strategy, we were certainly more aware of the need to cross-check for baseline surveys before emailing follow-up surveys. If a baseline survey was missing for a participant, then we could follow the same strategy of emailing them and asking if we could assist in any way. We made clear in this email to UK and international participants that if they did not reply to the email or fill in the baseline survey, then we would assume that they no longer wished to take part. This was important as we did not want participants to feel pressured to take part by receiving multiple reminder emails.

Update to published meta-analysis paper

The meta-analysis paper in this thesis (Paper 1) was published in the Journal of Affective Disorders in June 2020. Initial database searches for this paper were conducted in October 2019. For this reason, it is plausible and likely that additional papers may have been published since this review. To provide for a thorough up-to-date analysis of the literature in this area, I decided to re-run the analysis (using the same search strategy and databases) for any studies published from 2019 – 2021 (or where databases allowed, October 2019 – April 2021).

Table 12: Update to published meta-analysis paper: Database search results.

Database	Number of articles returned	Full text article retrieved
PsycINFO	51	13
CINAHL Plus	19	2
PubMed	56	6
Ovid Online	270	0
Web of Science	82	1

After a total of 22 full-text papers were retrieved and reviewed, three papers (Angoff et al., 2020; Renteria et al., 2020; Zhao et al., 2020) would have met inclusion criteria for the meta-analysis. The majority of papers retrieved were not analysed as part of this update due to the fact they either reported on self-harm generally (rather than NSSI) or analysed bisexual people as part of a larger sexual minority category and did not provide raw

data for bisexual people. A risk of bias assessment was not conducted. The results of each paper are summarised below, and then a brief discussion of how each paper relates to the original published paper.

Angoff et al. (2020)

Of a total of N=2,717 bisexual youth (comprising 5.2% of the total sample), 1,422 reported NSSI prevalence (49.3%). The odds ratio (OR) for NSSI for bisexual youth compared with heterosexual youth was OR=6.33 (95% confidence interval=5.67-7.09), and when adjusting for past year suicide and grade level the adjusted OR (AdjOR) was 3.40 (2.96-3.89).

The authors looked at the effect of intersecting identities on NSSI behaviour. Table 13 reports on the risk of NSSI between specific subgroups of bisexual people belonging to different racial/ethnic groups, when compared against European American heterosexual people as:

Table 13: Adjusted odds ratios for the intersection between bisexuality and race/ethnicity

Intersecting identity	Adjusted odds ratio (95% confidence interval)
Bisexual and Black/African American	0.28 (0.12-0.67)
Bisexual and Latinx	0.60 (0.43-0.82)
Bisexual and 'Other' race/ethnicity	0.60 (0.43-0.82)

Effects found indicate that having the intersecting identity of bisexuality plus a minoritised racial or ethnic identity lowered the odds of NSSI, when compared with White heterosexual people.

For the intersection between gender and sexuality, the authors compared bisexual people with various gender identities to heterosexual people with the same gender identities. The results of this analysis are reported below:

Table 14: Adjusted odds ratios for the intersection between bisexuality and gender

Intersecting identity	Adjusted odds ratio (95% confidence interval)
Bisexual and cisgender men/boys	3.85 (2.72-5.45)
Bisexual and cisgender women/girls	3.33 (2.87-3.85)
Bisexual and transgender	2.51 (0.79-7.92)
Bisexual and 'other' gender	2.35 (1.00-5.54)

From the Angoff et al. study, it is clear that bisexual cisgender men/boys and women/girls had significantly greater odds of NSSI when compared to cisgender heterosexual youth. For bisexual youth with intersecting racial/ethnic identities, lower odds of NSSI were reported when compared to European American youth.

Renteria et al. (2020)

Of N=266 bisexual people, 18% of this group reported NSSI prevalence within the previous 12 months. This study examined the potential mediating role of perceived life stress on the relationship between bisexuality and previous 12 month NSSI prevalence, for Mexican college students. They found a significant indirect effect: $B=0.1$; $OR=1.12$ (95% $CI=1.03-1.21$). The authors conclude that perceived life stress seems to mediate the relationship between bisexuality and previous 12 month NSSI behaviour. Though of course when considering mediation effects for cross sectional data, results must be recognised as resting upon various assumptions, and that it is not possible to confirm the correct ordering of such effects (Maxwell et al., 2011).

Zhao et al. (2020)

This study of Chinese students included a bisexual sample of N=1,146, a homosexual sample of N=214 and a heterosexual sample of N=15,020. In their paper, the authors provide an odds ratio for previous year NSSI for 'sexual minority' (homosexual and bisexual combined) compared to heterosexual people ($AdjOR=2.29$; 95% confidence interval=1.73-3.02), adjusting for age, school type, birthplace, family economic status, family relationships, academic performance, academic pressure and relationship with teachers.

To obtain odds ratios for bisexual people independently, I have calculated these myself using an online tool (Select Statistics, 2021):

Table 15: Bisexual vs other sexuality comparisons

Comparison	Odds ratio (95% confidence interval)
Bisexual vs Heterosexual	3.31 (2.89-3.78)
Bisexual vs Homosexual	1.10 (0.80-1.51)
Bisexual men vs Heterosexual men	2.63 (1.98-3.49)
Bisexual women vs Heterosexual women	3.18 (2.72-3.71)
Bisexual men vs Homosexual men	1.29 (0.73-2.26)
Bisexual women vs Homosexual women	0.83 (0.56-1.24)

Discussion

A limitation of the studies included in the original meta-analysis was the fact that they were almost all exclusively from the Anglosphere, and a distinct lack of non-Western samples was apparent (Dunlop et al., 2020). The Zhao et al. (2020) paper reports on Chinese students and the Renteria et al. (2020) paper reports on Mexican college students, which provides some non-Anglosphere data to support overall literature findings that bisexual people have elevated odds of NSSI when compared to others. Additionally, the Angoff et al. (2020) study provides important data on the effect that intersecting identities has on the odds of engaging in NSSI. Interestingly, race/ethnicity did not seem to ‘compound’ risk of NSSI, rather, apparently reducing this. This is in keeping with some research that indicates that some ethnic minority groups demonstrate lower rates of self-harm when compared

with White people (Bhui et al., 2007). Gender was, however, an important variable; higher odds ratios were apparent for both bisexual cisgender men and women, though for bisexual trans and bisexual 'other' people confidence intervals crossed 1, implying there may be no significant difference for these identities.

During the updated search, and as was found in the original meta-analysis, a significant number of papers did not report on bisexual people separately from other groups. Most papers did not provide the numbers of bisexual people that had engaged in NSSI compared to others, so odds ratios could not be manually computed (as was done for the Zhao et al. paper). The three papers highlighted during this updated search continue to demonstrate the significant risk that bisexual people have for NSSI when compared to other sexualities, and continue to support the recommendation made in the published meta-analysis that future studies investigating NSSI for sexual minority groups need to report on the odds or risk for bisexual people separately.

Disseminations and future dissemination plan

The first dissemination to come from this thesis was in the form of a presentation of Paper 1 at the PsyPAG 2020 online conference (Appendix AA). This was shortly followed by the publication of Paper 1 in the *Journal of Affective Disorders* (Dunlop et al., 2020; Appendix A). Concurrently, the University of Manchester press office did a press release for this publication (University of Manchester, 2020), and key findings were reported on the ITV news website (ITV, 2020), Attitude magazine website (Attitude, 2020) and

the Gay Times website (Gay Times, 2020). I was interviewed about this paper by the radio station *Gaydio*, I was featured on the 'Bisexual Research' website (Bisexual Research, 2020), and interviewed as part of the *Bisexual Brunch* podcast. Furthermore, this paper was reviewed and reported by a blogger on the National Elf Service website (National Elf Service, 2021), which is an online blogging platform that analyse and report on evidence-based publications. Finally, the main supervisor of this thesis has presented this paper at the 27th British Isles Research Workshop on Suicide and Self-harm and The Lancet Psychiatry Suicide Symposium in October 2020.

For Paper 2, this has been formatted for the journal *Psychological Medicine* and will be submitted in May/June 2021. This paper has additionally been accepted as a symposia submission with other researchers for the International Society for the Study of Self-Injury online conference in June 2021. As part of the same symposia submission, this has also been submitted to the International Association of Suicide Prevention 31st World Congress, taking place online in September 2021. The results of Paper 2 have also been disseminated through a blog post on the Manchester Pride website (Dunlop, 2021b).

A lay summary of research findings has been produced (Appendix AB) and this has been sent to all participants that requested a summary of results. My colleague Sophie and I will also shortly be recording a lay summary video to be shared on Twitter, that will highlight key findings, future directions and implications. I shall also contact all organisations that assisted with recruitment to ask if they would like us to present our findings to their young people and/or organisation.

For Paper 3, this has been published in the journal *Psychology and Sexuality* (Dunlop et al., 2021; Appendix U). This paper has been accepted as a poster presentation (Appendix AC) at the 7th National LGBTQ Health conference and will be presented in May 2021. The same poster presentation has been submitted to the international Bisexual Research online conference taking place in September 2021. I have also been invited to write a blog on this paper for edpsych.org.uk, an online community of Educational Psychologists, that will be published online in June 2021.

Finally, a section of the current chapter (Paper 4) has been published in the BPS *Qualitative Methods in Psychology Bulletin* (Appendix Y).

Conclusion

From this critical appraisal and reflection of my research journey, I have learned several important things about the content and process of clinical research. The first is to recognise the value of both qualitative and quantitative approaches. I have come to learn that for some topics, such as bisexuality and NSSI, the value of having these methodologies side by side brings multiple perspectives that can bring awareness to different facets of the same experience. With qualitative research, I have come to recognise the need for flexibility with interviews, and have reflected upon the potential strengths and weaknesses of online interviewing. I have also learned that gatekeeping of research is a recruitment challenge when working with external organisations, and that despite this, the power and importance of relationship building is essential. This is especially important when working with marginalised groups. Finally, I now have the confidence to be able to

implement strategies quickly if I have noticed that something is going awry with data collection. Before I would have felt nervous to flag this to a supervisor and would have asked them to advise and assist. I now feel much more confident to independently raise this as a concern with supervisors and simultaneously present strategies or ideas to quickly fix this.

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Appendix A: Journal guidelines for *Journal of Affective Disorders*

Preparation of Manuscripts

Articles should be in English. The title page should appear as a separate sheet bearing title (without article type), author names and affiliations, and a footnote with the corresponding author's full contact information, including address, telephone and fax numbers, and e-mail address (failure to include an e-mail address can delay processing of the manuscript).

Papers should be divided into sections headed by a caption (e.g., Introduction, Methods, Results, Discussion). A structured abstract of no more than 250 words should appear on a separate page with the following headings and order: Background, Methods, Results, Limitations, Conclusions (which should contain a statement about the clinical relevance of the research). A list of three to six key words should appear under the abstract. **Authors should note that the 'limitations' section both in the discussion of the paper AND IN A STRUCTURED ABSTRACT are essential. Failure to include it may delay in processing the paper, decision making and final publication.**

Figures and Photographs

Figures and Photographs of good quality should be submitted online as a separate file. Please use a lettering that remains clearly readable even after reduction to about 66%. For every figure or photograph, a legend should be provided. All authors wishing to use illustrations already published must first obtain the permission of the author and publisher and/or copyright holders

and give precise reference to the original work. This permission must include the right to publish in electronic media.

Tables

Tables should be numbered consecutively with Arabic numerals and must be cited in the text in sequence. Each table, with an appropriate brief legend, comprehensible without reference to the text, should be typed on a separate page and uploaded online. Tables should be kept as simple as possible and wherever possible a graphical representation used instead. Table titles should be complete but brief. Information other than that defining the data should be presented as footnotes.

Highlights

Highlights are mandatory for this journal as they help increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: [example Highlights](#).

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

Abstract

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to

stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Keywords

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Formatting of funding sources

List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

Citation in text

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Reference style

Text: All citations in the text should refer to:

1. *Single author:* the author's name (without initials, unless there is ambiguity) and the year of publication;

2. *Two authors*: both authors' names and the year of publication;
3. *Three or more authors*: first author's name followed by 'et al.' and the year of publication.

Citations may be made directly (or parenthetically). Groups of references can be listed either first alphabetically, then chronologically, or vice versa.

Examples: 'as demonstrated (Allan, 2000a, 2000b, 1999; Allan and Jones, 1999).... Or, as demonstrated (Jones, 1999; Allan, 2000)... Kramer et al. (2010) have recently shown ...'

List: References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Examples:

Reference to a journal publication:

Van der Geer, J., Hanraads, J.A.J., Lupton, R.A., 2010. The art of writing a scientific article. J. Sci. Commun. 163, 51–59.
<https://doi.org/10.1016/j.Sc.2010.00372>.

Reference to a journal publication with an article number:

Van der Geer, J., Hanraads, J.A.J., Lupton, R.A., 2018. The art of writing a scientific article. Heliyon. 19, e00205.
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Strunk Jr., W., White, E.B., 2000. *The Elements of Style*, fourth ed.
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Reference to software:

Coon, E., Berndt, M., Jan, A., Svyatsky, D., Atchley, A., Kikinzon, E., Harp, D., Manzini, G., Shelef, E., Lipnikov, K., Garimella, R., Xu, C., Moulton, D., Karra, S., Painter, S., Jafarov, E., & Molins, S., 2020. *Advanced Terrestrial*

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Appendix B: Published meta-analysis paper for *Journal of Affective Disorders*

The published paper has not been included within this thesis for copyright reasons. The full paper is available at the following link:

<https://www.sciencedirect.com/science/article/abs/pii/S0165032720325489>

Appendix C: Risk of bias assessment consensus

Unbiased selection of the cohort: As described in tool.

Selection minimizes baseline differences in demographic factors: As described in tool.

Sample size calculated: As described in tool.

Adequate description of the cohort: This criterion was not used as (non-) reporting of the description of the study cohort was deemed to reflect reporting quality rather than inherent bias.

Validating method for ascertaining clinical status or participant group: As described in tool.

Validated methods for assessing predictor or risk variables: When the only predictor/risk variable was sexual orientation, and this was assessed using a self-report method, this item was answered affirmatively. When other predictor/risk variables were included in the study a rating of partial was given if the sexual orientation assessment was valid, however other variables included in the study may not have all been validated for the current paper.

Validated methods for assessing outcome or criterion variable: As described in tool.

Outcome assessments blind to diagnostic/clinical/participant status: As described in tool.

Adequate follow-up period (longitudinal studies only): As described in tool.

Missing data is minimal: As described in tool.

Analysis controls for confounding: As described in tool.

Analytic methods appropriate: As described in tool.

Appendix D: Results of meta-analysis using DerSimonian-Laird estimator

Comparison	NSSI outcome	<i>k</i> (outliers removed)	Odds Ratio (outliers removed)	Confidence Interval (outliers removed)	<i>I</i>² (outliers removed)
Bisexual vs Heterosexual	Past Year	9 (8)	6.07 (5.52)	4.50-8.18 (4.59-6.65)	94.6% (79.1%)
Bisexual vs Heterosexual	Lifetime	12 (11)	4.59 (3.76)	3.30-6.36 (3.17-4.45)	84.6% (34.7%)
Bisexual vs Gay	Lifetime	4	4.13	2.44-6.97	15.0%
Bisexual vs Anyone	Any outcome	24 (17)	3.49 (3.12)	2.61-4.66 (2.66-3.65)	96.7% (70.4%)
Bisexual vs Gay and Lesbian	Lifetime	10	2.19	1.80-2.67	21.8%
Bisexual vs Gay and Lesbian	Past Year	8	1.61	1.33-1.96	47.4%
Bisexual vs Lesbian	Past Year	3	1.50	0.96-2.34	90.1%
Bisexual vs Questioning	Lifetime	4	1.38	0.78-2.44	30.3%
Bisexual vs Lesbian ¹	Lifetime	3	0.90	0.30-2.61	76.9%

¹k=4 originally; one outlier study excluded pre-analysis due to abnormally large effect size

Appendix E: Journal guidelines for *Psychological Medicine*

Psychological Medicine is a journal aimed primarily for the publication of original research in clinical psychiatry and the basic sciences related to it. These include relevant fields of biological, psychological and social sciences. Review articles, editorials and letters to the Editor discussing published papers are also published. Contributions must be in English.

Submission of manuscripts

Manuscripts should be submitted online via our manuscript submission and tracking site, <http://www.editorialmanager.com/psm/>. Full instructions for electronic submission are available directly from this site. To facilitate rapid reviewing, communications for peer review will be electronic and authors will need to supply a current e-mail address when registering to use the system.

Papers for publication from Europe, (except those on genetic topics, irrespective of country), and all papers on imaging topics, should be submitted to the UK Office.

Papers from the Americas, Asia, Africa, Australasia and the Middle East, (except those dealing with imaging topics), and all papers dealing with genetic topics, irrespective of country, should be sent to US Office.

Please see the below table for the types of papers accepted:

Article Type	Usual Max Word count*	Abstract	References	Tables/figures**	Supplementary material online only
Original article	4500	250 words, structured, using subheadings Background, Methods, Results, Conclusions	APA style – see elsewhere in this document for full details	Usually up to 5 total	Yes

*** Editors may request shortening or permit additional length at their discretion in individual cases**

**** May be adjusted in individual cases at Editors' discretion**

***** Please note, Correspondence papers must be in response to content published in *PSM***

NOTE:

1. Figures should be submitted as discrete files, not embedded in the text of the main document.
2. Supplementary material for online only should be submitted as discrete files, not as part of the main text.

Generally papers should not have text more than 4500 words in length (excluding abstract, tables/figures and references) and should not have more than a combined total of 5 tables and/or figures. Papers shorter than these limits are encouraged. For papers of unusual importance the editors may waive these requirements. Articles require a structured abstract of no more

than 250 words including the headings: Background; Methods; Results; Conclusions. Review Articles require an unstructured abstract of no more than 250 words. The name of an author to whom correspondence should be sent must be indicated and a full postal address given in the footnote. Any acknowledgements should be placed at the end of the text (before the References section).

Contributors should also note the following:

1. S.I. units should be used throughout in text, figures and tables.
2. Authors should spell out in full any abbreviations used in their manuscripts.
3. Foreign quotations and phrases should be followed by a translation.
4. If necessary, guidelines for statistical presentation may be found in: **Altman DG., Gore SM, Gardner, MJ. Pocock SJ.** (1983). Statistical guidelines for contributors to medical journals. *British Medical Journal* **286**, 1489-1493.

References

The guidelines set forth in the *Publication Manual of the American Psychological Association* (6th ed.) should be used in the text and a complete list of References cited given at the end of the article.

Citing References in Text:

Type of citation	First citation in text	Subsequent citation int text	Parenthetical format, in first citation	Parenthetical format, Subsequent citation int text
------------------	------------------------	------------------------------	---	--

One work by one author	Walker (2007)	Walker (2007)	(Walker, 2007)	(Walker, 2007)
One work by two authors	Walker and Allen (2004)	Walker and Alien (2004)	(Walker & Allen, 2004)	(Walker & Alien, 2004)
One work by three authors	Bradley, Ramjrez, and Soo (1999)	Bradley et al. (1999)	(Bradley, Ramirez, & Soo, 1999)	(Bradley et al., 1999)
One work by four authors	Bradley, Ramirez, Soo, and Walsh (2006)	Bradley et al. (2006)	(Bradley, Ramirez, Soo, & Walsh, 2006)	(Bradley et al., 2006)
One work by five authors	Walker, Alien, Bradley, Ramirez, and Soo (2008)	Walker et al. (2008)	(Walker, Allen, Bradley, Ramirez, & Soo, 2008)	(Walker et al., 2008)
One work by six authors or more	Wasserstein et al. (2005)	Wasserstein et al. (2005)	(Wasserstejn et al., 2005)	(Wasserstejn et al., 2005)

The References section should be in alphabetical order. Examples follow:

Journal article

Author's Last name, F. M. (Year published). Article title. *Journal Title*,
Volume(Issue), pp.-pp.

Journal article with DOI

Nevin, A. (1990). The changing of teacher education special
education. *Teacher Education and Special Education: The Journal of the
Teacher Education Division of the Council for Exceptional Children*, 13(3-4),
147-148. doi:XXX

Light, M. A., & Light, I. H. (2008). The geographic expansion of Mexican
immigration in the United States and its implications for local law
enforcement. *Law Enforcement Executive Forum Journal*, 8, 73–82. doi:XXX

Journal article without DOI (when DOI is not available)

Good, C. D., Johnsrude, I. S., Ashburner, J., Henson, R. N. A., Firston, K. J., & Frackowiak, R. S. J. (2001). A voxel-based morphometric study of ageing in 465 normal adult human brains. *NeuroImage*, 14, 21–36. Retrieved from <http://xxxx>

No retrieval date is needed.

Journal article with DOI, more than seven authors

Gilbert, D. G., McClernon, F. J., Rabinovich, N. E., Sugai, C., Plath, L. C., Asgaard, G., ... Botros, N. (2004). Effects of quitting smoking on EEG activation and attention last for more than 31 days and are more severe with stress, dependence, DRD2 A1 allele, and depressive traits. *Nicotine and Tobacco Research*, 6, 249–267. doi:XXX

Journal article without DOI, title translated into English, print version

Guimard, P., & Florin, A. (2007). Les evaluations des enseignants en grande section de maternelle sont-elles predictives des difficultes de lecture au cours préparatoire? [Are teacher ratings in kindergarten predictive of reading difficulties in first grade?]. *Approche Neuropsychologique des Apprentissages chez l'Enfant*, 19, 5–17.

Journal article with DOI, advance online publication

Von Ledebur, S. C. (2007). Optimizing knowledge transfer by new employees in companies. *Knowledge Management Research & Practice*. Advance online publication. doi: 10.1 057/palgrave.kmrp.8500141

In-press article

Briscoe, R. (in press). Egocentric spatial representation in action and perception. *Philosophy and Phenomenological Research*. Retrieved from <http://cogprints.org/5780//EC...>

Citations for Websites

Author's Last name, F. M. (Year, Month Day published). Title of article or page. Retrieved from URL

Simmons, B. (2015, January 9). The tale of two Flaccos. Retrieved from <http://grantland.com/the-trian...>

Figures and tables

Only essential figures and tables should be included and should be provided in black and white except in exceptional circumstances, eg PET scan images etc. If you request colour figures in the printed version, you will be contacted by CCC-Rightslink who are acting on our behalf to collect Author Charges. Please follow their instructions in order to avoid any delay in the publication of your article. Further tables, figures, photographs and appendices, may be included with the online version on the journal website.

All wording within submitted figures must be Arial, point size 8. To ensure that your figures are reproduced to the highest possible standards and your article is published as quickly and efficiently as possible, Cambridge Journals recommends the following formats and resolutions for supplying electronic figures. Please note that submitting low quality figures may result in a delay in publishing your valuable research

Please ensure that your figures are saved at final publication size (please see the latest issue of the journal for column widths) and are in our recommended file formats. Following these guidelines will result in high quality images being reproduced in both the print and the online versions of the journal.

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All graphs and diagrams should be referred to as figures and should be numbered consecutively in Arabic numerals. Captions for figures should be typed double-spaced on separate sheets. Tables should be numbered

consecutively in the text in Arabic numerals and each typed on a separate sheet after the References section. Titles should be typed above the table.

Online Supplementary Material

Relevant material which is not suitable for print production, such as movies or simulations/animations, can be uploaded as part of the initial submission.

Movies should be designated as 'Movie' and each individual file must be accompanied by a separate caption and a suitable title (e.g., Movie 1).

Accepted formats are .mov, .mpg, .mp4, and .avi, though they should be archived as a .zip or .tar file before uploading. Each movie should be no more than 10MB. Upon publication these materials will then be hosted online alongside the final published article. Likewise, should there be detailed tables or figures which are likely to take up excessive space in the printed journal, these can also be published online as supplementary material [designated as 'Other supplementary material']. Note that supplementary material is published 'as is', with no further production performed.

Required Statements

Acknowledgements

You may acknowledge individuals or organisations that provided advice, support (non-financial). Formal financial support and funding should be listed in the following section.

Financial support

Authors must include a Funding Statement in their manuscript. Within this statement please provide details of the sources of financial support for all

authors, including grant numbers, for example: “Funding Statement: This work was supported by the Medical Research Council (grant number XXXXXXXX)”. Grants held by different authors should be identified as belonging to individual authors by the authors’ initials, for example: “Funding Statement: This work was supported by the Wellcome Trust (AB, grant numbers XXXX, YYYY), (CD, grant number ZZZZ); the Natural Environment Research Council (EF, grant number FFFF); and the National Institutes of Health (AB, grant number GGGG), (EF, grant number HHHH).” Where no specific funding has been provided for research, you should include the following statement:

“Funding Statement: This research received no specific grant from any funding agency, commercial or not-for-profit sectors.”

Conflicts of Interest

Authors are required to include a Conflicts of Interest declaration in their manuscript. Conflicts of Interest are situations that could be perceived to exert an undue influence on an author’s presentation of their work. They may include, but are not limited to, financial, professional, contractual or personal relationships or situations. Conflicts of Interest do not necessarily mean that an author’s work has been compromised. Authors should declare any real or perceived Conflicts of Interest in order to be transparent about the context of their work. If the manuscript has multiple authors, the author submitting the manuscript must include Conflicts of Interest declarations relevant to all contributing authors.

Example wording for your Conflicts of Interest declaration is as follows:

“Conflicts of Interest: Author A is employed at company B. Author C owns shares in company D, is on the Board of company E and is a member of organisation F. Author G has received grants from company H.” If no Conflicts of Interest exist, your declaration should state “Conflicts of Interest: None”.

Ethical standards

Where research involves human and/or animal experimentation, the following statements should be included (as applicable): “*The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.*” and “*The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional guides on the care and use of laboratory animals.*”

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Authors in *Psychological Medicine* have the option to publish their paper under a fully Open Access agreement, upon payment of a one-off Article Processing Charge. In this case, the final published Version of Record will be made freely available to all in perpetuity under a creative commons license, enabling its re-use and re-distribution. This Open Access option is only offered to authors upon acceptance of an article for publication. The current Article Processing Charge, can be found [on our website](#).

Appendix F: Ethical approval letter



Research Governance, Ethics and Integrity

2nd Floor Christie Building
The University of Manchester
Oxford Road
Manchester
M13 9PL
Tel: 0161 275 2206/2674
Email: research.ethics@manchester.ac.uk

Ref: 2019-7445-11947

14/10/2019

Dear Mr Brendan Dunlop, Dr Peter Taylor, Dr Samantha Hartley

Study Title: Self-Injury in young Bisexual people: a Longitudinal investigation (SIBL)

University Research Ethics Committee 3

I write to thank you for submitting the final version of your documents for your project to the Committee on 01/10/2019 13:10 . I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form and supporting documentation as submitted and approved by the Committee.

Please see below for a table of the title, version numbers and dates of all the final approved documents for your project:

Document Type	File Name	Date	Version
Statistical Review	Simulated Power Analysis	05/07/2019	1
Data Management Plan	Data Management Plan	12/07/2019	1
Default	INQ measure	14/07/2019	1
Default	SRI measure	14/07/2019	1
Additional docs	Face to face and skype email 16.07.19	16/07/2019	1
Additional docs	Debrief email - entered 16.07.19	16/07/2019	1
Additional docs	Debrief email - not entered 16.07.19	16/07/2019	1
Default	BSRI measure	17/07/2019	1
Distress Protocol/Debrief Sheet	SIBL risk protocol 17.07.19	17/07/2019	1
Default	Demographics measure	23/07/2019	1
Additional docs	Research Sub-Committee Approval	02/08/2019	1
Default	SITBI-SF v2 measure 27.09.19	27/09/2019	2
Default	Brief ABES v2 27.09.19	27/09/2019	2
Default	Self Compassion Scale v2 27.09.19	27/09/2019	2
Advertisement	Recruitment poster v2 27.09.19	27/09/2019	2
Additional docs	Message to be circulated on social media pages v2 27.09.19	27/09/2019	2
Additional docs	Letters of support for study 27.09.19	27/09/2019	2
Additional docs	Twitter social media message v1 27.09.19	27/09/2019	2
Participant Information Sheet	Participant Info Sheet v2 30.09.19	30/09/2019	2
Consent Form	Consent form v2 30.09.19	30/09/2019	2
Additional docs	Consent to Contact Form v2 30.09.19	30/09/2019	2
Additional docs	Response to UREC 30.09.19	30/09/2019	1
Default	ABUSI v2 30.09.19	30/09/2019	2

This approval is effective for a period of five years however please note that it is only valid for the specifications of the research project as outlined in the approved documentation set. If the project continues beyond the 5 year period or if you wish to propose any changes to the methodology or any other specifics within the project, an application to seek an amendment must be submitted for review. Failure to do so could invalidate the insurance and constitute research misconduct.

You are reminded that, in accordance with University policy, any data carrying personal identifiers must be encrypted when not held on a secure university computer or kept securely as a hard copy in a location which is accessible only to those involved with the research.

Reporting Requirements:

You are required to report to us the following:

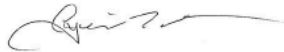
1. [Amendments](#): Guidance on what constitutes an amendment
2. [Amendments](#): How to submit an amendment in the ERM system
3. [Ethics Breaches and adverse events](#)
4. [Data breaches](#)
5. [Notification of progress/end of the study](#)

Feedback

It is our aim to provide a timely and efficient service that ensures transparent, professional and proportionate ethical review of research with consistent outcomes, which is supported by clear, accessible guidance and training for applicants and committees. In order to assist us with our aim, we would be grateful if you would give your view of the service that you have received from us by completing a **UREC Feedback Form**. Instructions for completing this can be found in your approval email.

We wish you every success with the research.

Yours sincerely,



Mrs Genevieve Pridham

Secretary to University Research Ethics Committee 3

Appendix G: Public and Patient Involvement

Public and Patient Involvement included providing advice on language used in online surveys, as well as awareness of a 'spectrum of bisexuality'. A bisexual individual with lived experience of self-injury also provided guidance on risk management and the acceptability of an online study for both young bisexual people, and for people who may self-injure. In addition, several LGBT groups were consulted. Their input included advising the team which support organisations participants should be directed to at the end of surveys.

Appendix H: Recruitment poster

Version 2, 27/09/19



Warning: discussion of difficult and potentially triggering subjects of sexuality and self-injury

Self-Injury in young Bisexual people: A Longitudinal investigation (SIBL)

The SIBL research project (based in the Division of Psychology and Mental health) aims to investigate the **psychological experiences** that are associated with **non-suicidal self-injury** amongst **young bisexual people**

We aim to investigate this relationship by asking participants to complete an online survey once a week for 6 weeks

If you are...

- ✓ **Aged 16 – 25 years old**

And...

- ✓ **Have experienced non-suicidal thoughts or urges to self-injure and/or have self-injured with no suicidal intent within the last six months**

And...

- ✓ **Identify as bisexual or as attracted to more than one gender**

Scan me!



Visit the website on the tear off strips below if you would like to be contacted by a researcher to find out more information. Alternatively, email SIBL@manchester.ac.uk or search SIBL on Instagram, Facebook or Twitter! If you wish to take part you will first be invited to a phone conversation (or meeting if preferred). Participants will be entered into 6 prize draws with an Amazon voucher available for each draw.

SIBL research study http://man.ac.uk/9yJbJl	SIBL research study http://man.ac.uk/9yJbJl	SIBL research study http://man.ac.uk/9yJbJl	SIBL research study http://man.ac.uk/9yJbJl	SIBL research study http://man.ac.uk/9yJbJl	SIBL research study http://man.ac.uk/9yJbJl	SIBL research study http://man.ac.uk/9yJbJl	SIBL research study http://man.ac.uk/9yJbJl	SIBL research study http://man.ac.uk/9yJbJl	SIBL research study http://man.ac.uk/9yJbJl
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Appendix I: Social media recruitment post

Warning: discussion of self-injury

The SIBL study (*Self-Injury in Young Bisexual people: a Longitudinal investigation*) is being conducted by Brendan and Sophie (Trainee Clinical Psychologists) at The University Of Manchester. They are completing research into the relationship between psychological variables (self-esteem, rumination, biphobia and feelings of belonging) and non-suicidal self-injury urges in young people who identify as bisexual. To investigate this Brendan and Sophie are asking participants to fill out an online survey once a week for six weeks. If you are...

- Aged 16-25
- Identify as bisexual and/or attracted to more than one gender
- Have had non-suicidal self-injury thoughts/urges/behaviour within the last 6 months
- Have regular access to a smartphone/computer with internet access

...then you may be eligible to take part in this study. If you are interested in finding out more about this study then simply click the link below and fill out the 'consent to contact' form and Brendan or Sophie will be in touch with you to discuss the study in more detail. If you have any questions you can also email us at: sibl@manchester.ac.uk

[Insert link to consent to contact form]

Appendix J: SIBL demographics Questionnaire

Age:

Gender:

- Female
- Male
- Non-binary/third gender
- Female to male transgender
- Male to female transgender

Sexuality:

- Bisexual (attracted to both those who identify as male and female)
- Pansexual (attracted to 'humans'; those who identify as male and female, as well as other genders such as non-binary)
- Mostly heterosexual (mostly attracted to the opposite gender, with some attraction to the same gender)
- Mostly homosexual (most attracted to the same gender, with some attraction to the opposite gender)
- Other

Ethnicity:

- Arab
- Asian/Asian British
 - Indian
 - Pakistani
 - Bangladeshi

Chinese

Other Asian Background

- Black African
- Black Caribbean
- Black British
- Irish Gypsy or Traveller
- White British
- White and Black Caribbean
- White and Black African
- White and Asian
- White other
- Other Mixed/Multiple Ethnic background

Employment status:

- Employed full-time
- Employed part-time
- Unemployed
- Student
- Volunteer

Marital status:

- Single
- Partnered
- Married
- Open relationship
- Polyamorous

Appendix K: Self-Injurious Thoughts and Behaviours Inventory Short-Form structured interview

Non-Suicidal Self-Injury

Non-suicidal self-injury refers to any deliberate, self-inflicted damage to body tissue where you did not wish to end your life. Self-injury that is part of your culture would not be included here.

Please consider if you do anything to hurt yourself without wanting to die, and specify what this is below:

Have you ever actually purposely hurt yourself without wanting to die?

(0) no

(1) yes

Now I'm going to go through a list of things that people sometimes purposely do to harm themselves without wanting to die. Please let me know which of these you've done:

(1) cut or carved skin

(2) burned your skin (eg. with a cigarette, match or other hot object)

(3) inserted sharp objects into your skin or nails

(4) picked areas of your body to the point of drawing blood

(5) hit yourself on purpose

(6) gave yourself a tattoo

(7) scraped your skin to the point of drawing blood

(8) pulled your hair on purpose

(9) swallowed objects foreign to the body

(10) banged your head

(11) interfered with wounds (eg. not allowed wounds to heal, unpicked stitches)

(12) ingested toxic substances (eg. bleach)

(13) other (specify): _____

How many times in the past year have you purposely hurt yourself without wanting to die? (Please give your best estimate)

How many times in the past month?

How many times in the past week?

Appendix L: Alexian Brothers Urge to Self-Injure Scale (ABUSI)

The questions below apply to **the last week**. This questionnaire will ask you about urges to hurt or injure yourself where you did not wish to end your own life (non-suicidal self-injury). When answering each question, please only consider your urges to engage in non-suicidal self-injury. If you wanted to die when you had this urge, or were ambivalent about dying, please do not report these urges. Place an "X" in the box next to the most appropriate statement.

1. How often have you thought about injuring yourself or about how you want to injure yourself?

- ☐ Never, 0 times in the last week
- ☐ Rarely, 1 -2 times in the last week
- ☐ Occasionally, 3 – 4 times in the last week
- ☐ Sometimes, 5 – 10 times in the last week, or 1 -2 times a day
- ☐ Often, 11 – 20 times in the last week, or 2 – 3 times a day
- ☐ Most of the time, 20 – 40 times in the last week, or 3 – 6 times a day
- ☐ Nearly all of the time, more that 40 times in the last week, or more than 6 times a day

2. At the most severe point, how strong was your urge to self-injure in the last week?

- ☐ None at all.
- ☐ Slight, that is, a very mild urge.
- ☐ Mild Urge.
- ☐ Moderate Urge.
- ☐ Strong Urge, but easily controlled.
- ☐ Strong Urge, but difficult to control.
- ☐ Strong Urge and would have self-injured if able to.

3. How much time have you spent thinking about injuring yourself or about how you want to injure yourself?

- | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| None. | Less than 20 min. | 21-45 min. | 46-90 min. | 90 min to 3 hrs. | 3-6 hrs. | More than 6 hrs. |

4. How difficult was it to resist injuring yourself in the last week?

- | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not difficult at all | Very mildly difficult | Mildly difficult | Moderately difficult | Very difficult | Extremely difficult | Was not able to resist |

5. Keeping in mind your responses to the previous questions, please rate your *overall average* urge or desire to injure yourself in the last week.

- ☐ Never thought about it and **never** had the urge to self-injure.
- ☐ Rarely thought about it and **rarely** had the urge to self-injure.
- ☐ Occasionally thought about it and **occasionally** had the urge to self-injure.
- ☐ Sometimes thought about it and **sometimes** had the urge to self-injure.
- ☐ Often thought about it and **often** had the urge to self-injure.
- ☐ Thought about self-injury **most** of the time and had the urge to do it **most** of the time.
- ☐ Thought about self-injury **nearly all** the time and had the urge to do it **nearly all** the time.

Appendix M: The Suicide Resiliency Inventory-25 Internal Protective subscale

Please answer each statement as *carefully* and *honestly* as you can; your answers will be kept confidential. Select a response for each statement to indicate how much it describes your attitudes, beliefs, or feelings.

	Strongly Disagree (1)	Moderately disagree (2)	Somewhat disagree (3)	Somewhat agree (4)	Moderately agree (5)	Strongly agree (6)
There are many things that I like about myself	1	2	3	4	5	6
Most of the time, I see myself as a happy person	1	2	3	4	5	6
I like myself	1	2	3	4	5	6
Most of the time I set goals that are reasonable for me to meet	1	2	3	4	5	6
I am satisfied with most things in my life.	1	2	3	4	5	6
I am proud of many good things about myself	1	2	3	4	5	6
I feel that I am an emotionally strong person	1	2	3	4	5	6
Regardless of the problem situation I face, I can be happy with myself	1	2	3	4	5	6
I feel cheerful about myself	1	2	3	4	5	6

Appendix N: Interpersonal Needs Questionnaire Thwarted

Belongingness subscale

The following questions ask you to think about yourself and other people.

Please respond to each question by using your own current beliefs and experiences, NOT what you think is true in general, or what might be true for other people. Please base your responses on how you've been feeling recently (the past 2 weeks). Use the rating scale to find the number that best matches how you feel and circle that number. There are no right or wrong answers: we are interested in what *you* think and feel.

INQ-R		Not at all - Somewhat true for me - true for me - Very True for me
8.	These days, I feel like I belong	1 2 3 4 5 6 7
9.	These days, I rarely interact with people who care about me	1 2 3 4 5 6 7
10.	These days, I am fortunate to have many caring and supportive friends	1 2 3 4 5 6 7
11.	These days, I feel disconnected from other people	1 2 3 4 5 6 7
12.	These days, I often feel like an outsider in social gatherings	1 2 3 4 5 6 7
13.	These days, I feel that there are people I can turn to in times of need	1 2 3 4 5 6 7
14.	These days, I am close to other people	1 2 3 4 5 6 7
15.	These days, I have at least one satisfying interaction every day	1 2 3 4 5 6 7

Appendix O: Consent to contact form



Self-Injury in young Bisexual people, a Longitudinal investigation (SIBL)

If you are interested in taking part or finding out more about the SIBL study, then please let us know whether it's OK for a member of the research team to contact you. This is so a researcher can explain more about the study and what it involves. Any data you provide will be held securely and kept completely confidential at the University of Manchester, in accordance with the Data Protection Act (2018).

- ☐ I am aged between 16 and 25 years old
- ☐ I am attracted to individuals of more than one gender and/or identify as bisexual
- ☐ I have had urges to injure myself (without wanting to die) or have injured myself (without wanting to die) in the last 6 months
- ☐ I give permission for my personal details to be shared with the research team, so a member of the research team can contact me to discuss the study further.

First name: _____

Last Name: _____

Mobile number: _____

Email address: _____

Do you have a preference about the gender of the person you speak to?

Male

Female

No preference

☐☐☐

Appendix P: Participant Information Sheet

Self-Injury in young Bisexual people: A Longitudinal investigation (SIBL)

Participant Information Sheet (PIS)

You are being invited to take part in a research study looking at the relationship between different social and psychological experiences (rumination, belonging, self-esteem and biphobia) and non-suicidal self-injury (NSSI) urges in young bisexual people. NSSI refers to when someone intentionally hurts themselves without wishing to end their life. This can include a wide range of experience such as cutting oneself or ingesting a toxic substance. Before you decide whether to take part, it is important for you to understand why the research is being conducted and what it will involve. Please take time to read the following information carefully before deciding whether to take part and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Thank you for taking the time to read this.

About the research

➤ Who will conduct the research?

The research is being carried out by a research team in the Department of Clinical Psychology at the University of Manchester. The researchers who you will be in contact with are Brendan and Sophie. They are Trainee Clinical

Psychologists at the university. This research is being overseen by senior researchers called Dr Peter Taylor and Dr Sam Hartley.

➤ **What is the purpose of the research?**

Research has shown that young people who identify as lesbian, gay or bisexual are at a much higher risk of NSSI than people who identify as straight. It is thought that this may be due to experiences of discrimination and stigma. Recently, it has been found that bisexual people are at a higher risk of NSSI than lesbian or gay people. At the moment, we are not sure why this is and the purpose of this research is to find out if different psychological factors link to NSSI for young bisexual people.

You have been chosen to take part in this study because you:

- Are aged between 16-25.
- Are attracted to individuals of more than one gender and/or identify as bisexual.
- Have had non-suicidal urges/thoughts to self-injure or have self-injured in the last six months.
- Own a mobile phone/computer and have access to email.
- Feel comfortable in your ability to use the internet.
- Understand and speak English.

We are expecting to recruit 200 participants in total to take part in this research. We are hoping to conduct interviews over the telephone/Skype/Zoom with a subset of approximately 10-20 of these

participants, to learn more about their experiences and how they found the online surveys.

➤ **Will the outcomes of the research be published?**

This research study will be written up as two doctoral theses and submitted for publication in academic journals. This research may also be discussed in conference presentations. You will not be identified in any reports, publications or presentations. You will be given the chance to request the results of the study.

All answers you give will be treated in the **strictest of confidence** and will be handled **securely** throughout the study. All data will be kept confidential in accordance with the Data Protection Act (2018).

➤ **Who has reviewed the research project?**

This project has been independently reviewed by the University of Manchester Research Ethics Review Committee 3 (Approval reference: 2019-7445-11947).

What would my involvement be?

➤ **What would I be asked to do if I took part?**

If you agree to be contacted, a researcher will phone you to discuss the study further and answer any questions you may have. If preferred, you will have the option to meet the researchers face-to-face at the University of Manchester or via Skype.

If you confirm that you would like to take part, you will be sent a link to a consent form to read and sign. **If you consent to take part, you can still withdraw from the research at any time without any negative consequences, and for any reason at all.**

Following this, you will be sent a link via text and email which will take you to an online survey to complete. This will first require you to answer questions about yourself (such as sexuality and ethnicity) and some questions about your wellbeing. Other parts of the questionnaire include questions on self-esteem, experiences of biphobia and self-injury over the last week. An example of one of these questions is “in the last week, how often have you thought about injuring yourself or how you want to injure yourself?” This will take approximately 20-30 minutes to complete.

Once a week for the next five weeks you will be asked to complete a shorter version of this survey. This will be focused on your experiences over the last week and will take approximately 10-15 minutes to complete each time. You will receive a text message and email when it is time to complete the survey, which will include a link that will take you straight to the survey. In weeks 3 and 6 of the study, the researcher will contact you either by phone or email (whichever you prefer) to answer any questions you have and see how you are finding the study.

As well as looking at responses to your online surveys, we are hoping to interview some participants. On your consent form you can indicate if you would like to take part in a telephone/Skype/Zoom interview with a researcher after you have completed the study. During this interview you will be asked

some questions about your experiences of bisexuality and self-injury, and also how you found taking part in the online study. The audio from these interviews will be recorded so that the researchers can analyse them afterwards. This is completely optional, and you do not have to consent to this interview in order to take part in the online study. It is expected that this interview will take approximately 30 – 40 minutes.

➤ **Will I be compensated for taking part?**

You will not be compensated for taking part in the online study. However, each participant will be entered into a prize draw for each weekly survey they complete. There are 6 prize draws each with a £50 Amazon voucher prize.

If you choose to take part in an interview with a researcher after you have completed the online study, you will be compensated for your time to the value of a £10 Amazon voucher.

➤ **What happens if I do not want to take part or if I change my mind?**

It is up to you to decide whether or not to take part. If you wish to hear more about the study you can consent to be contacted by one of the researchers, who will be able to explain more about the study and answer any questions you may have. Even if you consent to be contacted you don't have to go ahead and take part. If you do decide to take part you will be given this information sheet to keep and will be asked to complete an online consent form. If you decide to take part you are still free to withdraw at any time without giving a reason and without any negative consequences. To withdraw, you just need to contact the research team (SIBL@manchester.ac.uk) and let them know

that you no longer wish to take part. You can also request that your study data is destroyed by informing the research team. However, it will not be possible to remove your data from the project once it has been anonymised (April 2021) as we will not be able to identify your specific data. This does not affect your data protection rights. If you decide not to take part you do not need to do anything further.

➤ **What are the risks of taking part?**

This study is about potentially difficult subjects, including non-suicidal self-injury and sexuality. There is a risk that you may become upset by the content of this research. You may be asked questions in the surveys which are difficult and sensitive. If you choose to take part in an interview with a researcher after the online study, you may be asked to think about experiences you have not thought about much before. You have the right to choose not to answer any questions that you do not feel comfortable answering. You also have the right to withdraw from this study at any time, for any reason.

Data Protection and Confidentiality

➤ **What information will you collect about me?**

In order to participate in this research project we will need to collect information that could identify you, called “personal identifiable information”. Specifically we will need to collect:

- Demographic information such as your age, gender, sexuality, ethnicity, marital status, employment status

- Information about psychological experiences (e.g. self-esteem, belonging, rumination – a type of thinking style when we go over things again and again)
- Information about experiences of biphobia
- Information about non-suicidal self-injury and wellbeing
- (If you choose to participate in an interview after you have finished the online study) Information about your experiences of completing the online surveys

➤ **Under what legal basis are you collecting this information?**

We are collecting and storing this personal identifiable information in accordance with data protection law which protect your rights. These state that we must have a legal basis (specific reason) for collecting your data. For this study, the specific reason is that it is “a public interest task” and “a process necessary for research purposes”.

➤ **What are my rights in relation to the information you will collect about me?**

You have a number of rights under data protection law regarding your personal information. For example you can request a copy of the information we hold about you.

If you would like to know more about your different rights or the way we use your personal information to ensure we follow the law, please consult our Privacy Notice for Research.

A summary of the study, including the results, will be emailed to everyone who requested this on their consent form. This summary will also be circulated on social media. No participants will be identifiable from this summary.

➤ **Will my participation in the study be confidential and my personal identifiable information be protected?**

In accordance with data protection law, The University of Manchester is the Data Controller for this project. This means that we are responsible for making sure your personal information is kept secure, confidential and used only in the way you have been told it will be used. All researchers are trained with this in mind, and your data will be looked after in the following way:

All responses will be kept confidential. We will do this by assigning you a participant number when you begin the study, and keeping any identifiable information separate to the other answers you give us. This means that no one will know your identity or which answers are yours. Your contact details will be kept for the duration of the project. All your responses will only be viewed by the researchers involved in the study. Upon completion of the study (April 2021), we will make all your data anonymous, by deleting all the personal, identifiable information we have about you. Information collected for this research project will be kept safely and securely on a University of Manchester password-protected computer. Anonymous data will be kept for 10 years after the study, in line with the University of Manchester policy for the storage of research data. If you agree, then your anonymous data could be used in other research projects.

Any interviews will be audio-recorded so they can be analysed at a later date. These audio files will be stored and protected as detailed above, and will also each be password protected. The participant will be asked at the start of the interview to try and refrain from saying the names of any individuals, organisations or groups during their interview, so as to further protect confidentiality. If a participant does provide personally identifiable information during the interview, this information will be anonymised when the interview is later transcribed.

➤ **Under what circumstances would my confidentiality be breached?**

As indicated on the consent form, if during the course of your participation in this study we have concerns about your immediate safety or the safety of others, we may have to speak to another healthcare professional. We will speak to you before we do this to ask you if there is a particular professional you would prefer us to speak to. This could be your GP, a social worker or any other healthcare professional that you identify. Alternatively, we will contact emergency services and direct them to your last known location.

Please also note that individuals from The University of Manchester or regulatory authorities may need to look at the data collected for this study to make sure the project is being carried out as planned. This may involve looking at identifiable data. All individuals involved in auditing and monitoring the study will have a strict duty of confidentiality to you as a research participant.

What if I have a complaint?

If you wish to complain or have any concerns about any aspect of the way you have been treated during this study, you can approach the research team.

➤ Contact details for complaints

If you have a complaint that you wish to direct to members of the research team, please contact the primary research supervisor **DR PETER TAYLOR** on **peter.taylor-2@manchester.ac.uk** or 0161 306 0425.

If you wish to make a formal complaint to someone independent of the research team or if you are not satisfied with the response you have gained from the researchers in the first instance then please contact:

The Research Governance and Integrity Officer, Research Office, Christie Building, The University of Manchester, Oxford Road, Manchester, M13 9PL, by emailing: research.complaints@manchester.ac.uk or by telephoning 0161 275 2674.

If you wish to contact us about your data protection rights, please email dataprotection@manchester.ac.uk or write to The Information Governance Office, Christie Building, The University of Manchester, Oxford Road, M13 9PL at the University and we will guide you through the process of exercising your rights.

You also have a right to complain to the Information Commissioner's Office [about complaints relating to your personal identifiable information](#) Tel 0303 123 1113.

Contact Details

If you have any queries about the study or if you are interested in taking part then please contact the researcher(s) **BRENDAN DUNLOP** or **SOPHIE COLEMAN** by emailing **SIBL@manchester.ac.uk** or by calling 07725466104.

Support organisations

If you would like to speak to someone about any issues raised by reading this participant information sheet, or need support for mental health/sexuality concerns/self-injury, below are four organisations you can contact:

Samaritans (emotional/self-harm/sexuality support): 116 123

Papyrus (suicide prevention): 0800 068 4141

YoungMinds (emotional/self-harm/sexuality support): Text YM to 85258

LGBT Foundation (sexuality support): 0345 330 3030

Covid-19 specific information related to sexuality can be found here:

<https://lgbt.foundation/coronavirus/wellbeing>

Appendix Q: Consent Form

Self-Injury in young Bisexual people: a Longitudinal investigation

(SIBL)

Consent Form

Name of Researchers: Sophie Coleman and Brendan Dunlop

Email: SIBL@manchester.ac.uk

Please type initials

1	I confirm that I have read the information sheet (Version 3, Date 29/04/2020) for the above study and have had the opportunity to consider the information and ask questions and had these answered satisfactorily.	
2	I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving a reason and without detriment to myself. I understand that it will not be possible to remove my data from the project once it has been anonymised and forms part of the data set. I agree to take part on this basis.	
3	I agree that any data collected may be published in an anonymous form in academic books, reports or journals.	
4	I understand that if I need support with self-injury or with issues related to sexuality/sexual orientation during this study I can contact the support numbers provided at the end of online surveys.	
5	I understand that if I disclose details that the researchers believe affects my immediate safety, or the safety of someone else, the researchers may have to tell another healthcare professional, such as my GP. I agree to provide details of the most appropriate healthcare professional to the research team if they request them for reasons of safety/risk. In this instance, I understand that the researchers will ask me who I want them to contact. If I don't tell them anyone in particular, or refuse to, the researchers may need to contact emergency services instead and provide my last known location.	
6	I agree that my anonymous data can be used for other research projects and that if I agree to this I cannot be identified from any of the data.	

7	I agree to take part in this study.	
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Optional:

1	I agree that the researchers may retain my contact details in order to provide me with a summary of the findings for this study.	
2	I agree to be entered into a prize draw for each weekly survey I complete. I understand that the researchers will contact me via telephone or email if I win one of these prizes.	
3	I agree to be contacted to take part in an interview after my participation in the online study has ended. I understand that even if I agree to be contacted about this, I can still choose to decline this when it is offered.	

Data Protection

The personal information we collect and use to conduct this research will be processed in accordance with data protection law as explained in the Participant Information Sheet and the Privacy Notice for Research Participants.

Name (please type):

Date:

[Consent forms will be stored electronically at the University of Manchester in accordance with Data Protection regulations; you may request an electronic copy of this consent form if you wish]

Appendix R: Participant debrief email

Dear participant,

Thank you for taking part in this study, your time and effort is much appreciated. **[For participants wishing to be entered into prize draw]** As a thank you, you have been entered into a separate prize draw for each weekly survey you have completed, as you had selected this option on your consent form. The research team will be in touch through email/phone to let you know if you have won one of these prizes (6 available prizes of £50 each). If you do not wish to be entered into this prize draw anymore please let us know and we will remove your details from the entry. For your information, we have listed support organisations below should you wish to contact them.

Samaritans (emotional/self-harm/sexuality support): 116 123

Papyrus (suicide prevention): 0800 068 4141

YoungMinds (emotional/self-harm/sexuality support): Text YM to 85258

LGBT Foundation (sexuality support): 0345 330 3030

Many thanks once again,

SIBL research team

Appendix S: SIBL risk management protocol

The online SIBL study involves limited direct contact between participants and researchers. This includes an initial pre-consent telephone conversation (or face to face/Skype conversation, if this is preferable to the individual), and one or two “check-in” telephone calls during the study follow-up period. If participants choose to participate in a 30-40 minute telephone/Skype/Zoom interview after their participation in the online study is finished, this involves more contact than participants who are just completing the online study.

This risk protocol outlines a) general principles for mitigating risk and distress during all parts of the study, b) specific procedures to follow where risk is or distress is communicated by an individual, either during telephone contacts, via email, or during an telephone/Skype/Zoom interview.

General principles

A realistic and genuine discussion should be had with all potential participants during the first contact (prior to consent being taken) about the possibility of distress/risk during the study, and what might be a helpful response if this were to happen for them.

This discussion should cover helpful contacts or available sources of support (both formal such as NHS services, and informal, such as family and friends), any current risk management planning and other strategies they find helpful at times of distress. All potential participants will be supplied by email with contact details of support organisations (e.g. Samaritans/Papyrus/YoungMinds/LGBT Foundation), including COVID-19 specific

support. This signposting information will also be available as part of the automatic reply to any emails sent to the project email address.

Another goal of this discussion is to explain the limits of confidentiality and discuss how to manage this should issues arise. Furthermore, during this discussion it should be agreed what actions will be taken by both potential participant and researcher if risk becomes apparent, with the emphasis (where possible given the context and level of risk) upon the researcher and potential participant building understanding and trust. Just as the researcher can be trusted to follow ethical and research standards, the potential participant should also be 'trusted' to know how to manage their emotions and feelings.

The researcher should also explain to the potential participant that the study email account will not be checked consistently throughout each day, or overnight. The researcher will not be available outside of telephone contacts (as specified in project procedure), and it will also be sensitively explained to potential participants that the researcher cannot act as a crisis or clinical service. It will be made clear to potential participants that where they are struggling with distress or difficulties with their mental health they should access support through NHS and 3rd sector services, alongside any informal support available to them (e.g. friends and families).

Distress or risk expressed during phone contact, face-to-face meeting, Skype video call or telephone/Skype/Zoom interview

To be enacted if a participant or the researcher is concerned about the participant's current and subsequent welfare during contact with the researcher (e.g. phone/face to face/ Skype video call/telephone, Skype or Zoom interview):

- Reports or displays notable distress
- Reports thoughts or feelings related to suicide
- Reports current urges to harm themselves

If participants reports or shows signs of low or moderate distress

- Pause the phone call/meeting/interview (with the participant's agreement) and allow time to talk about other topics including how the participant feels, and then carefully observe levels of distress.
- Reiterate signposting information (e.g. Samaritans/Papyrus/Mind/LGBT Foundation).
- Encourage the participant to contact a clinician if distressed or in need of help in future.
- If distress seems to have lessened, discuss with participant whether or not they wish to continue with the study/the current phone call or session or interview.
- If distress remains prominent or worsens, follow steps below.

If participants report more severe distress or thoughts/feelings related to current urge to self-injure

- Halt or pause the phone call/meeting/interview.

- Try to validate the participant's feelings by reflecting back to them that you have heard and understood that they are feeling distressed.
- Allow the participant time to say more about how they are feeling and allow time to listen to them.
- Ask specifically about any thoughts of suicide, if not already mentioned.
- Where these are present, assess level of immediate risk (this should be done as part of a calm, collaborative conversation, avoiding appearing panicked).
 - Do you feel that taking part in this telephone conversation/interview is affecting how you feel? If so, in what way?
 - Currently, how would you rate your desire to live, with "10" being you really want to be alive and "0" being you very much want to be dead?
 - Do you have any plan or intent to kill yourself at this time?
 - Have you ever tried to attempt suicide in the past? (if not already known).
- Ask about current urges to harm themselves (which may be non-suicidal, or for which the intent may be unclear to them) if not already mentioned.
- Where these are currently present, assess level of immediate risk (questions below may help)
 - Do you feel that taking part in this study/interview is affecting how you feel?

- Do you currently have a specific plan to harm yourself?
- What are you thinking of doing (ascertain level of possible physical injury - is this likely to require medical intervention)?
- How able to resist these feelings do you currently feel, with “1” being able to resist them with little or no effort and “10” being impossible to resist these feelings?
- In judging the level of risk associated with urges to self-injure it is important to involve the participant themselves in thinking about this. In doing this you can check with the participant about the usual severity of their self-injury and aftercare (including any aftercare they provide themselves such as wound cleaning and also any health services they routinely attend). You can then check if current urges to self-injure feel typical for them, or different (more intense, or urge towards different kind of behaviour).

Where taking part in the study is having an adverse effect on the participant the study should be immediately halted (i.e. no further links or prompts to complete the survey should be sent). If the participant is keen to remain involved in the research, this could be discussed with them at a later date, once they have had a break from the study, and once the issue has been reviewed by the study supervisors.

Dependent on level of risk identified, the associated steps listed at the end of this document should be followed

Action plan for managing risk

LOW RISK = No current thoughts of suicide or urges to self-injure, or mild urges to self-harm that feel easy to resist or ignore (e.g. $\leq 3/10$).

- ☐ Acknowledge the difficult feelings the individual is experiencing (important that this feels genuine)
- ☐ Spend some time talking with the individual on a neutral subject matter and check in periodically on level distress to see if reducing (How are you feeling now?)
- ☐ Signpost the individual to the various support organisations that are available (Samaritans/Papyrus/Mind/LGBT Foundation)
- ☐ Encourage the individual to contact a clinician if distressed or in need of help in future

MODERATE RISK = thoughts of suicide but intent $\leq 6/10$, or urges to engage self-harm that could be medically severe, but which the individual feels able to resist (e.g. $\leq 5/10$).

- ☐ (check all completed above)
- ☐ Discuss safety plan with the individual (i.e., what to do if thoughts/urges increase). This could include ways to distract themselves, important people to contact and harm minimisation strategies.

HIGH RISK = Current suicidal ideation present, and intent 7-8/10, but no plan or access to lethal means. Urges to self-harm that are hard to resist (> 5/10) and could result in severe injury (e.g. planned overdose or hanging).

- ☐ (check all completed above)
- ☐ Ask individual for the number of somebody that the researcher can contact (could be family member/friend/GP). If this is not provided then the researcher shall ask where the individual is and arrange for emergency services to attend.
- ☐ Call Peter Taylor/Samantha Hartley (***must do***)

IMMINENT RISK = Current suicidal intent (7-8/10 with specific plan/access or 9-10/10 regardless of plan).

- ☐ (check all completed above)
- ☐ Call Peter Taylor/Samantha Hartley (***must do***)
- ☐ If an ambulance is being sent, stay on the phone/video call/sit with the individual until the ambulance arrives.
- ☐ If the individual refuses to do the above: call 999 and inform them of individual's last known location and level of risk.

If individual has already engaged recently in self-injury or reports recent self-injury that could be medically serious over the phone/face to face/on Skype video call/during telephone, Skype or Zoom interview:

- Try to gain information on how physically severe the self-injury is (if in doubt, err on the side of caution). Involve the individual in this discussion in a collaborative way where possible. They will have an

idea of what kind of self-injury is typical for them and also the potential physical consequences of different levels of self-injury based on their own experiences.

- Follow steps below, accordingly.

LOW RISK = Superficial injuries (e.g. shallow cuts, scratches, bruises) requiring no medical attention or very minimal medical intervention (e.g., plasters).

- ☐ Signpost the individual to the various support organisations that are available (Samaritans/Papyrus/Mind/LGBT Foundation)
- ☐ Discuss with the individual whether they would like to continue participating in the research/interview.

MODERATE RISK = Moderate injuries that may have required minor medical attention (e.g., bandages, may have been put on by individual). These may have some lasting effects (such as scarring, pain, or noticeable discomfort).

- ☐ (check all completed above)
- ☐ Encourage the individual to seek medical help for physical injuries (e.g. walk-in centre, GP) if not already sought.
- ☐ Discuss safety plan with the individual (i.e., what to do if thoughts/urges increase). This could include ways to distract themselves, important people to contact and harm minimisation strategies.

HIGH RISK = Serious injuries that either required medical attentions to prevent death or long-term disability.

- ☐ (check all completed above)
- ☐ Call Peter Taylor/Samantha Hartley (***must do***)
- ☐ The researcher will call an ambulance and provide the ambulance service with the last known location. Whilst the ambulance is being sent stay on the phone/video call/sit with the individual until the ambulance arrives.

Distress or risk expressed via email

The study email account will have an automatic reply set that a) reiterates that the research team is not able to provide crisis support and b) provides signposting information to relevant support services, including COVID-19 related information from the LGBT Foundation.

Further steps should be taken if the participant sends an email that indicates the following:

- Reports or displays notable distress
- Reports thoughts or feelings related to suicide
- Reports current urges to harm themselves

If participant indicates any of the above in an email to the research team's email account then the researcher will:

- Include the following standard email reply (minor changes are permitted to tailor the reply to the individual participant):

“Hi [participant], thanks for reaching out to the research team. It sounds like you are experiencing some thoughts/feelings that are quite upsetting for you. As a research team we have a duty of care to protect participants, but we are not in a position to offer support ourselves. Therefore, we would strongly recommend that you contact one or more of the below organisations to ask for emotional support. If you would like us to contact a healthcare professional on your behalf then please email us their details.

Please be aware that you are in no way obliged to continue with this research and you are welcome to withdraw at any point if you wish. Please get in touch with us if you would like to be removed from the study.

Samaritans (emotional/self-harm/sexuality support): 116 123

Papyrus (suicide prevention): 0800 068 4141

YoungMinds (emotional/self-harm/sexuality support): Text YM to 85258

LGBT Foundation (sexuality support): 0345 330 3030

Covid-19 specific information related to sexuality can be found here:

<https://lgbt.foundation/coronavirus/wellbeing>

With best wishes,

SIBL research team”

If participant has already engaged recently in life-threatening self-injury, reports recent self-injury that could be medically serious, or expresses imminent and severe risk to self (i.e. indicates imminence of engaging in life-threatening/medically serious self-injury, or other suicidal behaviour) in an email to the research team's email account then the researcher will:

- Include the following standard email reply (minor changes are permitted to tailor the reply to the individual participant):

“Hi [participant], thanks for reaching out to the research team. It sounds like you are experiencing some thoughts/feelings that are quite upsetting for you. As a research team we have a duty of care to protect participants, but we are not in a position to offer support ourselves. Because of this, and as indicated at the beginning of the study and on your consent form, in this instance we need to contact a healthcare professional, because you have [told us you have engaged in life-threatening self-injury/medically serious self-injury/thoughts to end your life – DELETE/EXPAND ON AS APPROPRIATE]. Please can you provide us with details of the most appropriate healthcare professional for us to contact. This could be your GP, other doctor, or community nurse. If we feel your safety is immediately at risk we may shortly call you to ask where you are so we can arrange for emergency services to be sent.

Please be aware that you are in no way obliged to continue with this research and you are welcome to withdraw at any point if you wish. Please get in touch with us if you would like to be removed from the study.

Samaritans (emotional/self-harm/sexuality support): 116 123

Papyrus (suicide prevention): 0800 068 4141

YoungMinds (emotional/self-harm/sexuality support): Text YM to 85258

LGBT Foundation (sexuality support): 0345 330 3030

Covid-19 specific information related to sexuality can be found here:
<https://lgbt.foundation/coronavirus/wellbeing>

With best wishes,
SIBL research team”

Personal Safety and Well-being

Where any of the above incidents take place the researcher should inform Dr Peter Taylor/Dr Samantha Hartley and arrange a time to debrief with regards to the situation, including a focus on how they have been personally affected.

Appendix T: Assumptions of mixed-model linear regression

For mixed model linear regression to be used, a series of statistical assumptions must be met. These assumptions are *normal distribution of residuals*, *linearity*, and no substantial *multicollinearity*.

Histograms were checked for all models. Observation of histograms of residuals indicated that distribution was roughly normal for both predictors. Unlike other regression models, we had residuals at two levels, and both were checked. This first assumption was therefore met. There was no indication of a curvilinear pattern from scatter plots, so the second assumption of linearity was met. Finally, a high correlation of over 0.7 is suggestive of multicollinearity (Tabachnick & Fidell, 2001). For the concurrent model correlation was 0.46 and for the lagged model this was 0.48. No multicollinearity was indicated, meeting the final assumption.

Reference:

Tabachnick, B. G., and. Fidell, L. S. (2001). *Using Multivariate Statistics, Fourth Edition*. Allyn & Bacon.

Appendix U: Full list of participant countries

Country	N (Total N= 204)
United Kingdom	103
United States of America	53
Spain	9
Poland	4
Germany	4
Australia	3
Mexico	3
Canada	3
Singapore	2
New Zealand	2
South Africa	2
Bulgaria	2
Brazil	2
Colombia	1
Kenya	1
Morocco	1
The Netherlands	1
Italy	1
France	1
Slovenia	1
Romania	1
Hungary	1
Lithuania	1
India	1
Pakistan	1

Appendix V: Published qualitative paper for *Psychology and Sexuality*

The published paper has not been included within this thesis for copyright reasons. The full paper is available at the following link:

<https://www.tandfonline.com/doi/full/10.1080/19419899.2021.1924241?src=>

Appendix W: Journal guidelines for *Psychology and Sexuality*

Preparing Your Paper

Structure

Your paper should be compiled in the following order: title page; abstract; keywords; main text introduction, materials and methods, results, discussion; acknowledgments; declaration of interest statement; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list).

Word Limits

Please include a word count for your paper.

A typical paper for this journal should be no more than 6000 words, inclusive of the abstract, figure captions.

Format-Free Submission

Authors may submit their paper in any scholarly format or layout.

Manuscripts may be supplied as single or multiple files. These can be Word, rich text format (rtf), open document format (odt), or PDF files. Figures and tables can be placed within the text or submitted as separate documents.

Figures should be of sufficient resolution to enable refereeing.

- There are no strict formatting requirements, but all manuscripts must contain the essential elements needed to evaluate a manuscript:

abstract, author affiliation, figures, tables, funder information, and references. Further details may be requested upon acceptance.

- References can be in any style or format, so long as a consistent scholarly citation format is applied. Author name(s), journal or book title, article or chapter title, year of publication, volume and issue (where appropriate) and page numbers are essential. All bibliographic entries must contain a corresponding in-text citation. The addition of DOI (Digital Object Identifier) numbers is recommended but not essential.
- The journal reference style will be applied to the paper post-acceptance by Taylor & Francis.
- Spelling can be US or UK English so long as usage is consistent.

Note that, regardless of the file format of the original submission, an editable version of the article must be supplied at the revision stage.

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To help you improve your manuscript and prepare it for submission, Taylor & Francis provides a range of editing services. Choose from options such as English Language Editing, which will ensure that your article is free of spelling and grammar errors, Translation, and Artwork Preparation. For more information, including pricing, [visit this website](#).

Checklist: What to Include

1. **Author details.** All authors of a manuscript should include their full name and affiliation on the cover page of the manuscript. Where available, please also include ORCiDs and social media handles (Facebook, Twitter or LinkedIn). One author will need to be identified as the corresponding author, with their email address normally displayed in the article PDF (depending on the journal) and the online article. Authors' affiliations are the affiliations where the research was conducted. If any of the named co-authors moves affiliation during the peer-review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after your paper is accepted. [Read more on authorship](#).
2. Should contain an unstructured abstract of 200 words.
3. **Graphical abstract** (optional). This is an image to give readers a clear idea of the content of your article. It should be a maximum width of 525 pixels. If your image is narrower than 525 pixels, please place it on a white background 525 pixels wide to ensure the dimensions are maintained. Save the graphical abstract as a .jpg, .png, or .tiff. Please do not embed it in the manuscript file but save it as a separate file, labelled GraphicalAbstract1.
4. You can opt to include a **video abstract** with your article. [Find out how these can help your work reach a wider audience, and what to think about when filming](#).
5. Read [making your article more discoverable](#), including information on choosing a title and search engine optimization.

6. **Funding details.** Please supply all details required by your funding and grant-awarding bodies as follows:

For single agency grants

This work was supported by the [Funding Agency] under Grant [number xxxx].

For multiple agency grants

This work was supported by the [Funding Agency #1] under Grant [number xxxx]; [Funding Agency #2] under Grant [number xxxx]; and [Funding Agency #3] under Grant [number xxxx].

7. **Disclosure statement.** This is to acknowledge any financial interest or benefit that has arisen from the direct applications of your research. Further guidance on what is a conflict of interest and how to disclose it.
8. **Biographical note.** Please supply a short biographical note for each author. This could be adapted from your departmental website or academic networking profile and should be relatively brief (e.g. no more than 200 words).
9. **Data availability statement.** If there is a data set associated with the paper, please provide information about where the data supporting the results or analyses presented in the paper can be found. Where applicable, this should include the hyperlink, DOI or other persistent identifier associated with the data set(s). Templates are also available to support authors.
10. **Data deposition.** If you choose to share or make the data underlying the study open, please deposit your data in a recognized data

repository prior to or at the time of submission. You will be asked to provide the DOI, pre-reserved DOI, or other persistent identifier for the data set.

11. **Supplemental online material.** Supplemental material can be a video, dataset, fileset, sound file or anything which supports (and is pertinent to) your paper. We publish supplemental material online via Figshare. Find out more about supplemental material and how to submit it with your article.
12. **Figures.** Figures should be high quality (1200 dpi for line art, 600 dpi for grayscale and 300 dpi for colour, at the correct size). Figures should be supplied in one of our preferred file formats: EPS, PS, JPEG, TIFF, or Microsoft Word (DOC or DOCX) files are acceptable for figures that have been drawn in Word. For information relating to other file types, please consult our Submission of electronic artwork document.
13. **Tables.** Tables should present new information rather than duplicating what is in the text. Readers should be able to interpret the table without reference to the text. Please supply editable files.
14. **Equations.** If you are submitting your manuscript as a Word document, please ensure that equations are editable. More information about mathematical symbols and equations.
15. **Units.** Please use SI units (non-italicized).

Appendix X: Topic guide and interview schedule

Sexuality and self-injury

- 1) You mentioned in the study that in the past you have intentionally injured yourself without intending to end your life. This is what we would call non-suicidal self-injury. How, if at all, has being bisexual affected your self-injury?
 - a. Do you think being bisexual is in any way related to you first starting to self-injure?
 - b. Has your experience of self-injury changed over time? In what ways?
 - c. Do you think your sexuality has any relationship with your ongoing experiences of self-injury?
- 2) What are the main challenges or difficulties you face because of your sexuality?
 - a. Do you have any difficulties with Biphobia? What sorts of experiences have you had?
 - b. Do you think people see you differently because of your sexuality?
 - c. Has your sexuality affected how you get along with others or form relationships?
 - d. Do you think your experience of sexuality is the same for others or different? In what ways? Why do you think this is?
 - e. How does your sexuality affect the way you see yourself?

- i. Have you faced any challenges in understanding or accepting your sexuality?
 - ii. Has your sexuality had an impact on other aspects of your mental health? In what ways?
- 3) Have any of the difficulties you mentioned [name any difficult experiences] contributed to your experiences of self-injury? In what way?
 - a. Do you feel that self-injury helps at all when facing these difficulties? In what way?
 - b. Do you think your self-injury has made any of these difficulties worse at all?
- 4) Is there anything about your sexuality that you think has helped you cope with difficult experiences?
 - a. Has your sexuality had a positive effect on the person you are today?
 - b. Do you think your sexuality has made you stronger or more resilient in any way? In what way? How? Has this changed over time?
- 5) Do you feel like you belong to the wider LGBTQ community? What has this been like?
 - a. Has this helped at all in terms of your self-injury? In what ways?

Experiences of COVID19

- 1) What has your experience of COVID19 and the lockdown been like?
 - a. How have things been different for you compared to before the lockdown?

- 2) What effect do you think this has had on your mental health?
- 3) What effect do you think this has had on your self-injury?
- 4) You mentioned before some difficult experiences you had had (name these, e.g., biphobia). What impact has COVID19 and the lockdown had on these experiences?
 - a. Has it made any of these difficulties worse?
 - b. Has lockdown reduced some of these difficult experiences
- 5) In what ways do you think COVID19 and the lockdown will affect your engagement with the LGBTQ community?
- 6) In what ways do you think your behaviour will be affected following COVID19 and the lockdown?

Appendix Y: Additional participant quotes

Coping with a heteronormative and binary-focused world

Expecting rejection

"I've got, quite a lot of, er, LGBT friends and stuff, but they're mostly like, yeah, lesbians, rather than bi and I think, er, when I'm within the community and stuff in say [X] and stuff, er, I don't feel as accepted, er, because at the moment I've got a girlfriend, and, er, so, yeah, er, I just don't feel as I'm accepted because I'm in a heterosexual relationship at the moment" (P14, cisgender man)

"I'm in this weird sort of limbo... like I'm not straight...it's not the case anymore... but I'm also not there like sort of in that, in the LGBTQ community. I sort of feel like I'm in this weird sort of, limbo that's, that's sort of me and maybe a few other people on Reddit who also struggle with feeling like they don't occupy the space as well" (P7, cisgender woman)

Living with prejudice

"like gold star lesbians that won't date bisexual people, because you may leave me for a man or you've been with a man, therefore I don't want you" (P15, non-binary/third gender person)

"I don't identify as bisexual, I identify as pansexual...I feel like it's not really taken as seriously as if I was gay or if I was straight, erm, and I think like in terms of the LGBT community in general, I think there's

less space for like pansexual, bisexual people...there's women only spaces in terms of lesbians, and then there's like gay only spaces in terms of men, I'm not sure where the spaces are for like bisexual people as much" (P6, transgender man)

Living with a sense of threat

"In my last job specifically I worked in [X], and from the get-go I was very much like making gay jokes about myself, just trying to gauge the reactions from my colleagues, and then like who I would form relationships with based on that" (P15, non-binary/third gender person)

Considering yourself 'lucky'

"even though I always say I'm pretty lucky in that, like people around me haven't been overtly sort of prejudiced, er, like towards me... when I was at school especially, erm, I went to an all girls school, and I think that in itself is quite difficult because you don't want people to think certain things about you...you know they wouldn't be ok to you to speak as honestly as people who are straight" (P2, cisgender woman)

"overall I think I've been quite lucky in having friends and the close family I have are very accepting of it" (P13, cisgender woman)

"I've been very lucky to have not experienced biphobia from within the LGBT community, but I was very aware of it especially when I was dating" (P15, non-binary/third gender person)

Relationship between bisexuality and self-injury

Sexuality as part of a wider context for self-injury

"I feel like it's quite difficult to pinpoint, 'cos it's never like a sole reason for wanting to do it, it's more just like, ah, everything feels really overwhelming, which sometimes is contributed to being bisexual, especially now during lockdown with the fact of like, oh god, I'm so bored" (P4, cisgender woman)

Self-injury as a means of coping with identity

"...in terms of like actually hurting myself, I really get those feelings when I think about my identity and that's sort of like little things like picking myself...I'm tapping into something that's very sensitive to me, and that's kind of still tucked away, deep down and it's like coming up very slowly there's a lot of feelings around that" (P10, cisgender woman)

Navigating intersecting marginalised identities

"I'm also non-binary... even though I realised that much later in, er, as opposed to me discovering I was bisexual quite young, it, I feel like that's had more of an impact because it's so much less understood...cos, erm, even though, we all still do encounter people we don't really think of bisexuality as a thing, it's much less common that you'll meet people like that than you'll meet people who, you

know think there are only two genders or whatever...So, I, I'd run into sort of friction with gender more than I do with sexuality" (P9, non-binary/third gender person)

Learning to accept sexuality

"I live on r/bisexual [Reddit sub-forum] at the moment, it's so nice to sort of see other people going through what I go through, you know, you get so many people on there, like, oh am I just, am I confused, am I even valid, am I, you know like I've never had an experience with the same sex, what does this mean and so many people just flock to them and just like, it's fine, you're valid, your experience does not equal your orientation and it's just so reaffirming to read, I love it and like it's one of the best ways I work on myself, erm, just seeing so many other people who are like me, who are just way more confident about it. It's really helpful" (P7, cisgender woman)

"I mean, er, considering how I felt a few years ago, er, I think discovering that I am bisexual, er, definitely, er, stopped me going through, er, a very deep tunnel of, er, you know confusion" (P14, cisgender man)

"I can't think of myself without taking my sexuality into account...I see it as a positive thing, like a positive attribute of myself" (P15, non-binary/third gender person)

Positive aspects of a bisexual identity

"I think bisexual people are more fun (laughs). Er, no, I, even though I think I've created a bit of an echo chamber with the people that I associate myself with, erm, I feel sort of a part of like a, just like a nice thing, whenever I'm talking to my friends, and I'm in like this specific, er, Facebook groups, or even when it gets to like, you know gay pride month and like the LGBT kind of thing, 'cos it's like, hey I fit into that, and that's cool and I can like stand up for that, and it, I don't know, in a weird way it does make me feel like I'm a part of something which can, in times, be very comforting when you associate with the right people" (P4, cisgender woman)

"I think it's sort of made me have a lot of experiences that have been maybe a lot more compassionate to others" (P3, non-binary/third gender person)

Experiences of lockdown

Emotional impact

"I've also seen some people say that, er, the LGBT community should give the flag to the NHS, as such and we're not allowed to use the rainbow anymore and stuff like that, which has been hurtful and it's kind of, as you can see it everywhere the rainbow, you're not sure, erm, who's actually an ally anymore" (P1, cisgender man)

"...much more overwhelmed and very, very anxious. My dad is older, has lung conditions, so I'm very worried about him, my mum's parents

are both over 90 and in care homes, and nearby, but I haven't been able to see them obviously, I've been very, very anxious about, er, will I be able to see my grandparents again" (P11, cisgender woman)

"[asked whether some of the previous experiences of biphobia/ discrimination have got better due to lockdown] it feels, er, a lot more comfortable 'cos I think, kind of going out in public...a bit of risk of these sort of things happening whereas now it's like, I know I won't feel like that, I know I don't have to explain anything so I'm just like, yeah, you know, I have time to just focus on me now, so it's better in that sense" (P10, cisgender woman)

Changes in self-injury

"I'm spending much more time in my room, and much less busy, and, so, it's far easier for me to do something like [self-injure] if I am overwhelmed" (P11, cisgender woman)

"I think it's become a lot more of a, a default response [during lockdown], whereas before, it would take more to get me to that point, now it's kind of like a, just like, normal coping mechanisms whereas before it was one of a few" (P2, cisgender woman)

"I was thinking about actively self-harming, but I didn't act on it...and I haven't had those thoughts in, I think it must have been around April" (P15, non-binary/third gender person)

Changes to daily life

“...it’s not like I could just walk over to my best mate’s house or another friend’s house, or even to my house, it’s not like I can just go home and see my parents and talk about it, yeah, so it does make you think, it doesn’t give you enough time to think and it gives you, takes you straight to do the wrong thing” (P13, cisgender woman)

“Having that work-life separation is difficult because my work space and my relaxing space is the same space” (P15, non-binary/third gender person)

Meaning and consequences of self-injury

Self-injury as a broad spectrum

“[drinking alcohol, described as a form of self-harm] just giv[es] me something to do as well, erm, ‘cos with, if lockdown wasn’t on, it’s usually a lot easier, ‘cos I can just go to work, or, like, complete an assignment...So it just gives me some kind of, erm, mental stimulation, I suppose” (P4, cisgender woman)

Numerous and multiple functions of self-injury

“I could say, yeah, might, [self-injury] might be a bit worse, er, I’d say, erm, because of the way that, er, you know, they talk about bisexuals and stuff” (P14, cisgender man)

“but I in terms of like actually hurting myself, I really get those feelings when I think about my identity and that’s sort of like little things like picking myself (P10, cisgender woman)

"[self-injury] releases a lot of pain I'm feeling, kind of weird, er, and contradictory, 'cos I'm inflicting pain on myself" (P14, cisgender man)

"in like the broader family aspects, massively, when I wasn't accepted with that, it did hurt quite a lot, and, it sent me, like, to a really direct it at myself and think my, I'm doing wrong sort of thing and punish myself" (P13, cisgender woman)

"I think, there have been one or two instances where it was kind of indirectly related to a kind of punishing behaviour" (P11, cisgender woman)

"it helps in like the short term, but in the long terms obviously it isn't an effective method or anything. But it definitely does like help me to like be like calm myself down almost and like re-focus" (P5, cisgender woman)

Negative consequences of self-injury

"kind of like a, a band aid, it helps slightly, but it still, it ended up causing problems down the line as well with, erm, it was only a temporary fix as such" (P1, cisgender man)

"it's made my life quite difficult in the fact of, I've now gotta live with scars all over me" (P13, cisgender woman)

"it's so hot at the moment and I can't wear anything short because I've just scratched up my legs, and everyone will see" (P11, cisgender woman)

**Appendix Z: Published paper for *Qualitative Methods in Psychology*
*Bulletin***

The published paper has not been included within this thesis for copyright reasons. The full paper is available as part of a paid-for publication by the British Psychological Society. A pdf copy is available upon request.

Appendix AA: PsyPAG 2020 online conference presentation




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Bisexuality and Non-Suicidal Self-Injury (NSSI):

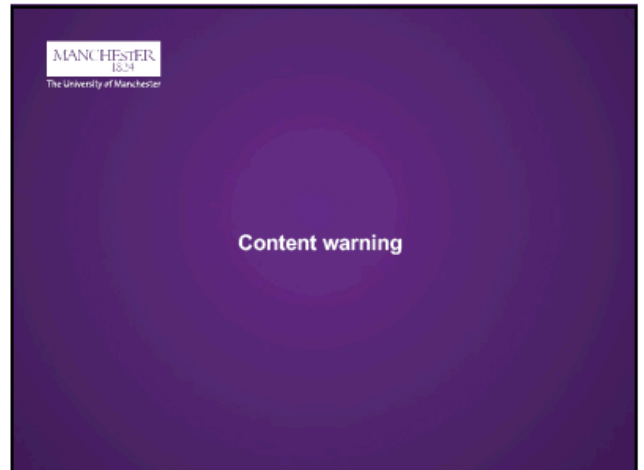
**A narrative synthesis of associated variables
and a meta-analysis of risk**

.....

Brendan J Dunlop
Clinical Psychologist in training

@BrendanJDunlop1 
He/him

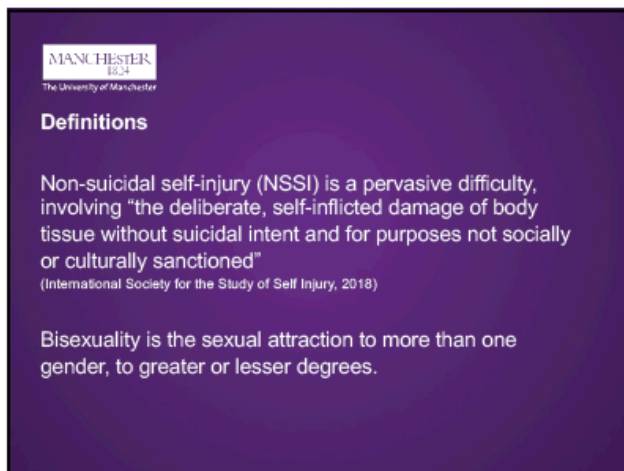
1



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Content warning

2



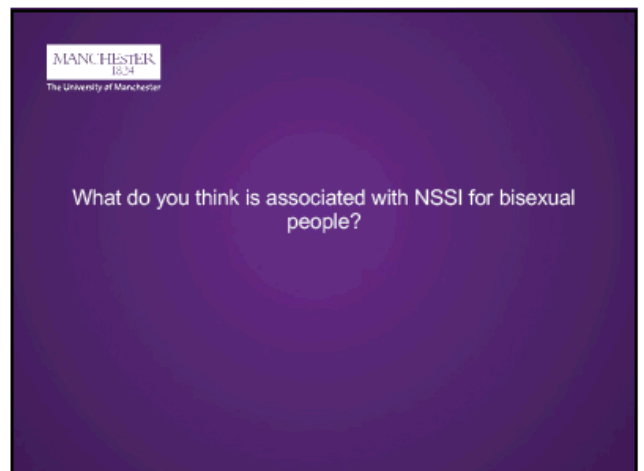
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Definitions

Non-suicidal self-injury (NSSI) is a pervasive difficulty, involving “the deliberate, self-inflicted damage of body tissue without suicidal intent and for purposes not socially or culturally sanctioned”
(International Society for the Study of Self Injury, 2018)

Bisexuality is the sexual attraction to more than one gender, to greater or lesser degrees.

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What do you think is associated with NSSI for bisexual people?

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Background

- Disproportionate mental health difficulties (King et al., 2008)
- Minority Stress Theory (Meyer, 2003)
- Higher risk of NSSI for bisexual people (Batejan et al. 2015)

Aim

- We want to update and extend the Batejan findings & examine associated variables

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Method

- Protocol for review pre-registered with PROSPERO
- Four databases searched – to Oct 2019
- N=24. Authors contacted; reference lists searched
- Papers and data independently screened, extracted, rated for risk of bias
- Random-effects meta-analysis & moderator analysis

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Results: Meta-analysis

Comparison	Odds ratio	NSSI outcome
Bi vs. heterosexual	6.07	Past year NSSI
Bi vs. heterosexual	4.59	Lifetime NSSI
Bi vs. gay men	4.37	Lifetime NSSI
Bi vs. anyone	3.50	Any outcome
Bi vs. gay men & lesbian women	2.13	Lifetime NSSI
Bi vs. gay men & lesbian women	1.62	Past year NSSI

Risk of bias = moderate (n=14)

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How did this match up with your initial thoughts/hypotheses?

Results: Narrative Synthesis

- **Beliefs:** thwarted belonging, perceived heterosexism, sexuality concerns
- **Behaviours:** restricted eating, substance use
- **Life experiences:** bullying, physical assault
- **Mental health difficulties:** symptoms of depression (++), symptoms of anxiety (++)
- **Protective factors:** feeling connected to parents, self-esteem, experiencing friends as caring

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Discussion

- Bisexual people have an elevated risk of engaging in NSSI
- Bisexual females seem to be at most risk
- Mental health difficulties most associated with NSSI for bisexual people

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Any reasons why?

- Bisexual people are at an elevated risk:
Additional difficulties alongside general minority stress?
- Bisexual females seem to be at most risk:
Gender related stigma as well?
- Symptoms of anxiety and depression most associated:
Theoretical models often link NSSI with affect regulation?

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Implications and future research

- Clinicians aware of client's bisexuality could explore risk
- Links to mental health services in online support groups
- Posters in LGBTQ+ venues e.g. nightclubs, BiPride
- Bisexual people should be studied independently!
- Quantitative & qualitative studies – NSSI and bisexuality

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...our current research is doing something about it

- The Self-Injury in Young Bisexual people: a Longitudinal investigation (SIBL) study
- Online study for bisexual people aged 16-25
- Completing online surveys weekly for 6 weeks
- Thwarted belongingness, biphobia, self-esteem, rumination
- Qualitative SIBL spin-off study: NSSI, bisexuality and COVID19

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With thanks to

- Dr Peter J Taylor @PJTaylorClinPsy
- Dr Samantha Hartley @HartleySamantha
- Olayinka Oladokun @YinkaOla_
- Sophie Coleman @sophcoley
- Matina Shafi @MatinaPsy

SIBL study:

 @siblstudy <https://www.youtube.com/watch?v=Xgha8pznyf8>

 @sibl_study [Contact form: http://man.ac.uk/9YJBjj](http://man.ac.uk/9YJBjj)

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This paper has been submitted...

- Watch this space!

And

- Online SIBL study results
- SIBL bisexuality, NSSI & COVID19 qualitative spin-off results

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Thanks for listening and watching!

brendan.dunlop@postgrad.manchester.ac.uk

@BrendanJDunlop1

Please get in touch with any questions, comments or thoughts

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Appendix AB: Lay summary of SIBL results



The Self-Injury in Young Bisexual people: a Longitudinal investigation

(SIBL) study results summary

Why did we do this research?

We knew that bisexual people were at a greater risk of self-injury (hurting themselves on purpose). We were not sure why this was, so we wanted to find out. Urges to hurt oneself can often come before someone self-injures, and these urges can be distressing in their own right. We therefore wanted to look at the urges that people get to hurt themselves and what experiences might occur alongside or precede these urges.

We thought that biphobia (discrimination received because you're bi), rumination (thinking about things over and over in a negative way), self-esteem (how you feel about yourself) and thwarted belongingness (how much you felt like you belonged or not) might have something to do with this.

What did we do?

Young people (aged 16-15 years) who identified as bi and had either thought about self-injury or had self-injured were invited to take part. We asked people to fill out some online surveys



once a week for six weeks. The surveys asked questions about the experiences we wanted to find out about.

How many people took part?

In total, we had 207 young bisexual people from 25 different countries take part.

What did we find?

We found a few really important findings. Firstly, we found that self-esteem seems really important when it comes to self-injury. If people in our study had lower self-esteem it seems that they felt a stronger urge to hurt themselves. Lower self-esteem was also related to more severe urges to hurt oneself the following week.

The same was true for feelings of belonging. If people in our study felt like they did not belong strongly to groups or did not feel like they were connected to others, they had stronger urges to hurt themselves.

Rumination was also linked to people wanting to hurt themselves. For people in our study, the more they thought about things over and over again in their minds, the stronger the urge to hurt themselves was.

For biphobia, this was linked to the urges people in our study felt to hurt themselves, but less so than rumination.

What does this mean?

Well, these findings mean that some things like self-esteem, rumination and feelings of belonging seem to be particularly linked to bisexual people's urges to hurt themselves.

This means that by improving these things, perhaps this might have an impact on a young bisexual person's urge to hurt themselves. We need to do more research on this though to find out more.



This also tells us that we need to make sure bisexual people are given the chance to develop a positive bisexual identity so that they can feel good about themselves, feel like they belong and don't need to worry about things that might be connected to their sexuality. To do this we need to tackle biphobic discrimination in all settings and work together to help bisexual people feel accepted, both in the Lesbian, Gay, Bisexual, Transgender and Queer+ (LGBTQ+) community, and in the 'straight' world.

Can I get a copy of the full article(s)?

These results are being written into full articles and will be submitted to scientific journals shortly. Once they are published, we will put a link to them on the SIBL twitter page (@siblstudy). You can also email us (sibl@manchester.ac.uk) to get a copy.

Who can I contact if I want to find out more information?

If you want to know more, or have any other questions or comments, please email Brendan and Sophie at sibl@manchester.ac.uk

Thank you!

Huge thanks to everyone who took part in the study, and to those that helped us with recruitment! We have really valued doing this research and learning more about the experiences of young bisexual people.

Brendan J Dunlop and Sophie E Coleman

Clinical Psychologists in training and SIBL Co-Investigators



The University of Manchester

Appendix AC: Qualitative paper poster presentation for conferences

“Why is it so different now I’m bisexual?”: young bisexual people’s experiences of identity, belonging, self-injury, and COVID19

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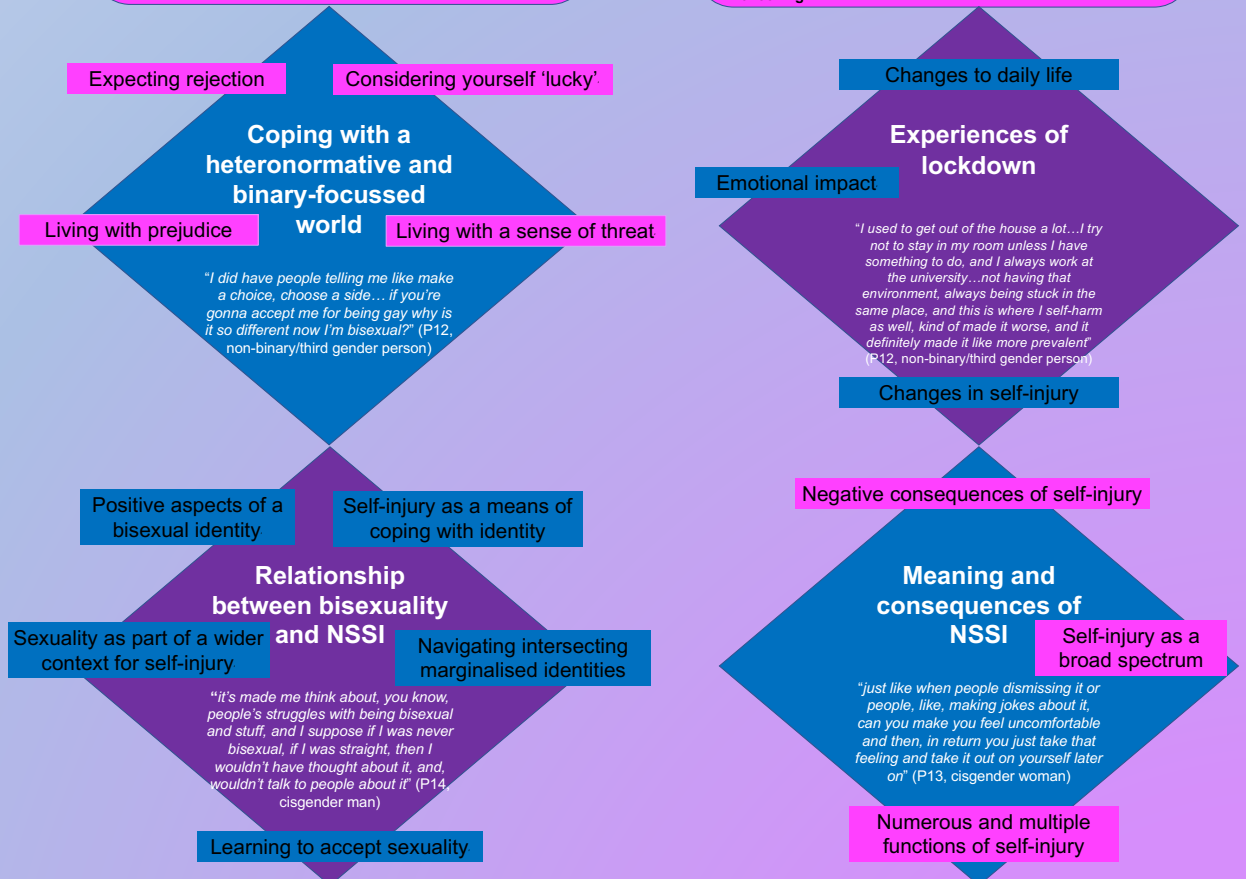
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Background

- ❑ Bisexual people have higher odds of Non-Suicidal Self-Injury (NSSI) vs other sexualities (Dunlop et al., 2020)
- ❑ Bisexual people face additional difficulties that other gay and lesbian people do not
- ❑ COVID19 has affected the way that people work, socialise and connect
- ❑ The aim of this study was to explore experiences of young bisexual people with regards to NSSI and the COVID19 lockdown

Methods and analysis

- ❑ Study protocol pre-registered
- ❑ 15 participants recruited as a subset of a larger online study (the @siblistudy)
- ❑ Interviews via Zoom/Skype
- ❑ Research team consisted of psychologists and academics
- ❑ Interviews transcribed verbatim and analysed using Thematic Analysis (Braun & Clarke, 2006)
- ❑ Four main themes constructed
- ❑ Themes taken back to some participants for member-checking



Discussion and conclusions

- ❑ Experiences of epistemic injustice (Fricker, 2007) permeated narratives – not being taken seriously as ‘knowledge givers’ and reduced capacity to shape and influence their own narratives and identity
- ❑ Strong sense of sexuality not fitting within a ‘binary-focussed’ world: participants felt shut out of heterosexual and LGBTQ+ worlds
- ❑ When participants had access to positive stories of bi/pansexuality, this enabled acceptance and embracing of internal experience of sexuality
- ❑ Mixed picture reported regarding self-injury during lockdown
- ❑ Limitations: self-selection bias, predominance of White participants and what about those who did not feel safe doing a remote interview?
- ❑ Implications/future directions: Clinicians should educate themselves about experiences of bisexuality in different contexts, including accessing stories/advice from bi-positive role models. Systemic discrimination within both LGBTQ+ and heterosexual communities needs to be tackled, including creating space for bisexual people to own and shape their own narratives and challenging all biphobic discrimination.

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